

AN APPRAISAL OF SOCIO-ECONOMIC
CHARACTERISTICS AND RESIDENTIAL
SATISFACTION OF OCCUPANTS OF
GOVERNMENT HOUSING PROJECTS
IN ADDIS ABABA

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By

SHEWANESEH FISSEHA

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June 29, 1994

To: Dr. Demissu Gemedu, Dean
School of Graduate Studies

From: K.N.Singh, Advisor
Department of Geography

Kailash Nath Singh

Subject: Correction

This is to certify that Ato Muluneh W/Tsadik, Ato Shewaneseh Fisseha and Teshome Tafa have incorporated the suggestions and modifications recommended by the examining board to the best of my satisfaction.

Thank you.

ADDIS ABABA UNIVERSITY
School of Graduate Studies

An Appraisal of Socio-Economic Characteristics and Residential
Satisfaction of Occupants of Government Housing Projects
in Addis Ababa.

by
Shewanesh Fiaseha
College of Social Sciences

Approved by Board of Examiners:

Kailash Nath Singh
Advisor

Kailash Nath Singh
Signature

Zewdneh Lakew
Examiner

[Signature]
Signature

K. N. Singh
Examiner

K. N. Singh
Signature

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ABSTRACT

One of the various strategies adopted to alleviate the problem of housing shortage prevailing in the urban centres of Ethiopia has been the construction of rental houses by the government. Despite such an attempt, little effort has been expended in assessing the marketing situation or to whom the dwellings are provided for, the movement pattern of households and their attitudes towards the available housing conditions. This paper examines the socio-economic and demographic compositions of the occupants of government built dwelling units found in Addis Ababa, the spatial patterns revealed during residential shifts and work trips; and the factors explaining residential satisfaction.

The original sample size consisted of 612 (20%) households drawn from a total population of 3058. However, due to unreturned and partly filled questionnaires, it dropped to 502. The sample households were randomly and proportionately selected from the housing units stratified into different rental groups by housing projects. Then, the questionnaires distributed to the households chosen were filled by the household heads. The data have been analyzed by employing tables, analysis of variance (ANOVA), simple correlation and stepwise multiple regression techniques.

The findings of the study demonstrate that the dwelling units under reference serve mainly small size families, married couples and the middle and higher income groups. The three main motives which generate residential shifts are the desire to avoid the discomforts arising from a shared housing accommodation, external compulsive forces and marriage. The spatial coverage of residential shifts indicates that the shifts are predominantly interzonal and that there are significant distance differentials with respect to the socio-economic positions of household heads. The bulk of the work

trips are city centre oriented, cover relatively longer distances and terminate out of residential zones. 53.5% of the variance of residential satisfaction is accounted for by five predictors (household size, number of rooms, distance between home and workplace, feeling of aural privacy and feeling of visual privacy) selected from the original eleven.

CHAPTER ONE

1. INTRODUCTION

A residence or housing is one of the primary needs of mankind and as opined by different scholars, it is a very comprehensive term implying not only shelter but also various services, amenities and neighbourhood features, which all enhance the quality of living. Housing is also one of the best indicators of the level of development and life style of a household for it is generally a reflection of its overall socio-economic and demographic characteristics, cultural attainment and quality of life. The magnitude of this reflection increases particularly when the range of housing alternatives for the various sections of the population becomes wider because the choice of housing type and the perception of housing condition basically differ from individual to individual depending on his socio-economic and demographic characteristic, his psychological make up and life experience as well as his quest for decor.

An inquiry into the existing social, economic and demographic characteristics of urban dwellers and an assessment of their movement behaviour while changing residences and their subjective perceptions and evaluations of housing, is necessary in order to promote the provision of appropriate housing accommodation. This paper, therefore, deals with the appraisal of the socio-economic status, demographic features, residential

shifts and satisfaction of the occupants of dwelling units constructed by government housing projects in Addis Ababa and currently administered by the Addis Ababa branch of the Agency for the Administration of Rented Houses (AARH).

The nature of the problem, the objectives of the study, the methods of data collection and analysis employed in this research are discussed in this chapter. Chapter two is devoted to the review of related literature where as chapter three investigates the socio-economic and demographic characteristics of the renters. Chapter four attempts to assess the spatial patterns of residential shifts and the journey to work exhibited by the occupants. Under chapter five, the subjective behaviour of the renters in the evaluation of their housing conditions will be analyzed with emphasis on the identification of those socio-economic, demographic, psychological and housing variables whose relative strength in predicting residential satisfaction is better. Finally, the paper ends up with conclusion and recommendations.

1.1 The Problem

It seems rational to suggest that the housing needs and aspirations of households vary according to their socio-

economic status and reveal changes in response to shifts in their life cycles. The type or quality of housing that households tend to occupy and the fulfillment of their residential desires are also intimately related to and influenced by their socio-economic positions, their demographic characteristics and the housing supply as well.

In order to adjust with the differential housing needs and achieve the anticipated residential objectives, households may move towards different geographical units of a city where housing is provided. This is particularly true of the occupants of dwelling units of government housing projects found in Addis Ababa. However, little has been established about the precise socio-economic and demographic characteristics of the renters; and little is understood about their geographic origins and patterns of flow in the process of shifting their residences.

In spite of the fact that a number of attempts have been made by planners, policy makers, social and behavioural scientists to provide housing conditions that will meet the needs of urban dwellers, little emphasis has been laid on their subjective perception and way of evaluation of their housing conditions (Ginsberg and Churchman, 1984 =425). In connection with housing, it is also important to assess the nature of the links between residential locations and employment sites since this aspect directly affects the spatial pattern of worktrips (Hanson and Pratt, 1988 = 303).

The planning of a sound and rational housing supply should be primarily based on a detailed and rigorous study of such crucial set of problems, notably, the composition of the occupants with respect to their social, economic and demographic characteristics; the movement patterns revealed during residential shifts and work trips, and the factors explaining residential satisfaction. The present study is, therefore, concerned mainly with these specifically selected and related aspects of households dwelling in the housing units built by government housing projects in Addis Ababa.

1.2 Rationale and Justification of the Study

The study is motivated by the following two basic concerns.

1. For the provision of appropriate residential environment, planners and policy makers have to consider the occupants' socio-economic and demographic features, and the spatial pattern they exhibit during work trips. Moreover, the major socio-economic, demographic and psychological factors, and the main housing attributes which influence residential satisfaction have to be objectively identified so that they can be incorporated in the planning of housing and implementation of projects.

2. The study of residential shift is yet to be conducted for none of the scholars to date have analyzed this aspect, particularly in relation with the recently built government rental houses.

The present study is, therefore, undertaken with the intention to fill these research gaps and provide a background information for future attempts in the provision of desirable housing conditions.

1.3 Rationale for the Selection of the Study Area

Addis Ababa (09° 02'N, 38° 42'E), the capital of Ethiopia is selected due to the following three reasons:

1. The socio-economic diversity of the city - Addis Ababa is a cosmopolitan city of considerable socio-economic and cultural diversities as compared to other major cities or towns of Ethiopia. As such, it offers a great opportunity for incorporating the housing needs of different sections of the population.

2. The rapid population growth of the study area - The rapid growth of population that has occurred in the city during the last three decades, i.e. 443, 728 in 1961 (OPHCC, 1984 = 266) and 2,023,107 in 1993 (ONCCP, 1985 = 176), has created numerous urban problems among which the provision of appropriate housing is highly critical.

3. The size of the city - The size of the study area is relatively larger, i.e. 222 square kilometers (CSA, 1990 = 37) and hence, imposes greater journeys to workplaces. This

situation offers better opportunity particularly for the study of worktrips.

Over and above, the researcher's acquaintance with the city and its housing problems along with the access to the field have also played significant roles in selecting Addis Ababa for his project.

1.4 Objectives of the Study

The specific objectives of the study are the following:

1. To appraise the social, economic and demographic characteristics of the occupants.
2. To search for the major reasons which generate residential shifts.
3. To assess the spatial pattern of residential shifts exhibited by the households.
4. To assess the spatial pattern of the worktrips exhibited by the renters.
5. To identify those socio-economic, demographic, psychological and housing variables that have stronger relationships with residential satisfaction and determine their relative contributions.
6. To recommend ways and means of improving the provision of rental house for urban dwellers.

1.5 Hypotheses

In order to achieve the objectives of the study outlined above, the following hypotheses are formulated.

Hypothesis I

The bulk of residential shifts are intrazonal, i.e. originate and terminate within the same zone.

Hypothesis II

Distances moved by households while changing their residences do not vary with socio-economic status, i.e. with income, type of occupation and level of education.

Hypothesis III

The journey to work pattern exhibited by household heads is dominated by intrazonal moves, i.e. the residences and workplaces of the majority of the household heads are located within the same zone.

Hypothesis IV

Residential satisfaction (y) is related to:

(a) Socio-economic and <u>demographic variables</u>	Expected or Hypo- <u>thesized relationship</u>
x1 (income)	+
x2 (occupation)	+
x3 (education)	+

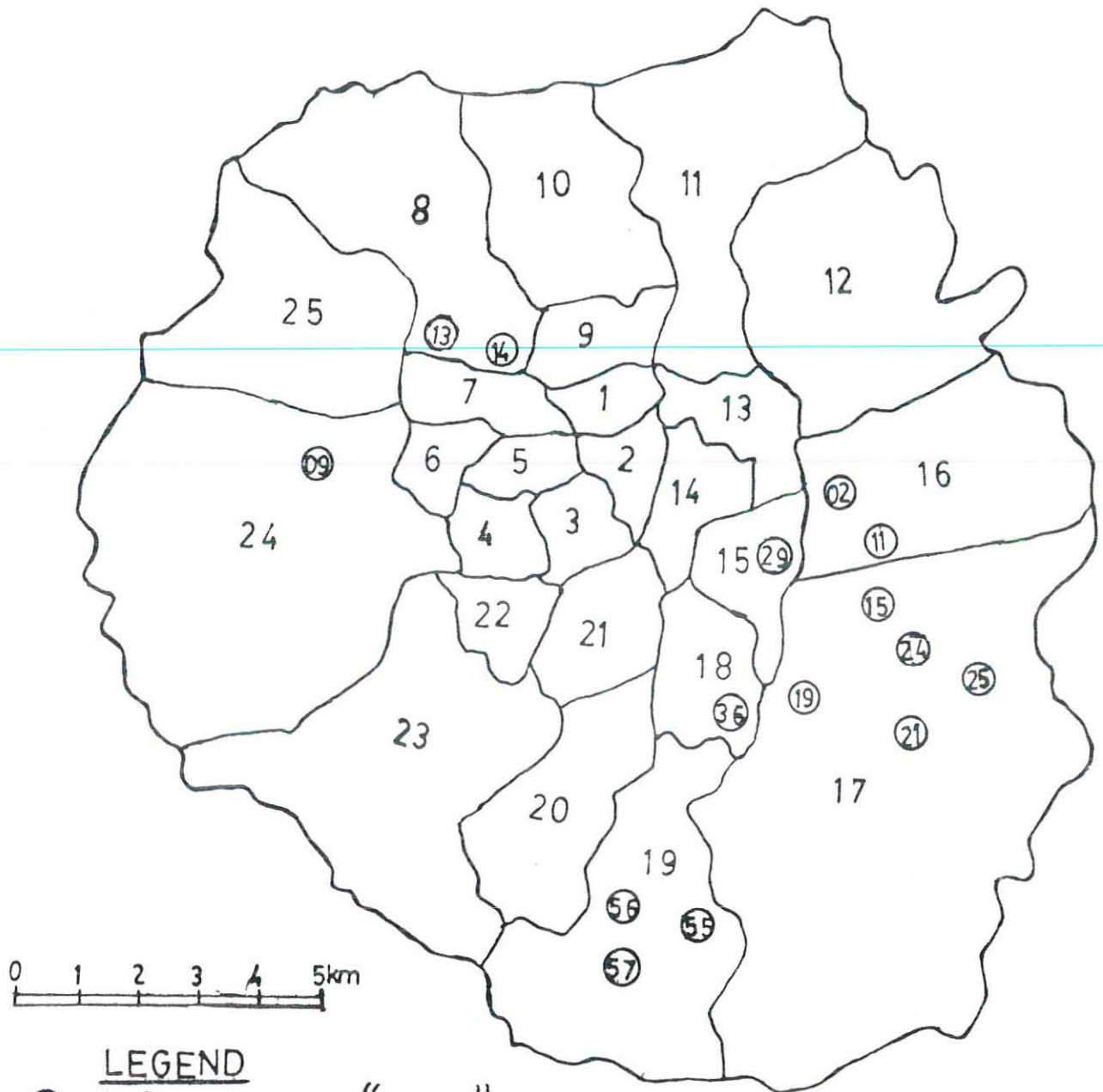
x4 (household size)	-
x5 (Age)	+
(b) <u>Psychological variables</u>	
x6 (presence of neighbour conflict)	-
x7 (feeling of visual privacy)	+
x8 (feeling of aural privacy)	+
(c) <u>Housing variables</u>	
x9 (number of rooms)	+
x10 (rent of the house)	+
x11 (distance between home and work place)	-

1.6 Methodology

This study is based mainly on primary data obtained through questionnaires distributed to selected sample households. In addition to site visits, some of the available documents of the Agency for the Administration of Rented Houses (Addis Ababa branch) and other relevant literature are utilized.

As reported by the Addis Ababa zonal offices of the Agency for the Administration of Rented Houses, the total number of dwelling units built by government housing projects since the establishment of the agency (1975) and occupied at present are 3058. These housing units are distributed in seven kefitegans and fifteen kebelles as shown on Figure 1. Thus, in order to have a reasonable sample size of households, it was decided to take 20% of the dwelling units which consequently, consisted of 611.6 or 612 households.

Fig. 1. ADDISS ABABA : SPATIAL DISTRIBUTION OF THE GOVERNMENT HOUSING PROJECTS



LEGEND

⓪ Projects with their "kebele" code numbers

- Isolated numbers indicate "kefitegnas"

Source: Base Map adapted from A.A.U., Department of Geography, 1984

To optimize the diversity of the sample and to include various socio-economic groups, a stratified sampling method was employed. The initial stratification involved the classification of the total housing units into different rental groups by Kefitegna and Kebelle as presented in Table 1.

Table 1. Classification of the Housing Units by monthly Rent by Kefitegna and Kebelle

Kefitegna	Kebelle	Monthly Rent (in Birr)					Total	
		50	50-99	100-49	150-199	200 & above	No	%
8	13	-	30	-	-	-	30	0.98
	14	-	32	-	-	65	97	3.17
15	29	-	54	36	-	-	90	2.94
16	02	-	108	-	-	-	108	3.53
	11	-	-	70	-	-	70	2.29
17	15	-	123	6	-	-	129	4.22
	19	-	-	-	24	24	48	1.57
	21	88	97	21	-	-	206	6.74
	24	325	77	56	149	-	607	19.85
	25	98	120	36	216	-	470	15.37
18	36	-	95	-	-	-	95	3.11
19	55	85	115	-	-	-	200	6.54
	56	-	187	21	-	-	208	6.80
	57	329	14	-	-	-	343	11.22
24	09	328	-	-	29	-	357	11.67
Total	15	1253	1052	246	418	89	3058	100.00

In the next stage, the size of the sample was proportionately determined according to the total number of dwelling units categorized into each rental class for Kefitegnas and Kebelles (see Table 2).

Table 2 - Distribution of the Size of the Samples

Kefitegna	Kebelle	Monthly Rent (in Birr)					Sample size	Percentage of the total sample*
		50	50-99	100-149	150-199	200 & above		
8	13	-	6	-	-	-	6	0.98
	14	-	6	-	-	13	19	3.10
15	29	-	11	7	-	-	18	2.94
16	02	-	22	-	-	-	22	3.59
	11	-	-	14	-	-	14	2.29
17	15	-	25	2	-	-	27	4.41
	19	-	-	-	5	5	10	1.63
	21	18	19	4	-	-	41	6.70
	24	65	15	11	30	-	121	19.77
	25	20	24	7	43	-	94	15.36
18	36	-	19	-	-	-	19	3.10
19	55	17	23	-	-	-	40	6.54
	56	-	37	4	-	-	41	6.70
	57	66	3	-	-	-	69	11.27
24	09	65	-	-	6	-	71	11.60
Total	15	251	210	49	84	18	612	99.98

* The percentage of the samples in each housing project is calculated out of 612 which is rounded from 611.6.

Thus, in the selection of the households which will fill the questionnaires, the housing units were drawn by random sampling procedure on the basis of their house numbers. Finally, each questionnaire was coded with its respective house number and was distributed to the households chosen.

Out of 612 questionnaires distributed, 502 (or 82%) were successfully completed and returned while the remaining 110 (or 18%) were returned either unfilled or partly filled. Therefore, the sample households used for the analysis were fixed as 502.

The analysis of the data was performed by employing a variety of methods. Analysis of variance (ANOVA) has been utilized to investigate the variation in distance moved by households during residential shifts based on their socio-economic positions. In order to identify and determine those socio-economic, demographic, psychological and housing variables that are better associated with residential satisfaction, simple and stepwise multiple correlations and regression have been employed. Moreover, tables have been used as methods of analysis and to depict data wherever necessary.

1.7 Limitations of the Study

A comprehensive study of this sort in principle needs to include the characteristic of each household member. However, this was handicapped by the cost problem, time shortage and the methodological difficulty in summarizing and analyzing the characteristic of every member of a family. Therefore, similar to many other researches of this nature, the study has restricted itself mainly to the consideration of household heads. Moreover, the following points have to be noted for their own setbacks on the study.

1. Wherever distance is considered, the measurements were made from and to the centres of the Kebelles where the housing projects, workplaces or former residences are located. Therefore, the result might have some short of approximation.
2. Though the questionnaires were proportionately distributed according to the total number of dwelling units categorized into different rental classes by Kebelle, the discrepancy in the number of fully answered questionnaires might have affected the share of each rental class in the sample.
3. A few household heads have also appeared to be suspicious in answering questions related to income, occupation, family size and housing conditions.
4. The complete absence of original documents in the zonal offices and in the head office of the concerned organization might have also contributed to the limitation of the data.

1.8 Definitions of Local and Technical Terms

1. Kebelle - The lowest administrative unit in the city of Addis Ababa or in any urban centre of Ethiopia.
2. Kefitegna - An urban administrative unit which is of higher order than kebelle.
3. Household - Members of a family that have common arrangements for meals.

4. Residential shift/relocation - The movement of households to a new dwelling environment within a city.
5. Family life - cycle - Also known as family status, is a general term embracing the age of the household head, age of children (if any), marital status and household size.
6. Dwelling/Housing unit - A house which is principally built for residential purpose and to serve a single family.
7. Neighbourhood - A small recognizable subunit of a city comprising the immediate surroundings of a housing unit.
8. Slum - A highly congested residential neighbourhood in a given city or town which consists predominantly of substandard dwellings and is occupied mainly by persons who belong to the lowest income stratum.
9. Squatter settlement - Any one of the spontaneous settlements in the third world cities where usually the poor build makeshift dwellings on land without any legal right or title.
10. Housing need - The necessity or requirement of dwelling units for individuals, households or a community as a whole.

The following categories of occupational groups are based on the classification made by the Office of Population and

Housing Census Commission (Jan, 1987), PP.125-129.

11. Professional Workers - Include :

- physical and life scientists
- medical, veterinary and related workers
- economists, accountants and auditors
- jurists, lawyers and judges
- teachers
- workers in religion
- ~~authors, journalists and related workers~~

12. Service workers - comprise :

- cooks, waiters, bar tenders and related workers
- cleaners, building care takers and related workers
- beauticians, hairdressers, barbers and related workers
- protective service workers

13. Administrative and managerial workers - consist:

- legislative officials
- government administrators
- managers and other officials

14. Clerical workers - Include:

- clerical supervisors
- typists, book keepers, cashiers, transport conductors and related workers.

15. Operators - comprise:

- computing machine operators, telephone and

telegraph operators, transport equipment operators and related workers.

16. Sales workers - consist :

- Working proprietors, salesmen, shop assistants and related workers.

17. Technical workers - Include:

- electrical fitters and related electrical and electronics workers.
- ~~architects and engineers~~
- mechanics, technicians and related workers
- artists, photographers and related workers

18. Production Workers - Consist

- industrial workers, tailors, shoe makers, carpenters, construction workers and related.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE : A GENERAL SURVEY

2.1 The Growth Pattern of Urban Population

2.1.1 The Global Scene

The initial growth of world urbanization began to take its shape in the early nineteenth century due to the increase in agricultural surplus, improved transportation and political security. Thus, world cities whose populations were 20,000 and more increased by 132% in the period 1800 to 1850, 193% during the period 1850 to 1900; and 239% between 1900 and 1950. During the same period, localities with 100,000 and more inhabitants grew by 76%, 222% and 254% respectively (Breese, 1966 : 16-17).

The urban population of the world grew more substantially in the post mid-twentieth century period as shown in Table 3.

Table 3. Percentage of World urban population by major Areas and regions, 1950 -2000

Major Area Region	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000
World Total	29.2	31.2	34.2	35.5	36.6	37.8	39.5	42.2	45.2	48.2	51.1
MDRs*	53.8	57.0	60.5	63.6	66.6	68.8	70.3	71.6	72.6	73.6	74.9
LDRs**	17.0	19.0	22.1	23.4	24.7	26.4	28.9	32.8	37.1	41.2	45.1
Africa	14.5	16.3	18.3	20.6	22.9	25.2	27.8	30.6	33.9	37.3	40.7
L.America	41.5	45.3	49.3	53.3	57.3	61.2	65.0	68.5	71.5	74.1	76.4
N.America	63.9	67.0	69.9	72.0	73.8	73.8	73.9	74.6	75.2	76.1	77.3
Asia	16.4	18.3	21.5	22.2	22.9	24.1	26.3	30.1	34.4	38.6	42.7
Europe	56.5	58.7	61.1	63.9	66.7	68.9	70.4	71.9	73.4	75.0	76.7
Australia- Newzealand	74.7	77.2	79.8	82.2	85.3	85.3	85.3	85.1	85.2	85.6	86.2

* MDRs = More Developed Regions

** LDRs = Less Developed Regions

Source : UN (1991). World Urbanization Prospects 1990 : Estimates and Projections of Urban and Rural Populations and of Urban Agglomerations, Table

The proportion of urban population in the world, which was 29.2% in 1950 grew to 45.2% in 1990 and is expected to reach 51.1% by the year 2000. When we compare the level of urbanization of the more developed and less developed regions of the world, significant variations are observed. The level of urbanization experienced by the advanced nations is much higher than that of the developing regions. As such, the percentage of urban population residing in the more developed regions which was 53.8% in 1950 reached 72.6% in 1990 and is projected to be 75% by the turn of the century. The urban population of the less developed areas of the world on the other hand, was 17.0% in 1950, 37.1% in 1990 and is expected to reach 45.1% by the year 2000.

Among the less developed regions of the world, the proportion of population inhabiting the urban areas has been highest in Latin America. In 1950, the percentage of the population concentrated in the urban areas of Latin America was as high as 41.5%. This figure grew significantly and reached 71.5% in 1990 and is expected to be 76.4% by the year 2000. The growth pattern has been continuous also in Africa and Asia. The African urban population which was 14.5% in the mid-twentieth century was recorded to be 34% in 1990 and is assumed to reach 40.77% by the year 2000. In Asia, the percentage of

urban population in 1950 was 16.4% and it rose to 34.4% in 1990 and is expected to reach 42.7% by the turn of the century.

It is also noted that the process by which urbanization operates in the developed and developing areas of the world is quite different. In the former, the growth of urbanization goes hand in hand with the decline in the size of rural population mainly because urbanization is being diffused in to the rural areas. In the less developed nations urban growth takes place largely as a result of the transfer of rural people to urban areas with still more rural inhabitants than urban dwellers (IUSSP, 1957 = 63).

Another important point of consideration which gives a clue to understand the pattern of world urbanization is the average annual rate of change of urban population (Table 4).

As revealed by Table 4, the pattern of world urbanization has been fluctuating regionally as well as temporally. During the period 1950-1955, the average annual growth rate of world population was 1.37% and it declined to a yearly growth rate of 0.90% in the period 1975 to 1980; and again rose to a yearly growth rate of 1.27% in the period 1990 to 1995. Such a fluctuating trend of change has affected both the more

Table 4. Average Annual Rate of Change of Proportion of Urban Population by major Areas and Regions, 1950-2000.

Major Area, Region	Average Annual Rate of Change (%)									
	1950- 55	1955- 60	1960- 65	1965- 70	1970- 75	1975- 80	1980- 85	1985- 90	1990- 95	1995- 2000
World Total	1.37	1.79	0.76	0.60	0.65	0.90	1.33	1.35	1.27	1.19
MDRs	1.15	1.19	0.98	0.93	0.66	0.41	0.37	2.27	0.29	0.34
LDRs	2.22	3.12	1.11	1.06	1.32	1.86	2.53	2.42	2.10	1.80
Africa	2.33	2.30	2.36	2.07	1.99	1.91	1.94	2.02	1.92	1.75
L.America	1.79	1.67	1.59	1.42	1.32	1.20	1.05	0.87	0.72	0.59
N.America	0.95	0.85	0.58	0.50	0.01	0.02	0.17	0.17	0.24	0.31
Asia	2.09	3.31	0.61	0.61	1.06	1.69	2.72	2.67	2.34	2.00
Europe	0.76	0.88	0.92	0.83	0.66	0.44	0.40	0.43	0.44	0.44
Australia-										
Newzealand	0.66	0.65	0.60	0.54	0.21	-0.00	-0.04	0.01	0.08	0.14

Source : UN (1991). World Urbanization Prospects 1990: Estimates and Projections of Urban and Rural Population and of Urban Agglomeration, Table A.8, PP.172-176.

developed and less developed areas of the world. In the advanced regions, the average annual growth rate of urban population in the period 1950 to 1955 was 1.15% and it slightly grew to a yearly increase of 1.19% during the period 1955 to 1960. Since then, it declined continuously up to the period 1985 to 1990 when it attained an annual growth rate of 0.27%; and again rose to a yearly growth rate of 0.29% in the period 1990 to 1995. The urbanization process of the less developed areas showed even more fluctuation over the past fifty years as the average annual growth rates observed were 2.22% (1950-1955), 1.86% (1975-1980) and 2.10% (1990-1995). The highest average annual growth rate of urban population over the fifty years encompassed (1950-2000) has been observed in Africa followed by Asia. According to the projection, one important and common feature of urbanization observed in both the developed and developing regions is that, the average annual

rate of urban population growth declines from the level attained in the period 1950-1955 to the period 1995-2000, the rate of decline being higher in the more developed than in the less developed nations. This implies that the rate of annual urban population increase has been higher in the developing nations than in the advanced countries and hence, the former has been affected by faster rate of urbanization.

In general, over the entire half century, the world's total population is expected to increase by about 160% and the urban population by 375%. Consequently, since the mid-twentieth century the world's total population required about thirty five years to double where as the urban population is projected to double twice by around 1995. Thus, with in the period of fifty years (1950-2000), the absolute growth in urban percentage will be nearly equal to the size of urban population that was attained till the mid-twentieth century (IUSSP, 1957: 54-55).

2.1.2 The Ethiopian Scene

In the preceding discussion it is observed that the urban population explosion has been a world wide phenomenon since the beginning of the nineteenth century and will tend to continue in the future also. Nevertheless, the advanced nations have reached near saturation as is reflected in their lesser growth

rates during recent years while the developing countries have been experiencing rapid urban population increase. As such, the emerging pattern of urban population rise in the latter has been threatening due to its serious consequences on the provision of urban services in general and of urban housing in particular.

~~The root causes of urbanization in the more developed and less developed nations have also been quite different. In the more developed regions of the world, the growth of urban centres has been closely associated with economic development, industrialization and tertiary services. The process of urban growth in the developing countries including Ethiopia, on the other hand, has mainly been the result of the rural "push". Thus, urbanization in Ethiopia has not resulted from progresses in agricultural and industrial productivity but rather from the rapid influx of rural population to the towns (Tolley and Vinod, 1987=V; Mesfin, 1968 : 10).~~

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As regards the pattern of Ethiopian urban population growth, a rapidly rising trend has been observed since the 1960's (Table 5).

Table 5 - The Pattern of Urban and Rural Population Growth of Ethiopia, 1965 - 1993.

Year	Urban Population		Rural Population		Total population
	No. ('000)	%	No. ('000)	%	('000)
1965	1525.4	6.75	21065.0	93.25	22590.4
1970	2292.0	9.42	22027.0	90.58	24319.0
1975*	3195.8	11.79	23906.3	88.21	27102.1
1980**	4224.9	13.60	26840.4	86.40	31065.3
1985	4518.8	10.42	38831.1	89.57	43349.9
1990***	5474.5	10.92	44658.1	89.08	50132.6
1993	6178.4	11.28	48594.9	88.72	54773.3

- Source : 1. C.S.O. (1965, 1970, 1976, 1980). Ethiopia : Statistical Abstract, PP.25-27, 38-39.
 2. ONCCP (1985). Population of Weredas and Towns by Sex and Average Household size based on the Preliminary Census Results; and Population Projections by Age - Sex Groups and Rural - Urban, for Total country and regions : 1984-1995, Census Supplement 1, PP.4,167,172,176.

- * 183 towns were recorded in 1975
 ** 259 towns were recorded in 1980.
 *** 322 towns were recorded in 1990.

As depicted in Table 5, the total population of the country in 1965 was nearly 22.6 million and at present (1993) it is estimated to be 54.7 million, a net increase of about

150%. In 1965, the population residing in the urban centres was about 1.5 million constituting only 6.75% of the total population of the country. In 1980, the urban population reached approximately 4.2 million accounting for 13.6% of the country's total population. Such a high figure might have been recorded due to an increase in the number of localities which attained the status of a town, i.e. the total number of Ethiopian towns (localities inhabited by 2000 and more people) in 1975 was only 183 and it grew to 259 in 1980. By 1985, the proportion of urban population dropped to 10.32%. However, since 1985, it has experienced a continuous rise attaining 11.28% or nearly 6.2 million in 1993. As computed from Table 5, it is also found that the percentage increase of urban population for the whole period of 1965-1993 is 305%. This figure is over two times higher than the percentage increase of both the rural and total population of the country which for the same period (1965-1993) showed an overall increase of 130.7% and 142.5% respectively.

Taking the 1981 urban population of Ethiopia which was estimated to be 4.3 million (or 13.3%) as a base and assuming a 5% annual growth rate, it has been projected that the population living in urban areas will double around 1996 (MOUDH, 1983:29). One important feature of the urbanization process of the country, as can be observed from Table 5, is that the growth in urban population has been continuous since

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the 1960's together with a substantial and regular increase in the size of rural population. However, as CPSC (1983+70) puts, "the basic reason for the rapid growth of the urban population of Ethiopia has been the rural-urban migration rather than the natural increase that occurs in the urban areas themselves".

Consequently, the urban centres of Ethiopia have been adversely affected by the rapid influx of rural population for they have not been in a position to provide the necessary urban facilities in general and specifically, the housing facilities needed by their fast growing populations.

2.1.3 The Addis Ababa Scene

Addis Ababa (09°02'N, 38°42'E) was founded in 1886/87 when Emperor Menelik II transferred his military camp from Entoto Mountain down to the present site of the city and its establishment was motivated by the Emperor's interest to have a strong military base from which to embark on the reunification of the divided Ethiopia in the 1870's (City Council of Addis Ababa, 1989 =9-10). It is built over an undulating area which ranges in altitude from 2200 meters in the south to 2600 meters in the north (NRDC and CPSC, 1981 =

90,92). The maximum rainfall occurs during the months of June to September with a secondary rainfall regime (Belg) during February to April. The highest and lowest temperatures prevail in May and December respectively (NRDC and CPSC, 1981=13; Kefialew, 1984=49).

During the early period of its evolution, Addis Ababa was mainly composed of widely dispersed agglomerations of various huts, the palace, military camps, market places, churches and foreign legations (Horvath, 1966=54; Amare and Fasil, 1986=13). Its size over space was also relatively larger because the settlements established by the nobles and the rest of the residents were so widely dispersed (Johnson, 1974=18). As such, the total area of the city by 1914 was 56 square kilometers (NRDC and CPSC, 1981=90). The population of the city in the early days of its growth was also very small. However, it reached 65,000 during the first decade of the twentieth century (Table 6).

The population of the city began to increase rapidly and substantially after the completion of the Ethio-Djibouti railway with its terminal at Addis Ababa in 1917 (City Council of Addis Ababa, 1989=15). Thus, in 1935 the total population of the city reached 100,000. In 1951 a census was carried out by the municipality and the population of the city was found to

Table 6. The Growth Pattern of the Population of Addis Ababa, 1910-2006.

Year	Population Size	Source
1910	65000	NRDC and CPSC (1981=90)
1914	70000	<u>Ibid</u> , 90
1935	100000	Pankhrust (1986=67)
1951	317819	MOUDH (1983 = 49)
1961	443728	OPHCC (1984 = 266)
1970	795900	C.S.O. (1970 = 26)
1980	1277259	C.S.O. (1980 = 36)
1990	1792699	ONCCP (1985 = 305)
1993	2023107	<u>Ibid</u> , 308
1995	2190167	<u>Ibid</u> , 310
2001	2142400	NUPI (1984 = 21)
2006	2406900	<u>Ibid</u> , 21

be 317,819; and just with in a period of three decades (1980), it rose to a 1.3 million mark. At present (1993) the population of Addis Ababa is estimated at 2.02 million and furthermore, it is expected to shot up to 2.4 million by the year 2006. The population of the city has, thus, been growing continuously and is expected to maintain this trend unless and until some position controls are put forth.

The general trend of the average annual rate of population

increase, on the other hand, is characterized by a regular decline since 1961 and tends to maintain this declining tendency in the future also (Table 7). Nevertheless, the rate of growth observed each year is still threatening. Moreover,

Table 7. Estimated and Projected Average Annual population Growth Rates of addis Ababa (in percent), 1961-2006.

Period	Growth Rate
1961 - 67	7.0
1967 - 78	5.0
1978 - 84	3.4
1986 - 91	2.7
1991 - 96	2.6
1996 - 2001	2.4
2001 - 2006	2.3

Source: 1) OPHCC (1987). Population and Housing Census of Ethiopia, 1984 ; Analytical Report on Results for Addis Ababa, vol.1, No.1, P.266.

2) NUPI (1984). An Assessment of the Demographic Characteristics of the Addis Ababa Metropolitan Region, P.22.

although the average annual growth rate declines from 7.0% (1961-1967) to a yearly growth rate of 2.4% (1996-2001), the absolute change between 1961 and 2001 is nearly 1.7 million (refer to Table 6). Available data for the city (including Akaki) also indicate that new households with an average annual increase of about 15205 would be formed as a result of population growth trends* between 1986 and 2006 (Hadgu, 1984=5-

6). Thus according to Hadgu, with the assumption that one household should occupy one housing unit, the total number of new dwelling units needed over the twenty years encompassed in the projection period (1986-2006) would be 304,098. This implies that the average annual housing need for the period concerned would be 15,205. A rough observation of the progress of housing construction in the city, however, indicates a very slow development of the housing sector (Table 8).

Table 8. New Residential House constructions in Addis Ababa (Based on Building Permits Delivered by the municipality, 1961-1990).

Period	No	Cumulative Total
1961 - 1970	3363	3363
1971 - 1980	11098	14461
1981 - 1990	24787*	39248

* Data on cooperative housings for 1985 is missing.
Source=1) CSO (1963-1984). Ethiopia : Statistical Abstract, PP.19-98.

2) CSA (1986, 1988, 1990). Ethiopia :Statistical Abstract, PP.126,169,112.

* The estimated average annual population growth rates (including the town of Akaki) were:

- 3.52% (1984)
- 3.88% (1986-91)
- 3.69% (1991-96)
- 3.28% (1996-2001)
- 3.11% (2001-2006)

The number of building permits delivered by the municipality of Addis Ababa in the period 1961 to 1970 was only 3363 and it grew to 24787 during the period 1981 to 1990. However, it must be noted that even these figures do not necessarily imply actual constructions. Moreover, when the rate of construction is seen in relation to population growth, a wide gap is observed between the two. This is justified by the figures computed from the data represented in tables 6 and 8. The average annual construction of dwelling units over the entire period (1961-1990) was only 1308.3. The inhabitants of the city during the same period on the other hand, increased on the average by 44965.7 persons per annum.

Therefore, over the past three decades it can be considered that each year, there were generally 43657.4 persons in excess of the housing units which were assumed to be produced annually.

The evidences presented so far indicate that the population of the city has been growing fast and continues to rise rapidly in the future also. As a result, the housing need of Addis Ababa has been increasing at higher and rapid rates. However, the pace of housing development has been lagging far behind and hence, could not absorb the fast growing population.

2.2 Formulation of Urban Housing Policies in Ethiopia

Before surveying the characteristics of urban housing policies and programmes formulated in Ethiopia, it is necessary to make a few observations about the different views forwarded in the perception of housing.

The basic and controversial issue which arises in the definition of housing is whether the term refers merely to the physical shell of a residence or it embraces also the residential environment and the amenities available. Some relate housing simply to the internal services delivered by the house, i.e. protection from climatic risks, provision of space for food preparation, storage, sleeping and procreation. Others conceive of housing as a combination of the internal as

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well as the external facilities like access to workplace, shopping, transportation, school and health services and neighbourhood features (Glaser, 1985 = 409; Rossi, 1980=22). This shows the difficulty of having unanimity in the definition of housing because its meaning refers to different things for different individuals since everyone interpretes it according to his own personal life experience.

Despite the problem of universally tenable definition, housing or residence is one of the best indicators of the level of socio-economic development and life style of a community. Moreover, housing, which appears either in single or multiple dwelling units, represents an important aspect of the physical form of a city through its location, size and design; and also reflects the economic, social and demographic characteristics of a community through the family components dwelling in it (Clark, 1982=1-2; Bourne, 1978 = 127; Adeniyi, 1972 = 315). Housing can also be conceived as a consumer good for the basic reason that it promotes personal satisfaction and physical comfort of human beings. Besides, it is an integral part of the social infrastructure and should be viewed as a complex product comprising dwellings, accessibility and services like street lighting, disposal of solid wastes, sewers, etc; and as exhibiting the various features of public capital investment (Glaser, 1985 = 410).

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On the basis of the foregoing discussions on the definition of housing, it is worth - while to survey the general features of the housing policies and programmes adopted in Ethiopia.

Housing policy refers to a multitude of activities which are jointly undertaken by governmental and private institutions in the provision of housing services for a community (McGuire, 1981+3). The principal motives which encourage governments to set up national housing policies and invest in housing are the economic benefits obtained from the provision of housing, the need to avoid the social and political disturbances which may arise as a result of housing problems and to counter-act the growth of slums and squatter settlements which promote overcrowding, insanitary conditions and diseases (Adeniyi, 1972 = 319+20).

The formulation of housing policies in some of the less developed countries (for instance, Mexico) dates back to the pre-World War II period. Nevertheless, in the majority of these countries considerable improvements in the adoption of housing policies and programmes took place only in the late 1940's, by way of formulating the overall development goals and by the creation of governmental planning bodies. Since then, housing policy has come to be progressively understood as one of the components of the broad socio-economic development

programmes. However, in comprehending the details of housing situations and in the methods of approaching the issue, there have been variations among the Third World countries. This being the case, housing policies and the degree of governmental involvement in the housing market significantly differ from nation to nation (Burns and Leo, 1977: 2,85, 87). As the policies of different nations reveal, governmental intervention in the housing sector may be passive or dominant; or governments may totally refrain from involvement in the housing sector leaving the level of production and prices to be determined by the interplay between the private market forces and consumer demands (McGuire, 1981= 3).

Governmental focus on the formulation of policies for the housing sector in Ethiopia was not worth mentioning until recently. This is clearly observed in the First Five-Year Plan (FFYP) which covered the years 1957-61. It almost ignored the housing sector, as no specific government policy on housing was formulated except mentioning the amount of investment earmarked for housing (Ethiopia's First Five- Year Development Plan, 1957-61 =121).

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housing, particularly from the view point of technical aspects, notably the construction of self-help housing units. This plan also attempted to encourage domestic investors to participate in the provision of better housing conditions (Ethiopia's Second Five Year Development Plan, 1963-67=135). The Third Five - Year Plan also aimed at improving urban housing and infrastructural facilities but mainly concentrated on the provision of medium and low cost housing for the middle and low income groups by encouraging private enterprises to invest in the housing sector. Moreover, the preparation of master plans, formulation of urban land acquisition policies and the provision of zonal housing areas were central to this plan. In order to gain statistical and factual knowledges of housing needs which serve as background information in the formulation of comprehensive government housing policy, the Ministry of Public Works was accorded responsibility to carry out such surveys. In terms of investment in the housing sector, the government mainly encouraged private firms and aimed at covering the expenditure of only a small proportion of the population, namely, needy or special 'target' groups. Accordingly, a considerable amount of this cost was to be recovered either through long term mortgage loans from owners or reasonable rentals from tenants (Ethiopia's Third Five Year Development Plan, 1968-73 = 306,362).

In pre-revolutionary Ethiopia, governmental intervention

in the housing sector was, therefore, just in the formulation of policies and programmes, i.e. the government did not involve itself in the production of housing. As such, the activities in the housing industry were predominantly left to private undertakings.

The Post-Revolutionary period in Ethiopia, however, seems to have a different perspective concerning housing policies. The main shift during this phase occurred in July 1975 when private urban lands and extra houses were nationalized. Thus, this phase particularly focused on the creation of governmental institutions in order to enhance the construction of extra and better quality dwelling units through housing cooperatives and private undertakings. Furthermore, the housing policy which was formulated during this period aimed at incorporating housing programmes into the overall national development strategies (ONCCP, 1988). In order to alleviate the housing problem which arises as a result of the rapidly growing urban population, the government also devised the following schemes (MOUDH, 1983 = 29-30):

1. Individual Housing Construction - Under this scheme, the government provides a free plot of land and a house plan to individuals who want to build their own houses with private financial sources or by borrowing from Housing and Savings Bank.
2. Aided Self-Help Housing Construction - This scheme is

intended mainly for the urban poor earning a monthly income between 100 and 200 Birr. Under this programme individuals are organized into Self-Help Housing Cooperatives providing unskilled labour which accounts for at least 10% of the total construction cost. The construction funds are provided by the Ministry of Urban Development and Housing (MOUDH) at 6% simple yearly interest payable over fifteen years together with all engineering services and full time supervision of construction.

3. Cooperative Housing Construction - At least twenty persons who earn a monthly income of 200 Birr and above are allowed to form the cooperative. The Ministry of Urban Development and Housing provides upto 500 square meters plot of land and the Housing and Savings Bank makes funds available at 9% interest per annum payable before the participant reaches the age of retirement.
4. Governmental Housing Construction - Under this scheme, the government undertakes the construction of low cost housing and apartments on a planned basis.

The involvement of the government in the housing sector in Post Revolutionary Ethiopia has therefore, been active and highly influential in directing the trend of housing development. Moreover, the construction of houses by the

The decision to change a residence and move to another geographical unit of a city seems to be complex as it is concerned on the one hand, with the requirements of a household which change over time and on the other, with the characteristics of the dwelling environments which comprise the residential unit (home), neighbourhood and alternative locations (Simmons, 1968=628). The theory of geographic mobility relates residential shifts to dissatisfaction with housing conditions and basically hypothesizes that persons who are dissatisfied with their residential environments tend to move to other locations whereas those who are highly satisfied are likely to remain in the same housing unit (Griffin-Wulf and Chi, 1980=17).

There are a number of factors which motivate households to change their residences though their strengths vary spatially as well as temporally. The study of residential shifts made by Deutschman (1972=354-55) in New York metropolitan area, for instance, shows that the basic reasons associated with shifts in residence were changes in the structure of households and dissatisfaction with neighbourhood, distant schools and type of residence. The issue of access to work place in influencing residential relocation, on the other hand, has been quite controversial and the literature surveyed are not completely unanimous about it. For instance, Deutschman (1972=355) and Rossi (1980=185) who studied movements of families in

Philadelphia, arrived at the conclusion that nearness to work place was not an important factor in drawing people to new residential locations. They indicated that access to employment site was only a part of the very large set of explanations for changing residence. According to Rossi (1980=53), residential shift in urban America is mainly associated with the behaviour of the people and as he puts, "America's city dwellers change their housing, it seems, almost as often as they change their cars". Clark and Burt (1980=60,67) in their study of residential relocation in Milwaukee metropolitan area, however, found that proximity to work place was a major reason for changing housing locations. This implies that the major reasons which generate residential shifts stem from the specific characteristic of each urban setting, the socio-economic and demographic characteristics of households, personal preferences and the magnitude and nature of housing supply.

With regard to the distance covered by households while changing residence, the studies made by Bible and Brown (1980) in Columbus, Ohio and by Johnston (1972) in six Australian cities, indicate that the movement patterns were characterized by short distances and the most common moves were made to familiar areas. According to Simmons' (1968=641) study of residential changes in urban areas of the United States, the tendency of movers to choose nearby destinations is attributed

to the need to maintain spatial familiarity, social contacts, institutional links and the nature of the housing market as well. It is also evident that near-by areas can be more easily evaluated than distant ones. Both Dennis (1977=350) and Pooley (1979=270) who studied residential mobilities in a victorian city (Huddersfield, Yorkshire) and Liverpool respectively, argued that the movement patterns are largely influenced by the socio-economic status of households and found that long distance moves were exhibited by the professional and intermediate income classes.

The analysis of residential moves made by Eng (1978=87) in an Asian city (Singapore) also shows that the moves were mainly intrasectoral, i.e. originating and terminating with in the same sector; and short distance moves were characteristics of households in lower income groups while longer moves were related to families with higher incomes.

The directions of flows of households in the process of changing residences are affected mainly by the spatial distribution of housing supply. Thus, the availability of more and better housing opportunities on the outskirts in particular has been found to encourage the movement of households from the city centre towards the suburbs (Simmons, 1968=644; Johnston, 1972=199; Clark, 1976=50). The spatial pattern of information flow to the individuals also influences their mental maps by

to the need to maintain spatial familiarity, social contacts, institutional links and the nature of the housing market as well. It is also evident that near-by areas can be more easily evaluated than distant ones. Both Dennis (1977=350) and Pooley (1979=270) who studied residential mobilities in a victorian city (Huddersfield, Yorkshire) and Liverpool respectively, argued that the movement patterns are largely influenced by the socio-economic status of households and found that long distance moves were exhibited by the professional and intermediate income classes.

The analysis of residential moves made by Eng (1978=87) in an Asian city (Singapore) also shows that the moves were mainly intrasectoral, i.e. originating and terminating with in the same sector; and short distance moves were characteristics of households in lower income groups while longer moves were related to families with higher incomes.

The directions of flows of households in the process of changing residences are affected mainly by the spatial distribution of housing supply. Thus, the availability of more and better housing opportunities on the outskirts in particular has been found to encourage the movement of households from the city centre towards the suburbs (Simmons, 1968=644; Johnston, 1972=199; Clark, 1976=50). The spatial pattern of information flow to the individuals also influences their mental maps by

which they become aware of some parts of a city while having little knowledge about others. Thus, the pattern of the search for new dwellings and hence, the movements of households can be directed towards the more information supplying locations (Adams, 1969=305).

2.3.2 Studies on Housing Satisfaction

In their study of housing satisfaction, Ginsberg and Churchman (1984=425-28) found the physical attributes of housing, interaction with neighbours and psychology of individuals to bear significant relationships with residential satisfaction. As Hwang and Albrecht (1987=63,73) suggested, the socio-economic position of individuals in the social structure also has a direct influence on their level of residential satisfaction. As such, some socio-economic groups seem to achieve higher degrees of residential satisfaction while others are less likely to meet their housing needs. Nevertheless, it is not possible to infer that certain socio-economic and demographic characteristics (for instance, income, occupation, marital status and presence of children) alone are absolute determinants of the fulfillment of residential aspirations. It has to be noted that these attributes would influence only the anticipated directions. In other words, the probability of the fulfillment of residential desires generally tend to be higher for better income and occupation groups and

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the likelihood of housing satisfaction for those who fall in the lower income class, are married and possess school-aged children tends to be lower but this does not always hold good. The study made by McHugh, et.al (1990=90) on the rental sector in Phoenix (U.S.A) for instance, revealed that renters with school-aged children were less satisfied with their housing than those without school-aged children. The degree of housing satisfaction among renters is also related to the monthly rent of the house, and it seems that renters who pay higher rents are more satisfied with their dwelling units than those who pay lower rents because under normal condition, the quality of housing tends to increase with increasing rent.

If on the other hand, households' perception of the size and distribution of space is considered, many families would be happier, for instance, with a six-room housing than a five-room dwelling unit of greater dimension. However, they seem to give priority to the physical condition of a house and availability of amenities than the number of rooms or area of floors (Meyerson, et.al, 1962=86). This implies that residential satisfaction is generally related not only to the physical characteristic and size of a dwelling unit but also to the number of rooms contained in a housing unit and availability of utilities.

The separateness of a dwelling unit is also among the most essential aspects of housing since it enables households to isolate themselves from neighbours while performing different activities. A housing unit should also possess direct access from and to a street or public staircase, passage, gallery or ground because this will enable the occupants to come in and go out of their residential units without passing through the premises of other families (U.N., 1980=237; Freid, 1984=68-70).

In the case of Addis Ababa, the survey study conducted by AAMPPO (1984=132-36) is the one to be mentioned in its attempt to identify sources of housing dissatisfaction in the city. According to this survey, too little space, missing or lack of urban facilities such as water supply, transportation, access to major roads, garbage collection, sewerage (drainage), recreational or cultural centres, schools and health facilities were found to be the causes of dissatisfaction. The study further revealed that problems of waste disposal, sewerage, and cultural or recreational services had been critical in creating worries or dissatisfactions among the residents.

CHAPTER THREE

3. SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF THE OCCUPANTS

An analysis and comprehension of the socio-economic and demographic compositions of the renters of government built dwelling units is essential for the basic reason that it attempts to answer the question "Which section of the community do these dwelling units serve?". Moreover, the characterization of the socio-economic and demographic features of the occupants is extremely important for further investigations since these factors impose a direct influence upon the patterns of residential shifts and satisfaction or housing choices of individuals. Therefore, in this section it is attempted to highlight some of the basic attributes of the renters.

3.1 Demographic Characteristics

Age Structure

About 82% of the total sample households considered in this study fall in the age group between 30 and 49 (Table 9). This clearly implies that the demand for rental housing is predominant among people of this age group (30-49) and this may be attributed to the following basic factors which relate to

Table 9 - Age Structure of the Sample Household Heads.

Age Group	No	%
Below 30	15	2.99
30 - 39	211	42.03
40 - 49	200	39.84
50 - 59	71	14.14
60 & above	5	1.00
Total	502	100.00

this age group. Firstly, some of the people in this age category seem to have spent relatively fewer years as employees and hence, lack financial savings which may enable them to build their own houses. Secondly, it seems that household formation or marriage is predominant among people of this age group and as a result, they are more motivated to search for housing units of better accommodation than people in other age groups. The share of the household heads in the age category below 30 is however, only 2.99%. This is, in fact, an insignificant share and might have been associated with the fact that people in this age group are youths who would be earlier for marriage or household formation. As such, they may not bother about searching for separate housing units of larger size or greater number of rooms. The proportion of household heads who fall over the age of 50, though somehow significant (15.14%), is relatively lower. This figure might have been associated with people who failed to become home owners either due to their lower economic backgrounds, the difficulty of

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getting urban land or the problem of organizing themselves into housing cooperatives. However, the small share of this advanced age group may in general, indicate a declining tendency in the number of renters at older ages due mainly to an increase in home ownership.

Marital Status

With regard to the marital status of the renters, it is found that over three-fourth (76.29%) of the household heads were married at the time of the survey as presented in Table 10. This high figure cannot be surprising because marriage

Table 10. Marital status of the Household Heads

Marital Status	No	%
Married	383	76.29
Single	81	16.14
Divorced	18	3.59
Widowed	11	2.19
Not stated	9	1.79
Total	502	100.00

or household formation which is related to an increase in family size, is expected to bring about changes in the housing needs of individuals. As such, married people seem to bother more about their housing conditions and hence, search for better housing accommodations than single persons. One of the findings of chapter four also supports this fact for marriage

is found to account for a significant share (18.33%) of the total reasons which caused residential changes in the study area. Married household heads have, therefore, better taken the advantages of these housing projects than single, divorced and widowed ones perhaps due to their marital characteristic which distinguishes them from the rest of the people. The smaller share of the remaining groups (23.71%) can also strengthen this fact. The proportion of single (unmarried) persons in the total sample is found to be 16.14%. Though this percentage is some how considerable, that of divorced and widowed individuals together accounts for an insignificant share, i.e. only 6% of the total sample.

Household size

A cursory look at the distribution of the household size of the residents (Table 11) reveals that nearly three-fourth (73.9%) of the total households surveyed were composed of up to six persons. This indicates that these housing projects are intended to serve mainly smaller (1 to 3) and medium (4 to 6) family sizes. This is basically attributed to the smallness of the housing units which were designed to save not only space but also construction materials and costs.

Table 11. Distribution of Household size of the Renters

Household size	No	%
1-3	122	24.30
4-6	249	49.60
7-9	114	22.71
10 & above	17	3.39
Total	502	100.00

The remaining one-fourth (26.1%) of the sample was constituted by families of larger size (seven persons and more). Thus, larger family sizes are relatively less served by the dwelling units of such projects since these families naturally need housing units of greater dimensions.

3.2 Socio-Economic Characteristics

In order to highlight the socio-economic characteristics of the renters, the three basic socio-economic variables, i.e. income, occupation and educational attainment of the household heads are treated separately.

Income

A look at the income distribution data reproduced in Table 12 reveals that renters earning below 400 Birr per month constitute below one-third (29.68%) of the total occupants where as the middle (400-799 Birr per month) and higher income (800 and above Birr per month) groups together account for the

majority (70.32%) of the residents.

Table 12 - Income Distribution of the Household Heads

Monthly Income	No	%
Below 200	33	6.57
200 - 399	116	23.11
400 - 599	135	26.89
600 - 799	123	24.50
800 - 999	69	13.75
1000 & above	26	5.18
Total	502	100.00

Moreover, those who earn a monthly income of less than 200 Birr (this group can be considered as poor) have an insignificant share (6.57%) of the total and this smaller proportion can be most probably attributed to the fact that these poor groups cannot afford the burden of the rents of the dwelling units. This also indicates that these housing projects are mostly aimed at meeting the needs of the middle and higher income groups.

An examination of the distribution of the household heads by their levels of income within each of the housing projects is also important since it may throw more light on the specific compositions of the various housing projects. To this end, income groups are classified into three categories, i.e. lower income class (below 400 Birr/month), middle income class (400

to 799 Birr/month) and higher income class (800 and more Birr/month), as presented in Appendix 1. From this appendix, it is observed that three housing projects are completely occupied by the lower and middle income groups. These are the projects located in Kefitegna 8 Kebelle 13 (66.67% lower and 33.33% middle income groups), Kefitegna 16 Kebelle 11 (8.33% lower and 91.67% middle income classes) and Kefitegna 17 Kebelle 15 (38.89% lower and 61.11% middle income groups). That of Kefitegna 17 Kebelle 19 is however, totally occupied by the middle (57.14%) and higher (42.86%) income groups. Significant proportions of lower income groups prevail in Kefitegna 8 Kebelle 13 (66.67%), Kefitegna 17 Kebelle 15 (38.89%), Kefitegna 19 Kebelles 56 (40.54%), and 57 (30.65%) and Kefitegna 24 Kebelle 09 (37.88%). The middle income groups on the otherhand, predominates in almost all the housing projects except in Kefitegna 8 Kebelle 13 and Kefitegna 15 Kebelle 29 where it accounts for 33.33% of the occupants in each of these projects; and in Kefitegna 17 Kebelle 24 where its share is 34.37%. Renters of higher income class dominate in Kefitegna 8 Kebelle 14 (40%), Kefitegna 15 Kebelle 29 (44.44%) and Kefitegna 17 Kebelle 19 (42.86%); and are totally absent in Kefitegna 8 Kebelle 13, Kefitegna 16 Kebelle 11 and Kefitegna 17 Kebelle 15. Thus, except the four housing projects mentioned above, i.e., those found in Kefitegna 8 Kebelle 13, Kefitegna 16 Kebelle 11 and Kefitegna 17 Kebelles 15 and 19; all the remaining projects are occupied by all the

three income groups though significant variations do exist in the share of each group found within these housing projects. Therefore, it can be justifiable to conclude that the majority of these housing projects serve heterogeneous income groups and this might have been caused partly by the differential housing rents which resulted from the variation in the standards of the housing units themselves and partly, by the housing shortage which forces households to rent housing units which do not match with their economic positions.

Occupation

The data collected on the occupation of the household heads is organized into eight occupational groups as presented in Table 13.

Table 13. Distribution of the Household Heads by Occupational Group.

Occupational Group	No	%
Professional Workers	164	32.67
Technical Workers	72	14.34
Administrative and managerial workers	36	7.17
Clerical Workers	67	13.35
Production workers	34	6.77
Sales Workers	41	8.17
Operators	38	7.57

Service Workers	50	9.96
Total	502	100.00

As revealed by Table 13, the occupational distribution of the household heads is largely constituted by professional workers (32.67%). Persons who engage in technical and clerical jobs stand second (14.34%) and third (13.35%) in the ladder. Thus, occupation wise, these three occupational groups appear to have benefitted more from these housing projects, the other occupational groups being more or less equitably represented in the sample.

As is observed from the above table, the whole sample is constituted by different occupational groups though the proportion varies from one occupational group to the other. However, this does not tell about the occupational heterogeneity or homogeneity of the household heads which constitute the specific housing projects. Therefore, Appendix 2 is reproduced to show the occupational groups distributed with in each of the housing projects.

The general picture of the distribution of occupational groups with in the housing projects, shows the dominance of professional workers in all the housing projects (Appendix 2). The proportion of professional workers is exceeded by production workers only in Kefitegna 19 Kebelle 55 where the

former shares 22.22% and the latter 25.92%. Though the share of professional workers is similar to that of technical workers (35.29%) in Kefitegna 18 Kebelle 36 and to that of service workers (21.21%) in Kefitegna 24 Kebelle 09, it still represents one of the highest proportions in these projects. This might have resulted from the relatively larger number of workers subsumed under this occupational category. As regards the distribution of the other occupational groups, it is seen that only the housing projects of Kefitegna 8 Kebelle 13 and Kefitegna 17 Kebelle 19 are occupied by a relatively homogeneous occupational groups, i.e. only professional, technical, clerical and sales workers are found; and even this itself might have resulted from the smallness of the samples which represent these housing projects. In the remaining projects, however, five and more occupational groups are observed. The most diverse (eight) occupational groups prevail in Kefitegna 17 Kebelles 15, 24 and 25; Kefitegna 19 Kebelles 56 and 57; and Kefitegna 24 Kebelle 09. The next most diverse (seven) occupational groups prevail in Kefitegna 19 Kebelle 55. Kefitegna 8 Kebelle 14, Kefitegna 15 Kebelle 29, Kefitegna 16 Kebelles 02 and 11 and Kefitegna 17 Kebelle 21 are occupied by six occupational groups. Therefore, it is possible to conclude again that the majority of the dwelling units of these housing projects are occupied by heterogeneous occupational groups, professionals followed by technical workers representing relatively higher proportions in most of the projects.

Education

As regards the educational background of the household heads, the majority (86.25%) of them have attained post primary school education (Table 14). 57.17% of the total household heads have attained post secondary level of education. Those household heads with junior and high school educational backgrounds constitute 29.08% of the total sample where as persons with elementary school training and literate together account for only 13.75%.

Table 14. Educational Attainment of the Household Heads

Level of Education	No	%
Read and Write	28	5.58
Grades 1-6	41	8.17
Grades 7 - 8	68	13.54
Grades 9-12	78	15.54
12+1 - 12+4	208	41.43
Above 12+4	79	15.74
Total	502	100.00

The whole picture of educational attainment of the household heads, is, however, characterized by complete absence of illiterate persons and dominance of people with higher education. This shows that people with higher education have more access to the media or other sources of information so that they can have better knowledge of these housing projects and hence, take advantage of that.

As is observed from the above table, household heads of different educational backgrounds are found in the total sample but their proportions within each of the housing projects is unknown. A glance at Appendix 3, tells us about the nature of this composition. Thus, among all the housing projects, only that of Kefitegna 17 Kebelle 19 is characterized by the existence of homogeneous educational groups. In this project only two educational groups are identified, i.e. all the household heads have attained 12+1 to 12+4 and over 12+4, each accounting for 57.14% and 42.86% respectively. However, this might have resulted from the small number of households represented in the sample. In seven of the fifteen housing projects, all the six educational groups are represented with different proportions. These include that of Kefitegna 17 Kebelles 24 and 25, Kefitegna 18 Kebelle 36, Kefitegna 19 Kebelles 55, 56 and 57; and Kefitegna 24 Kebelle 09. Kefitegna 15 Kebelle 29 comprises five educational groups whereas Kefitegna 16 Kebelles 02 and 11, and Kefitegna 17 Kebelle 15 consist of four educational groups. Kefitegna 8 Kebelles 13 and 14 however, have only three educational groups. The share of educational groups within the housing projects on the other hand, shows the dominance of the group 12+1 to 12+4 in all the housing projects save that of Kefitegna 17 Kebelle 24 where the largest educational group which accounts for one-fourth (25%) of the total household heads have attained a level of over 12+4. This educational group (12+1 to 12+4) is highest

(63.33%) in Kefitegna 17 Kebelle 21 and lowest (20.83%) in Kefitegna 17 Kebelle 24. When we consider the educational group formed by the household heads who are able to read and write only, it is totally absent in eight of the fifteen housing projects, i.e. in Kefitegna 8 Kebelles 13 and 14, Kefitegna 15 Kebelle 29, Kefitegna 16 Kebelles 02 and 11; and Kefitegna 17 Kebelles 15,19 and 21. Household heads with Grades 1 to 6 are also minimally represented in the majority of the housing projects, their maximum share (18.52%) being in Kefitegna 19 Kebelle 55. Therefore, the household heads occupying most of the housing units of these projects are mixed or heterogeneous in terms of their educational backgrounds.

In sum, it may be remarked that the distribution of the sample household heads (i.e. with respect to their income, occupation and educational attainment) within the housing projects indicates the prevalence of various socio-economic groups though the proportions vary. This implies that different socio-economic classes are found spatially integrated or mixed. As such, a household of lower economic and social class is likely to be adjacent to a middle or higher income or social class. Consequently, spatial segregation or differentiation along economic or social lines is hardly observed among the occupants of the dwelling units of these housing projects. Such a spatial integration of different socio-economic groups might have occurred due mainly to the

prevailing housing shortage which forced higher income classes to rent lower quality housings and lower income groups to occupy dwelling units of higher rents beyond their wills and standards.

CHAPTER FOUR

4. THE SPATIAL PATTERNS OF RESIDENTIAL SHIFTS AND WORK TRIPS

The first part of the present chapter attempts to investigate the major reasons which motivated the households to change their residences, the spatial pattern of the shifting process with respect to the origins and destinations of the moves and the distance covered during the shift. The remaining section is devoted to the assessment of the spatial pattern of the work trips exhibited by the household heads.

4. The Spatial Pattern of Residential Shifts

4.1.1 The Motives behind the Shift

Prior to the inquiry into the basic factors which motivated the households to change their dwellings, it is desirable to see the housing conditions under which they were living before they moved to the current residences. The data reproduced in Table 15 shows this background.

Table 15. Living Conditions of the Households before the shift

Living Condition	No	%
With a relative or parent	76	15.14
With a friend	8	1.59
In a hotel room	34	6.77
In a hostel	59	11.75
In a private rental house or room	197	39.24
In a " <u>kebelle</u> " or nationalized house	103	20.52
Own private house	19	3.78
Not Stated	6	1.20
Total	502	99.99

As portrayed in the above table, the largest proportion (39.34%) of the households were living in private rental houses

or rooms before they moved to the current dwellings. Such a high percentage may imply that privately owned houses are widely available for rent and hence, provide immediate shelters for a significant number of families in the city. The second largest proportion (20.52%) of the households surveyed reported that they were living in "Kebelle" or nationalized housing units. When we consider the lower rents that the "Kebelle" dwelling units demand, these families might have abandoned them either due to demolition, dispossession; or they might have presumed that the current dwellings would provide them with better services. Those household heads who reported to have been living with their relatives or parents constitute the third largest share (15.14%). This group might have changed its former residence either due to the formation of new household (marriage) or a change in income condition, i.e. because of an increase in earning or getting job; or due to family quarrels and inconvenience. The main factor that has motivated the hostel residents (11.75%) to search for separate dwelling units might have also been marriage or household formation since hostel rooms are not convenient to married couples. The proportion of household heads who reported to have been living with a friend (1.59), in a hotel room (6.77%) and in own private house (3.78%) however, constitute an insignificant share, altogether accounting for only 12.14% of the total.

Table 16. Distribution of the Sample Households by Reasons for Residential Shifts

Reasons for Shifting	Shifted Households	
	No	%
Marriage	92	18.33
To have better housing facilities (water, electric, bathing, kitchen, toilet, etc.)	31	6.17
To have greater number of rooms	67	13.35
To change residence type (apartment, hostel, hotel room, etc. to a house)	16	3.19
Fairness of the rent of the current house	22	4.38
To avoid discomforts of a shared accommodation	125	24.90
To be nearer to work place	32	6.37
Forced to move (due to demolition, eviction or dispossession)	106	21.12
Others*	11	2.19
Total	502	100.00

*Other reasons for shifting residence include preference of the current area, the need to have more space and being informed that the current dwelling units would be sold through long term payment.

accommodation may also encourage quarells among the residents. The other major reason which account for 21.12% of the shifts can be identified as compulsive events. Included in this group are former house owners and occupants of "Kebele" or nationalized rental houses who have been dispossessed of their previous dwellings by government orders of evacuations. With in this group, there are also flood victims whose dwellings were demolished by the hazards of flood and those whose relatives or friends dispossessed of their rooms. The third

largest percentage (18.33%) of the movers related their shifts to changes in their marital status. This indicates that marriage or household formation is a significant factor which induces residential relocations mainly by altering the housing needs of individuals. The need to have greater number of rooms also constitutes a considerable share (13.35%) while the need for more space accounts for an insignificant proportion (see other reasons for shifting residence) of the total shifts. This obviously implies that many families would give priority to housing units of greater number of rooms than housing units of greater dimensions; or it can be suggested that the current dwelling units are hardly desirable in terms of their sizes. Nearness to work place which accounts for 6.37% of all the reasons, however, has been found to be a relatively insignificant reason in inducing residential shifts and this can be attributed to the very low level of housing supply or absence of choices among alternative housing locations so that households ignore this aspect during their decisions to change residences. Similarly, the proportion of household heads who attributed their shifts to the need to have better housing services is comparatively insignificant (only 6.17%). This indicates that the primary objective of shifting residence is to have a shelter rather than better amenities. The other reasons together account for the generation of only 9.76% of all shifts.

4.1.2 Origin and Destination Zones of the Shift

Analysis by reason enables to identify and understand the factors which generate residential shifts but does not indicate the departure and destination points of households in the shifting process (Simmons, 1968=637). This section attempts to throw light on this problem by testing the hypothesis formulated as "the bulk of residential shifts are intrazonal, i.e. the majority of the shifts originate and terminate with in the same zone".

In order to approach this problem, it may be convenient to first consider the zonal classification of the city. As Figure 2 (adapted from CSO, 1979) portrays, Addis Ababa is subdivided into five zones as follows:

Zone I - Includes Kefitegnas 4,5,6,24 and 25

Zone II - Comprises Kefitegnas 3,20,21,22 and 23

Zone III- Is constituted by Kefitegnas 15,16,17,18 and 19.

Zone IV - Is formed by Kefitegnas 2,11,12,13 and 14

Zone V - Consists of Kefitegnas 1,7,8,9 and 10.

Information pertaining to the origins and destinations of the moves were obtained from the question "Where was your former residence? Kefitegna ____ Kebelle ____; and by referring to the current residential location. Through this method, the volume of residential shifts could be quantified spatially

(Table 17) and the streams of flows were identified as portrayed by the arrows represented on Figure 2.

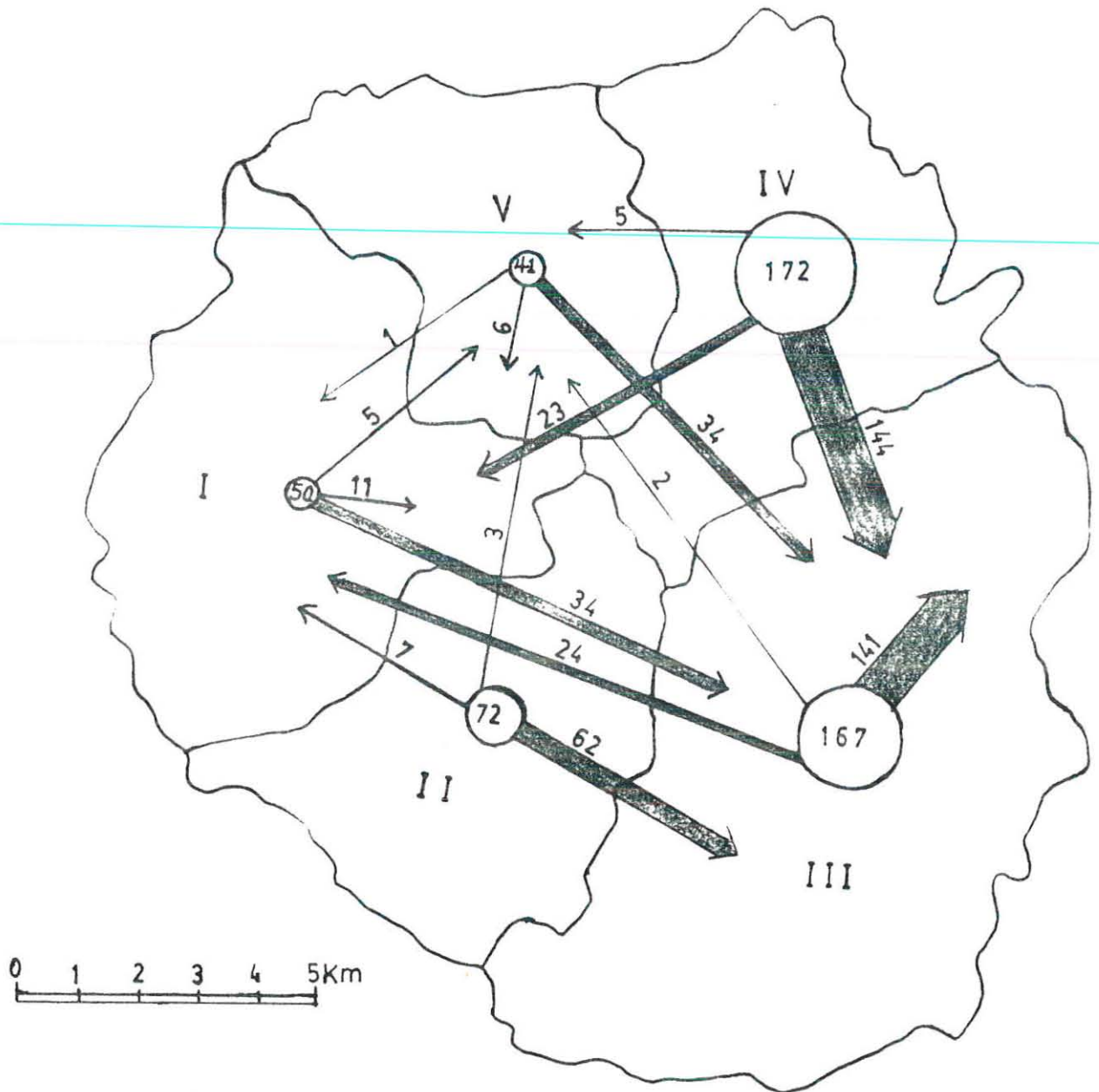
Table 17. Origin and Destination Zones of Residential Shifts by Number of Household.

Zone of Origin (Former Residence)		Zone of Destination (Current Residence)			Total (Out movers)
		I	III	V	
I	No. %	11* 22.00	34 68.00	5 10.00	50 100.00
II	No. %	7 9.72	62 86.11	3 4.17	72 100.00
III	No. %	24 14.37	141* 84.43	2 1.20	167 100.00
IV	No. %	23 13.37	144* 83.72	5 2.91	172 100.00
V	No. %	1 2.44	34 82.93	6* 14.63	41 100.00
Total (In movers)	No %	66 13.15	415 82.67	21 4.18	502 100.00

* These figures show intrazonal residential shifts.

As is observed from Table 17, and Figure 2, the majority of the households surveyed made their departures from zones IV and III, i.e. out of the total (502) sample households, 172 (34.26%) and 167 (33.27%) of them originated from zones IV and III respectively. The highest percentage of outmovers which is observed in zone IV can be related to the complete absence of government housing projects in this zone. As regards zone III however, the proportion of households moved

Fig. 2. STREAMS OF RESIDENTIAL SHIFTS



0 1 2 3 4 5 Km

LEGEND

~ Zonal boundary

I-V Zone numbers

Source: Prepared by the author (Based on Table 17).

out of the zone is only 15.57%, the remaining 84.43% being intrazonal movers. The predominance of intrazonal residential shifts which is observed in this zone might have been caused by the relative nearness of the previous dwellings of the majority of the households to the current housing locations. In other words, the proximity of the households might have enabled them to get more information about the conditions of the dwelling units so that their searches for new residences and consequently, their movement patterns are directed towards these locations. Zone III is also the destination of 86.11%, 83.72% and 82.93% of the overall movers originating from zones II, IV and V respectively. Though lesser in proportion, the majority (68%) of the outmigrants of zone I have also their destinations in zone III. The high level of attraction revealed by this zone (zone III) can infact be attributed to the fact that over four-fifth (84.2%) of the total rental houses built by the government are concentrated in this zone (refer to Table 1).

As regards the proportions of the intra-and interzonal residential shifts prevailing in each zone, it is observed that the latter is by far higher than the former except in zone III. As such, out of all residential changes that are observed in zone I, 78% moved out of the zone and only 22% ended with in the zone. Similarly, out of the total movers of zone v, 85-37% moved out of the zone and only 14.63% terminated with in it. All the households that have originated from zones II and IV also made their destinations in other zones. Moreover, the share of interzonal residential shifts in the whole sample accounts for 68.53% while that of intrazonal residential changes constitutes 31.47%. All the evidences obtained from the analysis made so far, therefore, disprove the hypothesis formulated above and hence, it is infered that the bulk of residential shifts exhibited by the households studied are interzonal. Such a dominant pattern of interzonal residential shifts might have occurred due mainly to the spatial aggregation of the housing projects at selected peripheral locations (refer to Figure 1) so that the flow of households from the different parts of the city is directed towards these locations there by crossing zonal boundaries. The provision of more housing supplies in the suburbs and the movements of households towards these peripheral areas is, in fact, not a unique phenomenon which is observed only in Addis Ababa; for various scholars (for instance, Simmons, 1968; Johnston 1972; Clark, 1976 and Eng, 1978) in their respective studies of

residential moves, have also arrived at similar conclusions. The concentration of the housing projects in the outskirts of Addis Ababa however, seems to have generally been dictated by the spatial distribution of the residential density of the city prevailing in the near past; and particularly by the availability of more open spaces which encourages new housing constructions. This is justified by the fact that five out of the fifteen (one-third) housing projects are located in Kefitegna 17 where the lowest residential density (90 persons per hectare of residential area) prevails and the remaining ten (two-third) are distributed in Kefitegnas 8,15,16,18,19 and 24 where lower residential densities (91 to 215 persons per hectare of residential area) are prevalent (refer to Appendix 4).

4.1.3 Distance Covered During the Shift

This section of the paper attempts to test the hypothesis "distance covered by households while changing residences do not vary with their socio-economic status". The presence or not of this variation is examined on the basis of the three basic socio-economic variables (income, occupation and education).

Income

The hypothesis stating that "in the process of changing residence, there is no significant distance differential between household heads of different income levels" is tested by employing a one-way analysis of variance (ANOVA). The results of the analysis are presented in Table 18.

Table 18 Table of One-Way Analysis of Variance (ANOVA) for Distances Covered by Households while Changing Residence based on the Income of Household Heads.

Source of Variation	Sum of Squares of Deviations	Degrees of Freedom	Variance	"F" Value
Between Group Variation	23815.25	5	4763.05	3.24*
With in Group Variation	123391.41	84	1468.94	
Total	147206.66	89		

* Significant at 0.05 level.

As portrayed in the above table, the computed "F" ratio (3.24) is a bit higher than the tabulated value of "F" (2.33) for 5 and 84 degrees of freedom at a probability level of 0.05. The result obtained, therefore, enables us to reject the hypothesis formulated above at 95% level of confidence and hence, conclude that households with different levels of income would exhibit significant distance variations while changing residences.

The appearance of such a variation is in fact expectable because the degree of importance that households attach to the different aspects considered in the decision to change residence (for instance, the link between home and work place,

distance from city center, access to main transportation routes or availability of transportation, preference of housing type and neighborhood, etc.) obviously varies with their levels of income. The ability to make choices among alternative housing locations also varies with the economic backgrounds of household heads. These factors, therefore, seem to cause differences in distances moved by households while changing residences. Nevertheless, as can be observed from the results of the analysis, the degree of distance variation with respect to income level is not, as such, impressive though statistically significant. This may also indicate that the income variable is not, as such, strong enough in affecting the distance moved during residential shift. The simple correlation coefficient ($r=-0.017$) computed for the two variables (distance covered and income of household heads), also confirms the above statement as the relationship is very weak.

Occupation

The occupation of household heads is the second factor which is presumed to have its own influence on distances covered during residential shifts. Analysis of Variance (ANOVA) is used to test the hypothesis stating that "distances covered by households while changing residences do not vary with occupational types of household heads". The results of the analysis are portrayed in Table 19.

Table 19. Table of One-way Analysis of variance (ANOVA) for Distances moved by Households during Residential Shifts based on Occupational types of Household Heads.

Source of Variation	Sum of Squares of Deviations	Degrees of Freedom	Variance	"F" Value
Between Group Variation	26831.93	7	3833.13	4.29*
With in Group Variation	100005.78	112	892.91	
Total	126837.71	119		

* Significant at 0.05 level.

The above table reveals that the calculated value of "F" (4.29) is greater than the tabulated value of "F" (2.09) for 7 and 112 degrees of freedom at a probability level of 0.05. Therefore, the hypothesis of no variance advanced above is again rejected at 95% level of confidence and consequently, it is concluded that distances moved by households while changing residences significantly vary with the types of occupation of household heads. This distance variation by occupational types of household heads might have resulted from the discrepancy among the household heads in making adjustments with the link between residences and work places, i.e. the locational variation of employment sites might have played a significant role in influencing the distance moved between the former and the current residences.

Education

Education is the third socio-economic variable which is thought to have an effect on the distance moved by households while changing residences. In order to ascertain this assumption, the hypothesis stating that "distances moved by households during residential shifts do not vary with educational attainments of household heads", is again tested by using analysis of variance (ANOVA). The results are presented in Table 20.

Table 20 Table of One-Way Analysis of Variance (ANOVA) for Distances moved by Households during Residential Shifts based on Educational level of Household Heads.

Source of Variation	Sum of Squares of Deviations	Degrees of Freedom	Variance	"F" Value
Between Group Variation	41256.78	5	8251.36	5.01*
With in Group Variation	138262.08	84	1645.98	
Total	179518.86	89		

* Significant at 0.05 level.

The tabulated "F" ratio for 5 and 84 degrees of freedom at a probability level of 0.05 is 2.33. This value is less than the calculated "F" ratio (5.01). Therefore, the hypothesis formulated above is rejected at 95% level of confidence. Thus, it is concluded that distances covered by households while changing residences significantly vary with educational attainment of household heads. Such a distance differential

with educational attainment of household heads implies that education is no less important than income and occupation in influencing the distance moved during residential shifts.

To sum up, the empirical results obtained for each of the three basic socio-economic variables reveal that distances covered by households while changing residences significantly vary with the income, type of occupation and level of education of household heads. This obviously reflects the significant role that the socio-economic status of household heads plays in the preferences of residential areas and in making decisions regarding residential shifts.

4.2 The Spatial Pattern of Work Trips

In this section, the spatial pattern of the worktrips exhibited by the household heads is assessed separately by:

1. testing the hypothesis stating that "the journey to work pattern exhibited by the household heads is predominantly intrazonal, i.e. the dwellings and work places of the majority of the household heads are located within the same zone", and
2. investigating the distance the household heads move between home and work place.

4.2.1 Origin and Destination Zones of the Work Trips

The assessment of the origins and destinations of the worktrips which is designed to test the first hypothesis is achieved by inquiring into the data presented in Table 21 and the streams of worktrips portrayed on Figure 3.

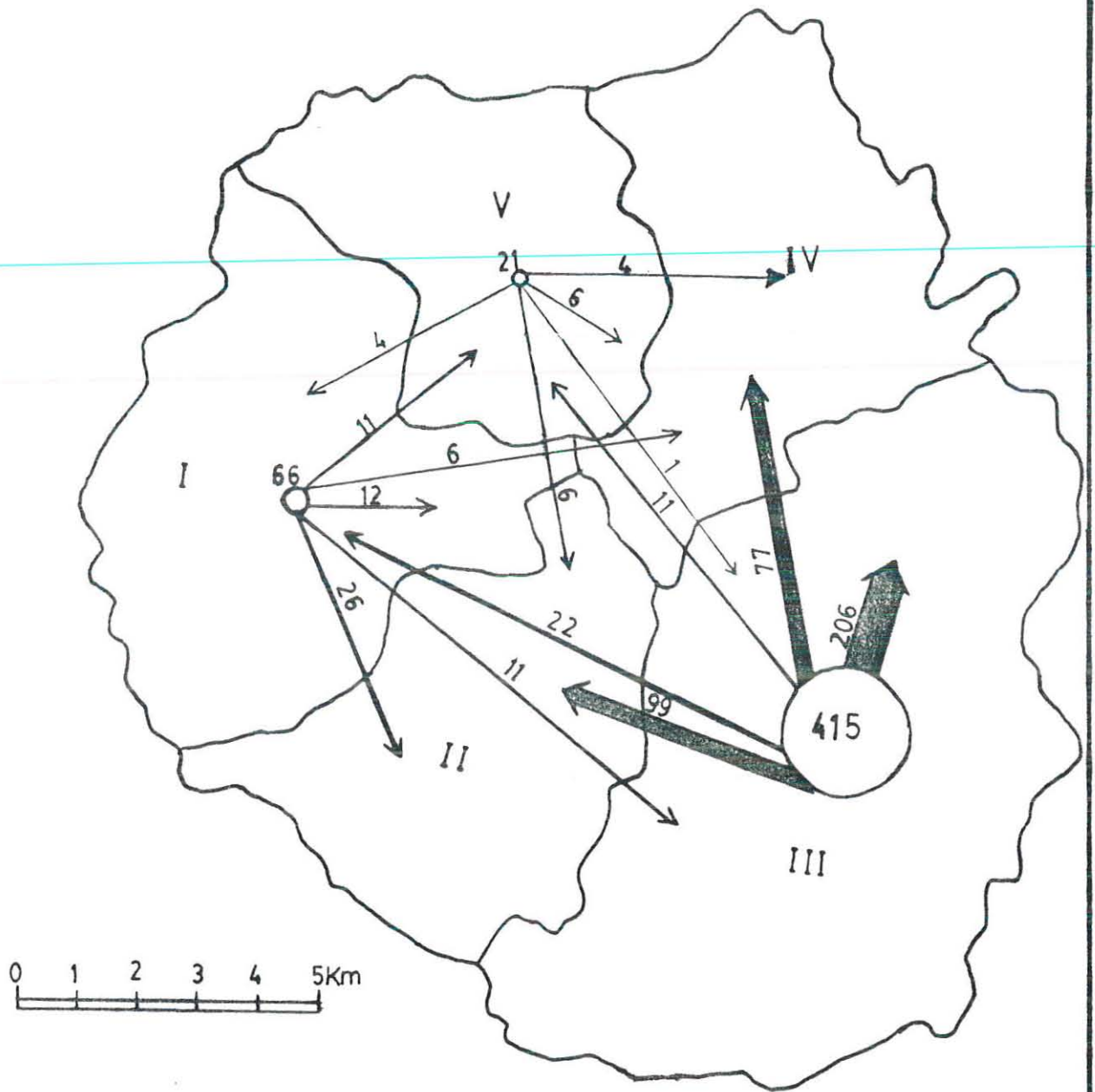
Table 21 Distribution of Worktrips by Origin and Destination Zones of the Household Heads.

Zone of Origin (Residence)		Zone of Destination (Work Place)					Total
		I	II	III	IV	V	
I	No.	12*	26	11	6	11	66
	%	18.18	39.39	16.67	9.09	16.67	100.00
III	No	22	99	206*	77	11	415
	%	5.30	23.85	49.64	18.55	2.65	99.99
V	No	4	6	1	4	6*	21
	%	19.05	28.57	4.76	19.05	28.57	100.00
Total	No	38	131	218	87	28	502
	%	7.57	26.09	43.43	17.33	5.58	100.00

* These figures represent intrazonal worktrips and together account for 44.62% of all (502) moves.

As can be seen from Table 21 and Figure 3, the highest proportion of the household heads who dwell in zone I, make interzonal worktrips, i.e. out of a total of sixty six household heads, only twelve (18.18%) of them reported that their work places are located within their residential zone whereas the remaining fifty-four (81.82%) respondents reported

Fig.3. STREAMS OF WORK TRIPS



LEGEND

- ~~~~~ Zonal boundary
- I - V Zone numbers

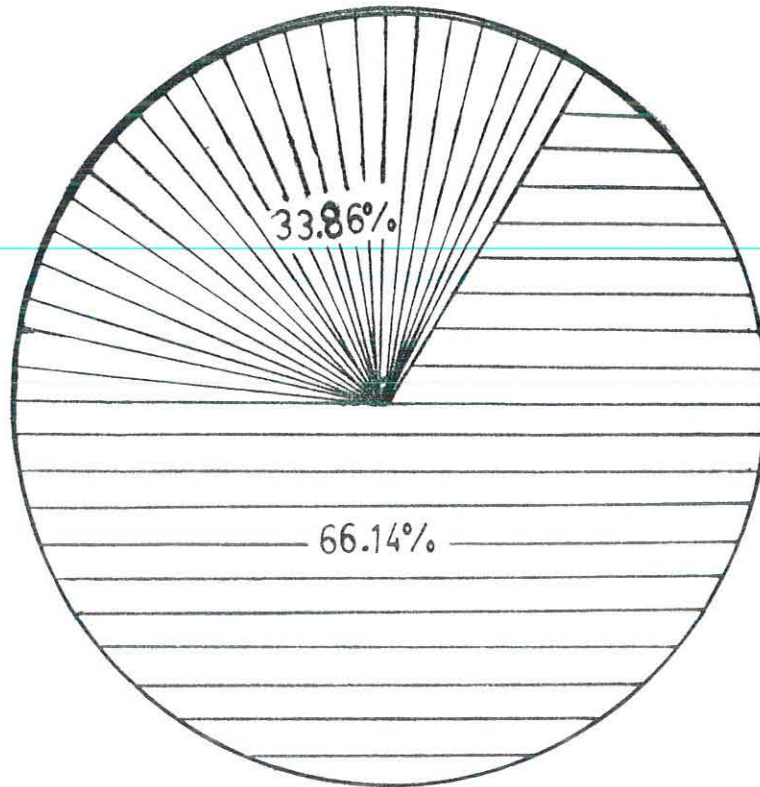
Source: Prepared by the author (Based on Table 21).

that they travel out of their zone of residence. The highest (39.39%) and the lowest (9.09%) proportions of the residents of this zone (zone I) make their worktrips to zones II and IV respectively. Similarly, among the residents of zone V, only 28.57% make intrazonal worktrips where as the remaining 71.43% move out of the zone; the highest proportion (28.57%) of them being arrivals of zone II. Zone II, thus, attracts the largest proportion of workers from each of the afore mentioned zones; and as could be observed from the records of C.S.A (1988=206), this might have been associated with the fact that a significant proportion (16.4%) of the total social and economic establishments found in the city are located in this zone. Nearly one-half (49.64%) of the household heads residing in zone III, however, work with in the zone itself where as the remaining one-half (50.36%) travel to other zones. Among the outmovers of this zone, a considerable proportion (23.85%) of the household heads make their journeys to zone II. Thus, the share of intrazonal worktrips observed in each zone is by far exceeded by that of interzonal worktrips except in zone III where both intra-and interzonal worktrips are almost equal in their shares of the total . Moreover, the overall proportion of outmovers or interzonal worktrips in the whole sample is 55.38% where as that of intrazonal worktrips is 44.62%. This indicates that the work places and residential areas of the greater proportion of the household heads surveyed are not located within the same zone and hence, the majority of the

worktrips cross zonal boundaries (refer to Figure 3). On the basis of this evidence, it is, therefore, possible to disprove the hypothesis advanced at the outset and conclude that the spatial pattern of worktrips exhibited by the household heads is largely interzonal. This interzonal pattern of worktrips might have resulted from the lack or absence of appropriate housing accommodation around employment sites so that the dwellings and job sites are located in different zones. The nature and patterning of the functional zoning and land use of the city can also dictate the segregation of residential zones from office blocks or other types of work places.

As regards the directions of worktrips, the bulk of the household heads make their journeys towards the central parts of the city. This is justified by the fact that the majority (66.14%) of the household heads have their work places in the central Kefitegnas (1-7, 9, 13-15, 18, 20-22) whereas only 23.86% work in the outskirts Kefitegnas (8,10-12, 16, 17, 19,23,25) of the city (refer to Figure 4 and Appendix 5). The orientation of the worktrips towards the central parts of the city is to be essentially attributed to the peripheral locations of most of the housing projects or residences of the household heads.

Fig. 4. DISTRIBUTION OF THE HOUSEHOLD HEADS BY THEIR PLACES OF WORK (KEFITEGNA)



LEGEND



Kefitegnas

8, 10, 11, 12, 16, 17, 19, 23, 24, 25



1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 18, 20, 21, 22

4.2.2 Distance Covered During the Work Trips

The data pertaining to the spatial coverage of the work trips or the distance moved between home and work place are presented in Table 22.

As depicted in Table 22, the largest proportion of the household heads (39.64%) exhibit distances which range between 5.0 and 7.5 kilometers where as 33.07% of the total household heads cover distances which range between 2.5 and 5.0 kilometers. Thus, 72.71% of the total household heads travel between 2.5 and 7.5 kilometers. A significant proportion (15.34%) of the household heads travel relatively longer distances which range from 7.5 to 10.0 kilometers. However, those household heads who move a distance of over 10 kilometers are practically insignificant as they constitute only 0.4% of the total sample. Those who move below 2.5 kilometers also account for a relatively smaller share (11.55%) of the total travellers.

A consideration of the specific features of the work trips prevailing in each project on the other hand, reveals

Table 22. Distribution of the Household Heads by Work Trip Distance by Location of Housing Projects

Location of Housing Project (Kefitegna)	Distance (in kilometers)					Total	
	<2.5	2.5 - 5.0	5.0 -7.5	7.5 -10.0	10 & above		
8	No.	3	15	3	-	-	21
	%	14.28	71.23	14.28	-	-	99.99
15	No.	4	12	2	-	-	18
	%	22.22	66.67	11.11	-	-	100.00
16	No.	2	12	6	8	-	28
	%	7.14	42.86	21.43	28.57	-	100.00
17	No.	24	57	102	42	1	226
	%	10.62	25.22	45.13	18.58	0.44	99.99
18	No.	3	11	3	-	-	17
	%	17.65	64.70	17.65	-	-	100.00
19	No.	20	34	51	20	1	126
	%	15.87	26.98	40.48	15.87	0.79	99.99
24	No.	2	25	32	7	-	66
	%	3.03	37.88	48.48	10.61	-	100.00
Total	No.	58	166	199	77	2	502
	%	11.55	33.07	39.64	15.34	0.40	100.00

that all the household heads dwelling in the housing projects located in Kefitegna 8,15 and 18 travel below 7.5 kilometers. In all these projects, household heads who cover distances ranging between 2.5 and 5.0 kilometers are dominant, constituting 71.43%, 66.67% and 64.7% of the total samples representing each of the aforementioned Kefitegnas respectively. Household heads exhibiting a relatively longer journeys (7.5 and over kilometers) however, prevail only in the projects found in Kefitegnas 16,17,19 and 24. Among the occupants of the housing projects located in each of these

Kefitegnas, the proportion moving between 7.5 and 10.0 kilometers is 28.57%, 18.58%, 15.87% and 10.61% respectively. The variation in the journey to work distance among the household heads originating from the projects located in these two groups of Kefitegnas might have resulted from the relative proximity of the projects found in Kefitegnas 8,15 and 18; and the suburban locations of the housing projects distributed in Kefitegnas 16, 17, 19 and 24 (Recall from the previous discussion based on Figure 4, that the work places of 66.14% of the total sample household heads are concentrated in the central parts of the city).

In order to complete the discussion on the spatial coverage of the worktrips, we shall now examine the means by which the household heads make their journeys (Table 23).

Table 23 Means of transportation used by the Household Heads during Work Trips

Means of Transportation	No	%
Private car	38	7.57
Service bus or car	74	14.74
Taxi	141	28.09
City bus	207	41.23
On foot	31	6.18
Not Stated	11	2.19
Total	502	100.00

As portrayed in Table 23, the largest proportion (41.23%) of the household heads surveyed use city buses during their journeys to work. The prevalence of a higher proportion of

city bus users is infact expected in the light of the following fact. As has been seen in the previous discussion, most of the housing projects are located in the outskirts of the city whereas the employment sites of the greater proportion of the household heads are located in the relatively central parts of the city. As such, the majority of the household heads can not afford the cost of transportation unless they use city buses which demand relatively lower costs of transportation for longer journeys. Those travellers who use taxi as means of transportation, account for over one-fourth (28.09%) of the total sample. This is also a considerable share and might have been constituted by household heads who either make relatively shorter work trips, earn better income or desire to avoid the long waiting hours and the discomforts associated with city bus transportation. The share of service bus or car users in the total sample is also significant (nearly 15%) where as that of private car users is only 7.57%. These two groups together account for 22.3% of all the household heads. When this considerable figure is seen in the light of the peripheral locations of the housing projects, it implies that there is a tendency amongst those household heads who own private cars and use service buses or cars to dwell in the suburbs, ignoring the distance factor operating between their residential locations and work places since they are free of any transportation problem. Those household heads who travel on foot however, constitute the lowest percentage (6.18%). Individuals who fall

in this category might have chosen to travel on foot either due to the proximity of their dwellings to their work places or they might have been forced by their low economic backgrounds which prohibit them to use public transportation.

Finally, an attempt has been made to assess the availability of public transportation (taxi and city bus) around the housing projects. This is achieved by inquiring into the magnitude of public transportation problems faced by the users (Table 24).

Table 24. Magnitude of Public Transportation Problems faced during Work Trips, as Reported by the Users

Magnitude of transportation Problems	Respondents	
	No	%
Very severe	79	22.70
Moderately severe	115	33.05
Least severe	48	13.79
No problem	106	30.46
Total	348*	100.00

* Only taxi and city bus users are considered assuming that the magnitude of the problem is highly perceived by this group and hence, the information obtained would be more reliable.

As Table 24 reveals, 69.54% of the total public transport users have reported that they face problems of transportation during their worktrips though their perceptions of the

magnitude of the problem varies. As such, one-third (33.05%) of these public transport users perceived that the problem is moderately severe while 22.7% and 13.78% considered the problem to be very severe and least severe respectively. The remaining 30.46% however, reported that they face no problem of transportation during their worktrips. The difference in the perception of the magnitude of public transport problem among the household heads studied might have been associated mainly with the spatial variation in the degree of accessibility of the locations of the housing projects by main transportation routes, availability of taxis and city buses and the provision of taxi and city bus terminals around the housing projects.

CHAPTER FIVE

5. RESIDENTIAL SATISFACTION AND ITS EXPLANATORY VARIABLES

The analysis presented in this chapter mainly concentrates on the identification of the major predictors of residential satisfaction. However, in order to make the analysis more complete, it is necessary to first consider the general characteristics of the residential units incorporated in the study.

5.1 General Features of the Residential Units

Perhaps the most important component of housing is the feature of the dwelling unit itself which is reflected in its style and materials of construction and availability of major services or facilities. The following discussions are therefore, devoted to the general consideration of such aspects.

The distribution of the households by type of building (Table 25) shows that all the houses are single storied. Thus, among all the households surveyed, 38.45% reside in blocks made up of 3 to 5 units whereas 35.66% dwell in extensive blocks consisting 6 and more units attached together. Those residents who live in blocks made up of 2 units account for 23.5% of the total sample where as those residing in detached (separate) housing units share only 2.39% of the total. The dominance of such an extensively

Table 25 Distribution of the Households by Type of Building

Type of Building	No	%
<u>Single Storied</u>	520	100.00
Detached housing units	12	2.39
2 housing units attached	118	23.50
3-5 housing units attached	193	38.45
6 and more housing units attached	179	35.66

attached style of construction obviously implies that more emphasis was given just to the provision of shelter by saving space and construction materials and costs; almost ignoring the difficulties which may arise from extensively attached dwelling units. The problems reported in this regard provide ample justifications of this fact (Table 26).

Table 26. Problems of Attached Housing Styles, as Reported by the Occupants

Reported problem	No	%
Aural disturbance	241	48.01
Visual disturbance	148	29.48
Inlet to and out let from residence is restricted to front doors only	74	14.74
Others	39	7.77
Total	502	100.00

As the data presented in Table 26 reveal, nearly one-half (48.01%) of the respondents have reported that they are disturbed by such noises as radio transmissions, music and even family conversations which come from their adjacent dwelling units.

This is attributed not only to the attached style of construction but also to the open spaces found in the blockets that are used in building the walls (It is seen in Appendix 5 that the wall construction materials used in 86.06% of the dwelling units are blockets and cement). A significant percentage (29.48%) of the respondents also suggested that attached styles of housing constructions are causes of visual disturbances because it is not possible to have permanent protection or fence since the passage between adjacent housing units is blocked. Still a good proportion (14.74%) of the occupants reported that their inlets to and outlets from the dwelling units are restricted to front doors only. Others (7.77%) expressed that extensive blocks are sources of conflicts among neighbours as there are no clear-cut demarcations which separate different families so that each household is restricted to the limits of its own compound. A few residents have also expressed their dislikes of the shapes of such extensive blocks and their fears to escape from some dangers or accidents (for instance, fire) since the outlets to the streets are only through front doors. Moreover, there is a high probability that all the dwelling units which make up the blocks will be destroyed if a fire is set on a single unit.

With regard to the materials used for construction, the walls of the majority (86.06%) of the dwelling units are built from blockets and cement where as that of 12.75% are made of bricks and cement (Appendix 6). Housing units whose walls are

built from wood and mud however, account for an insignificant share (only 1.19%). The most prevalent type of material used for the constructions of roofs are corrugated iron sheets (93.03%). Asbestos sheets have been used for the construction of only 6.97% of the dwelling units. The ceilings of 46.02% and 21.91% of the housing units are made of chipboards and fabrics respectively; 32.07% of the housing units however, have no ceilings at all. The floors of the bulk of the housing units (88.05%) are constructed from concrete where as that of 10.36% and 1.59% are built from cement and plastic tiles respectively.

As regards the availability of facilities in the dwelling units for use of the occupants, the data collected on the types of water supply, bathing, toilet and kitchen facilities are presented in Appendix 7. In the survey, it was found that all the housing units have piped water supply and electric connections too. Each unit has also its separate water and electric meters. Over three-fourth (76.17%) of the dwelling units have their own bathing facilities, the predominant type of bathing facility being shower (58.57%). Nearly one-fourth (23.9%) of the housing units however, have no bathing facility of any sort. The distribution of the surveyed residential units by type of toilet facility shows that there is no unit with out a toilet service (89.24% and 10.76% of the housing units possess flush and dry pit systems of toilets respectively). Housing units provided with modern and traditional kitchen facilities

constitute 43.82% and 47.81% respectively whereas those without any such facility account for 8.37%. It must be noted however, that the proportions of modern and traditional kitchen facilities may not be more reliable because of the difficulty among the respondents in distinguishing between modern and traditional kitchens. Furthermore, due to lack of adequate rooms or space, some families may use the kitchens for sleeping purposes and hence, may report that they have no kitchen services. A glance at the distribution of the residential units by number of rooms (Table 27) indicates that the highest proportion (59.76%) of the units possess 3 to 4 rooms where as 38.05% comprise 1 and 2 rooms. The share of the dwelling units consisting 5 and 6 rooms is however, negligible, i.e. only 2.19%.

Table 27. Distribution of the Dwelling units by Number of Rooms

Number of Rooms	Dwelling Units	
	No	%
1 and 2	191	38.05
3 and 4	300	59.76
5 and 6	11	2.19
Total	502	100.00

It is also attempted to assess the availability of major public facilities that are thought to have direct connections with housing and may affect residential satisfaction (Table 28).

Table 28. Availability of Major Public Facilities, as Reported by the Residents

Type of Public Facility	Available	Missing or Lacking	Not stated	Total
Recreational or cultural centers	147 (29.28)	353 (70.32)	2 (0.40)	502 (100.00)
Clinics, hospitals and health centers	176 (35.06)	326 (64.94)	-	502 (100.00)
Schools	319 (63.55)	183 (36.45)	-	502 (100.00)
Municipal Garbage Collection or waste disposal	91 (18.13)	411 (81.87)	-	502 (100.00)
Access to main road	295 (58.76)	203 (40.44)	4 (0.80)	502 (100.00)
Public transportation	198 (39.44)	301 (59.96)	3 (0.60)	502 (100.00)
Sewerage	139 (27.69)	362 (72.11)	1 (0.20)	502 (100.00)

Note: The figures in brackets represent percentages of the total (502) respondents.

As the data presented in Table 28 reveal, only two basic public services, i.e. schools (63.55%) and access to main road (58.76%) have been identified as being relatively better available around the housing projects, although the missing or lacking components are also significant. Among the major public services that are missing or lacking, the most severely perceived in order of importance are municipal garbage collection or waste disposal facilities (81.87%), sewerage (72.11%) and recreational or cultural centers (70.32%). The prevailing acute problems of refuse collection and sewerage, which are also characteristics to the city as a whole, indicate that the municipality of Addis Ababa has laid little emphasis on such aspects. However, the problem of sewerage around the housing projects in particular, could have been minimized had the builders made some attempts. The

absence of recreational or cultural centers seems to be mainly caused by the peripheral locations or remoteness of most of the dwelling units from the central parts of the city where most of the available recreational centers are found. However, parks and playgrounds for children could have been provided in these suburban areas.

5.2 Factors Explaining Residential Satisfaction

The main analytical body of this part of the paper seeks to explain the relationships between eleven socio-economic, demographic, psychological and housing variables and residential satisfaction. Moreover, it attempts to identify the "best" predictors of residential satisfaction.

The Independent Variables

The independent variables used in the analysis are selected on the basis of the literature surveyed and are classified into three groups in a manner suitable for future discussions. These measures, together with their operational definitions are portrayed in Table 29. The matrix of correlation coefficients which shows the nature of interrelationships among the independent variables is also presented in Table 30.

Table 29. Operational Definitions of the Independent Variables

Group I - Socio-Economic and Demographic Variables

- X1 Income of household head (in Birr per month).
- X2 Occupation of household head (professional =1, non-professional=0).
- X3 Educational attainment of household head (read and write =1, Grades 1-6=2, Grades 7-8=3, Grades 9-12=4, 12+1-12+4= 5, over 12+4 = 6).
- X4 Household size (number of persons per family).
- X5 Age of household head (in years).

Group II - Psychological Variables

- X6 Presence of neighbour conflict (Yes=1, no=0).
- X7 Feeling of visual privacy (high=3, moderate=2, low=1, no visual privacy=0).
- X8 Feeling of aural privacy (high=3, moderate=2, low=1, no aural privacy =0).

Group III - Housing Variables

- X9 Number of rooms (per dwelling unit)
- X10 Rent of dwelling unit (in Birr per month)
- X11 Distance between home and work place (in kilometers).

Table 30. Matrix of Correlation Coefficients for the Independent Variables

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X1											
X2	0.27758										
X3	0.50193	0.56041									
X4	0.20655	0.50213	0.74863								
X5	0.14484	0.08489	0.07650	0.10172							
X6	-0.2043	-0.07700	-0.45286	-0.53099	-0.1701						
X7	-0.0168	-0.12942	-0.00456	0.01850	-0.0021	-0.02727					
X8	-0.00750	-0.00679	-0.06137	-0.02513	-0.0139	-0.0107	0.16876				
X9	0.11396	0.02627	0.18515	0.10183	-0.14601	0.12052	-0.11170	-0.00748			
X10	0.06624	0.01857	0.04730	-0.02561	0.03210	0.04068	-0.0513	0.02442	0.03600		
X11	-0.0113	0.01103	0.04143	-0.01449	-0.0119	0.04792	-0.0505	-0.00057	0.18436	-0.0480	

The Dependent Variable

The dependent variable, residential satisfaction (y) is expressed as a score aggregated from a set of ten housing characteristics, each measured on 5-point satisfaction scales with values ranging from 1 "highly dissatisfied" to 5 "highly satisfied" (refer to Appendix 8). This method is applied because as various scholars (for instance, Ginsberg and Churchman, 1984=425, McHugh, et.al., 1990= 84 and Rossi, 1980 = 22) agree, a residence or housing implies a "bundle" of

services and hence, residential satisfaction has to be measured by asking the residents how much satisfied they are with either their dwelling units, their buildings or their neighbourhood or all of these.

a) Analysis of Zero-Order Correlation

In order to test the hypothesis formulated at the outset of the study, the simple linear relationship between each of the independent variables and residential satisfaction is investigated by means of zero-order correlations (Table 31).

Table 31 Results of Zero-Order correlations between the Independent Variables and Residential Satisfaction

Variable	r	r ²	% Explained
X1 Income	-0.00374	0.00001	0.001
X2 Occupation	0.04970	0.00247	0.247
X3 Education	0.06807	0.00463	0.463
X4 Household size	-0.47520*	0.22582	22.582
X5 Age	0.08308*	0.00690	0.690
X6 Neighbour Conflict	-0.04280	0.00183	0.183
X7 Visual privacy	0.23974*	0.05748	5.748
X8 Aural privacy	0.42944	0.18442	18.442
X9 Number of rooms	0.38330*	0.14692	14.692
X10 Rent of dwelling unit	0.12745*	0.01624	1.624
X11 Distance between home and work place	-0.39115*	0.15300	15.300

*The critical values of "r" when n=502 and m=2 at 0.05 and 0.01 levels of significance are 0.074 and 0.104 respectively (Dixon, W.J. and F.J. Massey (1983). Introduction to statistical Analysis, P.618, Table A-30a).

Among the Socio-economic and demographic variables (Group I), the positive relationships that were hypothesized to exist between income (X1), occupation (X2), education (X3) and age (X5); and residential satisfaction (y) are substantiated except that of income (X1) which runs contrary to expectation. The negative relationship that was expected or hypothesized between household size (X4) and residential satisfaction is also proved (Table 31). The degree of association which is observed between each of the socio-economic and demographic variables and residential satisfaction is however, very low and insignificant save that of household size (X4) and age (X5) which reveal significant correlations of $r=-0.475$ and $r=0.083$

respectively. The negative association ($r=-0.004$) found between income (X1) and residential satisfaction indicates that people with better income tend to be more dissatisfied with rental houses than lower income groups because they may have strong desires to possess their own dwellings. The fact that occupation (X2) and education (X3) are positively correlated ($r=0.05$ and $r=0.068$ respectively) with residential satisfaction might have indirectly been caused by the tendency of better educated and professional people to reduce their family sizes. This can be justified by a glance at the matrix of correlation coefficients (Table 30) which reveals a negative relationship between occupation (X2) and education (X3) and household size (X4), i.e. $r_{2 \times 4} = -0.008$ and $r_{3 \times 4} = -0.017$. From the negative association found between household size (X4) and residential satisfaction ($r=-0.475$), we can infer that satisfaction with housing falls as family size increases. This is not surprising because an increase in family size causes physical discomfort since it increases the degree of crowdedness or living density and hence, reduces the available space per individual. The positive correlation obtained between age (X5) and residential satisfaction ($r=0.429$) is also meaningful because renters of older ages generally seem to have lower expectations of moving and being home owners; and consequently, may exhibit more stability, psychological ties and satisfaction with their residential environments than that may be expected of the younger people.

As regards the psychological variables categorized under Group II, two out of the three have significant, though lower degrees of associations with residential satisfaction. The direction of hypothesized relationship for each variable is also substantiated. Neighbour conflict (X6), as expected, exhibits a negative though insignificant ($r=-0.043$) correlation with the criterion variable. This relationship is generally true, for neighbour disturbances normally weaken the social bonds that link households with their neighbours and consequently, encourage households to develop negative attitudes towards their residences. Feeling of visual privacy (X7) is positively related to residential satisfaction ($r=0.24$). This implies that households that have isolated themselves from others either by building fences or dwelling in detached housing units are more satisfied with their residences than those families who lack protections or encounter visual invasions. The positive correlation coefficient obtained between aural privacy (X8) and residential satisfaction ($r=0.429$) is also a good indicator of the importance of quietness in raising residents' level of satisfaction with housing. On this ground, it can be suggested that housing units which transmit more noises from adjacent rooms, or residential environments of greater noise disturbances are very likely to cause dissatisfaction with housing.

All the correlation coefficients computed for the variables classified under Group III (housing variables) are in conformity with the hypotheses formulated. Moreover, each variable is significantly associated with residential satisfaction. Number of rooms (X9) is, as expected, positively correlated with residential satisfaction ($r=0.383$). This happens so because if we assume family size to be constant, the ratio of persons per room or the living density drops as the number of rooms in a dwelling unit increases. As a result, housing satisfaction tends to rise with increasing number of rooms for the main reason that the availability of space and provision of physical comfort are increased accordingly. As shown by the correlation coefficient of $r=0.127$, residential satisfaction is also found to increase with increasing monthly rent of a dwelling unit (X10). This is perhaps attributed to the fact that occupants who pay higher rents are provided with better services and amenities than those who pay lower rents. Satisfaction with housing, as indicated by the correlation coefficient of $r=-0.391$, however, declines with increasing distance between home and work place (X11). This implies that people who make longer worktrips are more dissatisfied with their residences due, perhaps, to the more transportation costs and time they spend to reach their employment sites.

To conclude, all the hypotheses formulated are substantiated except that of the income variable (X1). However, the degrees of associations of the majority of the independent variables with the criterion variable, though significant, are indeed very low. Accordingly, the level of explanation of residential satisfaction which is accounted for by most of these variables is much smaller. The highest coefficient of determination (r^2), i.e. 0.226, is attained by household size (X4); and even this variable itself explains only 22.6% of the total variation of the dependent variable. This low level of explanation may however, surmount if the combined effect of all the independent variables on residential satisfaction is considered.

b) Analysis of Multiple Correlation and Regression

The multiple correlation and regression model is employed in order to examine the simultaneous influence of the eleven independent variables on residential satisfaction (Table 32).

Table 32 Results of Multiple Correlation and Regression between Residential Satisfaction and the Eleven Independent Variables.

Variable	Partial regression Coefficients "b"	"F" Ratio	Significant at 0.01 level*
X1 Income	-0.00080	0.478	No
X2 Occupation	0.20243	0.206	No
X3 Education	-0.00544	0.001	No
X4 Household size	-0.89383	95.842	Yes
X5 Age	0.00004	0.000	No
X6 Neighbour Conflict	0.03738	0.011	No
X7 Visual privacy	1.41170	54.447	Yes
X8 Aural privacy	1.64168	60.260	Yes
X9 Number of rooms	2.03191	72.875	Yes
X10 Rent of Dwelling unit	0.00012	0.001	No
X11 Distance between home and work place	-0.75462	78.564	Yes
Coefficient of Multiple Correlation (R) =0.7327			
Coefficient of Multiple Determination (R ²) =0.5368			
Standard Error of Estimate =3.9572			
Constant "a" =28.7615			

*The critical value of "F" when n=502 and m=11 at 0.01 level of significance is approximately 2.29.

As the results set out in the above table indicate, the multiple correlation coefficient (R) computed between the eleven independent variables and residential satisfaction is reasonably high (R=0.7327). Similarly, the proportion of the explained variance of residential satisfaction which is accounted for by the set of these variables is relatively higher (53.68%). However, we have to identify the significant and the non-significant variables since some of them may make no real contribution to residential satisfaction. Therefore, in order to select the optimal combination of independent

variables which represent the maximum level of prediction, the forward inclusion method of step wise multiple regression is utilized. The step wise multiple regression model, as Shaw and wheeler (1985 = 343-44) put, combines the efficiency of forward inclusion and backwards elimination with thoroughness of "all possible" regressions or explanations. In this scheme, the independent variables are re-examined at each stage to identify those that have become superfluous following the introduction of subsequent items and to permit use of previously rejected variables. In doing so, the model takes particular care of the problem of multicollinearity.

Selection of Basic Predictors

The selection process starts by regressing the variable with the highest zero-order correlation coefficient against the dependent variable. The variable which is to be entered at each step is determined by reference to the partial correlation coefficients of the non-included variables against the criterion variable but holding constant those predictors that are already with in the model. Thus, whenever a new variable is added to the regression equation, its significance for the increase in the coefficient of determination (R^2) is tested by the "F" ratio (Shaw and Wheeler, 1985 = 240). The results of this computational procedure are presented in Table 33.

Table 33 Entry of variables and Tests with R2.

Step	Variable entered	R	R2	Change in R2
1	X4	0.475	0.226	0.226
2	X9	0.580	0.336	0.110
3	X11	0.657	0.432	0.096
4	X8	0.694	0.482	0.050
5	X7	0.732	0.535	0.053

The variable which recorded the highest zero - order correlation coefficient ($r=-0.475$) with residential satisfaction was household size (X4). The selection process, therefore, began by regressing X4 on residential satisfaction (y). Then, as a new variable is entered, the resultant coefficient of explanation (R2) is compared with the preceding one and if it is larger, the variable is retained in the equation but if it is smaller, the variable is deleted since it does not make significant contribution to the degree of explanation. As such, with the inclusion of the variables X4, X9, X11, X8 and X7, the coefficient of determination (R2) increased to 0.535 but drops whenever any of the remaining variables is added. Consequently, these five predictors are distilled from the original eleven variables and represent the optimum number of independent variables which together account for the highest possible proportion of the explained variance of residential satisfaction. 53.5% of the variation of residential satisfaction is, therefore, explained by the set of

these five predictors. This proportion of explanation falls short of less than 0.2% as compared with the full variation (53.68%) explained by the inclusion of all the eleven variables. Thus, we can conclude that the remaining six variables are superfluous since they together account for a negligible proportion (only 0.18%) of the variation of residential satisfaction. In other words, these five basic predictors are efficient enough in representing the influences imposed by all the eleven independent variables on residential satisfaction. This is, infact, an important conclusion but there is still another question that must be answered. More specifically, the relative influence or the separate effect of each of the selected five predictors is unknown. Therefore, we need to examine the beta weights of each predictor in order to identify the order of their contributions (Table 34).

Table 34 Distribution of Beta values and "F" Ratios for the Five Basic predictors

Variable	Standardized Beta Coefficient "B"	"F" Ratio*
X4, Household size	-0.3206	145.842
X9, Number of rooms	0.2823	83.009
X11, Distance between home and work place	-0.2820	83.810
X8, Aural privacy	0.2539	48.282
X7, Visual privacy	0.2320	56.920

*The critical value of "F" when $n=502$ and $m=5$ at 0.01 level of significance is approximately 3.06.

As the standardized beta coefficients (B's) set out in Table 34 reveal, the most important contributor to the variation of residential satisfaction is the demographic variable household size (X4). The housing variables - number of rooms (X9) and distance between home and work place (X11) rank second and third respectively; where as the psychological variables - aural privacy (X8) and visual privacy (X7) stand fourth and fifth respectively. The "F" ratios of all the five basic predictors also show that these variables are highly significant at 95% level of confidence.

Regression Equation

The multiple regression equation produced from the analysis made so far, takes the form:

$$Y_c = 28.4565 - 0.8984X_4 + 1.4232X_7 + 1.6301X_8 \\ + 2.0153X_9 - 0.7545X_{11}, \text{ where}$$

Y_c = Residential satisfaction (Predicted)

28.4565 = Constant "a", and the independent variables are listed in Table 34.

Analysis of variance

As a final step in the analysis, it is attempted to test the whole regression model by employing the analysis of variance (ANOVA) presented in Table 35.

Table 35 Analysis of Variance (ANOVA) for Significance Testing of the Regression Model of Residential Satisfaction and the Five Basic Predictors

Source	Sum of squares	Mean square	Degrees of Freedom	"F" Ratio
Regression	8870.166	1774.033	5	
Residual	7695.165	15.514	496	114.347*
Total	16565.331		501	

*The critical value of "F" for 5 and 496 degrees of freedom at 0.01 level of significance is 3.06.

According to the summary of the results portrayed in Table 35, the proportion of explained variance is 53.55% and as confirmed by the "F" test, this is significant at 99% level of confidence. This outcome is consistent with the previous ones and hence, enables us to conclude that the null hypothesis of no explanation of residential satisfaction by the regression model is rejected. However, as the share of the residuals which is 46.45% indicates, a considerable proportion of the total variance of residential satisfaction still remains unexplained. This may suggest that there are some important predictors that could not have been included due to practical difficulties of getting information. These include particularly the psychological variables such as acquaintance with neighbours (proportion known), exchanging help with neighbours, perceived ethnic, religious, socio-economic etc. similarity to neighbours and other urban phenomena.

CHAPTER SIX

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Much of the concern of this study has been the search for the answers of the following major questions = What is the socio-economic and demographic characteristics of the occupants of government built rental housing units recently developed in Addis Ababa? Why has there been residential shift? What spatial pattern of residential shifts do the households exhibit? What spatial pattern of work trips do the household heads under study reveal? Which combinations of the considered variables have the strongest power of explaining residential satisfaction?. The most important inferences drawn from the study are outlined below.

Housing units of similar standards are occupied by households of different socio-economic status, or families earning the same level of income are found occupying different standards of housing. As such, families with lower income and social class dwell adjacent to households of middle or higher socio-economic class and hence, spatial segregation or differentiation along economic or social lines is hardly observed among the occupants. Moreover, these government built rental houses serve largely medium size families, married couples and the middle and higher income classes.

The factors which motivate households to change their residences are quite numerous and dependent upon their socio-economic status, demographic, cultural and psychological characteristics and the housing market in general. This study has, however, identified three major motives which generated residential shifts. These are - the desire to avoid the inconveniency arising from sharing a single dwelling unit, external compelling forces like demolition and dispossession of former residences; and marriage or household formation.

The analysis of the spatial pattern of residential shift has come out with two basic results:

1. The bulk (66.53%) of residential shifts cross zonal boundaries since there are no near by housing alternatives.
2. Distances covered by households while changing residences significantly vary with the socio-economic status (income, type of occupation and educational attainment) of the household heads.

From the relative distributions of the residences and work places of the household heads, it is found that most of the work trips are oriented towards the central parts of the city and cover relatively longer (over five kilometers) distance.

Moreover, the majority of the worktrips (55.38%) are interzonal, i.e. terminate out of residential zones.

The search for the optimum combination of predictors with the highest possible level of explanation of residential satisfaction has identified the variables household size, number of rooms, distance between home and work place, feeling of aural privacy and feeling of visual privacy as the strongest of all the socio-economic and demographic, housing and psychological measures included in the analysis, explaining 53.5% of the variance associated with residential satisfaction.

6.2 Recommendations

The findings of the present study indicate some policy measures that have to be taken in the provision of urban rental housing and also shed some light on the directions which future research may take. The summary of these measures and avenues of future researches are presented below.

1. In order to provide alternative housing conditions and also alleviate the chronic housing shortage, the government should encourage private enterprises to involve themselves in the provision of urban rental houses there by pulling out governmental housing agencies from the rental sector (because governmental bodies should not be business makers).

2. The size of non-home owners who need rental houses should be identified by their socio-economic status (income, type of occupation and educational attainment) and demographic characteristics so that the provision of appropriate housing accommodations is facilitated.

3. The five basic predictors of residential satisfaction identified in the study are good indicators of the most desirable qualities of a residence and hence, can be geared towards meeting the housing preferences of urban dwellers.
 - a) Household size which emerged as the most important predictor of residential satisfaction, implies that the provision of housing should take particular care in order to match the size of a dwelling unit or the space it covers with the number of its occupants. As such, the dimension of a residential unit should be determined according to family size.

 - b) The number of rooms contained in a dwelling unit according to the findings of this study, is the second most important quality of a residence in influencing housing satisfaction. Therefore,

inorder to raise the level of satisfaction with housing, it is recommendable that the number of rooms comprised in a dwelling unit should be fixed on the basis of family size.

- c) The distance factor operating between home and work place has also been found to significantly affect satisfaction with residence. Thus, inorder to reduce the distance moved between home and work place, it is necessary to identify rental house searchers by their places of work and incorporate this in the planning of rental housing.
- d) The provision of aural privacy is one of the most important qualities of housing in promoting residential satisfaction. Therefore, housing designs (for instance, extensively attached dwellings) and materials of constructions which transmit noises from adjacent neighbours should be avoided. Furthermore, areas which cause greater aural disturbances should not be selected for the constructions of residential houses.
- e) As revealed by the analysis, the variable feeling of visual privacy has also emerged as one of the basic predictors of residential satisfaction. Thus, housing units should be

designed in such a way that they can isolate households from one another. More specifically, it is necessary to avoid the constructions of extensively attached units since they create problems in separating families even by building fences since passage is blocked. The orientation of a housing unit in relation to other buildings should also be taken into account in order to avoid visual invasions.

4. The municipality of Addis Ababa should seek ways to provide efficient sewerages, garbage collection services and/or waste disposal facilities around the housing projects.
5. The concerned organizations should pay attention, at least to the provision of parks and play grounds in the suburbs of the city.
6. Every research is partly oriented to the future since it aspires to be a guide to the research which follows it; and hopes that future research will build on its success and correct its failures (Rossi, 1980=229). Therefore, future directions of research on factors explaining residential satisfaction may focus on the following aspects:

- a) The housing characteristics that are incorporated as component measures of residential satisfaction should be increased beyond those employed in this study. Likewise, the scale of measurement used to determine the level of satisfaction should be extended beyond 5.
- b) The number of independent variables that are employed to predict residential satisfaction should be broadened to include more socio-demographic, housing, locational and psychological variables as well as other urban phenomena.
- c) If possible, the attitude of each family member towards his or her residence should be incorporated in measuring residential satisfaction.

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Appendix 1 Distribution of House hold Heads by Income Groups in the Housing Projects

Location of the Housing Projects		Income Group (Etim/Month)						Total	
		<400		400-799		800 & above			
Keitegna	Kenelle	No	%	No	%	No	%	No	%
8	13	4	66.67	2	33.33	-	-	6	100.00
	14	3	20.00	6	40.00	6	40.00	15	100.00
15	29	4	22.22	6	33.33	8	44.44	18	99.99
16	02	2	12.50	9	56.25	5	31.25	16	100.00
	11	1	8.33	11	91.67	-	-	12	100.00
17	15	7	39.89	11	61.67	-	-	18	100.00
	19	-	-	4	57.14	3	42.86	7	100.00
	21	1	3.33	26	86.67	3	10.00	30	100.00
	24	41	42.71	33	34.37	22	22.92	96	100.00
	25	9	12.00	43	57.33	23	30.67	75	100.00
18	36	5	29.41	10	58.82	2	11.76	17	99.99
19	55	13	40.15	11	40.74	3	11.11	27	100.00
	56	15	40.54	19	51.35	3	8.11	37	100.00
	57	19	30.64	31	50.00	12	19.36	62	100.00
24	04	25	37.88	36	54.54	5	7.58	66	100.00

Appendix 2 Summary of Occupational Distribution of the Household Heads by Housing Projects

Location of Housing Project		Occupational Groups														Total				
Kefitaga	Kebel	Professional		Technical		Administrative & Managerial		Clerical		Sales		Production		Operators		Service		No	%	
		No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%			
8	13	3	50.00	1	16.66	-	-	1	16.66	1	16.66	-	-	-	-	-	-	6	99.99	
	14	8	53.33	2	13.33	1	6.67	1	6.67	1	6.67	2	13.33	-	-	-	-	15	100.00	
	15	29	9	50.00	3	16.67	1	5.56	2	11.11	2	11.11	1	5.56	-	-	-	-	18	100.00
	16	02	7	43.75	3	18.75	1	6.25	-	-	3	18.75	1	6.25	1	6.25	-	-	16	100.00
17	11	5	41.67	1	8.33	-	-	2	16.67	1	8.33	1	8.33	2	16.67	-	-	12	100.00	
	15	6	33.33	4	22.22	1	5.55	1	5.55	1	5.55	3	16.67	1	5.55	1	5.55	18	99.97	
	19	3	42.86	1	14.28	-	-	2	28.57	1	14.28	-	-	-	-	-	-	7	99.99	
	21	13	43.33	7	23.33	3	10.00	3	10.00	-	-	-	-	3	10.00	1	3.33	30	99.99	
	24	27	28.13	12	12.50	8	8.33	13	13.54	6	6.25	6	6.25	10	10.42	14	14.58	96	100.00	
	25	32	42.67	10	13.33	7	9.33	12	16.00	7	9.33	1	1.33	5	6.67	1	1.33	75	99.99	
18	36	6	35.29	6	35.29	-	-	2	11.76	2	11.76	-	-	-	-	1	5.88	17	99.98	
19	55	6	22.22	4	14.81	1	3.70	3	11.11	-	-	7	25.92	2	7.41	4	14.81	27	99.98	
	56	11	29.73	6	16.22	5	13.51	3	8.11	6	16.22	2	5.40	2	5.40	2	5.40	37	99.99	
	57	14	22.58	7	11.29	4	6.45	10	16.13	6	9.68	5	8.06	4	6.45	12	19.35	62	99.99	
	24	09	14	21.21	5	7.57	4	6.06	12	18.18	4	6.06	5	7.57	8	12.12	14	21.21	66	99.98

Appendix 3. Distribution of Educational Attainment of the Household Heads
by Housing Projects

Location of Housing Project		Level of Education												Total	
Kafi-tagna	Kaballa	Read & Write		Grades 1-6		Grades 7-8		Grades 9 - 12		12+1 - 12+4		Over 12+ 4		No	%
		No	%	No	%	No	%	No	%	No	%	No	%		
6	13	-	-	1	16.67	-	-	2	33.33	3	50.00	-	-	6	100.00
	14	-	-	-	-	-	-	2	13.33	8	53.33	5	33.33	15	99.99
15	29	-	-	2	11.11	1	5.56	2	11.11	8	44.44	5	27.78	18	100.00
16	02	-	-	-	-	2	12.50	1	6.25	8	50.00	5	31.25	16	100.00
	11	-	-	-	-	2	18.67	2	16.67	7	58.33	1	8.33	12	100.00
17	15	-	-	1	5.56	4	22.22	4	22.22	9	50.00	-	-	18	100.00
	19	-	-	-	-	-	-	-	-	4	57.14	3	42.86	7	100.00
18	21	-	-	1	3.33	2	6.67	4	13.33	19	63.33	4	13.33	30	99.99
	24	11	11.46	11	11.46	12	12.50	18	18.75	20	20.83	24	25.00	96	100.00
	25	1	1.33	3	4.00	6	8.00	7	9.33	36	48.00	22	29.33	75	99.99
19	36	2	11.76	1	5.88	2	11.76	2	11.76	8	47.06	2	11.76	17	99.98
19	55	3	11.11	5	18.52	6	22.22	3	11.11	9	33.33	1	3.70	27	99.99
	56	1	2.70	4	10.81	8	21.62	7	18.92	14	37.84	3	8.11	37	100.00
	57	4	6.45	4	6.45	10	16.13	13	20.97	29	46.77	2	3.23	62	100.00
24	09	6	9.09	8	12.12	13	19.70	11	16.67	26	39.39	2	3.03	66	100.00

Appendix 4 - Distribution of Residential Density in Addis Ababa by Kefitegna, 1984

Kefitegna	Population	Residential Area (ha)	Residential Density (Persons/ha)
1	45513	88.77	513
2	35583	82.62	430
3	71905	118.16	608
4	66595	129.36	515
5	78083	103.26	756
6	62763	126.90	494
7	76500	130.71	585
8	58863	318.64	185
9	43035	149.30	288
10	59537	283.68	210
11	68308	239.57	285
12	43508	215.22	202
13	54567	126.85	430
14	55642	185.56	300
15	55333	256.95	215
16	52187	424.16	123
17	57448	636.12	90
18	47842	286.36	167
19	53425	584.94	91
20	55731	331.55	168
21	75954	264.86	287
22	32857	82.52	398
23	59875	639.43	93
24	63404	625.62	101
25	48653	323.27	150

Source = Computed from data obtained from=

1. OPHCC (1987) - Population and Housing Census of Ethiopia, 1984= Analytical Report on Results for Addis Ababa, vol-1, No. 1, PP. 43-50
2. Addis Ababa master plan project office (1984)

Appendix 5. Origins and Destinations of Household Heads during Worktrips, by Kefite gna

Origin (Location of Housing Projects)	Destination (Location of Work place)																									Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
8	2	2	3	1	2	1	1	3	-	-	-	-	1	1	-	-	-	1	-	-	2	1	-	-	-	21
15	2	1	2	-	-	-	-	-	-	-	-	-	-	-	2	4	2	1	1	-	2	1	-	-	-	18
16	-	-	-	-	-	-	-	-	-	1	2	-	-	-	1	2	2	3	9	1	1	1	2	1	2	28
17	4	16	14	3	13	-	-	1	-	-	5	4	12	11	20	18	28	17	21	10	25	4	-	-	-	226
18	1	1	-	-	-	-	-	-	-	-	1	-	-	2	1	1	3	2	2	-	2	1	-	-	-	17
19	2	8	6	-	3	-	-	-	-	-	2	-	-	12	10	6	14	15	21	12	9	2	4	-	-	126
24	2	1	5	2	6	4	5	3	1	-	-	-	1	4	4	-	2	4	1	6	8	5	2	-	-	66
Total	13	29	30	6	24	5	6	7	1	1	10	4	14	30	38	31	51	43	55	29	49	15	8	1	2	502

Appendix 6 - Distribution of the Dwelling units by Type of construction materials

Part of the dwelling unit	Type of construction material	No	%
Wall	Bricks & cement	64	12.75
	Blockets & cement	432	86.06
	Wood & mud	6	1.19
	Total	502	100.00
Roof	Asbestos	35	6.97
	Corrugated iron sheets	467	93.03
	Total	502	100.00
Ceiling*	Fabrics	110	21.91
	Chipboard	231	46.02
	None	161	32.07
	Total	502	100.00
Floor	Concrete	442	88.05
	cement tiles	52	10.36
	plastic tiles	8	1.59
	Total	502	100.00

*Includes ceilings built by the renters themselves

Appendix 7. Distribution of the Dwelling units by Type of Facility

Type of facility	No	%
1. <u>Bathing</u>		
bath tub	35	6.97
Shower	294	58.57
Bath tub & shower	53	10.56
None	120	23.90
Total	502	100.00
2. <u>Toilet</u>		
flush	448	89.24
dry pit	54	10.76
Total	502	100.00
3. <u>Kitchen*</u>		
modern	220	43.82
traditional	240	47.81
None	42	8.37
Total	502	100.00

*According to OPHCC (1987=309), kitchen facilities are classified into two. These are:

1. Modern kitchen - This refers to a room used for cooking using electricity, gas, kerosene, fire wood or charcoal as fuel with appropriate stove and has piped water and sink.
2. Traditional Kitchen - This refers to a room used mainly for cooking using firewood, charcoal, dung cakes, cotton seeds, saw dust, leaves or barks as fuel with simple or no stoves and has no piped water or sink.

Note: All the housing units have piped water supply, electric connections and separate water and electric meters.

Appendix 8. A list of Residential Satisfaction (Y) measures. Respondents were asked to answer the question "Indicate your level of satisfaction with each of the following Housing characteristics".

Housing characteristics	Highly Dissatisfied (1)	Dissatisfied (2)	uncertain (3)	Satisfied (4)	Highly Satisfied (5)
1. Floor size					
2. Number of rooms					
3. Availability of utilities (water & electric supplies, bathing, Kitchen, toilet, etc. facilities)					
4. Construction style or design					
5. Access to main road					
6. Availability of open space					
7. Physical condition or quality of construction materials					
8. Aesthetic quality of surroundings					
9. Rent of house					
10. Distance between home and work place					

Questionnaire No. _____
TO BE FILLED BY THE HOUSEHOLD HEAD

Part one - Socio-Economic and Demographic Aspects

1. Age _____
2. Sex = Male , Female
3. Marital Status = Married , Single , Divorced ,
Widowed
4. Household size : _____ persons
5. ~~Gross monthly income of household head _____ Birr~~
6. Gross monthly income of your wife _____ Birr
7. Educational attainment of household head =
Read & write , Grades 1-6 , Grades 7-8 ,
Grades 9- 12 , 12+1 - 12+4 , Over 12+4
8. Type of occupation of household head _____.

Part Two - Housing Aspect

1. Total number of rooms (excluding kitchens, bathrooms and toilets) in the dwelling unit _____.
2. The block (building) you live in is made up of =
A single unit , 2 units , 3-5 units ,
6 & more units
3. Indicate the problems which arise from attached style of housing units =
Aural disturbance , Visual disturbance ,
Inlet to and outlet from residence is restricted to doors only , Others _____,

4. Construction materials of the wall:

Bricks & cement , Blockets & cement ,
wood & mud ,

5. Roof construction materials =

Corrugated iron sheets , Asbestos

6. Construction materials of the ceiling =

Fabrics , Chipboard , None ,

7. Floor construction materials

Concrete , Cement tiles , Plastic tiles ,
Earth ,

8. Type of bathing facility =

Bath tub , Shower , Bath tub & Shower ,
None .

9. The available bathing facility is =

Private , Shared ,

10. Type of toilet facility =

Flush , Dry pit , None ,

11. The available toilet facility is :

Private , Shared ,

12. Type of Kitchen facility =

Modern , Traditional , None ,

13. The available kitchen facility is =

Private , Shared ,

14. Source of light =

Electricity , Kerosene lamp , Others ,

15. Source of water supply =

Piped , River , Others _____.

16. The water meter is =

Private , Shared ,

17. The electric meter is =

Private , Shared ,

18. Rent of the dwelling unit _____ Birr per month -

19. How were you making a living before you rented this house?

With a relative or Parent , With a friend

In a hotel room In a hostel , In private rental

house or room , In a "Kebelle" or nationalized house , Own private house , Others _____ .

20. What was the basic motive behind your decision to change your former residence and move into the current house?

- Due to marriage ,

- To have better housing facility (water & electric supply, bathing, kitchen, toilet etc.)

- To have greater number of rooms

- To change residence type (apartment, hostel, hotel etc. to a house)

- Fairness of the rent of the current house

- To avoid discomforts of a shared accommodation

- To be nearer to freinds or relatives
- To be nearer to work place
- Forced to move (due to demolition, dispossession
or eviction)
- Others _____

21. Location of your previous residence =

Kefitegna _____, Kebelle _____. If you were formerly living in this Kefitegna and Kebelle, the distance between your previous and current residences is approximately _____ kilometers.

22. Indicate the available and missing or lacking public services around your residential area =

	Available	Missing or Lacking
1. Recreational or cultural centres	<input type="checkbox"/>	<input type="checkbox"/>
2. Hospitals, Clinics, health centres	<input type="checkbox"/>	<input type="checkbox"/>
3. Schools	<input type="checkbox"/>	<input type="checkbox"/>
4. Municipal garbage collection or waste disposal	<input type="checkbox"/>	<input type="checkbox"/>
5. Access to main road	<input type="checkbox"/>	<input type="checkbox"/>
6. Public transportation	<input type="checkbox"/>	<input type="checkbox"/>

23. The level of visual privacy you feel while living in this house =

High , Moderate , Low , No visual privacy

24. The level of aural privacy you feel while living in this house =
 High , Moderate , Low , No aural
 privacy ,
25. Do you encounter conflicts with your neighbours?
 Yes , No
26. If yes, what are the causes of the conflicts?
 1. _____ 2. _____ 3. _____

Part Three - Work Trips Aspect

1. Location of your work place =
 Kefitegna _____ Kebele _____
2. If your workplace is with in this Kefitegna and Kebele,
 how far is it from your home (approximately)? _____
 Kilometers.
3. The mode of transport you use during your worktrips =
 Private car , Service car or bus , Taxi ,
 City bus , On foot
4. If you use public transport (taxi and city bus), indicate
 the magnitude of the problem you face during the journey
 to workplace?
 Very sever , Moderately severe ,
 Least severe
 No problem of transportation
5. Your single travel to workplace takes _____hour(s) and _____
 minutes.
6. How much do you spend on a single travel to workplace?
 _____ Birr _____cents.

DECLARATION

I, the undersigned declare that this thesis is my work and that all sources of material used for the thesis have been duly acknowledged.

Name = Shewaneseh Fisseha

Signature = 

Place of Submission = Department of Geography,
College of Social Sciences,
Addis Ababa University.

Date of Submission = June, 1994