THE RELATIONSHIP BETWEEN PLACES OF EMPLOYMENT, RENTS AND RESIDENTIAL LOCATIONAL CHOICE OF LOW INCOME HOUSEHOLDS IN KISUMU MUNICIPALITY - KENYA.

BY

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A Thesis submitted in partial fulfilment of the requirement

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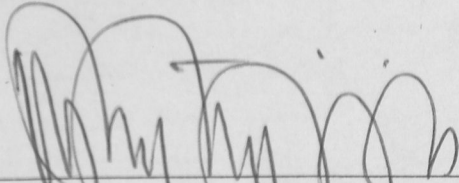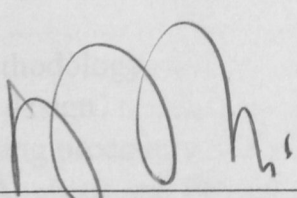
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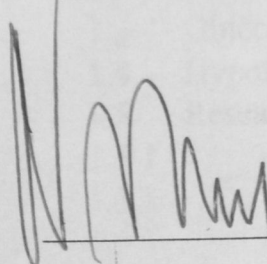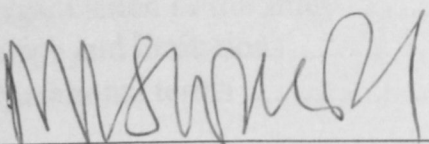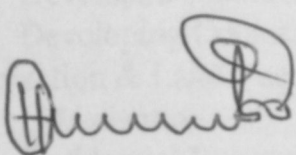
DECLARATION

I, **Agutu, John Washington Otieno,** hereby declare that this thesis is my original work and has not been presented for a degree in any other University.

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ACKNOWLEDGMENT

ABSTRACT

The study sought to examine the outermost location of low income residential areas in Kisumu municipality (Kenya) with particular reference to the influence of rent and distance from place of work, to determine residential mobility among low income households and the relative influence of factors on residential locational choice. From secondary sources and pilot surveys, it was observed that land use patterns in Kisumu municipality does not conform to the majority of conventional urban land use models. Low income residential areas formed the external boundaries of the town.

Six low income residential areas were identified, out of which four areas were randomly selected for the study, and the household population determined. Each of the four areas was divided into four geographical clusters, whereupon structured questionnaires were administered to a total of 325 heads of households in the months of February and March 1993.

The data was entered into a computer and analyzed using Epi5. It was observed that distribution of the population within the low income areas showed a high proportion of particular district sources. It was established that ethnicity and kinship was the most important locational factor for the new urban migrants, with 64.1% having stayed with their relatives on first arrival. The low income households considered room space suitability (33.7%), distance to work place (28.5%), affordability (19.7%), neatness, suitability of units for business purposes as important locational factors. Apart from kinship, the other factors were differentially considered in the four low income residential areas.

The other "Pull" and "Push" factors were observed to be availability of market for goods and services offered by the urban low income households, peaceful neighbourhood, cleaner environment, good roads and availability of electricity. The importance of rent and distance from place of work as locational factors were underlined.

The study further established a distinct relationship between area of residence and mobility (P Value = 0.0033) at alpha level of 0.05, and mobility and age (P Value = 0.0177) but that this mobility was not dependent on the sex of the head of the households. Younger people tended to move or change residence more than older people, with 84.3% of those who had moved, falling between the ages of 18-30 years. It emerged that there was a tendency for rent to increase with mobility in Nyalenda and Obunga (P Value = 0.021). The tendency to reduce rent with mobility, as was observed in Manyatta and Kaloleni, was not statistically significant and it was shown that average rent levels was the same, and movement was horizontal. While 72.3% of low income households walk to their places, it was shown that more than 50% cover 6-12 km daily one way, with different residential areas having different mean distances covered. However, it was observed that although there was a tendency for mean distances to decrease, it was not statistically significant. Average distances before and after moving were equal.

Of the factors which were ranked, rent, income level, distance from work place and room size were ranked higher than the rest, respectively and even though security was not listed for ranking, it emerged as an important factor. The revelations of the study calls for a renewed effort to reduce rural-urban migration by making the rural areas more attractive for informal sector investment.

Further, it calls for enactment and enforcement of by-laws which provide for minimum room sizes to be constructed by the private sector in the provision of houses for low income households.

DEDICATION

To son, Mark and daughter, Verah Di.

CHAPTER 1

INTRODUCTION AND PROBLEM STATEMENT

1.1   Introduction

The rate of urbanization in developing countries has been looked at in two different ways: one, as a reflection of the socio-economic status of a people within a country indicating rate of development; and two, as a reflection of the socio-economic and environmental problems that characterize urban areas in developing countries. The latter case portrays the problems of many people in developing countries within or without the urban areas. With the expansion of urban areas, most problems arise within the urban areas than if the *status quo* was maintained. Moreover, as the number of urban population increases, policy implementors are expected to be busy resolving the crisis which results therefrom and not tackling the root causes.

In developing countries, the larger cities have had higher growth rates than the smaller urban centers, with the satellites found in the proximity of the larger cities being usually absorbed due to expansion of the latter. In Kenya the principal causes, among others of this expansion have been the high population growth rate in the urban areas, both from natural increase as well as rural-urban migration. Secondly, Kenyans have become so attached to urban land ownership that land lying in the urban fringe have all been taken up in anticipation of the expanding town and therefore for speculation purposes. Thirdly, the 1990's have witnessed the creation of many new districts all of which require district headquarters. The result has been the turning of market centres into urban centres thereby enhancing the rate of urbanization in the country.

In addition, many urban centres have been upgraded into towns and municipalities whose requirements for more land and other utilities, like infrastructure, have increased, contributing to greater urban growth. The cited factors reveal that in Kenya, the medium size towns have had higher growth rate than the bigger towns, more so because of the fact that the urban or market centres became the focus of rural development strategy. As the town/city grows, pressure is put on the land available for urban use by various uses. What remains to be known, however, is; where and how the various land uses are located within the urban area in question.

Urban development in general is seen in developing countries as a creation of new patterns of territorial specialization, a result of growth and a diversification of output. The poor a country is, the more important the factor is. On the other hand, the richer a country is, the less is the difference between town and country side. In the latter case, therefore, it would not matter where one lives. The rural atmosphere may be more preferred than the urban and workers can afford to live at considerable distances from where they work.

In explaining the patterns of urban land use in developing countries, the models formulated in the more developed nations, notably the United States of America, has been referred to. Master plans governing the urban growth in Africa and Kenya in particular, were tailored in the fashion of developed countries. The models being used currently were developed in political systems (such as capitalism) which allowed democratization to be well developed and hence the market mechanism was to a great extent operational.

This is not the case in developing countries, such as Kenya. Is it possible for governments in developing countries to bring about changes to urban land use in the same ways that urbanization is taking place? Such changes, if possible, should be seen to make the urban areas more efficient and satisfactory places to live in and operate. The necessity to analyze the dynamics of urban process, whereby problems caused by urbanization are identified and policies and programmes are drawn, arises as long as the rate of urbanization process persists. This calls for the need to facilitate the functioning of these cities rather than attempts to move people and work places out of them. Developing countries are faced with the problems of housing in urban areas. Housing provision has not kept pace with the increasing level of urban population. The economically weaker category of the urban population have not been able to secure for themselves acceptable standards housing.

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1.2   The Problem Statement

Urban residential land use models have been developed in America and other developed nations in the world.   They have dealt with different characteristics and phenomena of the urban scene in order to explain the urban residential structure.   These models have found very little place in the African urban setting.   In the last century, African countries were colonized by a host of European countries.   The urban areas developed under the Europeans' tenure, but they practiced racial segregation in urban settlement patterns.   The master plans for urban land use were done to enforce these practices.

Land use models such as "concentric zone theory" by E. Burgess, 1929 have pointed out that low income households will necessarily settle in the inner core of the urban areas in order that they may enjoy the advantages of proximity to work places. These work places were assumed to be in the Central Business District (C.B.D).   By so doing, the low income households are expected to pay high rents prevailing in the town centre in order to secure houses near the C.B.D.   In the same analogy, the high income households, who prefer space to accessibility, would settle in the suburbs of the urban areas and pay more on transport to and from their places of work.

Urban residential location process was assumed to be the responsibility of the open market mechanism.   In a political system such as Kenya, the market mechanism operates to a very limited extent in as far as real estate is concerned.   In housing, one can only talk of sub-markets.   Studying of such sub-markets then become imperative and important tools for policy formulation.

The various models explaining residential land use have assumed that the incomes of the urban dwellers will continue to rise with the period of stay in the urban area. This would lead to increased propensity to consume and expenditure on housing, and hence enhanced status. The higher income group would move outwards thereby abandoning "better" housing for occupation by middle class and so on. This is called upward filtration process (gentrification).

It is a well known fact that the economies of developing countries can not allow for increase in incomes and standard of living. A high inflation rate has serious impacts on consumption power. Therefore, instead of increasing incomes, the real money value has actually reduced. The result of this is downward invasion and succession of housing among the various income groups. This factor then throws urban residential location and development out of focus. While some people move because of insufficient finances in search of affordable houses, other households move so as to upgrade their housing standards. In other words urban land use can not be explained solely in terms of market operation but with the help of other prevailing factors. Each economy would then develop its own model and pattern which is expected to be more complex. It is within this complexity that the various urban areas have to be made to function.

Kisumu Municipality, in Kenya, exhibits a classic case of "none-conformity" of the concentric zone land use model by Burgess. The inner core of the town (C.B.D) is occupied by people of the Asian origin, who are mostly middle to high income earners. The low income households are the ones found on the periphery in Nyalenda, Manyatta, Obunga, Kamakowa and Bandani.

The epitome of high income residential area is Milimani estate found to the south of the Central Business District (C.B.D) bounded by Nyalenda and Pandpieri which are low income areas. The middle income estates of Okore, Oguma, Ondiek and Arina are found to the East of the C.B.D, with Manyatta A and B which are sprawling low income zones, completing residential development to the East. To the North, apart from railways junior staff quarters and Arab Manyatta, it is Robert Ouko, Tom Mboya and USAID estates which are the high income residential estates bounded by Kamakowa, Obunga and Bandani - low income areas. The above situation is shown in Map 3.6.

The high income residential areas of Milimani is located 0-2km from the C.B.D while that of Tom Mboya, and USAID are 2-5km from the C.B.D. In contrast, Manyatta, Obunga, Nyalenda and Kaloleni are situated about 6-12km, 5-8km, 4-8km and 3-5km respectively form the C.B.D. These distances, if covered on foot, exert a great toll on the energy of the individual thereby lowering his productivity. The transport cost between the low income residential areas and the C.B.D ranges between sh.10-15/= per trip (one way). This is expensive for the low income households whose income levels are very low. The distances and fare vary for each individual, depending on where one works. The employment zones in Kisumu include Kondele, Kibuye (market centres), town centre, industrial area in Makasembo road and Kandege near the airport. So, while not everybody will travel to the C.B.D to work, others travel "across" the C.B.D to reach their places of work.

The assumption that places of employment are found only in the C.B.D could have been misunderstood. The towns where such studies have been undertaken started as industrial towns, therefore, industry was the single most important factor that explained the urban development . Manufacturing industries were a major employer for the urban dwellers. The above situation is substantially different in Kenya. For example, Kisumu was started as an administrative centre and port. Low income households do all types of "odd jobs" and are employed in both formal and informal sectors, whose locations are not necessarily the C.B.D.

Table 1.1 shows employment by sector in Kisumu town. It can be observed that while the manufacturing sector has not been consistent in growth as an employer, the social sector has been very consistent and always a bigger employer than manufacturing. This trend of employment discards the notion of the importance of industrial (manufacturing) employment for the low income households and hence the importance of the C.B.D. as the major employment zone in town.

Table 1.1.   The pattern of Employment in Kisumu Town.

Sector	No. Employed			
	1972	1977	1985	1991
Manufacturing	3200	2900	3500	5000
Construction	1400	1000	900	2700
Trade & restaurant	1700	1600	2000	2700
Transport	1600	2200	1400	1500
Finance	400	800	1000	1800
Social Sectors	5000	6500	8400	8700

Source: Economic surveys 1972, 1977, 1991

It has been observed that the social sector is the major employer in Kisumu. Foremost within this sector are informal employment where the individual is self-employed such as in informal and/or appropriate technology otherwise commonly known locally as "*Jua Kali*". The main activities of "*Jua Kali*" are concentrated in Kibuye, Old Industrial area and Kondele. It is important to note that Kenya's industrial policy has targeted "*Jua Kali*" as the main channel for industrial take-off by the year 2020. At the moment, it has not been given the guidance and assistance that it deserves. Self-employment may be important but it has been observed that the incomes that it generates for the low income households of Kisumu are not only low, but also unreliable. This factor limits their economic choice particularly as regards rental accommodation.

The population of these low income suburbs was projected to be 94,469 by 1989. This is almost a half the population of the town recorded in the 1989 census of 192,733 having a sex ratio of 1:1. Of the total population of Kisumu town, 34,792 were engaged in wage employment out of which 25,203 earned 3000/= per month and less. This situation is similar to that observed in 1977 when about 60% of Kisumu's urban population earned less than 700/= per month and about 80% earned less than Kshs. 1500/= per month as shown in table 1.2. The majority of the households in Kisumu have poor purchasing power and investment, being mere survivors in the economic and social set up within the urban area. (Economic Survey, 1989).

The Kenya gazette supplement No. 49 of August 1982 categorizes income groups as follows:-

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Income groups.

Level	Income
Lowest income	0 - 1499
Lower middle	1500 - 2999
Upper middle	3000 - 4999
Highest income	5000 and above

As table 1.2 shows it appears that about 70% of Kisumu's population are low income as at 1991, with 55% of the total population living in the study areas of Nyalenda, Manyatta and Obunga. The low income levels observed among the households have to be spread to cover the various households basic needs.

The income levels observed, therefore, exclude them from occupying better houses in the town.

A pilot survey carried out in the town in December 1991, revealed that the rent levels in the middle income residential areas of Nyawita, Patel flats, Argwings estate and Migosi were between 2000-5000/= while the Municipal middle income residential areas of Mosque, Kibuye flat 3 and Arina, had rent levels of between sh.550-1000/= per month. The rent levels, compared to income, are therefore out of reach for the low income households. The invasion and "succession" method of enhancing housing status of the low income households seems unworkable. The rent levels of the high income areas of Tom Mboya, USAID and Milimani range between sh.6000 - 30,000/= per month, with Milimani exhibiting the highest rent average.

The following wage grouping has therefore emerged:

Table 1.2.   Wage groupings for Kisumu.

Wage Group	Percentage	Estimated number of households
0 - 150	0.12	26.6
151 - 199	0.21	157.5
200 - 399	17.21	3817.5
400 - 699	40.27	3932.7
700 - 999	15.18	3367.2
1000 - 1499	13.36	2963.5
1500 - 1999	5.91	1311.0
2000 - 2999	5.64	1251.1
3000 - 5999	3.10	687.6

Source: (G.O.K) Statistical Abstract, 1979

Table 1.3. shows a high level of rental housing in Kisumu as opposed to owner occupied and other forms of tenure, a trend which was similar to that of Nairobi. Focus on the provision of rental housing is therefore important.

Table 1.3.   Level of rental housing in Kisumu.

	Kisumu	Nairobi
Owner occupied	10.42%	29.13%
Rental	84.59%	65.57%
Others (Institutional)	4.98%	5.30%
TOTAL	100%	100%

Source: (G.O.K) Central Bureau of Statistics, 1996.

Under assumption of central place of employment, the low income households spend a lot in terms of commuting costs and energy. They can not afford basic necessities like food, clothing and good housing given the low income level. This presents a major constraint in residential locational choice. Arguments have been put forward to the effect that low income households will locate in "designated" areas so long as they can afford them. Urban residential studies have assumed that rents charged in low income zones are similar, if not the same. Rent would then be irrelevant in terms of choice. The question asked here, is whether this is true and why one would choose to locate in Nyalenda and not Obunga or Manyatta. Is it the availability of houses in those different areas or proximity to work that determine their choice of location? While high income households prefer spacious living for comfort, the low income households have other factors to consider such as family size which might prompt a household into looking for a bigger house for his family (By 1977, the household size was 4.5 for Kisumu town). This factor is aided by the tradition, culture and customs of Africans. Under the western model, rent for both land and building are supposed to be lowest at the periphery, which probably explains the Kisumu case. The study of residential locational choice of low income households can not be complete without examination of the relocation or mobility factors. It has been assumed by previous researchers in urban land use patterns that are more an urban immigrant stays in the urban area, the better the standard of living for him, since his economic lot shall have improved after being engaged in gainful employment. Improved income so assumed gives the urban dweller more economic choices in terms of residential location with respect in terms of fare paid to and from work and the rent paid in particular locations.

Understanding the mobility process, rate and direction, both horizontal and vertical, are important tools for the urban planner since they reflect the needs and aspirations of the people for whom the urban area is being planned. It serves to differentiate locational needs of the new urban immigrant and that of the urban immigrant.

It is clear that the supply of houses for the middle and high income group outstrips the demand, going by the vacancies observable in Migosi, USAID and Okore. This reduces the location choice of households in those income groups to being economic in nature. The low income group are therefore forced to occupy semi-permanent structures found in Nyalenda, Obunga and Manyatta.

1.2.1 Manyatta, Nyalenda & Obunga.

The inclusion of these areas into the municipality was long overdue at the time. People had settled in these areas supplying labour force for the urban area. Their population had surpassed that of the original municipal boundary by far. They are located in different directions of Kisumu and are the epitome of low income settlements within the Municipality. Nyalenda and Manyatta were the first settlements outside the town centre and were very popular with the African population who could not be housed by the authorities. Rental houses began appearing in Nyalenda and Manyatta in 1955 and 1958 respectively (Macoloo, 1984). The importance of these urban fringes should have been noted as potential problem areas.

The pattern of residential development in Nyalenda, for example, can be attributed to the expansion of the boundary. The buildings were rural-like and by the time were still cheap enough so that low income households could afford to rent. Immigrants located here because they could do some peasant farming and find some work in the nearby Kisumu town (Amunga, 1972:17). By 1972, rents were about 40/= per month.

Manyatta has two phases; Namely A and B for the purposes of adjudication. The urban II projects of the World Bank earmarked Manyatta and Nyalenda for upgrading. For Manyatta, Phase B is better developed in terms of housing even though it has poor road access. This has been so because the land in this section leading to Kasule was sold by bidding. This meant that only those who were financially able ended up purchasing the plots. In this event, better housing has been observed. For the purposes of this study, Manyatta A was sampled and studied because it represented the "Original" Manyatta and its low income nature. Obunga is found to the North of Kisumu town with perceived social evils. Together with Kamakowa, they have catered for the majority of the low income households of Kisumu. By the way of haphazard settlement pattern, it has been difficult to economically construct water and sewerage networks. Water points have, therefore, been the main method of water distribution. Infact in 1972, the master plan recommended a halt to any further development in Kisumu so that services could be put in place first but this was not heeded. Construction of houses continued without regard to planning for services.

Apart from the tenant purchase schemes for higher income groups, Kisumu has suffered a lot in terms of housing. Their location at the same time have not been guided.

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For the low income people, for the time being, it has been these three residential areas that have catered for them. Migosi site and service was destined for low income residential. Lack of guided physical residential development plans has resulted into the foggy nature of residential development and the confusion of possible employment zones. Kisumu suffers from lack of an intra-urban transport system which complicates the issue even further.

Generally, the location of households have been related to job access, transport network and intra-urban migration. For urban areas in developing countries, where many families can not afford existing housing or regular journey to work by bus/matatus, it is important for local authorities to understand the residential locational needs of low income households. The location and planning of the residential projects, meant for low income group, would then consider the factors. Njenga (1991:206) identified the none economic motives of housing allocation in residential areas of Nairobi and found out that people are very much alike in their housing wants but that this depends on the stage that their household has reached. Low and middle income households considered affordability and distance to work as the second priority after space requirements. However, the study did not examine the specific locational factors that exert "push" and "pull" for the low income group in the various income zones. This study has therefore examined the variability of rent within the various low income zones in Kisumu, and the availability of many employment places, which affect distance from place of work, as factors which affect residential locational choice and mobility of low income households.

1.3   Objectives Of The Study

The main objective is to determine how <u>rents</u> and <u>places</u> of <u>employment influence</u> <u>residential locational choice</u> of low income households in Kisumu.   The study there attempted:

i)   To determine the factors which influence the choice of residential location amongst low income households in Kisumu.   In this regard heads of households were asked how they got accommodation in their first arrival and why they chose particular residential areas.

ii)   To examine residential mobility among low income households.   To achieve this objective, mobility pattern for each household was recorded for a period of 2 years prior to the date of administering the interview detailing the area of residence, rent paid, year, duration and place of work for each move.   Reasons for such moves were recorded.

iii)   To determine the relative influence of these factors on residential choice.   This was achieved by asking the heads of households to rank various factors in order of importance, that would influence them to change their residences.

1.4   Hypothesis

Rent and distance from place of work are always the most important factors that influence residential locational choice and mobility among the low income households in Kisumu

1.5   Research Methodology

1.5.1 Study Design

A cross sectional survey was conducted within low income residential areas of Kisumu Municipality with a view to understanding the low income households horizontal residential mobility, with respect to rent levels and distance from place of work.   The primary data was collected during the months of February and March 1993 in Kisumu. From secondary sources, low income residential areas were identified and the three areas were grouped into North, Southern and Eastern, that is, Obunga and Kamakowa, Nyalenda and Pandpieri, Manyatta and Kaloleni respectively.   It should be noted that institutional low income residential areas were excluded in this research because they are outside the market mechanism. ✓

1.5.2 Sampling Procedure

Use was made of the 1979 population data. This was so because at the time of data collection, the results of the 1989 population census were not yet released, though they became available during the writing of the thesis. The population was determined as 16,264 households for the four study areas, out of which 325 households were identified on the ground and proportionally interviewed as follows:-

A physical survey was done in each of the four areas and approximate central location was identified. The area was then divided into four geographical clusters. The houses were then numbered whereupon equal proportion, according to the number of households in each cluster, was interviewed.

Structured questionnaires were administered to the heads of households between 5p.m - 7 p.m during week days while this was done the whole day during weekends. It should be noted that where the head of household was not present, the unit was skipped and another attempt was made later. The timing was aimed at finding the head of households since this period was considered the time he/she would be home from work. Only the heads of households were interviewed on the assumption that they are the sole decision makers as pertains to residential mobility, taking into account the economic and social factors.

After scrutiny of all the filled questionnaires 39 were rejected on various grounds such as incorrect entry of information or missing data . The sample size therefore was reduced to 286 whereby the residential areas returned 104, 94, 54,34, for Nyalenda, Obunga Manyatta and Kaloleni respectively. Data was also collected from secondary sources, particularly the Housing Development Department (H.D.D) of the Municipal Council of Kisumu, department of social services, town planning, finance, with regard to municipal housing policy, physical development and rent collection level of the municipality.

This was proportionally divided into these four study areas according to the number of households. Only half of the number of the households in Manyatta was considered. It was evidently clear that Manyatta B was occupied by higher income groups judging from the residential structures prevalent in the area. Most of them were self contained single family residential units. Again, because of the haphazard nature in the siting of the residential structures in these low income areas it was difficult to employ systematic random sampling. We were able to identify central locations of each of these residential areas using topographic maps from the department of land survey and each was divided into four, approximately equal, quadrants. Equal number of households were interviewed in each quadrant. In situation where some structures had more than 3 residential units therefore only odd numbers of households were interviewed from left to right, in each structure. Chart 1.1 shows the steps that were followed in sampling.

1.5.3 Data Analysis Procedure and Techniques

Several data was collected to help answer the objectives of the study, and use has been made of simple analytical techniques such as descriptive methods, proportions, hypothesis testing, analysis of variance and chi-square, to test particular aspects of the study objectives. We have used both objective and subjective data results in this process.

Chart 1.1   Sampling Procedure And Data Collection

```
                    ┌─────────────────────────────┐
                    │ From secondary sources      │
                    │ six low income residential  │
                    │ areas identified            │
                    └─────────────┬───────────────┘
                                  │
         ┌────────────────────────┴──────────────────────┐
         │                                                │
┌──────────────────────┐                      ┌──────────────────────┐
│ Four areas randomly  │                      │ Other data from      │
│ selected to represent│                      │ secondary sources    │
│ geographical location│                      │ collected            │
└──────────┬───────────┘                      └──────────────────────┘
           │
┌──────────────────────┐
│ Sample size determined│
└──────────┬───────────┘
           │
┌──────────────────────┐
│ Apportionment        │
│ according to No. Of  │
│ HH in each area      │
└──────────┬───────────┘
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MANYATTA	KALOLENI	OBUNGA	NYALENDA
Division into 4 clusters & HH Numbered	Division into 4 clusters & HH Numbered	Division into 4 clusters & HH Numbered	Division into 4 clusters & HH Numbered
Data collected according to No. Of HH in each cluster randomly From head of HH	Data collected according to No. Of HH in each cluster randomly From head of HH	Data collected according to No. Of HH in each cluster randomly From head of HH	Data collected according to No. Of HH in each cluster randomly From head of HH

```
        ┌──────────────────────────────────────────────┐
        │ Data analysis using Hypothesis testing, ANOVA,│
        │ CHI-Square and Student t-test                 │
        └────────────────────┬─────────────────────────┘
                             │
                    ┌──────────────────┐
                    │   Conclusion     │
                    └──────────────────┘
```

1.5.4 Rent

The influence of rent on low income residential mobility (location) was examined with respect to velocity (number of moves per year) and direction of mobility. A question was asked focussing on the various areas that the respondents had lived in, in Kisumu during the previous two years prior to the study. The residential areas were noted, as well as rent paid, place of work and the corresponding distance from place of work. The direction of movement was examined in terms of rent paid. Did they move to higher rent units or otherwise ? Conclusion is then based on simple hypothesis testing (comparison of means) i.e the mean rent before shifting and the mean rent after shifting. This was done for all the data and for each of the four residential areas. We were therefore able to identify in which residential areas rent played a role in determining mobility, rate of shifts and in which direction. The household data was also collected to find out how sex, age and level of education of the head of household could also play a role.

The two methods used for all these were comparison of the "difference of means" and the "Chi-Square". Difference of means is examined using the Z-Score where:-

$$Z_c = \frac{\bar{X}_c - \bar{X}_p}{\frac{S^2_c}{N_c} + \frac{S^2_p}{N_p}}$$

Where: $\bar{X}_c$ = The current mean.

$\bar{X}_p$ = The previous mean.

S_c = Current standard deviation.

n = Total number of those who shifted residence.

S_p = Previous standard deviation (before shifting)

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The Chi-Square method has been applied in some cases and use has been made of the following formula:-

$$X^2 = \Sigma \quad \frac{(F_0 - f_e)^2}{F_e}$$

Where: f_o = The observed frequencies in a cell in the contingency table.

F_e = The expected frequencies in a cell.

Comparison is made between the calculated or observed X^2 and the expected X^2 under the confidence level of 0.05. For smaller sample sizes (where we are examining only those who shifted from their residence), we employed student-t test, for example in Kaloleni where the number of those who had moved were less than thirty.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(N-1)S^2_1 + (N_2 - 1)S^2_2}{N_1 + N_2 - 2}} \quad \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

Where X_1, X_2, n, s denoting the same items as in the previous formula.

1.5.5   Distance From Place of Work

To examine the influence of distance on the location of the households, data regarding areas of residence, work place and corresponding distance was collected. It was assumed that anybody working within the same residential areas where he is staying commuted zero distance. We then calculated distances from the four residential areas to the various work places. A change in the residential area would automatically affect the distance from work place. It was possible to study whether a change in residential unit or area brought about a movement towards or nearer place of work or otherwise.

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In the above circumstances we have the previous distance before shifting and the accompanying current distance after shifting. Use was made of similar analytical techniques as the ones used in rent analysis. It was possible to work out the change in distance, whether it was positive or negative. We were able to examine the proportion of those who work near their residences and whether that proportionality was significant or not. This was done for the whole data and for each residential area.

1.5.6 Other Factors

With regard to the relative importance of factors, heads of households were asked to rank the factors that commonly influence residential mobility (Change of residence) in order of importance. Among the ten factors listed, were the two factors of rent and distance from work place. This enabled us to come up with a prioritized list of factors and the other factors which appear most important for low income households. A factor scored points in terms of rank. Position one scored ten points, while position ten scored one point.

Out of the 286 respondents, the best ranked factor would score a maximum of 2860 points. The same procedure was applied to all the residential areas and we were able to examine how these factors are considered in all the residential areas. The above procedure was secured as follows:-

$$nR_i + (n-1)R_{i+1} + (n-2)R_{i+2} + \ldots\ldots\ldots\ldots (n-9)R_{i+9}$$

where

n = factor score

R_{i+j} = the frequency of rank i

From the above formula, it was possible to examine the relative importance of factors that commonly influence residential mobility, with particular interest being rent and distance from place of work.

It was taken a step a further and a one way Analysis of Variance (ANOVA) was performed. To do this, it was assumed that the population for each sample was normally distributed with identical means and Variances and that all sample observations were independent. The proportion of the variance explained by the different ranking of factors and the unexplained variances should be tending towards one and this is the F-Statistic under examination. It was able to test whether the mean score or ranking of each factor in all the residential areas were equal. Treatment mean Square, MST, is given by the following formula:-

$$MST = \frac{SST}{C-1}$$

$$=$$

Where $SST = r \, \Sigma \, (X_j - X)^2$

  $C =$ The number of columns.

  $r =$ The number of rows.

  $=$

  $X =$ The grand mean.

  $\overline{X}_j =$ Column means.

The error mean square, MSE is given by:-

$$MSE = \frac{SSE}{(r-1)c}$$

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$$SSE = \Sigma \Sigma (X_{ij} - \bar{X_j})^2$$

X_{ij} = The observed rank frequency or mean score.

$\bar{X_j}$ = Column means for each factor.

1.6   Justification Of The Study

Despite the differences in socio-economic, physical, cultural, environmental conditions of urban areas between the more developed and the developing countries, residential land use models of the Western cities have been used to explain the spatial structures of cities in developing countries. The dimensions on which households have been found to make their residential choice are locations, cost, dwelling characteristics, quality of the physical environment and the social status of the neighbourhood. However, rents in most cases have been treated as a function of accessibility and therefore, difference in rent of different localities do reflect the differences in the accessibility of these locations (Basset, 1980:34)

Kain (1975) agrees that Alonso's proposition holds for residential space of stated quality and amenity but that this assertion has not received adequate empirical verification or rejection. The difference in the length of journey to work and in the locational choice of workers employed in each zone may be understood only when the characteristics of metropolitan schedule of location rents is specified.

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If industrial areas are assumed to be the main points of employment for low income households, then we would expect to see low income residences being near to the industrial zones. Manufacturing activities determine the locational decisions of urban households and changes in the metropolitan spatial structure may be strongly affected by the metropolitan growth. Industrial location mobility may be a "pull" and "push" factor in residential location of different income categories of the urban population.

The desirability of a particular neighbourhood can be seen in the price/rents. People are prepared to pay to live in such neighbourhoods given other opportunities. However, evidence is not conclusive as to whether this is so or whether in fact only the highest income groups have the aspirations to live in the most desirable area that they can afford, while the remainder must go to the other residential areas (Johnstone, 1973:79).

Studies have concentrated in the evaluation of residential location of people with differing incomes which obviously have clear divergence of needs and affordability, but very little had been done on the low income groups. In addition, such studies have not been able to indicate whether distance is a causative factor or just an effect of the desire to interact with ones social group and the existing pattern of residential spatial separation.

Muth (1969:2,37) believed that the older parts of the central cities were not properly developed, planned or regulated initially, so that the upper and middle income groups have largely moved to the suburbs. Assumptions are that urban land is properly used as determined by the market mechanism as the town grows outwards.

New residential buildings are also assumed to be constructed continually responding to the expansion. It is to these new residential buildings that the high income households move.

He, however, concedes that "very little is known empirically about the strategic factors influencing the location of employment centers." Is it the employment centers which follow the population (in terms of settlement) or vice-versa ? If slums are the results of the low incomes of their inhabitants, the location of slums will be governed by the locational determinants of the low income households.

Evans (1973) contended that households with steepest bid price cones will always locate near their work place while those with the least bid price cones will locate farther. If accessibility is divorced from income, which of the two factors determine the slope of the bid price cones? How is accessibility evaluated? Since it has been shown that low income households have the steepest bid price cones in terms of accessibility, do they then have the kind of income which can enable them to purchase dearer land in the C.B.D?

An implicit assumption of most of the models is that parcels of land being purchased are for owner-occupation houses. Unfortunately, this has down played the importance of rental accommodation. In Kenya, the housing policy has been tailored in this line. Agevi (1982:21) argued that there is lack of suitable public land for low income public housing in Kenya. Consideration of "the journey to work will necessarily dictate that low cost houses should be located near the employment centers.

This has not been possible in all cases since the value of such land is often high, thus being unavailable for low cost housing. Where should the housing projects meant for low income groups be located for the benefits of these people?

Gichaga (1982:30) noted that some of the low income people walk as far as 5 -10 km one way to places of work. This is too demanding for a person who is expected to undertake active work on arrival for work. Kabagambe(1986:81) while studying the location of small scale industries in Kisumu, found out that they are located in the periphery of Kisumu Town mainly because of:-

i)   Nearness of place of work to place of residence so as to maintain the socio-
       economic set up.

ii)   Reduction of transport costs between places of work and residence.

iii)   Nearness to low income residential areas which form the bulk of the market for
       goods and services produced

Unregulated individual behaviour in any sphere of economic life fails to serve the public interest. The low income households rent housing not because of age, but because of what they may consider as space requirements and affordability. Although governments have a large stake in the results of locational development, great power to influence that development and corresponding heavy responsibility for influencing it in socially desirable directions, few governments have even followed any coherent policy in regard to location. At the same time it is difficult to attempt to apply the Chicago school of thoughts, to an entirely different social reality - that of a dependent Neo-colonial capitalist social formation (Hoover, 1948:242; Herbert, 1981:62).

Studies have tended to rely on the assumption that the settlement constitutes a relatively homogeneous universe with the consequence that the observer fails to identify element of change that forms the pedestal for efficient urban function. There is need to examine the settlement patterns in relation to their functional roles in the satisfaction of properties of low income households. Various income groups of people have changing priorities and the are usually economically, socially and geographically mobile. The slums and shanty towns all performs the principle functions demanded by their inhabitants. Inspite of their many and often severe drawbacks, they often act as forward moving vehicles of social and economic mobility (Turner, 1967).

The more developed countries have express ways, by which people's movement is highly facilitated. This is not the situation in Kenya. The need to examine these enclaves of low income residences therefore is a priority. The need to study the importance of rents and distance on residential locational decisions is still important for Kenya. These may be taken into account in future where the government intervenes in the housing market operations.

1.7   Organization Of The Study

This study has been organized into five sections:-

Chapter 1:   Examines the problem statement, research methodology, scope of the study and terms used.

Chapter 2:   Literature review, discussing the various residential land use models and residential locational patterns in developed and developing countries, including urban residential land use policy in Kenya.

Chapter 3:   This is a brief section discussing the study area covering historical background, population, climate, geology and soils and economic base with a view to examine how they have affected residential development.

Chapter 4:   Data Presentation and analysis, discussing the factors that commonly influence residential location and their relative influence on locational pattern among low income households.

Chapter 5:   Conclusions, recommendations and areas for further research.

1.8   Scope and Limitations

The study has been conducted in low income households neighbourhoods in Kisumu, but since the study was not a census survey, not all the low income residential areas were covered. First, it was considered that institutional low income housing excludes the operation of open market mechanism as a locational tool and hence would not present the correct picture of residential locational factors.

They were therefore ignored. Secondly, cost limitations could not allow the studying of all the other low income residential areas, so, random sampling was used to select the study areas. Finalization of the study has been delayed owing to various reasons but most important is the loss of the data on two occasions, due to theft and the unavailability of computers in the remote parts of Kenya where I was working at the time.

1.9   Operational Terms

These are fairly simple terms although at times they are usually confused and misunderstood.

1.9.1 Employment: This is a term normally used without some bit of thought. For the purposes of this work, employment is any form of gainful engagement either by the individual or by a company such that at the end of the day, he is remunerated accordingly. There is no question as to whether the individual is not employed to his capacity (disguised unemployment) or not. We are just interested in the amount of money which he gets by carrying out that particular activity. Point of employment and places of work have been used interchangeably to show the location of that particular activity.

1.9.2 Rent: This is the payment or consideration by one party(tenant) to the other party(landlord) for an exchange of use of property owned by the landlord for a specific period of time. The payment is in terms of money payable in advance or in instalments as per the agreement. The period of renting was assumed to be monthly.

1.9.3 Low income: This has been used to cover those persons earning less than 2000/= monthly as the upper limit (upper low income). These could be in form of salaries or wages as determined by the type of work or activity or the employer. It is of interest that there were instances where people earning more than this level were interviewed."Why did they choose to live here?" The question is well answered.

1.9.4 Household: Was considered as all that group of persons having a common eating arrangement.

1.9.5 "Jua Kali":   This is a term commonly used to refer to the various informal economic activities in the urban areas in Kenya but specifically, it refers to those economic activities whose products have metallic input and can be classified under "appropriate technology".

CHAPTER 2

LITERATURE REVIEW

2.1   THEORIES OF URBAN RESIDENTIAL LAND USE PATTERN

2.1.1   Introduction

This chapter, recapitulates the various theories that have been used to explain the urban residential land use. It forms the basis for analysis of the urban area under study, that is Kisumu. It is also a fact that these theories have been "reproduced" in various works by geographers, economists, sociologists both abroad and locally (see Kingoriah, 1983; Njenga, 1991). They have, however, been summarized to give the background information on urban land use. More important is the form of land use patterns in developed and developing countries as they exist today and any divergence that result therefrom the existing prescription for urban physical development.

The organization of activities within any urban area is of utmost importance to the planner. The planner does not act in a vacuum but make use of various framework on which his work can be guided. In the 19th century, urban development was determined by industrial location. Urban geographers and economists have delved into the cause and effect of the urban spatial form and the evolution of set guidelines which could be used to improve the functionality of the urban system.

2.1.2 Concentric Zone Theory

This theory was developed by Ernest Burgess in 1929 and was among the first models that attempted to explain urban land use patterns. He conceptualized the city's growth within a set of five rings, each with a distinguished land use, all radiating from the central business district (C.B.D) of the urban centre.

1.   The first ring was the C.B.D, the commercial and civic life focus, with offices, and other land uses depended on the location and growth of the C.B.D.

2.   The second ring was the transition zone with mixed development and residential buildings in deteriorated conditions and a hub for criminals. It therefore had some features of the C.B.D with warehousing dominating the zone.

3.   The Zone of independent working men's homes occupied the third ring. The houses were closer to the factories and their occupants sought access to their places of work.

4.   Zone of better residence was characterized by apartment houses and residential hotels. Business sub-centers are the other common features in this ring.

5.   Commuters zone is the last ring and may be composed of satellites and spotty development of fairly high quality residences along lines of rapid travel. The inhabitants depend on work availability in the C.B.D.

An important aspect of this theory is its explanation of urban growth. It assumed that work is only available at the C.B.D. The aspect of invasion and succession is brought forth so that ripples start from the C.B.D outwards. In terms of residences, people's incomes are assumed to increase with time so that the immigrants will seek better housing the more they stay in the urban area. One needs to recognize the fact that Burgess relates the low income residences with industries which are not spatially located within his theory.

The competition for space is reflected in the process of invasion and succession. When the migrants arrive at the city, they can only afford the cheap rented accommodation in the zone of transition (Basset, 1980:11). But the succession and invasion theory assume that the city is growing uniformly and evenly. It is common knowledge that the "punctiform" assumption does not hold, for there are very many physical constraints to urban growth apart from institutional constraints.

The concentric zone theory explained the situation as it existed in Chicago then and was based on migration survey. The theory, however, ignored the factors of inertia and accessibility surface which change overtime and not uniformly. The degree to which a city re-orders itself to the new influence depends on the mobility of people and write-off of earlier capital investment and the importance of marginal benefits of, for example, accessibility at that time (Johnstone, 1970:74).

Cities, according to Davies, exhibited C.B.D's of irregular sizes, areas of commercial land use extending out to the radial streets from the C.B.D and concentrating at strategic points, with industries located near lines of transportation by water or rail, low grade housing found near industrial and transportation areas, and second and first class housing almost anywhere else.

Perhaps Burgess (1929) last point on high class residences was not very correct. Once other users have taken their space and locational requirements, it would mean that specific areas remain for occupancy by the high income groups and reasons for not being occupied by other users may be the very important and salient features highly considered by the high income group of urban dwellers. Burgess did not consider heavy industries which in themselves are significant in accounting for the distribution of low grade economic areas. At the same time, he did not recognize the fact that the city cannot expand at the same rate on all fronts due to growth. The assimilation of agricultural land into urban area (and hence change of use) assumed overall importance of land being put more to urban use than agriculture. This really depends on the economic strength of a country. If agriculture is more important, then very few farmers would be willing to convert their land to urban use.

Secondly, the geological and physical conditions of the land on which the urban area stands may present a barrier to urban extension in either direction. In general, therefore, Burgess did not account for:-

i)   Physical conditions such as geological structure and presence of water bodies and other structures.

ii) The climatic conditions and occurrence of earthquakes and floods.

iii) Institutional factors like zoning and density requirements by local authorities, land tenure and political decisions.

iv) Consumer preference whereby different groups of people would like to live in different areas.

v)   History of the urban area, that is, how it was started. In this instance, inertia may be a pivotal factor in explaining the land use patterns there.

Despite the numerous criticism that have been leveled against the Burgess models it formed the basis on which other models were based. Secondly, nobody has come outright to prove it wrong. In fact we may find out that urban land use in general can be explained only well by use of various theories that have come up so that Burgess theory becomes just one of them.

2.1.3 The Radial Sector Theory

Homer Hoyt, who developed the sector theory in 1939, described the urban residential spatial arrangement in terms of the various income groups. He viewed the arrangements as being determined by the lines of transportation, which accordingly were important to high income zones which in turn were instrumental in determining the location of other income groups.

He emphasised the importance of transport routes in urban residential areas. According to him residential areas would grow in wedges outwards from the C.B.D according to the income group. Rent was therefore a reflection of other characteristics of urban housing. The highest rent areas tended to be located in one or more sectors of the city and there is a gradation of rental downwards from these high rental areas. It was the movement of the high class residential group that determined or triggered off the movement of other income categories. In his view, the well to do considered such factors as transportation lines,, high grounds free from floods (and hence the "Milimani" estates feature in almost all urban areas in Kenya), trends of movement of offices, banks and stores as pull factors in the choice of residential location.

If the urban elites were sensitive to the C.B.D then Hoyts' argument would be overturned upside down. They would locate near the C.B.D so as to be accessible to the working place. Secondly, the offices would move out of the C.B.D and subsystems would develop within the urban system. The remnants of land would then be occupied by the low income earners, and that would be after the middle income. Explanation of the urban residential structure by Neo-classical economist assume perfect competition in the housing market. Indeed, the housing market has never been perfect. At any given time there are "more buyers than sellers," with differing capacity (affordability) for different types of houses.

It has been assumed that housing developers have always taken into account the needs and requirements of different classes of people. If this was true, urban residential land use would be determined only by the developers. It will then be the land market consideration rather than housing. It should be noted that developers have always constructed houses where land is available. The public sector has also developed housing units on available vacant land. However, the tenants have got more factors to balance in choosing where to live and will only be involved in the micro-economics or micro-market forces within particular residential zones.

Hoyt, on the other hand, failed to consider the roles of cultural and social systems on high income groups, neglecting the general structure of housing stock and abstracting from the institutional effects on land use controls. His emphasis on social status of neighbourhood as a key element in house prices and rentals offer insight into residential spatial structure of modern cities and supports the view of locational interdependence. Examined carefully, Burgess' and Hoyts' models are just complimentary to one another, although Hoyt added a directional component to the evaluation of patterning of various income groups in the urban areas as well as the process of invasion and succession of the groups in definite direction with time (Richardson, Robson and Murphy, 1968). Again, Hoyt did not discuss the importance of heavy industries as a major residential locational factor as did Burgess' but he made a step forward.

2.1.4 Multiple - Nuclei Model

This theory deviated significantly from the other two theories in their assumption of monocentric cities and suggests that land use pattern of a city is built around a single centre. This is closer to reality given the urban growth. It reaches a point where the importance of sub-centers to local residents, as opposed to the C.B.D, increases. Some of the centers may serve (nearly) almost every need of the local residents. Harris and Ulman recognized the   consumer oriented business which would therefore move with the population such that functional specialization of centers increased in importance.

According to Harris and Ulman, the nuclei reflect the effect of the interaction of four variables:-

a)   High order retail facilities require the most accessible location within the city. This is not necessarily the C.B.D but at least such activities are brought closer to the consumer.

b)   The factor and importance of agglomeration will group these activities which are of benefit to one another in certain locations of the city.

c)   The ability to pay rent in various areas will necessarily determine the location of certain users and consumers in those areas.

d)   At the same time, some activities will repel one another so that high class residential areas are likely to be located away from the environmentally polluted heavy industrial areas.

By considering these factors, the multi-nuclei theory made a breakthrough in the factors which were hitherto ignored by Burgess and Hoyt. Manufacturing industries are such factors that can not be ignored in explaining urban land use. All the four factors represent only predominant land use at any given location which amounts to the use of space at street level and fail to account for the rise of multi - storey buildings both in the commercial cum offices and the low income residential areas. In Kenya, particularly in Nairobi, it has become fashionable that low income residences can best be provided in multi storey buildings with single rooms given the turnover from such investments. This raises the issue of land availability in the face of the urban expansion. According to the theories this issue is addressed in the horizontal expansion of the urban area as the demand for land increases.

All the questions begging have been addressed at different fora following these three main theories. It was as a result of these theories that economists and sociologists joined the fray in pursuits of the cause of urban form and structure.

2.1.5 Trade - Off Theory

In the 1950's economists came with the explanation for the process of location. The trade off theory assumes that the household has a bundle of money (fixed) to be distributed between rent and transport to work. If one lived near the C.B.D, he would pay more for rent because of the competition for accessibility and pay less for transport. If he lived far from the C.B.D, he would pay less rent, because of relatively low competition than he did previously but pay more for transport not only in terms of distance but also, the inconvenience of having to travel long distances to work and the

time factor.

In the trade off theory, all jobs are assumed to be in the C.B.D and the number of working trips per time period is fixed and identical for all households. At the same time commuting costs depend on distance but not direction from the C.B.D, and all residential land is identical except for its price and commuting costs. But, Herrin and Kern (1992:146) argue that " housing and commuting costs are the wrong foundation on what to build a model of residential choice". In so stating, they failed to give the alternative foundation. Of all the factors that are of concern today, particularly to the "consumers" of housing, it is rent to be paid for what kind of structure and the transport costs that would result by locating in certain areas of the urban area, that are important in economic terms. At the same time, Herrin and Kern confuse the matter further by arguing that the trade off model should be adapted to allow for decentralized employment so as to yield a residential equilibrium that minimises the aggregate commuting distance of metropolitan workers. Once this equilibrium shall have been attained workers would be both fixed in their location in terms of residence and place of work. One would imagine that it is not very easy to change jobs in the present times and if Herrin's and Kern's arguments were to hold any water, then the individual (and household) would change his residence as opposed to his work place.

The trade off theory is not applicable in practice, but useful in studying residential choices, merely because of its restrictive nature.

Wheaton (1979:125), while criticizing locational models on their assumption of monocentric city, noted that there is empirical evidence that suggests that there are few cities with even a majority of employment located in the C.B.D. Moreover, employment distributions of many of the 19th century cities were less centralized than had been supposed. With the expansion in transport technology the importance of the C.B.D has been highly eroded. He said "..... *it should be possible to model a region as a system of monocentric sub-cities, each with an employment centre and a surrounding workforce*".

What this reveals is that the trade off model, if relaxed, could still be useful but then it should be desegregated to suit these sub-centres. Greater decentralization leads to less aggregate commuting. This model, therefore, is more concerned with accessibility to employment points than anything else.

2.1.6 Other Theories (Social Process)

These are presented in terms of urban ecology, dominance, gradient and segregation. Urban ecology describes the physical change processes in urban areas and that urban community and its successive patterns and phases, and community development adjust to one another and to their environment. Dominance describes the process by which one area in the urban centre dares and controls the social and economic position in relation to other areas. Gradient is the receding degree of dominance from some selected dominant centre to the more distant location relative to that centre. The gradient is interrupted by the amount of land use development in its path.

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Segregation is a selected process by which homogenous units become grouped together to form clusters. This results into identification of distinct prestige areas in slums or areas of high incidence of diseases and crime. The extent and rapidity of sorting out is a function of zoning regulations, ownership, family ties, location of work place and the situation of the housing market. Even though these terms have been used by sociologists to explain the social process in the urban areas, directly or indirectly they have been used in the other models. Dominance, for example, has been used to define certain areas as being say commercial, industrial or residential. If residential, some areas are high, medium or low income. This is because we can not have pure land use types but mixed uses. More so, dominance has been used to show the guidance that a certain use may give to general land use such as the C.B.D.

Gradient which is related to dominance can be linked to land value whereby the highest land value can be gotten from a particular centre where from other land values recede outwards. The lowest land value can then be expected at the periphery. The land value in turn would determine the land uses for different areas. These terms have been used to explain the human ecological approach to urban land use and the social area analysis (Njenga, 1991:35) and factorial ecologies. In all, the separate explanation of land use have little practical meaning unless viewed in one interrelated matrix. According to the behaviourial concept, land goes into use as a consequence of a number of groups and individual actions motivated by values, greed and ideals.

2.1.7 Theoretical Concepts

Henrich Von Thunen developed a theory of agricultural land use patterns. In his theory, the market mechanism and the cost of transport and production costs of crops were the main factors determining land use. Different farmers for different crops were seen to compete for different locations with respect to the market centre which was assumed, initially to be single. Patterns emerged where crops with higher yields were able to be produced near the market.

This model was successfully applied to urban residential land use by Alonso, who studied the value of land at specific locations with respect to C.B.D. Urban land users could then fit themselves in such locations that they could afford. Land value was seen to decline from the C.B.D. to the periphery due to competition. The land rent paid therefore took a similar pattern. Under simple market mechanism, the low income would only settle in the urban periphery where they could afford the cost of land. In other words, the higher income group would outbid them in purchasing the more expensive land in or near the C.B.D. However, the land use patterns within the urban areas in the more developed countries have been shown to be the reverse. The low income households are seen to be prepared to pay higher rents near the C.B.D but possess the advantage of accessibility to their places of work. Jobs were assumed to be located only at the C.B.D, which is an erroneous assumption.

Alonso later on indicated that the lower income groups are more locational conscious than the wealthy because they can not afford both the high land cost and high transport costs to the central city working place. This in itself was a contradiction. If the low income category can not afford the high land prices and therefore the rentals near the C.B.D, and at the same time, they do not want to incur the high transport costs if it happens that they located at the periphery, where would they finally live?

The mathematical approach by Neo-classic economists and New Urban Economists (NUE) like Alonso and Wingo are simplified with unrealistic assumptions, to ease calculation, but do not give good account of the realities on the ground. Alonso lays so much emphasis on distance that we would expect to find same type of use at the same distance from the C.B.D in all directions. For the low income, very little of the gross or even net income remains for leisure so that what is earned is spent in purchasing or acquiring most basic items.

Alonso asserts that "the rich are price oriented whereas the poor are location oriented", (Alonso, 1968:109). This would mean that market mechanism is best analyzed within the high income residential zones. This may not be very correct for even the "rich" are the ones who have the capability of choosing where to live in terms of economics (money). They are not likely to live in a very good house constructed in a slum, so they are also locational conscious. In addition, Alonso's theory is more inclined to land ownership and home ownership rather than the rental market.

It has been argued that the journey to work appears significant in the selection of a

residential site primarily in setting an outside limit to the distance between home and work. Dominant factors then are relative space amenity, rents to be paid and the character of the neighbourhood. This is countered by the fact that in choosing an initial residential area, proximity to place of work is crucial:

However, the uncertainty of obtaining employment in the formal sector with the unavailability of rental accommodation in the central area, makes proximity to the city centre and the industrial zone less significant to the new immigrant (Muwonge, 1980:76).

Frictions in choice of location, in terms of costs, are ameliorated by transportation networks. The more efficient the network, the lower will be the costs. Richardson (1975) contends that households locate to maximize their satisfaction rather than to minimize friction costs, the centre of argument by the trade - off model.

The individual movement of the urban population will eventually influence the pattern of land uses and traffic flows. Clark (1988) asserts that change in the family cycle appears to be the most important factor in determining the movement and direction of movement.

In conclusion, the individual households have a lot of say in the urban residential land use pattern. The householder is faced with an uphill task to find shelter and a good one which he can afford. The quality of the structure which he chooses to rent will depend on the "size of his pocket". It has been argued that the low income earners do not

have choice. This is mainly because of poor affordability. They can not choose between high quality residence and low quality residence mainly because of the exorbitant rents in the former. The choice that they seem to have is that of neighbourhood. The different low income residential zones are assumed to reflect the same rental levels. It is the different qualities in such neighbourhoods that would draw exert the "push" or "pull" pressure on the low income earners.

They will make a choice after consideration of ability to pay, the household size, distance to place of work, security services as well as social amenities. These are defined in their own terms and not the ideal.

The flow chart (2.1) shows the decision process of the householder on whether to move or not. He will only move if his considerations are fully satisfied. This he will do within the action space presented before him by the urban environment. The head of the household will evaluate the present needs and aspirations of the households and the satisfaction derived from the current locational environment and the residential unit occupied. The above factors then form the decision process parameters upon which residential relocation are made by the household.

2.2 EMPIRICAL URBAN RESIDENTIAL LOCATIONAL PATTERNS IN DEVELOPED AND DEVELOPING COUNTRIES.

2.2.1 Introduction

It is a fact that the free market mechanism may not apply in very many cases as we will see presently. In many instances, historical, sociological and institutional factors play major roles in shaping land use. In this section, we will examine the role that the individual household plays in determining residential land use patterns when the historical, cultural, sociological and the economic factors are taken into account or rather, the extent to which these factors have been considered in various parts of the world as far as residential location is concerned. The developed countries are represented by United States of America, Britain and China while developing countries are represented by Mexico, Peru, Bolivia, Indonesia, Nigeria, Zimbabwe, and Greece.

2.2.2. Developed Countries

North America stands out tall in as far as the initial studies of urban spatial patterns are concerned. The city of Chicago has had more than its share of studies in this field. Even though industrialization started off in Europe, America surpassed it within a short time. The formation of urban areas was based on the industrialization process and particularly the coal industry.

When scholars examine accessibility in terms of the C.B.D, it is seen as the location point of the industries. There are urban centers which come about as a result of the industries (industrial centers) as Pennsylvania in North America and those which are commercial and administrative centers. All these centers will have unique characteristics and, therefore, the issue of accessibility will vary accordingly. An important fact to note is that most of the urban areas in America came up as industrial cities unlike our case where most of the urban areas were either administrative, ports or commercial centers. Therefore, while the C.B.D of urban areas in America were dominated by industries, in developing countries, office blocks and shops have been the main features of the C.B.D's.

Perhaps the process of industrialization influenced the outcome of the city way of life in North America. This process brought along with it such problems as noise and environmental pollution. The urban dwellers were propelled by such effects into staying further out of the urban area. The majority of the employees in the factories were the peasants whose access to the work place was more important than the pleasure of luxurious apartments and clean environment found in the urban periphery.

Transportation is much better in America and other developed nations such that their cities have become automobile oriented. The poorest urban dwellers are normally found in the centers of urban areas since they are not able to own cars of their own. While the sub - urban areas are planned this is not the case in developing countries where suburban settlement takes its own course (Chaichian, 1991).

Forrest (1987:1612), writing about the United Kingdom said, "It has become evident that for an increasing number of households, home ownership is a tenure of constraint rather than choice". He could be very correct. In developing countries, home ownership is the key policy as far as housing is concerned. This is an oversight. In developed nations, the urban dwellers have better standards of living and therefore prestige could be doing the other way round.

In the United Kingdom, home ownership has been seen as a barrier to labour mobility and, therefore, not suitable. Residential movement (mobility) is a reflection of job constraint of career path migration rather than choice. There is evidence that the housing problem in the United Kingdom is taken seriously. The employer-provided compensation facilities are numerous. In fact, it is the role of the employer to choose such housing which would be commensurate with their paying ability. At the same time, this method discourages movement or relocation which may be more expensive. Developing countries have been dictated to by the donor community in all spheres of economic, social and political way of life. What seems undesirable in the west, is what has been adopted as a panacea to problems facing developing nations.

"Employment opportunities available to marginal groups are likely to be in localities where the opportunities to rent publicly and privately are most restricted and where access to home ownership is most expensive" (Forrest, 1987:1621). Howard recognizes the fact that urban form is dependent on its own setting even in developed countries. The Americans have continued to grow to be more affluent and hence the desires for single family detached housing has also increased.

The neighbourhood in America was on ethnic lines and immigrants from Europe were the one major source of this pattern. In America, the race is a more powerful force for segregation than the economic force. Similarly, race reflects economic status. Currently, there is a changing construction mix of American dwelling units and as Howard argues, it reflects a movement of those who can afford to live anywhere into more central accessible location. As the urban distance becomes greater, it may foretell a weakening of the American's traditional willingness to trade community time with space (Howard, 1993:241).

In Europe, the emphasis has shifted from the analysis of the city as a system per-se to an examination of the power and interest of the different groups within the city. It has been argued that there is a class struggle over the use of houses and that this is the central process of the city as a social unit (Rex and Moor, 1971:102). Spatial segregation is, therefore, seen as a function of the differential access of various classes to alternative segments of the housing market. Housing and housing areas are not only the indicators of individual success in the competition for space and of status but become indicators of class power deriving from the labour market.

Yago (1984:110) on urban transportation, argues that the proportion of tertiary activities in a city is indicative of its functional specialization in servicing economic expansion. This places the urban area in its national position. "*The distribution of work place and residential location and social activities is believed to facilitate or hinder political responses by the urban populace to social and political changes and to direct flows of daily movements in ways amenable to public or private modes of transport.*"

Competition for residential space within cities, between classes, led to resettlement of workers in the suburbs, where work related travel would be subsidized by local and central government. In this instance, even if one was competing for a space, he is aware that his needs in terms of travel costs are taken care of. It would be totally a different matter were the individual to take into account his travel costs which he would have to bear.

In Philadelphia, it was observed that more people would change their residence with respect to a change in job place as opposed to a change in job place with respect to a change in residence. The ratio was 7 : 1. Those working in the suburbs are slightly more accepting of residence moves than those working in the central city of the metropolitan area. The city worker does not intend to move to a neighborhood of his work place, while the suburban worker has indicated a decided preference to move to or near the same area in which he works (Loewenstein, 1960:94,107).

Despite the foregoing, one factor which seems more important particularly for the low income households is that of immigrants and relatives. More newly arrived immigrants, between 1840 and 1920, sought cheap accommodation partly because of their poverty and partly because of their desire to accumulate savings to finance the passages of relatives. Since the jobs were temporary, staying closer to where work could be found was an added advantage (Ward, 1993: 293).

The pattern of residential arrangement in America was further affected by zoning ordinances. These were introduced with a view of protecting the interests of the rich from being encroached into by the middle income. The same argument was to arise and apply later for the middle income against the low income group. The developers of the C.B.D got huge profits resulting therefrom. The big houses were subdivided to be let to the poor household (Vernon, 1984:19). This kind of subdivision reflects what can be observed in Kenya currently where property developers are into the single rooms development in the slums and site and service schemes, thereby realizing huge returns. Cherry (1990:20) says of Britain, that suburban or small town environment has proved to have deep and sustained attraction for many. "It is a preferred form of living for the majority and the post war years have only confirmed a century long process". For one to choose a suburban environment, he must be rich. It is only at that stage when one would choose a lifestyle to lead and this is now a question of luxury. Status becomes important when one can afford it. At least the unemployed in Britain can count on some welfare earnings at the end of a month as opposed to those in developing countries. The urban migrant has to find somewhere to live and because he does not have any income flow, a friend or a relative has to help him out. If he finds some temporary employment, then he is expected to rent some apartment within the same neighborhood as his benefactor.

Cherry (1990) appreciates the fact that those who have rejected the inner locations for the outer rings have been the more able, the more self sufficient and those with higher than average incomes. Spatial changes in the urban systems have been associated with important modification to the locational patterns of employment. In Britain in 1971, 58% of jobs were in the urban centers (C.B.D) compared to 48% of the resident population.

Gains in employment have been recorded in the metropolitan rings while there has been a decline in economic fortunes found in the inner cities. The dominant trend, therefore, is towards the decentralization of jobs, both in manufacturing and service industry. Perhaps this decline in central city job location or opportunities, and their increase in sub-centers may be equated with the lack of jobs in developing countries so that the informal sector dominates the scene particularly for the majority of urban dwellers.

The factors important for urban land use patterns in Britain include:- social factors, technological improvement which affect the location of manufacturing and service industry. The service industry has proved less locational conscious because accessibility has been improved with very fast highways. The other factor is public policy, notably town planning. Johnson (1973:87) reckons that *"Capitalist societies are built on inequalities which are reflected in the spatial arrangement of cities. The city is the focus of society's social and economic problems. Within it many of the problems are spatially concentrated... they reflect the divisions of society which are manipulated and maintained by a series of mechanisms..."* This manipulation is controlled by people in control of the society who are only eager to satisfy their ego and maintain the status quo. It is believed that the form and impact of rent depends on the social relations and the institutional frameworks in which land development takes place. The balance of social forces will determine the nature and form of development (Bentivegna, 1985:6).

Hinshan (1972:176), found out that almost all races preferred to live in the suburban areas. This was more intense among the top two income brackets. The finding further revealed that none of the respondents interviewed wanted to live near their relatives. Previous researches in America have shown that among the working class filial attachment was greatest and therefore they would tend to congregate together in any urban setting. At the same time, safety was a very critical factor and ranked highest. The research was carried among the youth who were not largely independent in decision making regarding living places. What the research revealed was the desire amongst the youth to be residentially independent. In their studies of North Carolina and Piedmont cities, (Weiss and Kaiser,1970:32) argued that there is a need to understand the decisions of households to move and link between residential mobility process with land conversion process.

2.2.3   Developing Countries

Cities in developing countries have presented significant challenges to the models that were developed in America to explain urban land use patterns. The market mechanism has failed in these nations mainly because of the level of economic growth coupled with the social upheavals that have bedeviled the developing countries.

Since economic development has been slow, with natural factors dictating the agricultural sector, there has been movement from the rural areas into the urban areas (rural-urban migration). This work force or labour mobility has been a critical factor in the urban housing problems in developing countries.

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Turner (1967) formulated his model of Latin American cities thus:

1. Newcomers into the urban area would stay with kin or rent accommodation near the centre of the city.

2. Those who secure employment would move to the edge of the city and begin to build for themselves (self-help) accommodation.

3. Thereafter the more successful and longer established would become home owners, the rest being tenants.

However, Turner failed to show the extent to which the arrival of the new comers stimulate housing construction at the edge. What happens during the time an immigrant has not got a job and what do they do for a living? In Mexico city, owners in the new settlement have the lowest average incomes. It so happens that these low income households have the largest household sizes and this was the case in Guadalajara, Puebla and Mexico city. This tended to push them into opting for accommodation which offers them more space. The process of self-help housing construction in Mexico seems not to be affected by land tenure. The low income households do not face constant threats of eviction hence the continuing practice of being tenants and not owners. Further, the preference for central location may be the fact that the C.B.D has better infrastructural services than those in the peripheral location. The immigrants can afford those structures at the edge despite the disadvantages.

Natives of the urban area (as opposed to migrant workers) settle in the C.B.D, so that the migrant worker will have to settle at the periphery. The kinship concept then has to be carried on to the periphery for the migrant worker.

Herzog (1991:264) observes that *"in the pre-industrial city, distance from the centre of town was directly proportionate to the social class. As the location of one's place of residence increased in distance from the C.B.D, social status and income declined"*. In other words, the Mexican considered central location a sign of status. It would mean that the wealthy would be the ones to settle in the central urban areas. This was viewed from the cultural aspect rather than economic. As the towns expanded, the C.B.D had developed as a form of protection (militarily) and the elites would get the first preference in this regard, hence they are the ones who determine the land use. This argument is similar to that of Homer Hoyt, that it is the high income earners who determine the trend of residential land use.

The land use is changing gradually and the elites are gradually moving to the outskirts of the towns, such as Guadalajara, due to congestion, rising land costs and the convenience of automobile. This is a question of change in customs or cultures. Amato, (1970) observed that the most dramatic occurrence, in Latin America, signaling the breakdown of particular land use was the flight of the upper classes to suburban locations. In the first instance, this showed that with time, cultures and customs will not determine the urban land use. Amato was of the opinion that Bogota, which he studied, tended to exhibit the Hoyt's Sectoral Pattern. The same pattern was observed in Quito and Lima.

In China, the work unit complexes are owned and administered by a particular industrial unit or a commune production Brigade. The housing units may be scattered all over the city but, normally, the houses are assigned to employees on the basis of location of the work place and the family size. In some cases, workers are housed in apartments right on the premises with no separation of the place of work and residence (Chaichian, 1991:52).

It is worth noting that investment in housing in China by the state is considered uneconomical since the returns are not as high as those from the industrial investment. The priority for housing provision is, therefore, laid on the shoulders of the industrial planning units. It is the planning for industries which will determine the location of houses.

Berry et al, (1988) asserted that the factorial interpretation of the ecology of Indian Urban centers can not be cast into the narrow conceptual mould of studies of American urban centers. Interpretation of the settlement patterns can not be complete unless the various social and cultural ethnic backgrounds differentiation and the unique historical attitude of the nation to the urban centre are taken into account. They equally found out that people with high status are located in the C.B.D rather than in suburban areas.

It is apparent that the experience in developing countries in as far as urban development is concerned, is similar. External factors play major roles in urban land use in Africa. Since poverty levels are generally high for different countries, these external factors have profound effects.

For example, in Nigeria, 1/3 of urban areas experienced population "boom" from the rural areas mainly because of the oil "boom" of the 1970's (Okowa, 1988:84). This crisis had to be dealt with politically. By doing so, the planners and policy makers had very little they could do. They lacked the political will and the social discipline to translate plan posture into reality. In other words, African countries are fond of solving urban crisis rather than the root causes of urban problems.

Residential districts develop in sectors in the urban areas but migrate across districts in line with socio-economic conditions and ethnic affiliation, given the migration rate. Afolayan and Adedebu, (1989:62) found out that majority of people in the low income residential zone of Ilorin, Nigeria are the indigenous of Ilorin, and most of them are in the informal sector of the economy. However, they did not study the areal importance of sectoral employment given the nature of the economy. There were few rental houses in the low income zones reflecting the fact that as the town of Ilorin expanded, the indigenous people of Ilorin were incorporated into the urban areas and the land tenure holding was not disturbed.

At the same time, it is evident that the Nigerian government has provided shelter for the higher income group. Significant in the study of Ilorin by Adedebu was the fact that there was a positive correlation between income and rental occupation. It is the immigrants who have better jobs than the indigenous. The same phenomenon was observed in Ekpoma city in Nigeria by Akinbode (1988:101).

A study of Germanika city in Greece by Hirchan and Tharkadesai, revealed that the social way of life and customs play a very dominant role in indicating where one would live. The community paid dowry by providing a room or a house where their daughter and their husband would live. This meant that there would be expansion of the number of rooms and the dwelling units in the same compound (Hirchan and Tharkadesai, 1970:41). This social concept is applicable even in Kenya though in a different context. The marriage of one's daughter or son, would mean that privacy must be observed to the highest level particularly amongst the Luo community. Perhaps the most important factor in the residential landscape in Africa is colonialism. Mabogunje (1987:9) observed "...*the erstwhile European reservations experienced an influx of Nigerians of similar status and a remarkable expansion in area ...the high class character of dwellings was preserved*" Generally the status quo established by the colonialists in the African urban land uses has been maintained if not strengthened or entrenched by the succeeding governments. In Zimbabwe, Underwood (1986) recognized a clear segregation between low cost and other residential suburbs. Low cost areas are generally on the periphery, often 10-20km from the city centre (Harare). Social surveys in Zimbabwe indicate that low income urban dwellers place a high priority on access to employment and community facilities.

2.2.4 Developed And Developing Countries Compared

Studies in developed countries have shown that the effect of manufacturing industries could be more important in determining residential land use particularly for the high income group moreover the historical "accident" of industrialization should not be used to explain the set up of residential land use for it has been shown to change overtime.

Since the transport technology is quite advanced, accessibility is a difficult measure of location characteristics. At the same time, improved transportation has resulted to decentralization of employment centers such that we can only talk of nodes. They have usurped the importance of the C.B.D as the single most important employment zone.

Thirdly, tenure type and housing policy may be the governors of urban residential land use. Home ownership may be the wrong measure of residential location. The residential locational choice is therefore seen in the realm of the housing policy.

Fourth, it is the political set up and down struggle in the developed nations that will determine the shape of the residential landscape, upon which the market mechanism operates where survival for the fittest is the order of the day.

Fifth, in view of the intense class struggle, the low income tend to have stronger social ties, perhaps as a collective bargain. At the same time, migration into the urban areas shape up the low income residential set up.

The urban land use patterns in developing countries revolve around several factors. Unlike the developed nations where economic issues are pulling the shots, it is the historical perspective that has given the developing countries their urban features. In this regard, the historical aspect has been a perpetuation of the colonial past so that segregation currently is not on races but on wealth. There was just change of guard.

Secondly, culture has turned out to be a very clear factor in urban land use in developing countries. The kinship is still quite important so that location may almost have been determined in the urban areas given the location of a kin.

Thirdly, the political goodwill and the general institutional constraints coupled with housing policies are bound to be major actors in urban landscape. Very little room is given for market mechanism to operate. Home ownership or tenure type is less significant in determining land use in countries particularly for the low income group. In Kenya, for example, home ownership is not for prestige but actually an investment. In most cases, the home owner would rather let the house than occupy it. This can be seen in many tenant purchase schemes as we shall see in the later chapters of this work. This is mainly because, while the cost of living has continued to sky rocket, the income levels have been very low. The urban dwellers have had to look for ways of supplementing the meager incomes and the surest way is by owning a real property, and letting it out.

2.3 URBANIZATION AND LAND USE POLICY IN KENYA

The housing problem in Kenya particularly in the urban areas, has been a cause of concern prior to and after independence. Before independence, the concern was derived from the social unrest which were rampant in the urban areas, Mombasa and Nairobi, making the administration difficult for the colonial government in Kenya.

After independence, the housing policy was aimed at solving the urban crises resulting from massive influx of people into the urban areas which were hitherto prohibited except under special circumstances. This influx resulted into high urbanization rate and the growth of urban areas particularly the primate cities (Nairobi and Mombasa)

2.3.1 Urbanization

Under United Nations definition, urbanization could be defined as the rate at which trading centers are acquiring the 2000 population status. The U.N considered that those trading centers having a population of 2000 be classified as urban areas. In Kenya, there were only 48 urban centers in 1969 with 1.08 million people or 15% of the total population.

Table 2.1 shows regional representation of urban growth in Kenya. It can be observed that inter-censal urban population growth has been slightly over 1 million. The number of urban centres has continued to increase with 91 more urban centres being declared between 1969 and 1989.

Table 2.1.   Distribution of Urban centres and population in Kenya.

AREA	1969	1979	1989
NAIROBI	1 (509,286)	1 (827,795)	1 (1,324,570)
CENTRAL	6 (45,955)	13 (128,932)	19 (294,633)
COAST	8 (283,652)	11 (406,991)	15 (588,470)
EASTERN	7 (37,965)	15 (233,316)	22 (354,369)
N/EASTERN	- (-)	7 (60,139)	7 (90,724)
NYANZA	4 (43,829)	7 (207,757)	19 (352,527)
RIFT VALLEY	20 (148,576)	31 (338,141)	42 (672,177)
WESTERN	2 (10,645)	6 (105,743)	14 (186,049)
TOTAL	48 (1,079,908)	91 (2,308,794)	139 (3,863,519)

Source: Central Bureau of Statistics, 1989.

In Kenya, the urban population has increased tremendously. In 1979, the overall urban population was 2.3 million, while in 1989, it had increased to 3.8 million showing an inter-censal growth of 4.8% (Econ survey 1991). Between 1977 and 1978, the stock of housing was expected to be increased by 8.1% so as to meet the demand in the urban areas but only 3.9% was realized. The balance had to be met by the households by occupying anything they could refer to as shelter/house (Econ surveys) despite the inability of governments to adequately cater for the increasing urban population, in terms of housing provision, the people have had to get themselves housed. Therefore urban development, more so residential, has taken its own pace and place despite the restraints imposed by local authorities.

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2.3.2 Residential Locational Policy

It is due to this unprecedented urban population increase that has brought about housing shortages in the urban areas particularly for those who are economically weak. This population increase has been as a result of the rural urban migration in pursuit of white collar jobs as well as perceived benefits of urban life, real or imagined.

Land use policy and residential segregation in Kenya's urban areas can be traced through the period of colonial governance, because the spatial arrangement as they exist today is a manifestation of the colonial mentality particularly towards Africans and Asians. The settlers came from the British nobility and were actually escaping from their congested, industrialized and busy metropolitan environment. The land use controls which they slapped on the Kenyan urban areas, Nairobi in particular, were meant to benefit them. Even after decolonization, very little change has taken place. This has been largely because of the inbuilt administrative machinery that did not allow Kenyans their environment wantonly (King'oriah, 1984:2-4). The land use in Nairobi has been duplicated in many other urban areas, particularly those which spring up as a result of the European interest such as Kisumu. The segregation was racial-cum-income. It was a fact that even though the settlers did not want racial mix, the races themselves reflected the income group of each race.

In his study of causes of urban structure (Nairobi) in Kenya, King'oriah found out that economic factors were insignificant in the shaping of the main land use framework because of the stiff government and local authority control over land and land allocation.

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These regulations are also a replica of the British codes and regulations which have not been overhauled to suit the Kenyan needs. Accordingly, the perpetuation of the white settlers interest by the independent government barred the lowly paid Kenyans from purchasing land in certain locations. This was as a result of the fact that high quality environments had higher land values because of the competitiveness for such sites by those who were more able.

The result was that for over 50 years of town development before independence when fundamental changes in the urban land use took place, it could not be attributed to market mechanism. An important feature of the low income residential development during the colonial era in Kenya was the fact that their "locations" were in proximity to the industrial area which was presumably their working area. These were peripheral locations.

The settlers occupied the hilly areas with better natural environment and good soils. The Asians occupied the second best locations. The settlers feared competition which could emanate from the Asians both in economic and social spheres, hence their restriction. The locations synonymous with Africans was recognized by the revised 1973 master plan (Kingoriah, 1983:246, Kiamba, 1986:176).

From the early beginning of urbanization in colonial Kenya, government policy attempted to control the African population with minimum expense (Stren 1978:230). To realize this objective the Africans were forced to live in segregated or particular locations.

In these locations, particular aspects of their ways of lives were governed by by-laws keeping their wages low. The government or local authorities then, were not committed to spending any of their money to house the Africans and at the same time, the latter were not allowed to build their houses with permanent materials since they were considered sojourners in the city.

Employers were cajoled to build houses for their workers but the policy was specific that such houses should only be constructed in the African locations. The Devonshire White Paper of 1923 only allowed the mixing of Asians and whites. The methods of its implementation were contained in the Feetham report of 1927. The African race was expected to live in peripheral location where no other race was allowed to live (Kingoriah, 1983:252). The location of the Africans was done with the view to enhancing their job accessibility to the industrial areas. This was later recognized by the 1976 Nairobi master plan (Nairobi has been regarded as the "leader" in urban land use forms for other urban areas in Kenya).

After independence, it was the sole objective of the new government to cater for the welfare of its citizens for which it had fought gallantly. Despite the growing affluence of the African elites, increasing numbers of recent migrants and less educated Africans could not afford housing in the well serviced planned areas, hence squatting was the solution. The most fundamental recommendation made by the UN Commission to Kenya on housing (1964) that has formed the bedrock of Kenya's housing policy, was the site and service scheme which has gathered a lot of support from the donor community, particularly the world bank.

"Utmost attention be directed to development of site and service projects considering seriously:-

(i) the sites which should be chosen where the journey to work is reasonably convenient and the transportation costs not too high. Temptation to select relatively low grade outlying lands for such projects should be resisted" (Abram, 1964:42).

The sessional paper No. 5 of 1966\67 was keen on slum clearance and demolishing the "obsolete" housing stock. This was in pursuit of essential housing and a healthy environment. It echoed the Abrams report on the location of housing estates for low income to be close to industrial enterprises and other places of employment to save the worker time and expense involved in travelling (pg 5). Integration of housing and urban development and country planning was seen as a vehicle through which the control and acceleration of urban and peri-urban development could be achieved, so as to deal with the long term problem of land for housing in existing and new towns at the time.

The leaders at independence were caught in a dilemma. They were echoing the sentiments of the Europeans regarding the urban environment and at the same time trying to fulfil their avowed duty of giving the African dignity after independence. It can be said that the source of Kenya's urban development problems started at this time when there was policy conflicts. In the 1980's, there has been consensus on the need to increase efficiency in program and project preparation and implementation through enhanced coordination and housing to support industrial expansion.

The housing policy has been consistent on the governments role in assisting the lowest income households to obtain adequate shelter and concentration on site and service schemes. It has been a question of the government working with and facilitating the development of housing by private sources by charging market rents. The government has also been committed to harnessing the activity of the informal housing to meet the required needs. Changes of this nature require intense knowledge of local conditions and imply a shift in policy towards the local areas (G.O.K, 1987). The supply of public land for low income families appear to have been dwindling rapidly with no comprehensive urban land inventory. Further, land for housing development is subjected to stringent public control through laws and regulations governing the change in land use, zoning and planning regulation.

CHAPTER 3

THE STUDY AREA

3.0   Introduction

This chapter attempts to highlight the historical background of the study area which could give a hint as to the present physical set up of Kisumu municipality. However, it is not going to be as detailed as expected since so many authors have previously dwelt on the historical aspect of Kisumu town that it would not be warranted (See Obudho and Waller, 1976; Macoloo, 1984 and 1986; Otieno, 1991; Agutu 1991; Olima, 1993. The historical bit included here is of importance in as far as the physical allocation and expansion of the town is concerned.

3.1   Historical Background

Port Florence, as Kisumu was then known, was conceived in 1901 when the Kenya Uganda Railway line reached the port. It was of immense importance in communication given the fact that it could serve the East African region by rail transport and lake (steam ship) transport. Kisumu hence grew as a trading centre for the region. The township boundaries were gazetted in 1903 and a township authority was established to run the affairs of the council.

Since then, the area has been increased three times from 19km to 45km and now, it covers 417km including the water area. Currently, Kisumu is Kenya's third largest town, having achieved municipal status in 1960.

The town's physical expansion has been limited by the Nandi hills to the East and South, Miwani sugar plantation and the Kano rice irrigation scheme and floods (G.O.K, 1969).

Kisumu stands on a down-faulted lava ridge in the floor of the Nyanza Rift Valley which extends some 129 Km from the lake until it is concealed beneath the outpouring of Tinderet hills to the North East. Since the European settlers were developing the whole region of East Africa for their own benefit, the importance of Kisumu as a trading centre experienced sharp competition from its counterparts in Tanzania. With a new road connection through Eldoret and in the mid 1950's with development of Mwanza as a trade outlet to Dar-es-salaam, the importance of Kisumu as a port and main communication centre declined (Hogsbro,1970). This has had a rather negative effect on industrial activity in Kisumu. Map 3.1 shows the regional setting of Kisumu town.

3.2   Regional Setting Of Kisumu

The municipal lies between longitude 34° 35' East and 34° 55' East and latitude 0° 12's. The total area is 417 Km^2 including of water area. Kisumu has been designated as a national and regional service centre. To the South East, is Kisii, Migori, and Homa-Bay to the South, Siaya and Busia to the West and Kakamega to the North. It has an airport and steamship plying the lake port and piers. Its dominance as an administrative centre as well as industrial and commercial centre has been facilitated by its unique and strategic location at the hub of this impressive communication network which serves most of the western Kenya (G.O.K Development Plan for Kisumu District 1979-1983).

Kisumu has a big hinterland covering 31,000km with about 6,000,000 inhabitants in Western, Nyanza and part of the western part of the Rift Valley. Its early development increased employment opportunities and subsequently generated effective demand for other social, industrial and commercial services within, and the peripheral areas of, the urban centre. Being a provincial headquarter has enhanced its administrative functions.

MAP 3.1 : REGIONAL SETTING OF KISUMU

SUDAN

ETHIOPIA

3 6°

4 0°E

4°N

LAKE TURKANA

UGANDA

WESTERN

RIFT VALLEY

NORTH EASTERN

SOMALIA

0°

KISUMU

L. VICTORIA

NYANZA

CENTRAL

NAIROBI

EASTERN

TANZANIA

COAST

INDIAN OCEAN

4°S

MOMBASA

Boundaries:-
International.....
Provincial.........
Study Area ....●
Road ....

0   100   200km.
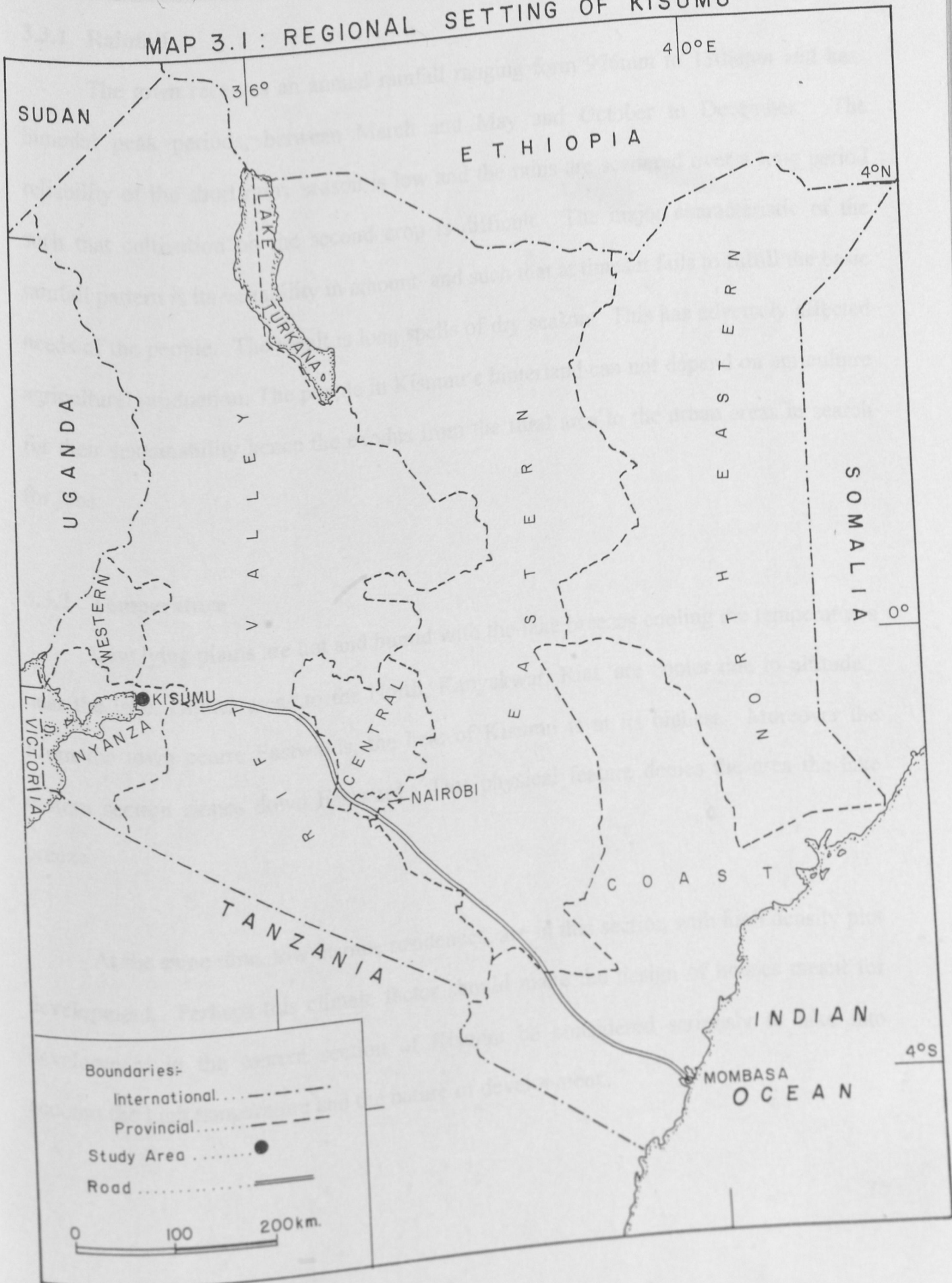
3.3   Climate, Geology And Soils

3.3.1 Rainfall

The town receives an annual rainfall ranging form 976mm to 1306mm and has bimodal peak periods, between March and May and October to December.   The reliability of the short rainy season is low and the rains are scattered over a long period such that cultivation on the second crop is difficult.   The major characteristic of the rainfall pattern is its variability in amount and such that at times it fails to fulfill the basic needs of the people.   The result is long spells of dry season.   This has adversely affected agricultural production. The people in Kisumu's hinterland can not depend on agriculture for their sustainability hence the exodus from the rural area to the urban areas in search for jobs.

3.3.2 Temperature

Low lying plains are hot and humid with the lake breezes cooling the temperatures near the lake. Higher areas to the North, Kanyakwar, Riat, are cooler due to altitude. From the town centre Eastwards, the heat of Kisumu is at its highest.   Moreover the eastern section slopes down Eastward.   This physical feature denies the area the lake breeze.

At the same time, low income residences, are in this section with high density plot development.   Perhaps this climate factor should make the design of houses meant for development in the eastern section of Kisumu be considered seriously to take into account the high temperature and the nature of development.

Table 3.0 shows the annual temperature range for Kisumu town:

Table 3.0.   Annual Temperature range for Kisumu Town. (Temperature °C)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
23.9	23.9	23.9	22.8	22.2	22	22..2	22.8	23.7	23.7	23.7	23.1

3.3.3 Humidity

The relative humidity by a round 0600hours is about 60-77%. and at 1200 GMT it is 36-55% (G.O.K).   This humidity is highly influenced by the temperature and the presence of Lake Victoria nearby. This also varies depending on the time of the day.

3.3.4 Geology and soils

Kisumu lies on the arm of tertiary lava which extends southwards of town, phoriolite which is associated with black cotton soils, dominate, with pyroclastic rocks being found in patches. In general, the bedrock in the municipality are of the Nyanzian system whose geological stability makes the town ready for heavy intensive development and can withstand tall buildings. This can be said for the town centre. Nyalenda, Pandpieri and Manyatta "B" are of black cotton soils. These areas are prone to floods and are, therefore, generally weak in character for tall building structures.

The red loam soils are found in the areas to the North East of the old municipal boundary. The slopes of East Kisumu are of granitic nature. The black cotton soils in the low lying areas are usually water logged during rainy season. They are calcareous with high plasticity, large silt clay fraction, high swelling and shrinkage properties (G.O.K 1969).

These properties are significant to road and building construction. Konya, Dago and Korando sub-locations have youthful soil consisting of shallow gravel, sandy silt mixed with murram. Since they are well drained, they may be suitable for urban development. Map 3.2 shows these features.

The direction of growth of Kisumu is, therefore, highly influenced by its physical features. The low lying region has weak soils but the more stable north is sloppy and there it is quite costly to put up a building in that region. Despite these physical handicaps, the population of Kisumu is growing and the town is expanding, it is important that the two extreme physical factors be harmonized for a better Kisumu. Map 3.3 shows the physical constraints to development of the municipality.

Map 3.2. Geology and Soils.

SOILS

Red to strong brown marble and clay compacted sand

Black cotton soils on plains

Black cotton soils of permanent or seasonal swamps

Rock outcrops

Dark red marble Clays

——————— New municipality boundary

— — — — Old boundary

KISUMU

STRUCTURE PLAN

SCALE

Kilometres

LAKE VICTORIA

SOURCE: Waweru and Associates "Sewerage and Water Supply Planning for Kisumu Municipality".
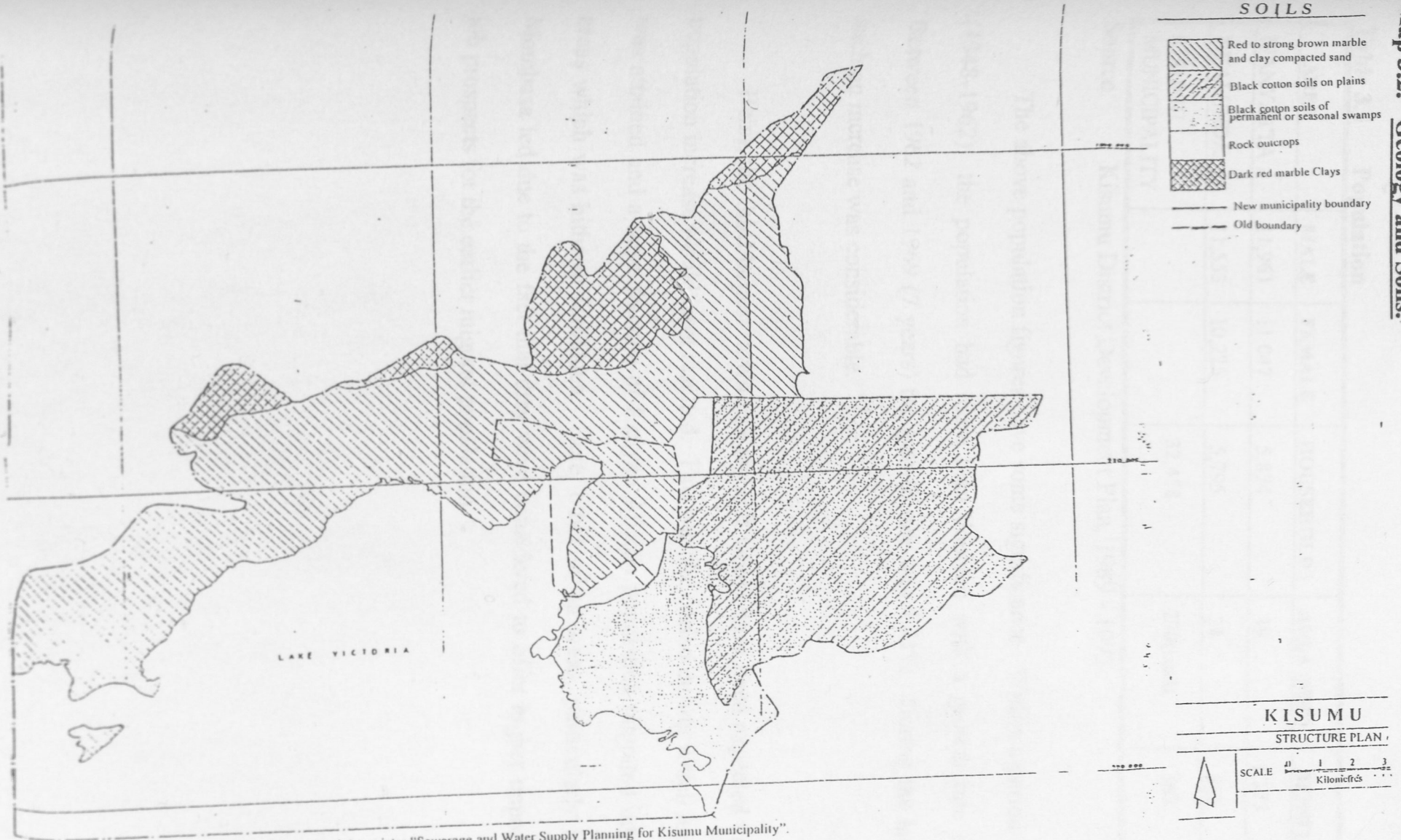
3.4.0 Population

Table 3.1   Population

AREA	MALE	FEMALE	HOUSEHOLDS	AREA (KM^2)	DENSITY	TOTAL
MANYATTA	11,961	11,047	5,874	19	1,173	23,008
NYALENDA	11,553	10,225	5,795	24	886	21,778
KISUMU MUNICIPALITY			32,458	270(land)	563	152,643

Source: Kisumu District Development Plan, 1989 - 1993.

The above population figures have some significance. Within a period of 14 years (1948-1962) the population had more than doubled with a growth rate of 5.71%. Between 1962 and 1969 (7 years) the growth rate was 4.71%. During the latter period, such an increase was considerable.

Being the third largest town in Kenya, it would have been expected that a bigger population increase would have resulted. This was the period during which independence was attained and a large fraction of Kenyan African population migrated into the urban areas which was hitherto forbidden. Here, other urban areas, particularly Nairobi and Mombasa led due to the fact that they were considered to offer higher opportunities for job prospects for the earlier migrant population.

Map 3.3. **Barriers and Constraints of Development of Kisumu Town.**
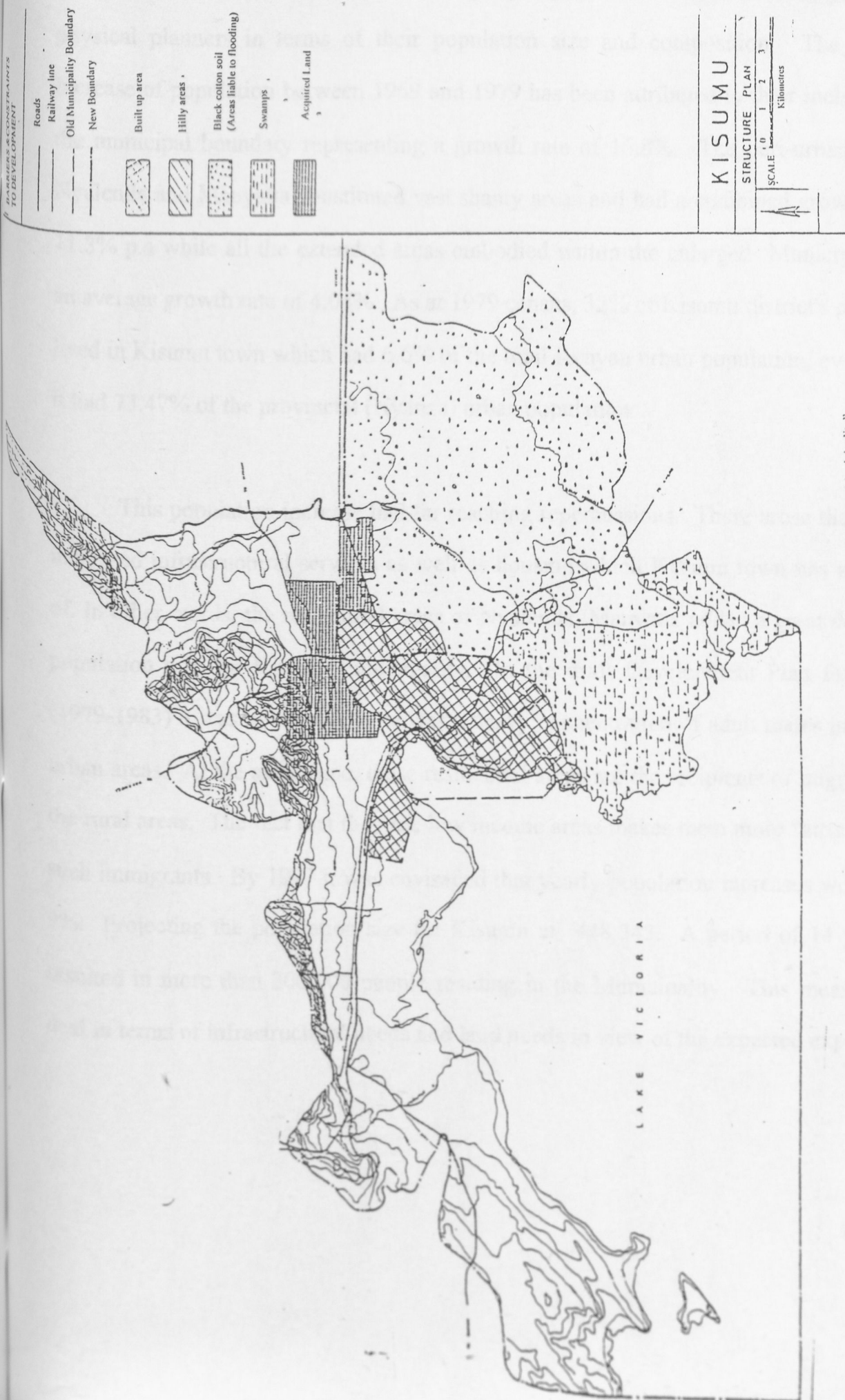
Legend:
- Roads
- Railway line
- Old Municipality Boundary
- New Boundary
- Built up area
- Hilly areas
- Black cotton soil (Areas liable to flooding)
- Swamps
- Acquired Land

KISUMU STRUCTURE PLAN

SCALE 0 1 2 3 Kilometres

LAKE VICTORIA

SOURCE: Waweru and Associates "Sewerage and Water Supply Planning for Kisumu Municipality"

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The study areas referred to as the periphery, had been of immense importance to physical planners in terms of their population size and composition. The immense increase of population between 1969 and 1979 has been attributed to their inclusion into the municipal boundary representing a growth rate of 16.8%. The peri-urban areas of Nyalenda and Manyatta constituted vast shanty areas and had a combined growth rate of 11.3% p.a while all the extended areas embodied within the enlarged Municipality had an average growth rate of 4.04%. As at 1979 census, 32% of Kisumu district's population lived in Kisumu town which had 6.6% of the total Kenyan urban population, even though it had 73.47% of the provincial (Nyanza) urban population.

This population increase had far reaching repercussions. There arose the need for increased infrastructural services as well as housing which Kisumu town has a shortage of. In other words, the residential areas of Nyalenda, Manyatta added a great deal of the population size for Kisumu municipality. In the draft Development Plan for Kisumu (1979-1983) it was noted that there was a heavy concentration of adult males in the peri-urban areas. At the same time, these residential areas are the recipients of migrants from the rural areas. The fact that they are low income areas makes them more "attractive" for such immigrants. By 1977 it was envisaged that yearly population increases would be 7-9%. Projecting the population size for Kisumu at 448,343. A period of 14 years had resulted in more than 300,000 people residing in the Municipality. This means a great deal in terms of infrastructural needs and land needs in view of the expected expansion.

Waweru was categorical on this and in fact the master plan for water and sewerage system proposed that further development be stopped immediately in the peri-urban areas of Nyalenda and Manyatta. Despite these recommendations, there was nothing to inhibit the population increase. Our plans, therefore have been drawn to solve crisis which often is overwhelming as far as resources are concerned. The high population increase for Kisumu has brought a lot of strain on the infrastructural needs and housing provision. Map 3.4 shows the population distribution of Kisumu town.
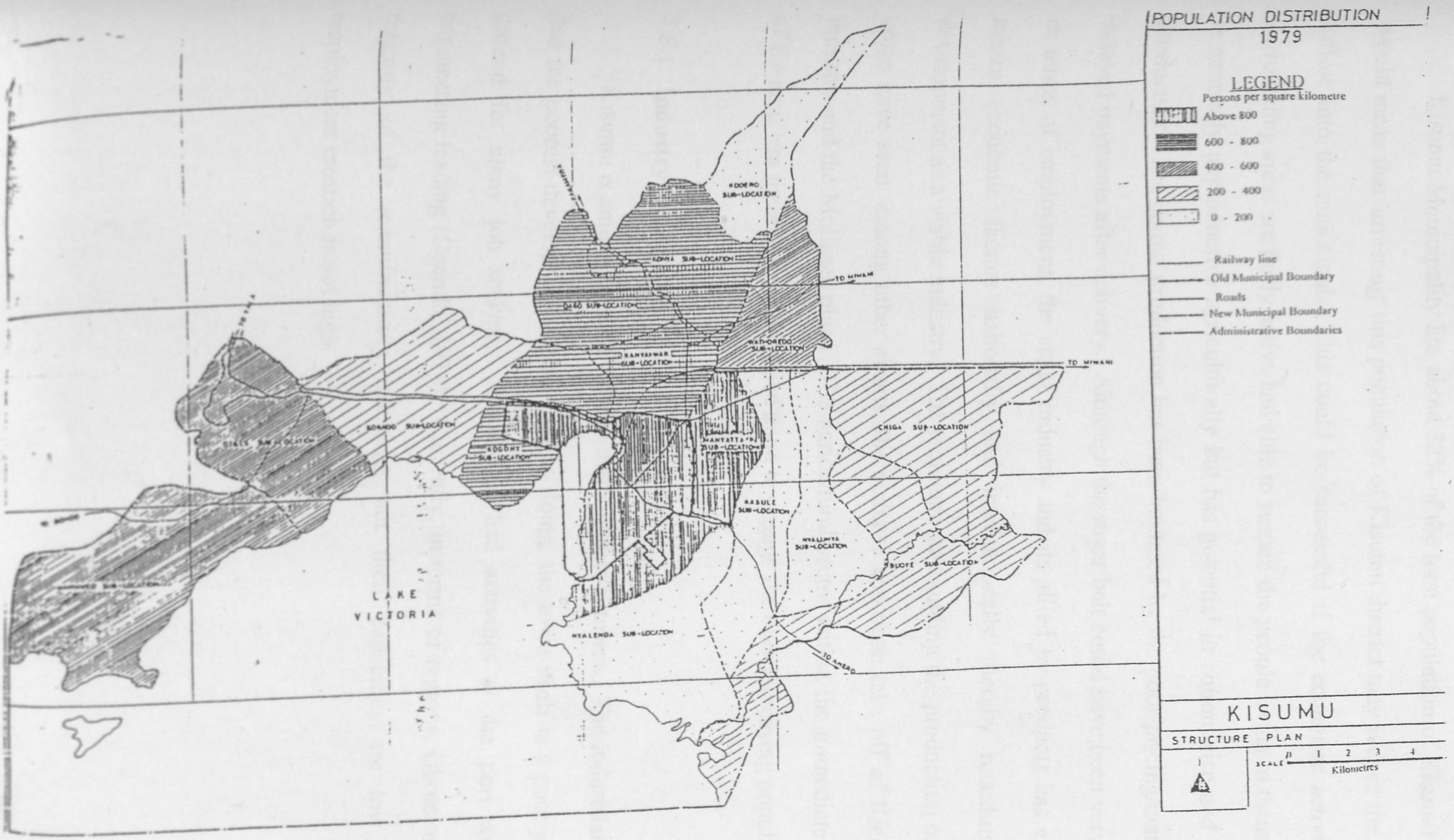
Map 3.4 Population Distribution.

LEGEND
Persons per square kilometre

Above 800

600 - 800

400 - 600

200 - 400

0 - 200

Railway line
Old Municipal Boundary
Roads
New Municipal Boundary
Administrative Boundaries

KISUMU

STRUCTURE PLAN

SCALE

Kilometres

LAKE
VICTORIA

SOURCE: Waweru and Associates "Sewerage and Water Supply Planning for Kisumu Municipality".

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3.5   Economic Base For Kisumu

Kisumu Municipality has about 32% of the total population of Kisumu district. It would mean that 'arresting' this population of Kisumu district may reduce the population inflow into the municipal. This could be successful if the economic activities of the surrounding areas are fairly active and able to sustain the people living in them. The land is generally unproductive agriculturally but has potential in cotton, rice and sugar cane production. The cotton production has been hindered by the poor pricing/marketing and delayed payments after delivery. Although the sugar belt could have been very important in terms of employment, the sugar industry and its allied by-products has experienced macro economic factors nationally and internationally thereby retarding its own development as a viable industry. The problems surrounding the production of these two crops have seen, among other events, the collapse and none take off of Kicomi textile industry and the Mollases plant. The agricultural sector within the immediate hinterland of Kisumu can therefore not be relied upon to engage the ever increasing population.

3.5.1 Industry

Kisumu is among the first thirteen main industrial towns. The industrial sector has had the poorest development record. By so doing, the town itself is a poor job hunting ground for many job seekers. Initially, it had activities at the port with marine engineering leading (Ogendo, 1974). Currently, in terms of regions, Obote road has the majority of the manufacturing industries but their capacities are low such that employment creation is not high.

This general apathy for industrial development can be attributed to a number of factors some of which are that; Kenya has never had a definitive industrial policy and industrial location for that matter. Even if it had, the political problems which were persistent after independence saw to it that no development took place in Nyanza where Kisumu is the headquarter.

Kisumu's industrial growth has had a poor impact because most of the raw materials used come from outside the immediate hinterland of Kisumu. The result is that the backward linkages between agriculture and industry have been very poor. Since the employment in this sector has been low and agricultural production poor, the purchasing power of the population around the town (Nyanza as a whole) has been very poor and this is a critical factor in industrial location. Naturally, therefore, the private investors have never been attracted by the prevailing economic factors to invest and locate in Kisumu municipality.

The infrastructural facilities are the poorest, to add salt upon injury of the 'sick' Municipality. The informal sector, jua kali and any form of self employment has therefore been very important in providing employment. These include manufacture of households items from discarded materials, open air clothes selling and tailoring, making fishnets, shoe repair, carpentry, motor vehicle repairs catering and related business and many others.

3.6 Physical Residential Development

The overall physical development of Kisumu has been guided by its administration function as perceived by the colonialists. Kingoriah, 1983 has pointed out the importance of historical factors and colonialism as the most important factors in determining the rate of specific urban expansion and its physical form. Put differently' the formation and growth of the urban areas in Kenya have not resulted from economic factors but how best they (the urban areas) suited the needs of the colonial administrators.

The growth of Kisumu town during the colonial period was guided by the British and the Asians as depicted in Map 3.5. Since the railway played a pivotal role in the establishment of the town, most of the activities and construction were concentrated close to the shores of Lake Victoria where the railway station is situated. Currently the housing estates available from the railway station towards Oginga Odinga Street are occupied by railway staff quarter grade 5. This zone has not been intensively developed by the railway authority. It is also worth noting that originally all the land in Kisumu belonged to the railways. Table 3.2 shows the position of different cadres of railway workers (Employees) residences.

The Asians settled in the town centre (C.B.D) to take care of their business and stay together as a race for protection purposes. In other words, in the town centre, we have commercial shops on the ground floor and residential buildings in the first floor or at the back. From the outset, Milimani was for the high income cadres of railway workers (whites) and a few able Asians then.
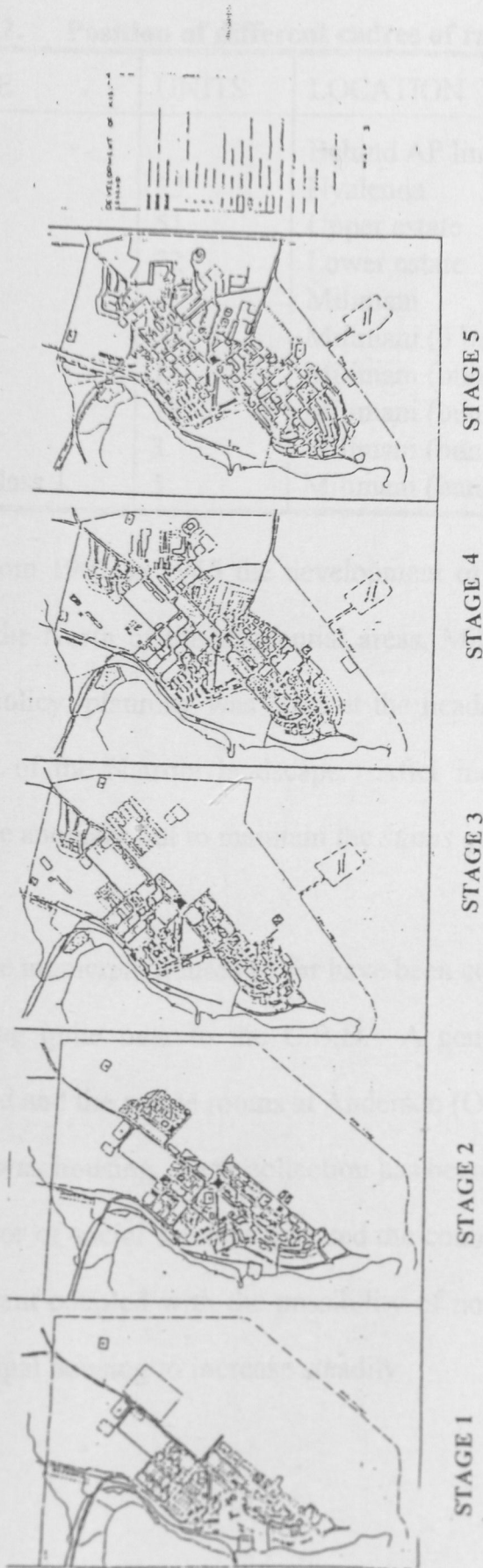
Map 3.5.   **Physical Development of Kisumu.**

STAGE 5

STAGE 4

STAGE 3

STAGE 2

STAGE 1

SOURCE: Waweru and Associates "Sewerage and Water Supply Planning for Kisumu Municipality"

The different levels were separated as shown in the sketch with the following number of units:

Table 3.2.   **Position of different cadres of railway workers residence.**

GRADE	UNITS	LOCATION
7&6		Behind AP lines
5	25	Nyalenda
5	51	Upper estate
5	72	Lower estate
5	2	Milimani
4	33	Milimani (3 bedroom)
3	14	Milimani (bungalows)
2	18	Milimani (bungalows)
1	3	Milimani (bungalows)
Better class 1	5	Milimani (bungalows)

From 1901 to 1965 the development of Kisumu took place along the lake shore towards the North of the residential areas, Milimani was well developed. By virtue of railway policy, planning was done at the headquarters in Nairobi and was, therefore, a prototype of the Nairobi landscape. After independence, attempt was never made to correct the anomaly but to maintain the *status quo*.

The municipal houses so far have been constructed on the eastern side of the town, some being quite near to the C.B.D. A general survey showed that they are badly maintained and the single rooms at Anderson (Ofafa) estate are reminiscent of the grade 7 and 6 railway housing. Rent collection has been a hitch towards their maintenance and as the Director of social services narrated the council has had perpetual liquidity problems. The low rent coupled with the possibility of non payment has always made the demand for municipal housing to increase steadily.

Tables 3.3 and 3.4 show the number of units earmarked for or as low rental housing, year of construction, original rent, current and proposed rent as per the time the study was carried out in February and March 1993.

Table 3.3.   Low rental houses

Estate	Units	Year of Construction	Original rent (Ksh.)	Current rent (Ksh.)	Proposed rent (Ksh.)
Lumumba	100	1961-2	77	250	350
Ondiek	167	1967	78	300	400
Makasembo	125	1968	89	360	460
Kibuye	40	1969	115	340	450
Arina I & II	255	1970-71	115	360	600
Arina IV	200	1977	300	320	420

Table 3.4.   Medium rental houses

Estate	Units	Year of construction	Original rent (Ksh.)	Current rent (Ksh.)	Proposed rent (Ksh.)
Mosque	87	1965	155	600	700
Argwing	58	1970	290	900	1800
Kibuye Flat 3	12	1971	275	670	750
Arina III	50	1974	250	550	600

Source: Field survey and minute No. 16 of 22/11/1990 of Kisumu Municipality Commission.

The tenant purchases traversing all income groups had a total of 519 units by 1984. Since then very little construction had taken place within the Municipality. The following rental patterns (collection) has emerged for some of the estates:

The demand for council houses has gone up and the waiting list as at the time of the field survey showed the following (for low cost and medium cost) pattern from 1979 to 1992 (Table 3.5). It shows that the municipality of Kisumu has not achieved even a quarter of its housing provision as is reflected in the waiting list vis allocation.

Table 3.5   **Rental Patterns**

Estate	Received 1988/89	Estimate 1989/90	Estimate 1990/91
Ondiek	30,060/=	34,570	29,880
Mosque	31,680/=	39,600	31,680
Kibuye	12,935/=	15,140	12,980
Makasembo	27,000/=	30,750	27,000
Argwings	25,920/=	32,400	25,920
Arina	111,900/=	162,900	111,900

Source: Kisumu Municipal Commission (1991;133 - 155)

In conclusion, it has emerged that the physical development of Kisumu has been affected by physical barriers such as topography, soil types and presence of water mass to the west of the town. The addition of the study areas of Manyatta, Obunga and Nyalenda into the municipality has exacerbated the problem of infrastructural provision. While the population continued to increase, the economic activities of Kisumu has not expanded proportionally. The majority of the population have largely remained low income earners.

MAP 3.6 : LOCATION OF STUDY AREAS AND WORK PLACES

To Butere

To Busia

To Nairobi

To Muhoroni

OBUNGA

KANDEGE

KONDELE

MANYATTA

KIBUYE

KALOLENI

INDUSTRIAL AREA

WINAM

TOWN CENTRE

To Nairobi

NYALENDA

Work Place

Residential Area

Both Work Place and Residential Area

Roads

Railway

N

0   1   1.5 km.

CHAPTER 4

FACTORS THAT INFLUENCE RESIDENTIAL CHOICE
IN LOW INCOME AREAS IN KISUMU.

4.1   Introduction

The four residential areas studied showed a strong regional representation. It emerged that the districts bordering Kisumu Municipality, are the main source of the increasing population within the Municipality. Table 4.1 shows the distribution of the population by district in Nyalenda , Manyatta, Kaloleni and Obunga.

Table 4.1.   Distribution of population source by district

DISTRICT	NYALENDA	MANYATTA	KALOLENI	OBUNGA	OVERALL
South Nyanza	36.6%	5.6%	2.9%	9.7%	17.9%
Kisii	4.8%	9.3%	-	9.7%	6.7%
Siaya	21.2%	20.4%	14.7%	28.0%	22.5%
Kisumu	23.1%	35.2%	47.1%	21.5%	27.7%
Kakamega	7.7%	14.7%	5.9%	9.7%	9.5%
Busia	1.0%	1.9%	2.9%	6.5%	3.2%
Vihiga	4.8%	-	2.9%	8.6%	4.9%
Taita Taveta	-	1.9%	-	1.1%	0.7%
Trans-Nzoia	-	3.7%	-	1.1%	1.1%
Bungoma	1.0%	5.6%	8.8%	-	2.5%
Nandi	-	1.9%	-	-	0.4%
Mombasa	-	-	1.4%	-	1.4%
Kiambu	-	-	11.1%	-	1.1%
Bomet	-	-	2.2%	4.4%	1.1%

Source: Field data, 1993

The people from South Nyanza generally prefer Nyalenda to the other residential areas, while Siaya has a fair distribution among the four residential areas. Kisumu has a strong representation in all the four areas. The majority of those in Nyalenda come from South Nyanza (36.6%) while those from Kisumu form the majority in Kaloleni (47.1%) and Manyatta (35.2%). Siaya District is more represented in Obunga (28.0%) than any other District .

Table 4.2 shows the low income characteristics of the respondents, with 100%, 75.4%, and 70.2% of those interviewed in Kaloleni, Nyalenda and Manyatta earning less than Sh. 2000/= per month respectively. About 53.8% of households in Obunga earned less than 2000/= .

Table 4.2.   Income levels

INCOME LEVELS	NYALENDA	MANYATTA	OBUNGA	KALOLENI
0-1000	32.7%	38.1%	19.4%	26.4%
1001-2000	37.5%	47.3%	34.4%	73.6%
2001-3000	29.8%	10.9%	26.9%	-
3001-5000	-	-	16.1%	-
5000 and above	-	3.7%	3.3%	-
TOTAL	100%	100%	100%	100%

Source: Field survey, 1993

The low income levels exhibited limit the residential locational choice of the individual households. First, the households can only afford particular units within the urban area thereby limiting their locational choice.

Secondly, households give preference to food as the most important basic need, and with the high cost of food-stuff, very little of the income earned remain for paying rent.

Thirdly, transport daily to and from work is a function of the income with the very low income nature observed, the households have limited bundle of income to trade-off between rent and transport. Residential location far from place of work for them, means a great deal in terms of either the cost of transport involved or the amount of energy spent walking to and from place of work.

4.1.1 Residential choice

The study revealed that the initial location of an individual is highly dependent on the location of his relatives in the town. Few households would rent their own houses on first arrival. Many would live with their relatives initially, later they would look for their own houses. Table 4.3 shows this trend.

Table 4.3.   Accommodation on first arrival.

	NYALENDA	MANYATTA	OBUNGA	KALOLENI	OVERALL
Stayed with relative	63.5%	52.8%	68.8%	70.6%	64.1%
Stayed with friend	18.3%	47.2%	11.8%	29.4%	22.9%
Employer provided house	1.0%	-	6.5%	-	2.1%
Build own house	16.3%	-	5.4%	-	2.1%
Rented a house	1.0%	-	7.5%	-	8.5%
TOTAL	100%	100%	100%	100%	100%

Source: Field survey, 1993

In all the residential areas , except Manyatta , more than 60% of the households stayed with relatives. Even though 52.8% of the households stayed with relatives on first arrival in Manyatta, an almost equal proportion of those interviewed (47.2%) stayed with their friends, reflecting a more sociable environment, than the other areas.

The urban "pull" is pegged on the need for jobs while residential location is determined by availability of relatives or friends in specific residential areas. It emerged that 94.3% of low income household rented their residential units while 5.7% owned their units. The ability to accommodate relatives (new migrants) can only be due to the magnanimity of the households and the traditional set up where dependency on kinship reigns supreme.

While kinship determined the initial distribution of low income households, it appeared that the factors that are important for low income residential choice were space suitability (33.7%), distance to work place (28.5%), rent affordability (19.7%), neatness (6.9%) and the adaptability of the residential unit for business purposes. Despite the fact that the above scenario holds for low income households, the degree of consideration varied from one low income residential area to another. Space suitability or room size was considered the most important locational factor, in Nyalenda, with 45.8% of those interviewed citing it. 40.7% of the respondents considered either rent or distance to place of work as the other important locational factors in Nyalenda. While 32.1% in Manyatta considered room size, 56.7% of the respondents isolated rent or affordability and distance from place of work as most important factors. Similar observations were made in Kaloleni where 79.4% considered either rent and distance as crucial locational factors.

Though important, distance from place of work did not emerge as a critical locational factor in Obunga as it did in the other residential areas. Consideration of the above factors varied from one residential area to another as shown in table 4.4. Respondents were asked why they chose the houses they were living in and the results were as follows:-

Table 4.4.   Reasons for choice of houses.

	NYALENDA	MANYATTA	OBUNGA	KALOLENI
The only one available	1.0%	3.8%	15.4%	-
Suitable space	45.8%	32.1%	27.5%	20.6%
Close to work place	29.2%	34.1%	12.1%	61.8%
Affordable	11.5%	22.6%	27.5%	17.6%
Suitable for business	6.2%	1.9%	6.6%	-
Good house (finishing)	6.2%	5.7%	11.0%	-
TOTAL	100%	100%	100%	100%

Source: Field survey, 1993.

It has been established that the important employment zones in Kisumu town for the low income areas are Kondele, Kibuye, and town centre and these two residential areas are close to Kibuye and Kondele. It has also been observed that distance to place of work is the most important locational factor in the residential areas in question.

Residents of Kaloleni showed strong affinity towards being close to their place of work and considered space suitability and affordability favourably, but in Obunga, affordability and space suitability were the most important reasons for choice.

Heads of households were asked the estates they would move to if they were to change their residences and the residents of Kaloleni and Manyatta showed that they would not want to move away from their respective areas. Households in Obunga and Nyalenda showed a strong desire to move and more so to Kondele (34.4% and 35.2% respectively). It was revealed that the most popular estate is Manyatta, with 38.6% of the respondents preferring it to the others, and specifically 21.7% preferred Kondele area which is part of Manyatta.

Reasons for choice of houses

⊡	The only one available
⊟	Suitable space
☐	Close to work place
☐	Affordable
⊞	Suitable for business
⊡	Good house finishing
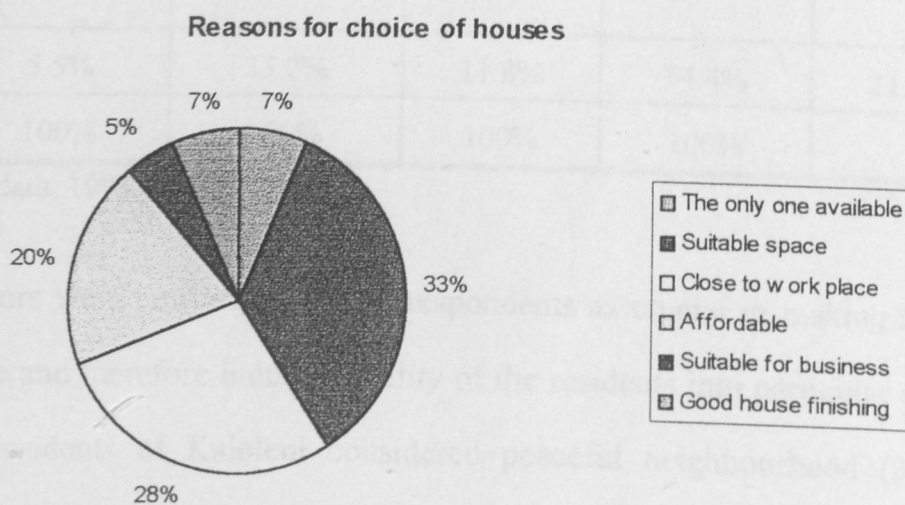
Table 4.5 shows the "attractiveness" of the various low income residential areas. While Kaloleni was the second most popular estate, it emerged that it was most popular among its own residents. Similar trend was observed in Manyatta. Ironically, Obunga estate was not only the least popular estate overall, it was also not popular among it own residents (4.3%). Nyawita estate which was also highly ranked, had a better built and finished building structures and environment than the rest of the low income areas.

Table 4.5.   Attractiveness of the various low income residential areas.

	MANYATTA	NYALENDA	KALOLENI	OBUNGA	AVERAGE
Kaloleni	14.5%	4.8%	44.1%	11.8%	18.8%
Nyalenda 'B'	1.8%	16.2%	5.9%	6.5%	7.6%
Nyalenda 'A'	16.4%	17.1%	2.9%	-	9.1%
Manyatta	36.4%	4.8%	17.6%	8.6%	16.9%
Nyawita	12.7%	17.1%	5.9%	25.8%	17.9%
Obunga	1.8%	1.0%	-	4.3%	1.8%
Pand pieri	1.8%	4.8%	-	3.2%	2.5%
Arab Manyatta	9.1%	-	11.8%	5.4%	6.6%
Kondele	5.5%	35.2%	11.8%	34.4%	21.7%
TOTAL	100%	100%	100%	100%	

Source: Field data, 1993.

Various factors were considered by the respondents as crucial in making an area popular or attractive and therefore induce mobility of the residents into particular estates. It emerged that residents of Kaloleni considered peaceful neighbourhood (32.4%), cleaner environment (32.4%) and closeness to place of work (11.8%) as the most important factors in that order, while in Manyatta it was peaceful neighbourhood (40.0%), cleaner environment (29.1%) and security which ranked the highest. While peaceful neighbourhood was the most important attraction factor in all the four residential areas, residents of Nyalenda took also into account availability of electricity (24.8%), closeness to market for their goods (12.4%) as important factors. In Obunga, it was good roads (15.1%), closeness to market (10.8%) and security (9.7%) which were the other factors considered alongside peaceful neighbourhood (26.9%).

Low income households' locational factors can be categorized into three:- first, for the new urban migrants, residential locations and distributions have been shown to be influenced by kinship and ethnicity. These factors expose the migrants into particular residential areas and hence the possibility of later acquiring residential houses within the estates of the first stay (adaptability).

Secondly, in a bid to acquire for themselves residential units, the factors that compel the settled residents to settle into particular estates were observed to be space suitability of the houses to accommodate the households, rent affordability, distance to work places, neatness and business suitability of the buildings. It, therefore, appears that economic factors influence more, the low income locational pattern once they are settled within the urban area.

Thirdly, it was observed that the residential locational choice amongst low income households is determined by social, environmental, infrastructural and economic factors. As shown in Table 4.6, low income households in Kisumu are keen in choosing to stay in particular estates against various factors such as peaceful neighbourhood, closeness to places of work, cleaner environment, security, availability of electricity, closeness to market for their goods and good roads. This was true for both the new migrants and the settled inhabitants. It is these factors that make particular estates attractive thereby induce mobility or encourage inertia. The degree of consideration of the above factors varied from one residential area to another except that of peaceful neighbourhood.

Table 4.6.   The factors that make residential areas attractive and induces mobility.

FACTORS	KALOLENI	MANYATTA	NYALENDA	OBUNGA
Peaceful	32.4	40.0%	31.4%	26.9%
Good roads	-	3.6%	2.9%	15.1%
Secure	5.9%	12.7%	7.7%	9.7%
People are co-operative	2.9%	3.6%	2.9%	3.2%
Near place of work	11.8%	1.8%	1.9%	5.4%
Presence of relatives	-	-	7.6%	2.2%
Availability of electricity	-	-	24.8%	3.2%
Near market	2.9%	5.5%	12.4%	10.8%
Close to hospital	-	-	1.0%	6.5%
Spacious houses	5.9%	1.8%	6.7%	6.5%
Cleaner environment	32.4%	29.1%	-	4.3%
Affordable rents	5.9%	1.8%	-	6.5%
TOTAL	100%	100%	100%	100%

Source: Field survey, 1993

The factors that make residential areas attractive and induces mobility

Legend:
- Good roads
- Secure
- People are co-operative
- Near place of work
- Presence of relatives
- Availability of electricity
- Near market
- Close to hospital
- Spacious houses
- Cleaner enviroment
- Affordable rents
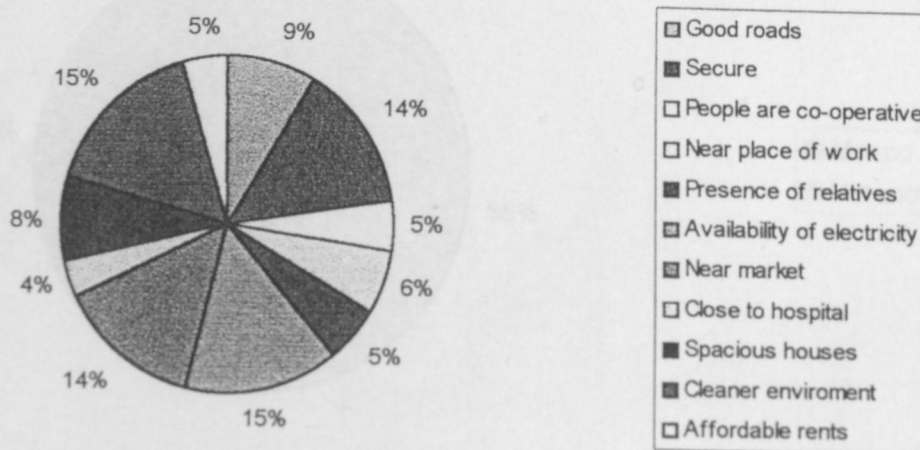
4.2   Low Income Residential Mobility.

Table 4.7. shows those who had moved since coming to Kisumu. Obunga and Manyatta showed a higher proportion of those who had moved, 63.8% and 63.0% respectively. Nyalenda had almost equal proportion of those who moved and those who had not moved. Kaloleni showed a high level of immobility, that is about 70.6% had not moved, possibly because of inertia cited earlier.

Table 4.7.   Those who have moved since arrival in Kisumu.

	KALOLENI	MANYATTA	NYALENDA	OBUNGA
Moved	29.4%	63.0%	51.9%	63.8%
Not Moved	70.6%	37.0%	48.1%	36.2%
TOTAL	100%	100%	100%	100%

Source: Field survey, 1993.

Those who have moved since arrival in Kisumu (Overall)

45%

55%

□ Moved
■ Not moved
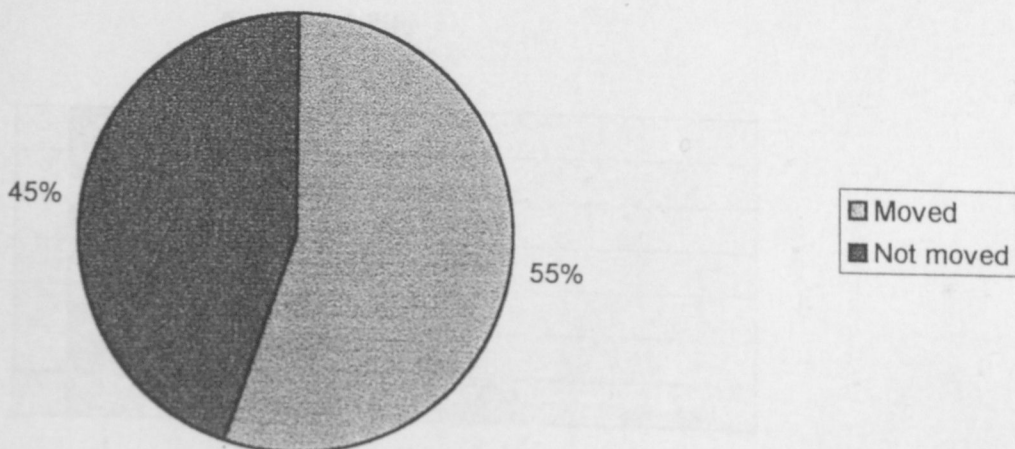
From field data, it was observed that urban residential mobility was generally horizontal, that is, within same or similar residential areas. The number of moves was considered within a span of two years (previously)from the date of the interview. 55.2% of the respondents had moved. Out of these, 63.3% had moved once while 25.3% had moved twice. 7.6% had moved three times while 3.3% had moved more than three times as shown in figure 4.1.

Table 4.8.   **Area Mobility**.

No. Of Moves.	KALOLENI	MANYATTA	NYALENDA	OBUNGA
0	70.6%	37%	47.2%	36.2%
1	8.8%	29.6%	41.3%	41.5%
2	11.8%	22.2%	9.6%	14.9%
3	2.9%	11.1%	1.9%	3.2%
4 - 7	5.9%	0%	0%	5.3%
Total	100%	100%	100%	100%

Source: Field survey, 1993.
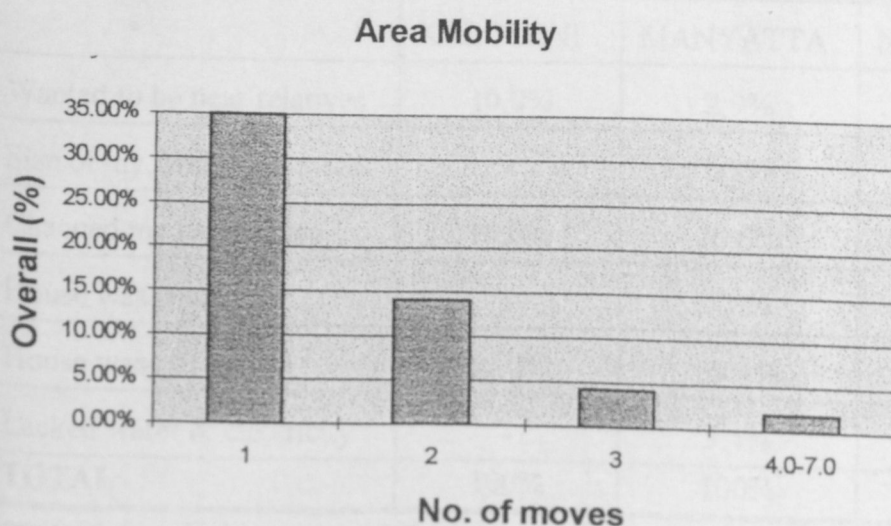
Area Mobility

Table 4.8 shows a high degree of mobility with more than 50% having moved twice and less within the other three residential areas. It emerged that 63%, 52.8%, 63.8%, had moved in Manyatta, Nyalenda and Obunga respectively.

Various reasons were given for changing residential area as well as residential unit. Of those who had moved in the four residential areas, it emerged that insecurity was the most important reason for moving in Kaloleni (80.0%) and Manyatta (59.4%). Change of work place (32.0%) and increasing small size of residential units (33.2%) in Nyalenda and Obunga respectively, were the most important factors. Other factors highly considered in Obunga were insecurity (29.0%), changing of work places 29%, size of the house being small (28.0%) and family size having increased (16.0%) were also rated highly in Nyalenda. The combined factors of the increase in the family size and room size being small, contributed grately to residential relocation by respondence Obunga and Nyalenda. Table 4.9 shows the results:-

Table 4.9.   Reasons for moving.

	KALOLENI	MANYATTA	NYALENDA	OBUNGA
Wanted to be near relatives	10.0%	2.9%	12.0%	4.4%
Size of my family increased	-	6.3%	16.0%	4.4%
Changed my work place	10.0%	20.6%	32.0%	29.0%
House was small	-	5.4%	28.0%	33.2%
House was not secure	80.0%	59.4%	2.0%	29.0%
Lacked water & electricity	-	5.4%	10.0%	-
TOTAL	100%	100%	100%	100%

Source: Field survey, 1993.

Reasons for moving

Pie chart segments labelled: 5%, 7%, 8%, 32%, 26%, 22%

Legend:
- Wanted to be near relatives
- Size of my family increased
- Changed my work place
- House was small
- House was not secure
- Lacked water & electricity
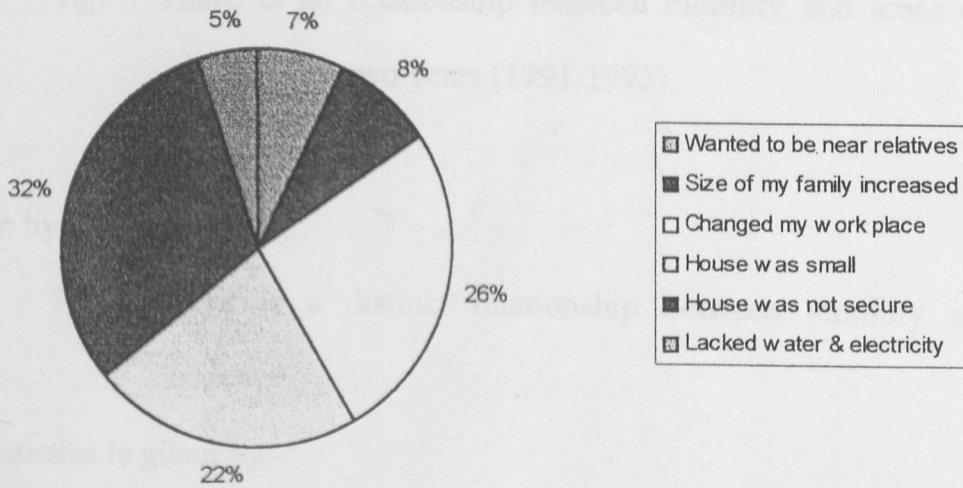
It appears that unless mobility amongst low income households is vertical (higher rent levels), rent is not a prime motive or reason for moving. This is possibly because of the similarity in rent levels within low income residential areas. Chart 4.3 shows that insecurity is a prime "push" factor for those who had moved with 31.1% citing it as the main reason for moving. Change of work place for those who had moved (25.9%) aand size of housing units occupied (22.4%) constituted the other important "push" factors.

4.2.1. Zonal mobility

It was observed that the four residential areas exhibited varied mobility rates. Was the difference observed across cells existed because mobility is related to the area of residence or did it exist because of chance alone or sampling error?

The following hypothesis was subjected to Chi-Square (X^2) test:-

The null hypothesis:

H_o: There is no relationship between mobility and areas of residence over the past two years (1991-1993).

Alternative hypothesis

H_A: There is a distinct relationship between mobility and area of residence.

The test statistics is given by:-

$$X^2 = \Sigma \left[\frac{(F_o - f_e)^2}{F_e} \right]$$

Where:- F_o = the observed frequencies.

F_e = the expected frequencies.

The level of significance was set at 0.05. Using EPI5, we were able to compute the X^2, having 3 degrees of freedom.

$X^2_{0.05 \atop df=3} = 7.815$.

$X^2_c = 13.737$

Since $X^2_c > X^2_{0.05 \atop Df=3}$, P Value = (0.0033).

Reject the null hypothesis and conclude that mobility of low income households is related to the area of residence. A number of factors peculiar to a particular residential zone will determine the "Push" and "Pull" factors and the rate of mobility will depend on the extent of these factors at play.

4.2.2. Mobility and sex

The decision to "move" was examined in relation to the sex of the respondent. This was also subjected to X^2. Test with the following hypothesis:-

H_o: There is no relationship between mobility and sex.

H_A: Relationship exist between mobility and sex.

Using three (3) degree of freedom and significance level of 0.05, the calculated $X^2_o =$ 0.3943

expected X^2_e $\underset{\substack{0.05 \\ Df=3}}{}$ $=$ 3.84

$$X^2_0 < X^2_e$$

We were able to accept the null hypothesis that there is no relationship between mobility and sex of the head of household. It can therefore be inferred that the sex of the individual does not significantly influence mobility decision. It is not a question of "men move more than women" or vice-versa. It is based on salient issues that do arise in one's area of residence and a unit of residence taking cognizance of the social and economic factors prevailing.

4.1.3 Mobility And Age

Of the respondents interviewed 67.1% fell between age groups 18-30 years while 17.1% 31-40 years, 12.2% fell between 41-50 years and 3.5% above 51 years as shown in Table 4.9a.

Table 4.9a

Age group (Years)	Proportion
18 - 30	67.1%
31 - 40	17.1%
41 - 50	12.2%
51 and above	3.5%

It was necessary to examine whether the decision to move, among low income household was affected by the age of the respondents. Mobility and age were cross tabulated and result subjected to Chi-Square test against the following hypothesis:-

H_o: There is no relationship between mobility and age.

H_A: There is a definite relationship between mobility and age.

At 3 degrees of freedom and significance level of 0.05, X^2 was calculated as 10.10 and expected at 7.81.

$$X^2_{0.05} \quad = \quad 7.81$$
$$\scriptstyle Df=3$$

$$X^2_{e} \quad = \quad 10.10 \qquad (P = 0.0177)$$
$$\scriptstyle Df=3$$

$$X^2_{c} \quad > \quad X^2_{0.05}$$
$$\scriptstyle Df=3 \qquad\qquad Df=3$$

The null hypothesis that there is no relationship between mobility and age was rejected and we concluded that there is a definite relationship between mobility and age. Of the people who had moved over the previous two years (Study period), it was revealed that 84.3% were below 35 years of age. There was a higher tendency for the older generation to stick. We should note that for the new urban immigrants, it is not easy to settle. The Observed phenomenon where younger people tend to move more than the older generation should be seen in the background of the drive to settle in a new competitive environment. We observed that about 64% of the new immigrant stay with their relatives initially, and as they try to find a job, and an "own" residential unit, we expect them to move a lot. The age factor can also be influential because there is a tendency to have own family as one grows older. The aspect of possibly having a family may therefore influence one's choice to stay on or move to a new residence and as has been observed 22.4% of the movers considered the houses where they stayed before as having been small in size and were therefore not adequate for the family.

4.2.4 Residential Mobility And Rent

The rent levels in the four residential areas were collected and the rent averages calculated. This was done for the levels before and after changing residence. It emerged that the mean rent in Nyalenda was Kshs.130.58 a month before moving and Kshs.189.90 a month after moving. 21.4% of the respondents in Nyalenda paid Kshs. 200.00 a month before changing residence while 54.8% did so after. Obunga displayed a bigger range of rent levels than Nyalenda with an average of Kshs.172.02 a month before moving and a mean rent of Kshs.244.79 a month after moving. Because of the big range in rent levels, the mean rent in Obunga was slightly higher than that of Nyalenda.

Kaloleni has a lower mean in both cases than Nyalenda and Obunga, the mean rent being Kshs.126.18 and Kshs.105.59 prior to and after changing residence. It was also instructive that the mean rent after mobility was lower than that prior to change of residence. It was in Manyatta where the rent average was highest, with a mean of Kshs.275 a month and Kshs.244.63 a month prior to and after change of residence.

It was the difference in these means that was the area of concern. Two residential areas exhibited lower rent averages after moving, while the other two showed the reverse phenomenon. The average rents were subjected to Z-Score test to find out whether the perceived difference in rental means was significant or not. The significance level was set at 0.05 but this was halved to accommodate the expected results, which could be either positive or negative. It was meant to show whether the respondents enjoyed greater advantages in terms of rent paid if he changed residence, that is greater mobility will offer lower rent. The null hypothesis was stated as below:-

H_o: The two mean rents are equal, there is no significant difference in rent levels.

H_A: The two mean rents are not equal, significant difference in rent occur after mobility.

If the mean rents are the same, the expected Z-Score is ±1.96.

In Nyalenda, the results was as follows:-

$$Z_{0.025} = 1.96$$

$$Z_c = 7.22$$

Hence the realized Z-Score is greater than the expected Z-Score . We therefore reject the null hypothesis that the mean rents are equal and conclude that they are not equal. Mobility resulted into significant increases in rent. Similar conclusion was made for Obunga with respect to mean rents where the calculated Z-Score (2.02) was greater than the expected Z-Score (1.96). Only twenty one in a thousand cases could be explained by chance or sampling error alone. Similar procedure was applied to Kaloleni and Manyatta where it was observed that calculated Z-Score level -1.68 and -1.79 respectively were less than the critical Z. The null hypothesis was therefore accepted and it was concluded that the mean rents of the two areas are equal. Even though there was a tendency for rents to decrease as one moved, the reduction in rent was not statistically significant in these areas. Mobility results into increase in rents, while in other areas it tends to be the same.

4.2.5. Mobility And Distance

We examined how distance affects mobility. It was observed previously that more than 60% of the respondents in three of the four residential areas had changed residence, with the exception of Kaloleni where shifting was not prevalent. Because of the low incomes, distance from work play a significant role in the daily lives of the individual. First it was observed that out of the 286 respondents 72.3% walked to their places of work, while 12.6% cycled to work. Only 8.4% boarded buses/matatus. It was in Kaloleni where 94.1% walked to their work place. This should be seen in light of its situation vis a vis various places of work. It is closer to town centre, and the "Industrial area" of Kibuye than all the other three residential areas, where 59.3%, 70.25 and 67.3% walked to their work places in Manyatta, Obunga and Nyalenda respectively.

Tables 4.10 and 4.11 show percentage change in distance following change in residence or work place.

Table 4.10.   Previous Distance Covered.

DISTANCE(KM)	KALOLENI	MANYATTA	OBUNGA	NYALENDA
0	29.4%	18.5%	26.6%	38.5%
1	47.1%	-	1.1%	-
2	-	-	-	1.0%
3	14.7%	31.5%	1.1%	-
4	2.9%	-	21.3%	-
5	-	-	-	36.5%
6	-	27.8%	45.7%	-
7	-	7.4%	1.1%	-
8	5.9%	-	-	14.4%
9	-	1.9%	-	-
10	-	-	-	4.8%
11	-	1.9%	3.1%	1.0%
12	-	11.1%	-	3.8%
TOTAL	100%	100%	100%	100%

Source: Field Data, 1993.

From table 4.10, it is evident that about 91.2% of residents of Kaloleni cover upto only 6km both ways daily and therefore form the majority of those who walk to their work place.   29.4% work within the same estate (0km) 39% of the respondents in Manyatta covered between 12-22km while 11.1% walked 24km both ways daily.   A similar scenario emerged in Obunga where 49.8% did 12-22km both ways daily, while 36.5%of those interviewed in Nyalenda covered 10km daily, 24% covered 16-24km per day.   It can safely be inferred that the low income households living in Manyatta, Obunga and Nyalenda do longer distances daily to work than Kaloleni.   For those who board buses/matatus to work, it takes off a substantial amount of their meagre income (transport).   Table 4.11 shows the current distances covered.

It was shown earlier that Kaloleni residents rarely change residence. After examination of current distances covered, those who work close to their houses had not shifted (91.2%). The situation remained unchanged. While 39% of respondents in Manyatta covered between 12-22km daily, about 42.6% covered the same distances, while 50% covered 0-6km daily. Previously 57.4% did the same distance after shifting. It can be observed that all those who walked 24km daily reduced their distances by either changing the residence or the work place.

Table 4.11.   Current Distances Covered

DISTANCE(KM)	KALOLENI	MANYATTA	OBUNGA	NYALENDA
0	29.4%	16.7%	26.6%	41.3%
1	47.1%	-	1.1%	-
2	-	-	-	-
3	14.7%	40.7%	1.1%	-
4	2.9%	-	23.4%	-
5	-	-	-	39.4%
6	-	25.9%	42.6%	-
7	-	7.4%	1.1%	-
8	5.9%	-	-	7.7%
9	-	1.9%	-	-
10	-	-	-	5.8%
11	-	7.4%	4.3%	-
12	-	-	-	5.8%
TOTAL	100%	100%	100%	100%

Source: Field Data, 1993

In Obunga, 49.8% did 12-22km previously, almost similar number 48% covered the same distance after changing residence, just a minimal reduction. 52.2% covered between 0-8km daily. The percentage of those who covered 16-24km in Nyalenda reduced from 24% to 19.3% and those who walked 10km daily increased to 39.4% form

36.5%, this increased to 41.3%. The evident minimal reduction was subjected to Z-Score test to find out whether people moved to other residential areas or units in order that they could shorten the distance to the work place.

This was done in each of the four residential areas under the following null hypothesis:-

H_o: The mean distance before shifting is the same as after.

H_A: The mean distance was significantly different after moving.

Significance level was set at 0.05.

It was in Kaloleni where the "Movers" were less than 30 and therefore student t-test was used testing the same null hypothesis.

Z-Score of 0.161, 0.02, 1.05 and 0.729 was recorded for Kaloleni, Obunga, Manyatta and Nyalenda respectively. In all cases the calculated Z were less than the expected at alpha level of 0.05. The null hypothesis was therefore accepted that despite the change in residence or place of work, the distance was same or thereabouts. It was also observed that the conclusion might have been reached due to chance for none of it was statistically significant. Despite this, there was a general trend to reduce the distance in the three residential areas of Kaloleni, Manyatta and Obunga. The Proportion of those who worked near their residence was highest in Kaloleni, Manyatta, Nyalenda and Obunga in that order.

4.3   Relative Factorial Variation

The heads of households were asked to rank the factors that commonly influence residential mobility in order of importance and several factors were suggested in the questionnaire. This was meant to provide the respondents with the opportunity to pin point other factors in competition with rent and distance, which commonly influence one's choice to move or not to move. We have noted previously that these rankings were awarded points. The following table shows the relative importance of each factor, calculated from the best possible score for all the residential areas and how these factors fared in each residential area.

Table 4.12.   Relative residential factor ranking and score.

AREA	NYALENDA	OBUNGA	MANYATTA	KALOLENI	AV. RANK	ALL
FACTOR 1. Change in income	0.7933 (2)	0.7097 (2)	0.7327 (3)	0.7029 (4)	2.75	0.7432 (2)
2. Distance from work place	0.7711 (3)	0.6322 (3)	0.8764 (1)	0.7588 (2)	2.25	0.7400 (3)
3. Rent levels	0.8990 (1)	0.8011 (1)	0.8345 (2)	0.6824 (5)	2.25	0.8243 (1)
4. Quality of neighbourhood	0.4683 (7)	0.6849 (4)	0.4254 (6)	0.4118 (7)	6.00	0.5386 (5)
5. Neighbours	0.4212 (8)	0.5441 (6)	0.2927 (10)	0.2206 (10)	8.50	0.4073 (8)
6. Relatives	0.4721 (6)	0.3139 (9)	0.3164 (9)	0.2559 (8)	8.00	0.3603 (10)
7. Vacancy	0.6058 (4)	0.3022 (10)	0.3964 (8)	0.2324 (9)	7.75	0.4210 (7)
8. Family size	0.4000 (9)	0.5688 (5)	0.5982 (5)	0.7471 (3)	5.50	0.5324 (6)
9. Room size	0.4894 (5)	0.4849 (7)	0.6545 (4)	0.8441 (1)	4.25	0.5599 (4)
10. Privacy	0.2404 (10)	0.4140 (8)	0.4055 (7)	0.6471 (6)	7.75	0.3756 (9)

Source: Field Data (1993) calculated from frequency score of each factor.

When all the residential areas were taken together, rent, as a factor was considered the most crucial factor in influencing the decision to change residence among the low income households. If posted, a relative score of 0.8243 out of the possible 2860 points. The respondents were seen to be sensitive to income levels which was ranked second while distance from place of work followed closely in position three.

It was observed that the presence of relatives in a particular neighbourhood was not considered as an important mobility factor. Perhaps their importance is regarded highly by the new urban migrants as we saw earlier. Ironically, the room size was highly considered as a motivator (rank 4) while privacy as a factor did not fare very well. In Manyatta, distance as a factor upstaged rent (rank 1) while room size was considered the most important factor in Kaloleni, where family size was equally important.

The necessity to examine the factor variability in these residential areas arose from the observations. We used a one way analysis of variance (ANOVA) to test the following null hypothesis:-

H_o: The mean score of each factor in all residential areas are equal.

$$\bar{X}_1 = \bar{X}_2 = \bar{X}_3 = \ldots \bar{X}_{10}$$

H_A: The mean score of each factor in all areas are not equal.

$$\bar{X}_1 \neq \bar{X}_2 \neq \bar{X}_3 \neq \ldots \bar{X}_{10}$$

To utilize this, it was assumed that the population for each sample is normally distributed with identical means and variances, and that the sample observations were independent. The F-Distribution statistic was used and the table below shows the final calculation.

Table 4.13. F-Distribution Results

Variation	df	Sum of Squares	Mean Square	F
Explained by treatment <u>between</u> column	c-1 10-1 = 9	SST = 223.5	MST = 24.833	MST/MSE = 7.129
Error or unexplained <u>within</u> columns	(r-1)(c) 3.10 = 30	SSE = 104.5	MSE = 3.4833	

Source: Calculated from field data.

Where: DF = Degrees of Freedom

SST = Treatment Sum of Squares

SSE = Error Sum of Square

MST = Error Mean Score

The expected F-Statistic with the numerator df=9, and denominator df = 30 was 2.86.

Therefore:

$$F_C > F_e$$

$$7.129 > 2.86$$

The null hypothesis is rejected and we conclude that the mean score of each factor in all the areas are significantly different. Factors that commonly influences an individual choices to move or not to move, are rated differently in the four low income residential areas of Kisumu. This implies that whereas a factor might be critical in one residential area, other factors might play a bigger role in determining the individual's decision. It also reflects the difference in needs of particular residential areas among low income groups.

It emerged that economic factors are more important than social factors for urban residential mobility to take place. Even though security was considered important, overall, the above conclusion holds true. Despite the importance of economic factors, the level of income amongst low income households are extremely low with 69.2% earning less than 2000/= a month, 28% earning less than 1000/= per month overall. Obunga showed a better spread of household income than the other areas, with 48.9% earning more than 2000/= a month. It was also observed that 96.1% of the respondents in Kaloleni, 83.3% in Manyatta and 70.2% in Nyalenda earned less than Ksh.2000/= a month.

4.3.1 Employment Zones In Kisumu

Table 4.14 shows the zonal distribution of work places within Kisumu Municipality for the low income households.

Table 4.14. Work place distribution in Kisumu.

Place of work	Kaloleni	Manyatta	Nyalenda	Obunga	All
Industrial area.	2.9%	11.1%	1.0%	2.2%	3.5%
Kandege.	5.9%	11.1%	1.0%	6.5%	5.3%
Kibos Rd.	-	-	-	1.1%	0.4%
Town centre.	14.7%	25.9%	36.5%	35.5%	31.6%
Within same residential area.	29.4%	22.2%	40.0%	28.0%	31.6%
Kibuye.	47.1%	27.8%	19.2%	26.9%	26.7%
Other areas	-	1.9%	2.0%	-	1.2%
Total	100%	100%	100%	100%	100%

Source: Field data, 1993

It is evident that town centre and the residential areas emerged as the most important employment zones with Kibuye being rated highest, with respect to employment in other residential areas. Nyalenda had 76.5% working within it and town center as compared to 63.5% of Obunga's residents. Residents of Manyatta were fairly distributed to all the places of work except Kibos road, while 76.5% of residents of Kaloleni worked in or near Kaloleni. It was clear that higher mobility tended to be with respect to the residential unit or area rather than work place.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS.

5.1   Conclusion

The study has established that initial physical residential development of Kisumu was influenced by the European and Asian settlers who were building the railway line. The location of the various classes of residential areas was subject to the colonial policy of racial segregation. The colonial legacy of residential location has been perpetuated by economic disparity that exists amongst the urban dwellers. Residential development for the middle and high income group has kept pace with the increasing population, but with unattainable rental levels for the low income households. Economic factors, mainly rent affordability, play a crucial role in residential location of the middle and high income households.

It has been established that the inhabitants of low income residential areas of Kisumu such as Kaloleni, Manyatta, Nyalenda and Obunga earn very low income, with 74.5% earning less than Ksh.2000/= per month. This has affected their effective participation in the property (allocation) market. Their ability to pay high rents are impeded and hence their inability to secure for themselves acceptable standards of housing. The amount of money available, to be spread among the various basic human needs such as food, clothing, shelter and the urban-induced cost of travelling to and from place of work, is limiting residential choice among urban low income households.

Residential development for the low income households has not competed effectively with the ever increasing influx of people from the rural areas. The majority of the new urban migrants move into the town in search of jobs. The recipient residential areas are mainly Nyalenda, Obunga and Manyatta. The study sought to examine the factors that commonly influence residential locational choice amongst low income households. It has been observed that social factors and kinship are crucial factors in determining the initial location and distribution of the new urban migrants with 64% of the low income households having stayed with relatives on first arrival, while 22.9% staying with friends. This confirms John Turners theory of Latin american cities whereby newcomers would stay with kinsmen on arrival but it differs with the same theory in that the location of low income residences happens to be in the outskirts of the town rather than the town centre. These factors were further buttressed by the fact that the various low income residential areas have majority of their population coming from various districts neighbouring Kisumu, which are the main source of urban migrants. The result is that various residential areas are almost district specific with 33% of those staying in Nyalenda coming from South Nyanza, while the majority, accounting 28%, of those staying in Obunga coming from Siaya District. Manyatta and Kaloleni draw their majority from Kisumu district. It therefore appears that there is regional tendency amongst low income households residential location within the various low income residential areas.

Once the migrants have been able to secure jobs, factors that determine location amongst low income households become varied. Even though the majority accounting for about 61.3% occupied single rooms, with 25.8% occupying double rooms, it appeared

that the other factors that determine residential location are room space suitability with 33.7% of the respondents interviewed citing it as a crucial factor, followed closely by distance to work place (28.5%).

While over 90% of those interviewed walked to their places of work, it emerged that the residents in Nyalenda, Obunga and Manyatta cover long distances daily with 60.5%, 49.8% and 39% respectively doing 10- 24km daily to and from work. It was observed that low income households residential mobility did not significantly reduce distances covered to and from places of work, but there was tendency to reduce the distances with each move in all the four residential areas studied. Inertia was observed in Kaloleni as opposed to the other areas citing closeness to their work places.

It was also established that rent or affordability (19.5%), neatness of the area (6.9%) and suitability of the area and the house for business purposes (4.7%) were the other important factors. Certain other factors or features were also observed to be critical as either "Push" or "Pull" factors. Amongst these was the availability of market place for goods and services being offered by urban low income households. Where this was closer to the place of residence, it was a big plus as was observed in Manyatta and Kaloleni where the location of Kondele and Kibuye made the residential areas quite popular.

Peaceful neighbourhood was observed in the four residential areas, as being among the important factors that determine location and change of location of residences.

About 32.7% of those interviewed cited it as a factor that enhances the attractiveness of an estate or neighbourhood and hence induces mobility. Apart from peaceful neighbourhood, consideration of the other factors varied from one estate to another. While residents of Kaloleni considered cleaner environment (32.4%) and closeness to place of work (11.8%) as the second and third most important "Pull" factors, it was good roads (15.1%) and availability of market (10.8%) which appealed to residents of Obunga. Availability of electricity (24.8%) and market (12.4%), was regarded highly in Nyalenda while clean environment (29.1) and security were crucial for residents of Manyatta.

Further, the study sought to examine the residential mobility among low income households. It emerged that mobility rate measured by moves within a span of two years was high in some estates and low in others but that this mobility was generally horizontal where movements tended to be within same or similar rent zones. It was statistically established that mobility of low income households was area specific i.e it was related to the area of residence. Again, it was observed that mobility was a function of age of the head of households, whereby younger people tend to shift more than the older people. 84.3% of those who had moved were below 35 years of age. This was attributed to the adaptability to the new urban environment and the changing of the status of the households, as many of the urban migrants "acquired" their own families. Some of the "Push" factors that induced mobility were observed as insecurity, lack of electricity and water, size of the house being small, change of work place, family size and need to be close to relatives. These factors were considered variedly among the various residential areas.

Further analysis of residential mobility among low income households revealed that mobility resulted into statistically significant increases in mean rents in Nyalenda and Obunga. It was observed that mobility in Kaloleni and Manyatta did not alter mean rent and it tended to be equal even though the trend showed a reduction in rent, the decrease was not statistically significant. Despite change in residence or place of work, which affected distance between the two, it was statistically established that distance was the same or thereabouts but there was a general tendency to reduce the distance with mobility in Kaloleni, Manyatta and Obunga.

The relative influence of factors that commonly affect residential location was determined where it was observed that distance from place of work, change in rent levels, change in income and room size were the most important factors in all the residential areas, with score levels of 0.7400, 0.8243, 0.7432, 0.5324 respectively of the possible 2860 points that each factor could amass. It was statistically established that the mean score of each factor in all the residential areas are statistically significantly different.

Factors that commonly influence residential mobility and locational patterns have different areal behaviour amongst low income households, signifying the variability of salient characteristics that exist in different residential areas and the individual needs of low income households. When asked to rank the various factors that commonly influence residential mobility, heads of households revealed that they were sensitive to changes in rent, income, distances from places of work and room sizes as some of the factors that are important, in that order. Economic factors emerged more important than social factors when analysed subjectively by the low income households.

The study revealed that Kibuye market, the residential areas themselves and the town centre remain the crucial employment zones within Kisumu town for the informal economic activities of low income households.

5.1   Recommendations

5.1.1 Policy options

Proponents of property market mechanism as a means of housing distribution and ownership have argued that government intervention in housing supply confuses the market. By so doing, it has been assumed that low income households have economic power to effectively compete in the housing market and that the market itself supplies various types of houses for various income groups, but this has been shown to be untrue particularly with reference to low income households. The income levels of these people have been low and lacking proper mechanism to adjust them upwards with the inflationary trends which have made the cost of living to be very high. This can not allow them to compete in the housing market. Majority of them tend to rent rather than own their residential units.

Even if they were to compete in the housing market, it is difficult for them to do so in an environment where urban land ownership is seen as the most rewarding investment and the land is not allocated by the market, and where the land is allocated by the government, it is the "land grabbers" who get the lion's share mainly for speculative purposes. Other schemes such as tenant purchase or site and service schemes have failed for various reasons, but two stand out clearly.

(i)   The conditions attached to them are unattainable by the low income households who have unreliable income sources (informal).

(ii) The schemes have not been properly managed with respect to allocation, and collection of dues.

It was observed that the sources of the urban migrants into Kisumu were the districts neighbouring the town. To ease the pressure for the provision of housing and other infrastructure, there is a renewed need to reverse the trend of rural-urban migration. This has been occasioned by lack of jobs hither to considered as being readily available in the towns. Further, the informal sector or "Jua Kali" is the type of work that can be done anywhere so long as the necessary environment is put in place such as provision of electricity. This will enhance the development of trade or market centres.

Low income households need bigger houses than those currently available or provided. There is a need to legislate on the minimum size of houses that must be provided by the private developers. Planning for housing projects meant for low income households need to take various factors into account. First, it is important to consider the location of the project vis-a-vis its proximity to places of work including the areas for informal economic activities. Secondly, the planning of such projects should provide for proper market centres within the residential area. This will not only encourage/spur economic activities among urban low income households, it will take care of the daily long treks to various employment centres.

Even low income households, who are known to stay in squalid conditions, yearn to stay in a clean and peaceful environment. This has proved to be a difficult job for the local authorities. It is the submission of this study that to maintain a clean environment, it is necessary to contract or privatize the cleaning exercise to people in the various residential areas. This will not only maintain the environment, it will provide jobs for low income earners. When localized, it is easier to supervise.

In the past, industrial employment was seen as the most important aspect for the new urban immigrants and they provided cheap labour to these emerging industries. It would be futile basing Kenya's housing policy and urban physical development plans on the assumption of uniform industrial expansion. Kisumu has been found to be a "dry" hunting ground for job seekers. It is a broad national industrial location policy, coupled with an enabling economic, social and political environment that will enhance industrial distribution in the urban areas, thereby increasing chances of employment for the urban dwellers in the "cities". If not so, the physical development plan of Kenya's urban areas, more so residential, should be based on the meager earnings of the low income group particularly when planning for them and their activities. The thrust of this argument is the need to revisit provision of rental housing units particularly for low income households. The fact that the management of a system has failed does not mean that the system is bad. While not advocating for rent restriction, institutional provision of housing, should be encouraged.

By leaving the housing supply to the market mechanism, we may be encouraging the proliferation of slums and the general decay of our urban system. Earlier research showed that distance from work place was not rated highly (Macoloo, 1984) in terms of residential preference in Kisumu. Almost ten years later, it was ranked among the top three. This can be attributed to the growing status and the expansion of Kisumu. The importance of informal centres in the town can therefore not be overemphasized. The amount of time and energy spent walking to work places by low income households, 10-24km both ways daily tend to decrease the productivity and creativity of these people, a trend which must be reversed if Kenya is to Industrialize by the year 2020 using the informal sector. Town plans currently in use are a product of colonial legacy. It is the contention of this study that plans should take cognisance of the fact that employment zones particularly for informal activities and low income households should be closer to the people. The work place should be taken to the people rather than the people to the work place !

The sessional paper No. 5 of 1966/7 on site and service schemes, had a similar vision which should have been built on rather than being discarded and confused with policies meant to solve urgent urban crises. By doing so, we are denying our urban environment a chance to be what we want them to be. In all the belief that Kenyans desired to own houses in urban areas has been misinterpreted, so that policies have been tailored towards home ownership. As observed by the U.N Mission to Kenya on Urban housing "...home ownership should be encouraged and speeded up for those segments of the population whom ownership is in their best interest".

5.2   <u>Areas For Further Research</u>

a)   The need to study the industrial sector employment as opposed to informal employment with a view to explain the current residential location pattern.

b)   Whether productivity is affected by long distances to work among low income households.

C)   The interaction between urban satellite centres and residential location of urban dwellers.

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DATA COLLECTION SHEETS

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1993.

THE RELATIONSHIP BETWEEN PLACES OF EMPLOYMENT, RENTS AND RESIDENTIAL LOCATIONAL CHOICE OF LOW INCOME HOUSEHOLDS IN KISUMU MUNICIPALITY - KENYA.

M.A (HOUSING ADMINISTRATION)

RESEARCH BY:

AGUTU, JOHN WASHINGTONE

B50/7664/91

NAME OF THE ESTATE:

QUESTIONNAIRE NUMBER:

DATE:

INTERVIEWER:

HOUSEHOLD DATA (FILL IN)

1.

Relation to head of household	Age	Sex	Education level	Activity, type of work	Place of work	Means of reaching	Fare
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

KEY:

RELATION TO HEAD OF HOUSEHOLD
1. Head of household.
2. Spouse.
3. S/Daughter.
4. Relative.
5. Visitor.
6. Friend.

EDUCATION LEVEL.
1. Below standard 5.
2. Standard 6 - 8.
3. Secondary form 1 - 2.
4. Secondary form 1 - 4.
5. University/ College.
6. Trade exams (artisan)

PLACE OF WORK.
1. Old industrial area.
2. Kandege industrial zone.
3. Kibos road industrial zone.
4. Town centre.
5. Within the residential estate.
6. Kibuye Market .
7. Other areas (specify).

MEANS OF REACHING.
1. Bus/matatu.
2. Walking.
3. Cycling.
4. Welfare bus.

2. Where were you born ?
   District ....
   Location ....

3. For how long have you lived in Kisumu ?
   .... (Years).

4. In which other areas or towns have you lived in before coming to Kisumu ?

	PLACE	DURATION
1.		
2.		
3.		
4.		

5. How did you get accommodation when you first arrived here ?
   1. Stayed with a relative
   2. Stayed with a friend
   3. Employer provided residence
   4. Built own residence
   5. Any other (specify).

6. Why did you choose this residential area ?

7. In which residential areas of Kisumu have you lived in in the past two years?

AREA	RENT PAID	YEAR	DURATION	PLACE OF WORK
1.				
2.				
3.				
4.				
5.				
6.				

8.   Why did you shift from these residential areas ?
     1. I wanted to be near my parents.
     2. Size of my family had increased.
     3. I changed my work place.
     4. The house was too small.
     5. It was insecure.
     6. Lacked water services.
     7. Any other (specify).

9.   Why did you choose this particular house ?
     1. It was the only one I could find.
     2. It had suitable space.
     3. It was near my place of work.
     4. I could afford the rent.
     5. It was suitable for my business.
     6. It was/is properly constructed.

10. Do you own this house ?   1. __YES__   2. __NO__

11. If no, what is the monthly rent that you pay ? ....(Kshs).

12. Your monthly income (Kshs) falls within which bracket under the following classification?
     1.   0   -   500
     2.   501   -   1,000
     3.   1,001   -   1,500
     4.   1,501   -   2,000
     5.   2,001   -   2,500
     6.   2,501   -   3,000
     7.   3,001   -   3,500
     8.   3,501   -   4,000
     9.   4,001   -   5,500
     10.   5,501   -   7,000
     11.   7,001   -   10,000
     12.   Above 10,000

13. Do you get house allowance ?
     1. _____YES_____   2. _____NO_____

14. Other incomes from members of the household ?
     1. _____YES_____   2. _____NO_____

15. If yes, they (total in Kshs.) fall within which bracket ?
     1.   0   -   1,000
     2. 1,001   -   2,000
     3. 2,001   -   3,000
     4. 3,001   -   5,000
     5. 5,001   -   8,000
     6. 8,001   -   10,000
     7. Above   10,000

16. Is this house used partly as a business premise ?
     1. _____YES_____   2. _____NO_____

17. If yes, specify the nature of business.
     _____

18. What is the income from the business ?
     _____ Kshs. Per month.

19. a) Does the house have in borne water supply ?
     1. _____YES_____   2. _____NO_____

     b) If yes, do you have:-
                 1.   Individual meter ?
                 2.   Communal meter ?

20. a) Does it have electricity ?   1. _____YES_____   2. _____NO_____

     b) Kitchen facilities available ? 1. _____YES_____   2. _____NO_____

     c) If yes, is it:-
                 1.   Separate ?
                 2.   Communal ?

21. Describe the condition of the house components.
     Floors
                 _____
                 _____
                 _____
                 _____

     Walls
                 _____
                 _____
                 _____
                 _____

Windows/
Doors

_____

_____

_____

_____

22.   How many dwelling units are within this structure ?   _____

23.   Are there other people who sleep here at night? 1. _____ YES _____   2. _____ NO _____

24.   I) If yes, what is their relationship to you ?

_____

_____

ii) How many are they ?   _____

25.   How many rooms are occupied by your household ? Please fill the table below:

Room	Size
1.	
2.	
3.	
4.	

26.   What type of toilet do you use ?
        1. Water borne (inside).
        2. Septic tank.
        3. V.I.P (Ventilated Pit Latrine).
        4. Ordinary pit latrine.
        5. Open space.

27.   Which of the following factors (in order of importance) influenced your choice to stay in
        this neighbourhood ?
        1. Transport is fast and easy to get.
        2. It has electricity and telephone services.
        3. It is near to schools, church and hospital.
        4. It is not noisy.
        5. The people here are friendly.

Rank Order _____

28. Which of the following factors would make you change your residence (in order of priority)

    1. Income level.
    2. Distance from place of work.
    3. Rent paid.
    4. Quality of the neighbourhood.
    5. Presence/absence of relatives.
    6. Neighbours.
    7. Existence of a vacant house.
    8. Size of the family.
    9. Size of the rooms.
    10. Privacy.
    11. Any other (specify).

    Rank order _____

29. If you were to change your place of residence, which one of the following estates would you move to ?

    1. Kaloleni
    2. Nyalenda B
    3. Nyalenda A
    4. Manyatta
    5. Nyawita
    6. Obunga
    7. Pandpieri
    8. Arab Manyatta.
    9. Milimani.

30. Why ?

    _____
    _____
    _____
    _____

31. Which one of the above estate is the worst according to you ?

    _____

32. Why ?

    _____
    _____
    _____
    _____