INTER-RELATIONSHIP OF WORKPLACE AND RESIDENTIAL AREA IN ABEOKUTA - A CREATED STATE CAPITAL.

M.Sc, ($U_tR_fP_t$) Thesis.

Babs. Adeleke Daini.
B.Sc. (Hons) Social Sciences.
University of Ife,

Department of Urban and Regional Planning,
Faculty of Environmental Design,
Ahmadu Bello University,
Zaria.

JUNE, 1980.

Department of Urban and Regional Planning
.faculty of Bovironmental Design
Ahmadu Bello University
Zaria,

C.3:: R g I F I 0 A T E

Thin is to certify that this thesis has been submitted in partial fulfillment of the requirements for the award of the Degree of Master *of* Science$_9$ Urban and Regional Planning*

APPROVED: .....
PROFESSOR S. JUCHNOWICZ:
HEAD OF DEPARTMENT.

ZARIA.
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CHAPTER 1

INTRODUCTION

1.1. STATEMENT OF PROBLEM

"City planning may be said to be concerned with the substances of urban areas and with the methods for reaching decisions about their development".[1] This leading statement highlights the need to monitor and order all the necessary elements within the city. One related issue which readily comes to mind is the urgent need for developing theories which can lead to a better understanding of the causes and possible remedies for the chaotic situation which many cities, especially cities of developing nations, are facing. Some of the problems include:

1. Long journey to work.
2. Long duration of journey to work.
3. Traffic congestion.
4. High cost of travelling to work, and
5. Inconveniences and strains.

These problems are caused by the faulty arrangement of residential areas in relation to workplaces.

Physical distribution of activities should be seen as the most relevant in planning although it has not been given the attention it deserves. Some authors believe that interest in the methods characterised by body of knowledge about the process by which these ends can be achieved is in the process of confusion brought about by what Dyckman attributed to "the recruitment of planners from other disciplines"[2] and thereby leading to formulation of theories brought from their respective

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1. Loewenstein, L.K.: "The Location of Residences and Workplaces in Urban Areas" New York, The Scarecrow Press, Inc. 1965, p. 20.

2. Ibid., p. 20.

initial professions. Though this sounds meaningful, he has forgotten that the complex nature of the city itself calls for attention of many professionals which could adequately help the planners in getting at the causal factors of some of these problems.

The main problem of this work is to investigate the factors influencing the choice of residential area by workers of different categories for the existing situation with the view to examining them in relation to future conditions so as to give necessary advice as to the modifications which the zoning map might demand.

1.2. RESEARCH JUSTIFICATION

The chaotic situation which is being experienced in most primate cities can be attributed to lack of balance between workplaces and the residential areas. This imbalance in the location of these two complimentary activities can be attributed to the introduction of automboile into the cities. This, in no small measure, has lead to the sprawling of citieis and at the same time the ever increasing population helps to further aggravate the situation. The result is that workers have to live too far from workplaces. With the increase fare on public transport the city poor stand to loose most of what is earned on transportation. In the study of low income earners in Metropolitan Lagos, Ojumu[3] discovered that "most of the employees who travel to work by public transport pay fares ranging between 10 - 15% of their monthly income". Most of the suggestions which is being adopted, like introduction of transport subsidy falls within what can be termed curative measures aimed

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3. Ojumu, J.O. "A Study of the Journey-To-Work of Selected Workers in Lagos" M.Sc. Thesis, Department of Urban and Regional Planning, A.B.U., Zaria (Unpublished) June, 1975.

at solving the existing imbalance in the cities. Nevertheless most of the problems remain unsolved. It is therefore necessary that a departure from this approach, using preventive means, be tried. The preventive approach attempts at arranging residential areas around major working places with the view to achieving the needed balance between residential and workplaces. This balance would help solve the movement of workers within the city into one direction. For example Hurd[4] finds out that, on the average, 300,000 pedestrians and 30,000 vehicles cross the Howrah bridge thereby causing traffic jam at both end. This situation can only arise where there is no balance between residential areas and workplaces. This same situation is experienced in Lagos along the Carter Bridge and the Lagos second bridge as all workers are only moving towards a single direction only to meet on the bridge or road junctions.

1.3. AIMS AND OBJECTIVES.

The study is an exploratory one aiming at isolating some of the factors which workers put into consideration before deciding on where to live. Abeokuta, the capital of Ogun State, Nigeria is the study site. The study aims at answering the following questions:

1. How does the location of workplace affects where to live?
2. What percentage of income is a worker ready to give up for:
   (a) Housing.
   (b) Transportation.

---

4. Hurd, G. "Human Societies" Boston, Rontledge and Kegan OSCMPDG Paul, 1973, p. 56.

3. Does this percentage in (2) differ from what is actually given up?
4. In the selection of where to live how does one's income affects the decision?
5. In what way can one's dependants affect the decision of where to live?
6. What role does place of origin play in the selection of residence?
7. How critical is income in travel time?

It is believed that the study can guide in formulating policies on housing and transportation with the view to using the existing imbalance in directing the future growth of Abeokuta. On the basis of the result, the zoning map prepared for the town by the Ministry of Works to guide the development of the town up to year 2000 will be tested for its adequancy or otherwise. Where any necessary amendments are necessary suggestion and amendment will be recommended?

1.4. DEFINITION OF TERMS

Most of the terms used in the study are based on ordinary dictionary meanings. However some terms are capable of more than one meaning and as such need to be defined in its usage in the study.

1.4.1. Low Income: The United Nations Economic and Social publication of May 7th, 1972 defines low income group as "family units making between ₦50 and ₦150 per month. Those making ₦50 and below per month are referred to as very low or low income group". During the last Budget Speech on March 31st

1980, it was clearly stated by the Nigeria Head of State that workers on Grade Level 01 - 06 are low income workers. According to the Federal Office of Statistics (1978) low income household is defined as one whose head earns a basic income of less than ₦141.67 per month. For the purpose of this study low income earners means any worker on salary not exceeding ₦200 per month.

1.4.2. MIDDLE INCOME:

Prior to the speech of the Nigerian head of State on the 1980/81 Budget, workers on Grade Level 07 were termed Middle Income Earner but this has seized to operate as level 07 has been placed on high income group. However the Federal Office of Statistics defines a middle income earner as "an household whose head earns basic income of between ₦141.67 and ₦331.67 per month. The study assumes any worker earning between ₦200 and ₦400 as middle income worker.

1.4.3. HIGH INCOME:

High income level officially in Nigerian means any person earning from Grade Level 07 and above. This definition modifies the definition used before April 1st 1980.which places Grade Level 07 salary on middle income status. The Federal Office of Statistics 1978 puts high income household as a household whose head earns more than ₦331.67 per month. For to purpose of the study a high income earner is one who earns more than ₦400.00 per month (Business Times of Nigeria, February 6, 1979 p. 1).

1.4.4. Door-To-Door Travel Time:

This is the total time spent from home to Office. It thus includes the walking time, waiting time and in-vehicle time. It is synonymous with total time and it is used interchangeably

1.4.5. Effective Time:

This is defined as the time spent walking and in-vehicle time. It does not include therefore the time spent at the bus stand waiting.

1.5. ASSUMPTIONS

The study assumes that all the zoning proposals contained in the zoning map drawn up by the Ministry of Works will be implemented. It also assumes that the population projections based on the 5% growth rate will be realized.

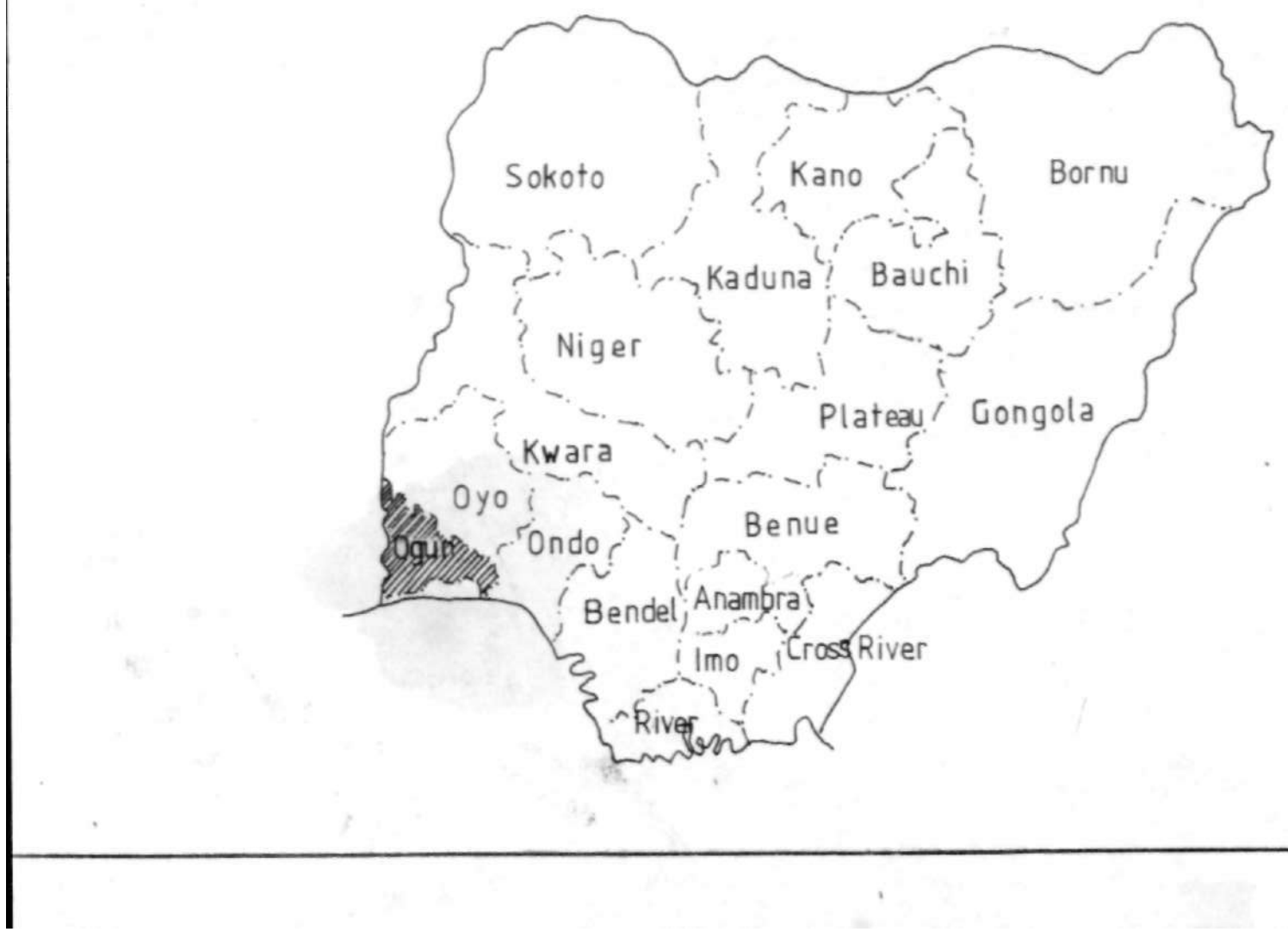
1.6. THE STUDY AREA

1.6.1. GEOGRAPHICAL CHARACTERISTICS

Abeokuta which is the capital of Ogun State of Nigeria is located at the Western end of the State.(Fig. 1 and 2). The town lies along latitude 7.0 N and 3.23 E and about 70 kilometres from Lagos, the Federal Capital and is almost the same distance to Ibadan to the North. The Trunk A road from Ibadan to Lagos traverses the town, so also is the western railway line. Abeokuta attains an altitude of between 50 and 200 metres above the sea level. River Ogun which is one of the largest rivers flowing across the western area of the country passes through the town.

Climatically, Abeokuta has a hot, humid climate and an average annual rainfall of 47 inches. The average temperature varies from 86°F to 92°F with a minimum temperature of 75°F in the cooler rainy season. Humidity level is generally high through out the year.

The natural vegetation is the lowland forest experienced in the western part of the country.



LOCATION OF OGUN STATE IN NIGERIA

B A Daini fig1
Dept. of U.R.P.
A.B.U., Zaria

25 0 100M

LOCATION OF ABEOKUTA IN OGUN STATE



B A Daini fig 2
Dept of U·R·P
A·B·U, Zaria

25 0 25

1.6.2. PHYSICAL PLANNING CHARACTERISTICS

Abeokuta displays some future which are of immense importance to physical planners. The name Abeokuta literarily means a town under the 'rock' derives its name from the Olumo rock. This indicates the importance of rock outcrop in the town. Some of the rock outcrops attain attitudes ranging from 50 to 200 metres above sea level. The incidence of such rock outcrops tend to constrain development. Another important feature is the Ogun River which serves as the western boundary of the town before. Development has now taken place on the western side. The integation of the main city towards the east of the river and the recent development towards the western part has been difficult. A bridge at Lafenwa serves as a link between the two sides. Running parallel to the river is the western railway line. This further makes development somehow difficult. Another important element is the Ibadan Lagos road which often cause serious traffic hold-up at the Lafenwa bridge. The extent of the through traffic and associated traffic jam has led to the construction of Ogun Second bridge.

1.6.3. HISTORICAL CONTEXT

As a result of the civil war which engulfed the whole of Yoruba land in the 19th century, large number of refugees moved south to found the present Abeokuta. It was said that the first Egba to live in the cave under one of the outcrops (olumo Rock) did not give it any name neither were his brothers who later joined him but that the name was only given to the town by the year 1830 when the main body of the Egba's land already settled in the town.

Because Abeokuta was not settled by refuges from the same area, the town did not develop as an homogenous unit unlike most Yoruba town where we have an Oba with palace in the traditional city centre, Abeokuta has five distinct units each with its own Oba within its own centre.[5] These units are Ake, Owu, Ona, Ibara and Gbagura. One other publication[6] has it that Abeokuta has four political units or municipalities and there they identify from their peculiar tongue reminiscent of the dialets spoken by the various sections before their coming together at Abeokuta. However in more recent time Ake section has gained prominance and the Oba is now being recognized as the main Oba.

Today Abeokuta is still a rallying centre for the large number of villages around whose names bear the names of quarters in Abeokuta to which they are related.

From the colonial era through early independence to the creation of state Abeokuta served a dual function as a divisional headquarter and a provincial headquarter.

1.6.4. SOCIO-CULTURAL CHARACTERISTICS

The officially figure accepted population figure for Abeokuta makes use of 1963 census figure of 187,000 and annual growth rate of 5% per annum.

With the creation of state Abeokuta is likely to take up some other functions expected of any state capital and the consequences might result in trade boom and high industrial development. This expected growth in commerce and industry will definitely lead to high population growth due to high rate of immigration than hitherto experienced. The high rate of population growth may continue to about 2000 A.D. when a lower growth rate might be expected.

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5. O.S.C.MP.D.G. "Ogun State Government Secretariat Complex: Final Draft Report" January, 1976. p. 35
6. O.S.I.S: "Olumo Rock" 1976. p. 6

TABLE 1

ABEOKUTA: POPULATION FORECAST

YEAR	5% ANNUAL GROWTH RATE	7% ANNUAL GROWTH RATE
1963	187,000*	[illegible]
1977	370,000	370,000
1980	429,000	554,000
1985	548,000	637,000
1990	700,000	894,000
1995	700,000	1,254,000
2000	1,140,000	1,754,000

*Source: 1963 Census Report.

The age/sex composition from 1963 census report shows that 35% of the total population are under the age of 5 years while 33% are between 5 and 19: while 32% falls between 10 and 14.

With the creation of state, government emphasis towards the development of Abeokuta has changed. What use to be a divisional and provincial headquarters with a small secretariat to house the few government workers now has to contain the headquarters of a state ministries. This has called for the construction of a minisecretariat adjacent to the small provincial secretariat. The government has estimated between 23,000 and 25,000 to work within the town in the year 2000.

Before the creation of Ogun State Abeokuta was more of a service to rather than an industrial town. Except for the brewery which is privately owned and the ceramic industry, there is no other industry of note. However small scale industries employing less than a hundred workers abound. The number of such

industries as at 1970 is given below.

TABLE 1.2

ABEOKUTA: TYPE AND EMPLOYMENT OF INDUSTRIAL ESTABLISHMENT IN 1970

PRODUCT	NUMBER OF ESTABLISH-MENT	NUMBER OF EMPLOYEES PER FIRM
Fruit and Vegetable (Canned and Preserved)	1	50 - 99
Soft drink and Carbonated Water	1	25 - 49
Saw Milling	6	20 - 49
Furniture and Joinery	1	25 - 49
Non-Mealtic Mineral	1	50 - 99
Miscellaneous	2	10 - 24

Source: Federal Ministry of Information, Industrial Directory, Lagos, 5th Edition, 1970.

Similar research by the industrial research unit, Department of Economics, University of Ife in 1972, shows that tailoring and carpentry are the two most important industries and that most of them can be grouped under sole entorprenourship.

In tern of commerce, Abeokuta was once a booming commercial town where Lebanese, Syrians and Indians traded in textile and other wares. The area near the Government Residential Area left by these Asians is now being occupied by some Nigerian firms and foreign firms such as S.C.O.A. Motors and C.F.A.O. Motors. This area has since been hear marked for the construction of shopping complex.

Until recently only few firms operate in the town

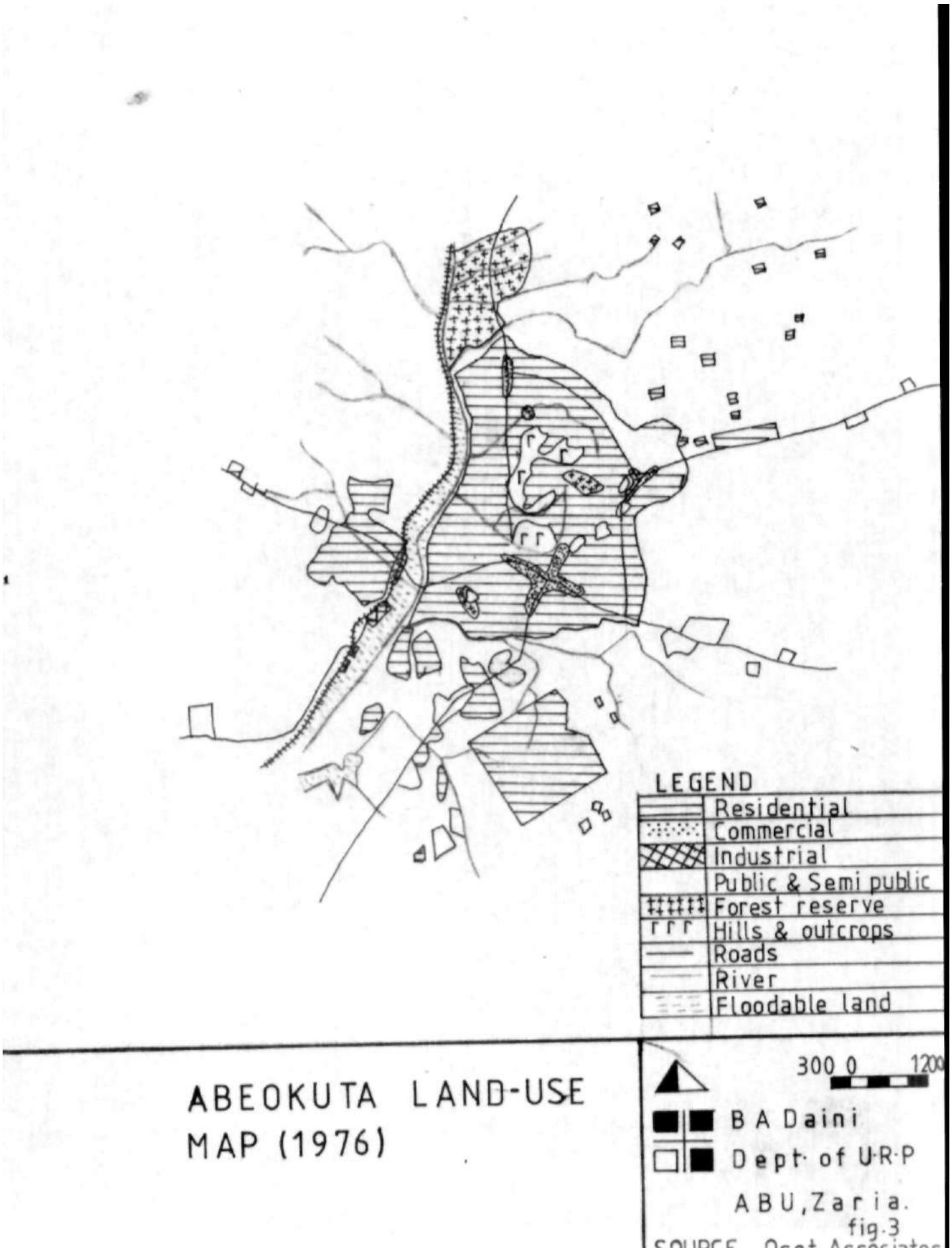
TABLE 3

ABEOKUTA: SMALL SCALE INDUSTRIES

TYPE OF INDUSTRY	NUMBER	PERCENTAGE
Bakery	10	1.7
Bicycle repairing	4	
Blacksmithing	12	2
Brickmaking	11	2
Capentry	90	15.8
Dyeing	11	2
Electricals	30	5.3
Furniture making	15	2.6
Goldsmithing	29	5.1
Grain milling	12	2
Knitting	1	
Motor Vehicle Repair	13	2.2
Printing	8	
Shoe making	10	1.7
Tailoring	293	51.3
Watch Repairing	18	3
Welding	3	
TOTAL	571	

Source: Small Scale Industries, Western State of Nigeria, Industrial Research Unit, Department of Economics, University of Ife (March, 1972).

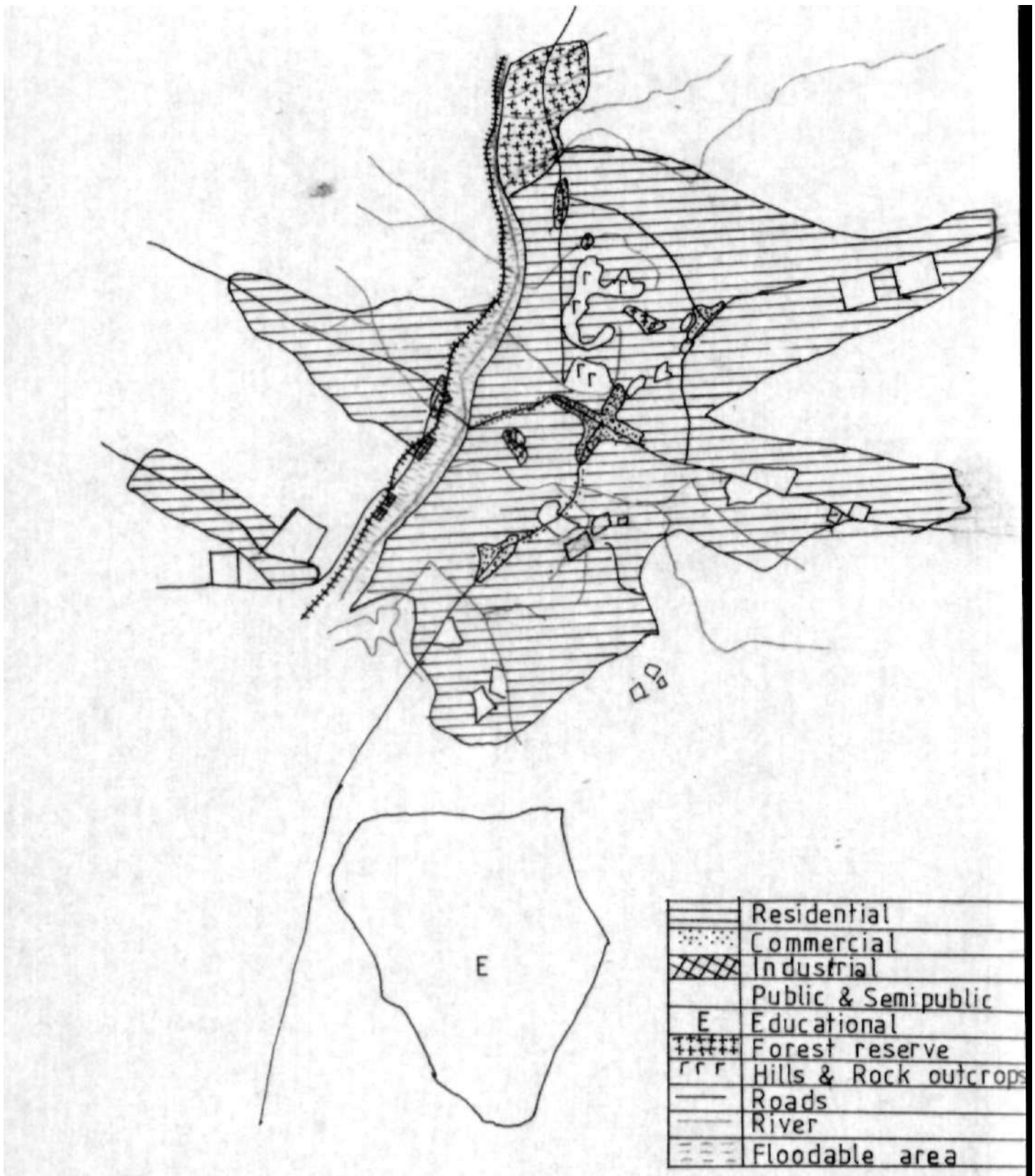
Abeokuta was more of trading and retailing centre based largely on traditional nature. The area around the junction of Ibadan,



ABEOKUTA LAND-USE MAP (1976)

fig.3

SOURCE Osot Associates



ABEOKUTA LAND-USE MAP (1980)

300 0 1200M

B·A·Daini fig 4

Dept· of U·R·P

ABU, Zaria

Lagos and Ajebo could be discribed as the CBD. It is here that the general Post Office, The NEPA Office, and Banks are situated. Both of the houses in the CBD area have mixed uses. The front is structured into shops which are either used by members of the house hold for commercial purpose or rented out for same use. Behind the shops are living apartments. Other areas fast growing for commercial purposes include Ibara and area around Lafenwa. The three commercial areas are now getting linked up gradually.

Hawking as an element in traditional commercial system in Yoruba land is mostly practiced. The ware are of few Naira in value but engages many people.

Fig. 3 and 4 show the landuses for the city in 1976 and 1980 respectively. Fig 5 shows the proposed zoning map for the same city for the year 2000.

CHAPTER 2

REVIEW OF LITERATURE

The literature to be review does not represent the total work that has been done so far but it will no doubt give some approaches which different authors have taken in solving some of the issues relating to residential location. Two types of work would be discussed. These are those that are descriptive in nature and those that are analytical.

2.1. DESCRIPTIVE:

BURGESS: In 1920 Burgess a Chicago Sociologist propounded what is known as the theory of concentic model. Burgess was interested in the city for its role as a determinant of human behaviour. Based on his observation, Burgess proposed five rings which he claimed were identified in his study of Chicago. The identified rings are:

Zone 1: This is the Central Business District of the city containing all the central elements like the offices, stores etc.

Zone 2: This zone he coined the zone of transition where the residential area is at the point of deterioration and which is being encroached by Zone 1. This zone Burgess believed was the first place an immigrant settles before getting adjusted to the new environment.

Zone 3: This is also a residential area of those who have got somehow settled after a brief stay in Zone 2 but still desire to live close to workplace.

Zone 4: This is supposed to be the residential zone for the middle class workers.

Zone 5: Burgess called this zone the commuter zone and serves as a domitory suburb.

In 1927 he renamed the five zones as:

1. The Central Business District.

2.2. ANALYTICAL

MEYER/KAIN/WOHL: They were of the opinion that the main idea behind residential choice in relation to workplace is to maximise the real total income. They are also of the opinion that in making such a decision that it is possible that workers might substitute between travel time and travel cost. In their studies they were able to conclude that income is an important factor in the type of residence which a worker lives. That this income differential also account for the ownership of accommodation such that while high income earners own their house most if not all the low income earners occupy rented houses. Further in the study they were able to relate age and sex to the type of accommodation which workers are looking for. Also important is the differences in behaviour of workers in different cities which they were able to relate to urban transportation characteristics. This they confirmed by comparing Chicago and Detroit origin and destination surveys. While Detroit has only public bus service, Chicago has a much more complex mix of public transportation modes. So also was the difference in the number of people employed in the two cities.

They argued that "if the same kind of housing cost less with distance from the city centre there should be resultant differences in the proportion of workers choosing to live in the various types of housing".[7] Regarding the effect of life-cycle in the choice of residence, they are of the opinion that workers with children live close to workplaces so as to "minimise their joint transportation and housing costs".[8] While unmarried or widow could afford smaller

7. Mayer, J.R. Kain, J.F., Wohl, M. 'The Urban Transportation Problem Massachusetts, Haward University Press, 1972, p. 123.

8. Ibid., p. 129.

space at the centre and reduce transportation cost.

They are of the opinion that the mode of transportation which is chosen by a worker would depend on various averages like speeds, costs, degree of comfort and the like and that the final choice will depend on how much residential space he consumes.

Their studies also confirm changes in mode by workers as distance of residence to workplaces increase. In the Chicago survey which they conducted it was discovered that the percentage of workers using automobile increases when compared with public transit trip as the distance from the CBD increases.

In term of racial segregation as it affects hosing, it was find in Chicago that where choice of housing is constrained by any form of discrimination that workers are ready to pay more on transportation.

WILSON F.R.: His main contribution was to investigate the factors influencing travel demands for the existing situation in Conventry and London with a view to giving suggestions on the future. He considered the factors under:

1. The principal dependent factors which affects car ownership in households.
2. Principal dependent factor which affect car usage by car owners.
3. Sociological and psychological factors affecting choice of travel mode.
4. The land-use factor
5. Traffic engineering factors.

6. Environmental factor.

7. Effect of housing costs and home purchasing factors.

In the study of Conventry which he conducted, Wilson, through workplace survey, collected door-to-door travel time for different mode of transportation. He also considered the out of pocket cost to the individual making the work journey using any of the available competing modes. He considers the effect of transfer from one mode to the other as being equivalent to 3d per transfer. Considering the inconveniences of using public transport in Conventry, Wilson was able to show that differences in location of workplaces in relation to distances from bus stops, waiting time at the bus stops, uncertainly of getting a sit, availability of shelter at bus stops and the transfer from one vehicle to another are the major contributory factors to the differences in the use of public bus to different workplace locations.

His study also affirms that socio-economic status is an important factor in the selection of residential zone. He also related economic status with modal choice and arrived at the conclusion that as economic class increases that the possibility of using car also increases.

One aspect of his study was that he was able to generate modal choice models which he used to test for the same study he carried out for London area and discovered that with cities of different sizes, the effect of the factors relevant to journey to work also changes.

KAIN, J.F.: This is an econometric study which has some relevance to land use and urban transportation. The data used for the study was collected in 1953 by Detroit Area Traffic Study. He was able to derive nine models using nine internal variables. The internal variables used are: Percentages of workers within a zone residing in single family unit, two family units, multi-family units and those residing in other types of dwelling places. Other internal variables used are mean automobile ownership of the zones workers, percentage driving auto to work, percentage using other means and mean elapsed time in hours using by the zones worker in reading work.

Kain then gave what he termed the external variables which are:

1. Mean family income of the zones workers in 100 dollars.
2. A proxy variable for the price of residential space per unit at the zone workplace.
3. Percentage of the zones worker who are male.
4. Percentage of the zones worker belonging to families having a single wage earner.
5. Level of transit service at the zone workplace.
6. Percentage of the zone workers belonging to families with more than two members.

Kain assumed that a worker's pre-occupation is the choice of residential density to live on the basis of his income, price of unit space, and space need. He used structure type as a surrogate to measure residential density which in itself can be misleading. On the price of residential space Kain has the hypothesis that

residential space has market value which differ from one area to the other depending on its relative distance to major work-places, to the level of employment his workplace and an inverse function of the supply of urban space available around the workplace. To incorporate the effect of differential land uses Kain substituted location rent-proxy. The surrogates which he used in the studies limit the validity of the model.

TORONTO STUDY: This study was carried out using a combination of workers survey, home interview, landuse survey and census report of Dominion Bureau of Statistics. The study investigated factors such as trip length, fare structures, population density, travel or service characteristics, geographical location of a particular zone and the economic motivations.

In the final analysis the study isolated these factors:

(1) Relative door-to-door travel time, including time spent walking to and from transit stations and time spent waiting.

(2) Income group.

(3) Degree of CBD orientation as the main factors which affect modal choice.

WASHINGTON STUDY

This study was conducted through home interview and O-D survey in 1955. The study was similar to the Toronto study. Five variables were used, namely:

1. The ratio of door-to-door travel time by public transit to the door-to-door travel time by private transport.

2. The ratio of travel time other than time on the vehicle by both modes.

3. The ratio of out of pocket travel costs by both modes.
4. The economic status of the persons making the trip.
5. Trip purpose either work trips or non-work trips.

The relevance of the study is that it is a predictive model on which modal choice decisions can be based.

ADAM W.T.: The work was to find out the relationship between the use of public and private transport with a view to finding out the factors leading to their uses. Adam adopted factors such as the land use distribution factors combined with factors such as population, car ownership, employment, transit service ratio, number of dwelling units and land area.

He then used multiple regression analysis to establish various relationships. He found out that transit service alone hasn't significant effect but that when combined with the other four factors it was significant.

The problem with the study was that it was not specific as 16 cities were used for the studies. Similarly the population of the cities vary from 48,000 to 3 million while the data was collected over 10 years which is long enough to bias the result.

HEGGIE, I.G.: The study was carried out in 1972/73 in Vancouver. It was concerned with how people perceive and value travel time savings and as such focus on travel time model which are capable of generating value of time. He was thus preoccupied with models dealing with disaggregated behavioural model. These models are characterised by trade off which could enable the price of time to be calculated.

He approached the study by using three types of choice decisions:

1. Modal choice.
2. Route choice.
3. Response to parking charges.

Haggie argued that some studies have been conducted with the basic assumption that there is no interdependence in the actual process of making journey decision but that in reality 'whether', 'how' and 'where' to make the journey are actually inseparable. The only situation he argued further is 'whether' to make the journey can be ignored is in journey to work.

He uses indifference curve approach for each mode. To actually find people's trade offs, six factors were used as independent variables.

1. The size of time savings.
2. The overall length of the journey.
3. Whether the journey was being made to or from work.
4. The geographical area in which the respondent lives.
5. The income level of the respondent.
6. The relationship between the responses for walking and waiting time (a) the seasons and (b) the provision of all weather protection at bus stops.

He divided travel time into:

(a) Walk home to bus.
(b) Waiting time at bus stops.
(c) Ride in bus.
(d) Interchange time.
(e) Walk bus to work.

He considered the variation that might exist in winter and summer and at the same time journey to work and from work.

Considering value of time savings, Haggie discovered that on the whole the value of time increases as the travel time increases to a point when it starts to decline. Though this phenomenon is common to both bus and car users, there is the indication that the threshold for bus user is reached earlier than for car users. Other conclusion made by Haggie was that, except for short journeys, the marginal value of time savings increases with journey length, that when one ignores the effect of journey length, the marginal value of in-vehicle time is more or less the same for both car and bus but that during the summer, the marginal value of savings in walking and waiting is lower than in winter.

On the differences between walking time for journey to work and journey from work, Haggie is of the opinion that homeward journey after a days work might be viewed as a substitute for a brief spell of exercise while this may not apply in the morning when the desire for exercise would probably be less.

Considering the residential area he realised that workers living in the Metropolitan Vancouver are paying higher amount on housing and facilities and this higher amount was to reduce time. Haggie is of the view that the common practice of expressing time value as a fixed proportion of the wage rate is in-correct, but that what is important is the disposable income and marginal values.

WATSON, P.L.: Though Watson's work was specifically based on inter-city travel, it no doubt has relevance to journed within the urban centres.

He tries to focus attention on the fact that modal choice in relation to any travel has a lot of dimensions each of which cannot adequately explain much unless when all are taken together. He demonstrated by formulating three hypotheses on fastness, cheapness and comfortability of mode. He was later able to synthesise the three hypothesis into one but giving weightings to each dimension depending on the environment, character of the traveller and the trip itself.

Choice using the final hypothesis he emphasised has built in assumptions based on Reliability, Limitedness of resources, preference reflected in behaviour and consistency.

Watson was much interested in binary choice and has therefore attempted at summarising choice between modes into binary types like public and private or motorised and non-motorised.

Contrary to some writers view, he felt that the value of time differ from one group of people to the other and that what ever value is placed on time depends on ones ability to buy time with money.

CHAPTER 3

METHODOLOGY

3.1. It was realised from the beginning of the studies that the reliability and consequently the validity of the end result depends solely on the data collected and method by which the analysis is performed. In this thesis, the data collection method was by surveys. Three types of surveys were used, namely: questionnaire survey, reconnaissance survey and the use of secondary data.

This chapter describes in detail each of the surveys as to the design and methods of carrying out the involved fieldwork.

3.2. ABEOKUTA JOURNEY TO WORK SURVEY:

The questionaire was framed in such a form that individuals given will not be biased and at the same time spend only a few minutes in the completion of the questionnaire. This is achieved by making the questions straightforward where possible alternative answers were provided to be ticked as applicable. The number of questions involved were also minimised. It was realised from the beginning, the difficulty which researchers find in data collection as respondents are of the opinion that, it could be meant for the purpose of taxation. This is much more pronounced in developing nation like Nigeria. An introductory note was therefore attached to batches of questionnaire going to specific workplaces. The introductory note explained the purpose of study, the usefulness which the study could have on the general well-being of the people and also reassured them that what ever data is given would be treated strictly as confidential.

For the distribution of the questionaires two alternatives came to mind:

(1) To administer the questionaire at workplace.

(2) To administer the questionaire at residence.

The first alternative was chosen as it is easier to track down workers at their respective places of work than at the residences. It was also found that workers are more dispersed at residential places than at workplace which is generally a meeting point for many people. It is also more convenient for the researcher to get free assistance from respective workplaces from some of the worker in the distribution and collection of the questionaire having worked in the town for some time?

3.2.1. DESIGN OF THE SURVEY:

Having discovered the need to collect data that could be of immense value, a considerable length of time was assigned to the drawing up of the questionaire.

The main problem was in the consideration of workplaces to be chosen as points of data collection. The problem was not as complex as the town now has few organised workplaces. Three sectors were given due consideration. These are 1. The government workplaces 2. Industrial, (3) Commercial. Except for few people working in small groups as the clinics, schools, almost all government workers are concentrated within a distance of less than one kilometre. The ministries within this area was thus chosen as area where data on government workers could be collected. The industrial sector also poses little or no problem in that the few large industries are all located along Lafenwa-Lagos Road. These industries could thus be chosen for data collection. The main area where main problem was faced is in the commercial sector. In the first instance they are distributed all over the town and in small number although the central business district has a larger proportion of the activity. Unlike the public sector and the

industrial sector, workforce in each of the establishment were often small.

The following ministries were selected randomly for sampling:

1. Ministry of Works.
2. Lands Department.
3. Ministry of Education.
4. Ministry of Information and Local Government.
5. Ministry of Health.
6. Ministry of Economic Planning and Finance.
7. Governor's office.
8. Ministry of Agriculture.

For the survey of industrial sector the main industries were sampled. They are:

1. The West African Breweries.
2. The Ceramic Industry.

In the commercial sector except for the Banks and the Post Office which employ more than 30 workers most of the other commercial concerns employ between 1 and 10 people. However the following offices were selected:

1. The National Bank
2. The First Bank.
3. The Cooperative Bank.
4. The General Post Office.

It was not easy to get the actual number of people working in each of the ministries in the town for the purpose of assessing and taking decision on sample size. However, the Secretariat Complex Master Plan contains an estimate of governments staff for each Ministry. This list could not show how many are working but

addressed itself to the approved estimate as follows:

1.	Office of the Governor	1,047
2.	Ministry of Finance & Economic Development	906
3.	Ministry of Establishment and Training ..	629
4.	Ministry of Education	280
5.	Ministry of Health	433
6.	Ministry of Justice	190
7.	Ministry of Local Government and Information	976
8.	Ministry of Trade and Cooperatives	250
9.	Ministry of Works and Housing	1,437
10.	Ministry of Agriculture and Natural Resources	1,421
11.	Audit Department	106
12.	Public Service	54
13.	State Health Council	72
14.	Local Government	188
15.	Central Schools Board	188
16.	High Court of Justice	292
17.	Water Corporation	630
18.	Agricultural Development Corporation ..	281
19.	Sport Council	107
20.	Waste Disposal and Sewage Board	134

Based on 2.5% per annum growth it is expected that the workforce will attin 12,240 in the year 1980. In the Industrial Sector the brewery has a workforce of 560 while ceramic employs 247 people. The banks and post offices and other commercial concerns employ only between 30 and 50 people each.

Considering all these facts a total sample of 500 was found adequate. The questionaire were distributed amongst the three sectors as follow:

TABLE 3.1

PERCENTAGE OF RETURNED QUESTIONNAIRE

NUMBER DISTRIBUTED		NUMBER OF USEABLE QUESTIONNAIRE RETURNED	PERCENTAGE RETURN
Government	- 260	252	96.9
Industry	- 120	100	83.3
Commerce	- 120	68	56.7
TOTAL	- 500	420	84

Source: Surveys.

The distribution of the questionnaires was carried out in such a form that both the low, middle and high income workers in each of the sectors would be well represented. At the present, most workers in Abeokuta do not earn above ₦3000 per annum. The approved 1977/78 staff list indicated that only about 4% of the total work-in the public sector earn salaries above ₦7,104 while more than 52% were in the low income bracket. In the private sector the statistics of P.A.Y.E. tax payers in Abeokuta also show a similar trend with more than 50% also within the various income brackets.

.2.2. DIVISION OF ABEOKUTA INTO ZONES.

To be able to study adequately the overall general pattern of residential areas which workers of different income bracket in the three sectors reside, it was necessary to zone the town into a number of residential areas bearing in mind the homogeneity in characteristics

which a zone is expected to have. It was considered that the use of census wards would not be adequate in this issue and that a districts based on the result of reconnisant survey on housing and facilities, services and historical aspects should be the basis for the demarcation of zones. The final decision was guided by the use of upgraded 1963 areal photograph map of the town on scale 1:4,000. It was found most necessary to use the maps since it shows all the streets including street names.

The following six zones were identified with their associated characteristics.

1. IBARA/TOTORO RESIDENTIAL AREA

   (a) Government residential area and Housing Corporation buildings located within this zone most of which have been allocated to the senior staff members in government and parastatals.

   (b) The Old Secretariat used when Abeokuta was a divisional headquarter is located here. This has, since the creation of Ogun State, been extended and turned into the state's temporary secretariat.

   (c) It has long been a status areas as the zone was the area the Syrians, Lebanese and the Indians once settled and as such has attracted affluent developers.

   (d) The main disadvantage which the zone has, is lack of adequate water supply owing to the high elevation of the area. Survey reveals that water corporation tankers are being used to supply water and that the government is hoping to construct a pumping station in the area to facilitate constant flow of water.

2. LAFENWA-SABO-ITAOSIN RESIDENTIAL AREA:

(a) This is the area of major industrial activity. The Brewery ceramic, and cork industries are all located within this zone.

(b) The industries have attracted the development of modern buildings within the zone.

(c) The zone enjoys adequate water supply.

(d) Institutions include Aro Mental Hospital.

3. GBAGURA ILUGUN RESIDENTIAL AREA:

(a) It is part of the traditional core.

(b) Buildings are old, lack adequate facilities, and inadequate and poor roads.

(c) It is part of the city earmarked for upgrading by the state government.

4. SAPON/ISABO/IDIABA:

(a) Area adjacent to the main commercial centre of Sapon and also contiguous with zone 1.

(b) Building types include mixture of old and modern.

(c) Institutions include General Hospital, State Hospital, Women Training Centre and some government residential houses for top senior officials.

5. LANTORO/AKE/ADATAN/ASERO

(a) Residential area with modern buildings.

(b) Adequate and constant water supply.

(c) Institutions include Ake's palace, Catholic Hospital, and Abeokuta Local Government Council Office.

6. IBEREKODO/KESSI RESIDENTIAL AREA

(a) Adequate water supply due to nearness to the resourvioure.

(b) Poor and inadequate road system.

(c) Adjacent part of the area to Zone 3 earmarked for upgrading.

(d) Mixture of modern and poor buildings.

3.3. QUESTIONNAIRE DESIGN

The survey was carried out between August and December 1979. To facilitate the distribution of the questionnaire, senior staff members of each of the establishments were consulted for their cooperations. They consented and actually did the distribution and collected them back.

The questionnaire designed for the survey, Appendix 6 , was made in one part containing a total of 29 questions. The questions were framed in such a form that any person could easily complete them without much assistance. The length of the form in term of the number of question was considered necessary to be few so that the return might be substantial.

The first question aim at identifying the home location of the respondent. To make it easy for the location of the street the second question was found necessary. In so doing street names duplicated in another area might not confuse that in which the respondent is residing. Question 3 is intended to be used in finding out the ratio of married workers to unmarried workers. The leading question on age which should have been asked before question 3 was left out as most Nigerians do not like to disclose their ages.

Since the creation of the new state some married couples have been living separately from their sponses because some are

working in establishments which do not have branches yet in the state capital and as such live alone only to travel to join their families during the weekends. Question 5 deals with the occupational structure of workers in Abeokuta. Unfortunately most of the respondents left out this questions unfilled.

Question 6 intends to be used in determining whether indigenes have specific areas in which they live within the town compared to the immigrants. It will also be of use in determining ratio of indigenes to non-indigenes in the total workforce in the town.

Since it is necessary to know the percentages of workers taking up rented from unrented residences, Question 6 was found necessary so as to identify ownership of these houses which the workers are occupying.

The 8th question is intended to be used to assess the salaries of individual respondents. This question is preferred to questions like, how much do you earn monthly? Respondents in most cases do not feel bad at ticking appropriate salary range to which they belong. It was also found necessary to have an ended frame above ₦600 per month since most workers in the town earn less than ₦7,100 per annum.

Question 9 considers the fact that an individual has an idea of what he/she considers appropriate to be spent on house rent per month. In some cases one might not have his desire materialise. The amount ticked were then converted into percentage. Question 10 actually deals with the amount which the respondent is paying for house rent. Those occupying staff quarters were specifically instructed to add the subsidy to the monthly rent which is deducted from his/her salary before ticking one of the alternatives.

Question 11 and 12 asked the same type of questions as in 9 and 10 but this time on transportation. Unlike in the case of house rent, the researcher is of the opinion that most respondent might not find it convenient to calculate the total amount of out pocket expenses on transportation monthly but could easily assess the average amount which he/she spends daily on transportation. This can be converted during the analysis stage to the same denomination as that of house rent. The same operation on Questions 25 and 24 will give the time spent on return journey.

Question 13 was designed to identify the mode of travel used by the respondent for work-trips. The eight alternatives which are given in question are the modes now in use in the town. The researcher is of the opinion that only the regularly used mode is essential since most workers occasionally deviate from their regular mode either to avoid lateness or otherwise. If word "regular" were left out of the question it is not unlikely that some respondents will tick more than one mode. Question 14 is asked so as to be able to know the percentage of the total workforce who could not get a direct mode of transportation to work and thus has to break trip.

Questions 15, 16 and 17 were asked so as to be able to assess the percentage of workers total time that are spent on walking to vehicular stand, waiting at the stand and walking again from necessary when dropped at the nearest bus-stand to workplace.

While questions 18, 19 and 20 seem to repeat almost the same questions as for 15, 16 and 17 it was however found necessary since where one takes a vehicle back home might not necessarily be the same point that he/she was dropped in the morning. At the same time the time spent walking and waiting to and at the stand respectively might be different from the morning pattern.

Question 21 is meant to be used with the salary structure so as to determine the relationship existing between distance from workplace and salary. This is the major area where the response could be biased as many might find it difficult to assess distance.

Questions 22, 23, 24 and 25 are asked to obtain information on the total time spent from home to workplace and from workplace back home. It was necessary to avoid direct question like "How many minutes do you normally spend from your home to your workplace"?" because the answer that might be given are likely to be seriously biased. These questions are asked instead of the direct question knowing fully that workers would have the idea as to when he normally lives home and when he gets to the workplace. Similarly workers would have a good idea as to when he lives workplace and when he finally get back home. The substraction of the response on question 23 from that of question 22 will give the time spent from home to workplace.

Question 27 was designed to supply the number of people living with the respondents to whom he/she is directly responsible. House maids are not included since they are not likely to influence the choice of where one lives. The question also intend to separate the dependents that are working from those that are in the school. The distances at which each of the dependents school is, from the present residence is also asked along in this question.

Question 28 is directly related to question 27 aims at correlating the presence or absence of dependants with distance from workplace.

Question 29 also linked to both questions 27 and 28 in that it requires further from respondents with dependents living with them as to how they might behave if they were to be living alone.

3.4. TECHNIQUE OF DATA ANALYSIS AND PRESENTATION:

The data collected were analysed on the A.B.U. Computer, using the statistical Package for Social Scientists (SPSS). The results were then presented in graphical and table forms.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF FINDINGS

4.1. SALARY STRUCTURE OF WORKERS

Analysis of salary structure of workers, illustrated in Fig. 6 shows that about 57% do not earn salaries above ₦200 per month. 26% others attract monthly salaries of between ₦201 and ₦400 while only about 16% earn salaries above ₦400 per month. The mean salary of workers in Abeokuta is about ₦177 per month while the median salary is around ₦128. The standard deviation of the salary structure is ₦165 with standard error of ₦10.14. Using 95% confidence interval a limit between ₦154.7 and ₦199.6 can be set. This indicates that one can be 95% sure that the mean salary of workers in the city lies within the limit.

From this, it can be seen that the mean and the median salary is expected to improve in the future as more employment opportunities are created and wages increased.

4.2. MARITAL STATUS

The percentage of married to single workers is 61% to 38%. This is illustrated in Fig. 7. The implication for the future is that housing demand for workers might be over-assessed as most married workers may be living with their spouse.

4.3. OWNERSHIP OF ACCOMMODATION

Out of the total workforce sampled, a total of 84.3% of the workers are living in rented apartments or government quarters. Only 1% of the total sampled live in owner-occupier houses while 13.8% of the workers are living in houses which are either owned or rented by parents or relation. This is an

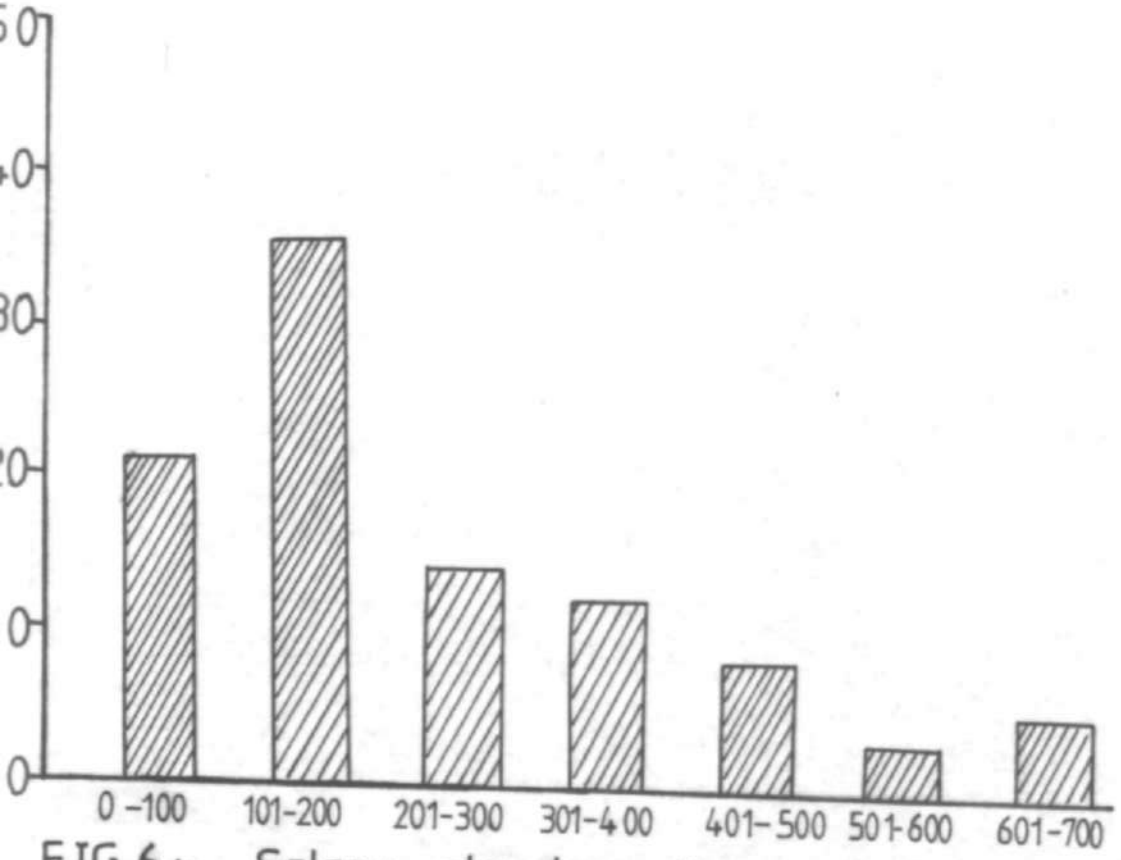


FIG. 6 :- Salary structure (in naira)

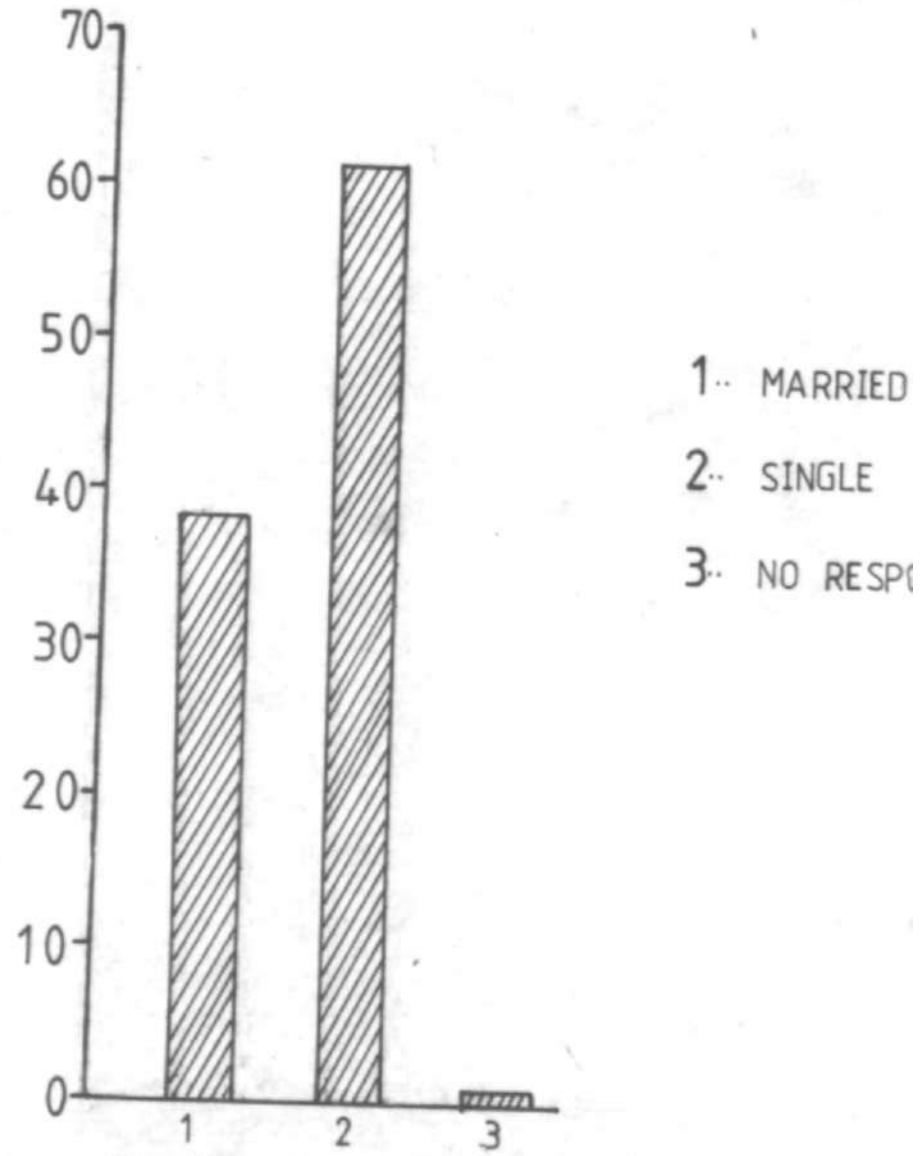


FIG. 7 :- Marital status

indication of a city which is just attracting migrants from other areas. As time goes on it is expected that the percentage of those who will be living in houses of their own will increase. This is because of social pressure to own a house as early as possible not only amongst natives but also amongst migrants. To the non-indigenes the tendency to build houses will be in an attempt to avoid payment of rents and also with the believe that even when they retire back to their places of origin they could let out the houses to others. Added to this amongst the natives is the tendency to love to say confidently that, 'this is my house'.

While I have suggested that more and more percentage will in future occupy their own houses, it is the high income group and to a lesser extent, the middle income group that will be much affected. The low income earners are likely to continue to occupy rented houses. This is because in the first instance the low income earners will have less disposable income and at the same time, could not attract housing loan from either banks or their employers. The result is shown in Fig. 8.

4.4. PLACE OF ORIGIN OF WORKERS

Analysis of workforce in the state capital shows that non-natives account for 50.2% of the total workforce while natives account for 47.6%. The remaining 2.2% of the respondents failed to give account of their respective places of origin. The result is that even if the 2.2% response is added to the total number of natives, the non-natives will still be a bit more in number than the natives. This tendency is not likely to change because as a state capital immigration rate is likely to increase as more establishments are opened. Fig. 9 illustrates the findings.

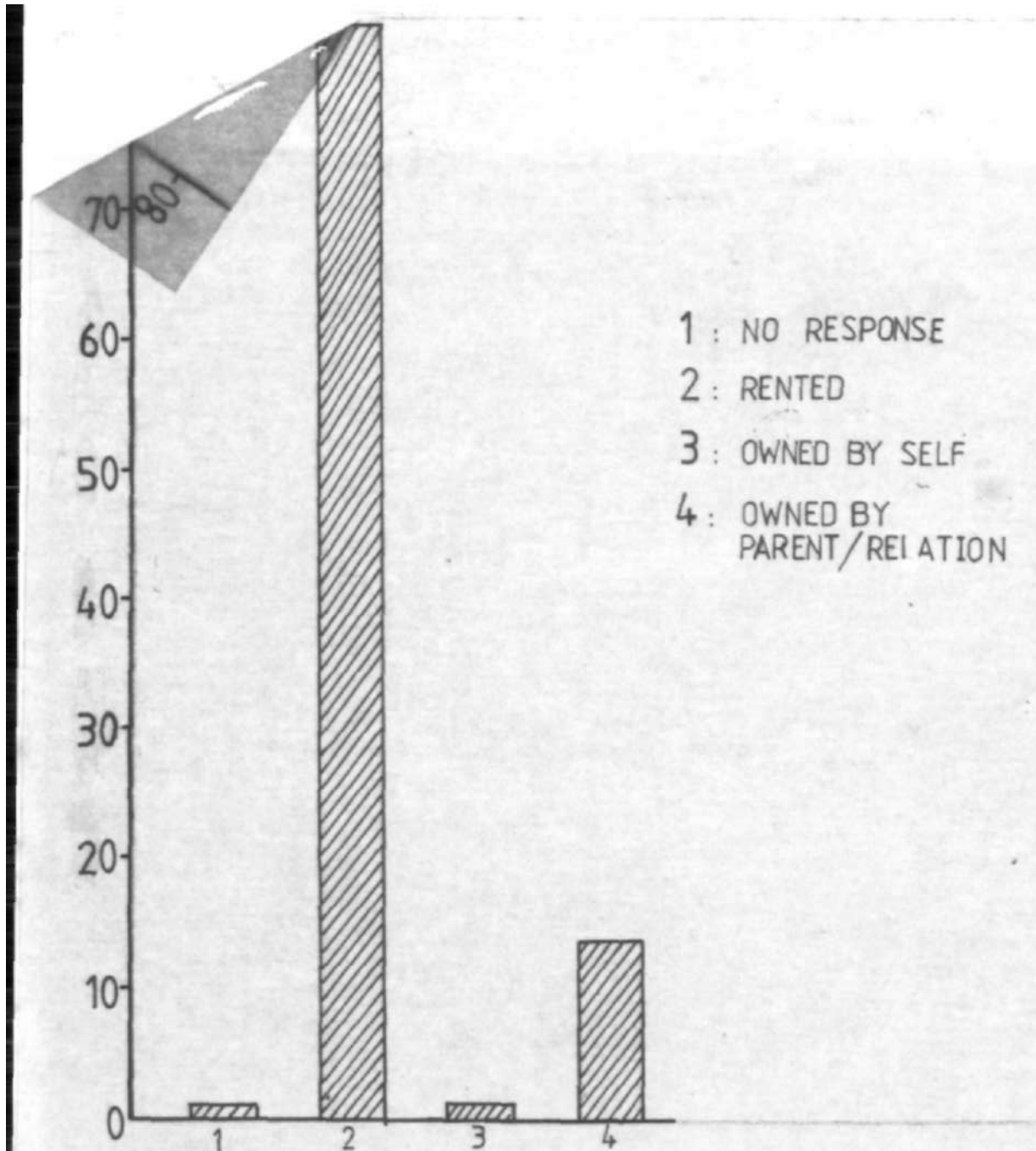


FIG. 8 :- Type of accommodation

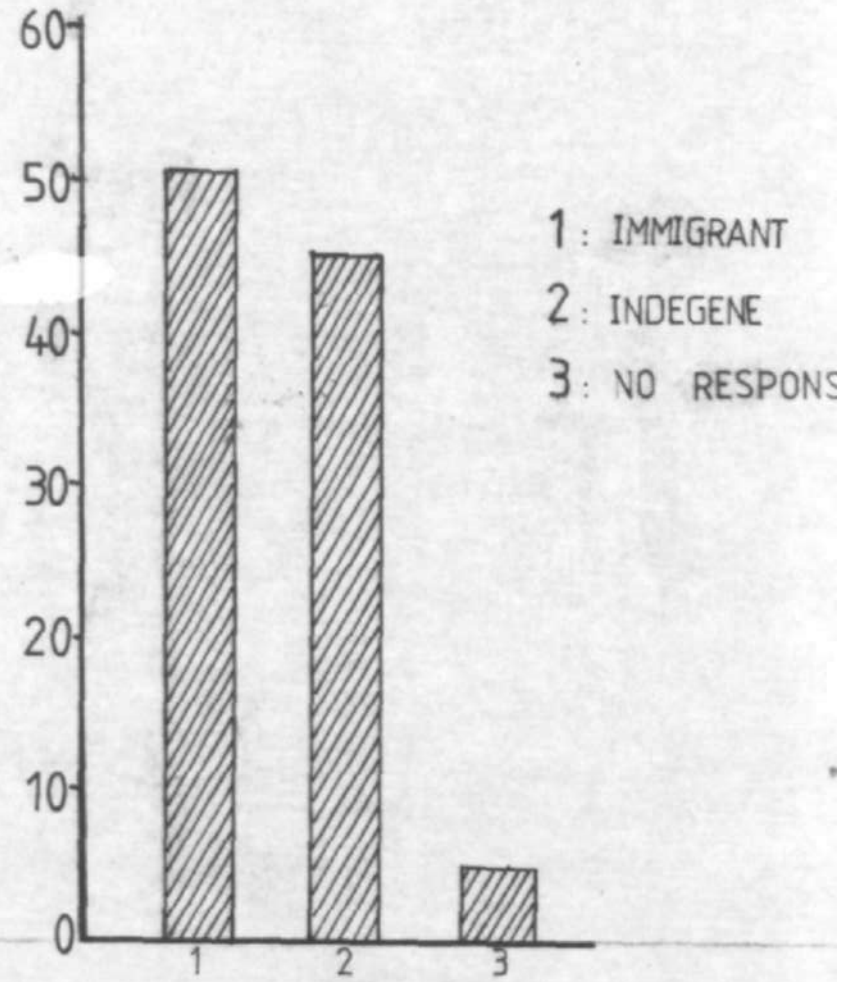


FIG. 9 :- Origin of worker

4.5. TYPE OF WORK.

Abeokuta now as a state capital is more of administrative town. This is because majority of the workers (Fig. 10) work for the government. Workers in the industrial sectors are at present very few. The commercial sector is developing and in the nearest future, it might be better organised.

4.6. HOUSE RENT:

The situation of rent in Abeokuta shown in bar graph form in Fig. 11 indicates that most tenants are paying more than what they prefer. While 57.7% of the respondents indicated that they would not want their rent to exceed 20% of their monthly salary, analysis of actual amount paid on house rent, shows that 40% of the workers are paying rent not exceeding ₦20 per month.

A comparison of those willing to give up more than ₦70 of their income for housing with those actually paying more than ₦70 is 4.3% to 19.5%. This indicates that the workers are actually paying more than they could afford. This is likely to have arisen due to housing shortage which a new state capital is expected to experience with immigration of workers.

Detailed analysis proves that what workers are actually paying for house rent, exceed what their budget could afford - Fig. 12. The expected mean gives a rent of ₦19.8 or 10.8% of salary on housing and the median rent of ₦19.72. The Actual mean on rent was found to be ₦25.3 or 14.3% of salary and a median rent of ₦18.76 considering the standard deviation of ₦17.9, error of ₦1.23 at 90% confidence interval, the expected mean has a limit between ₦15.1 and ₦21.8 while the actual rent has a standard deviation of ₦24.74 standard error of ₦1.71 with actual limit of mean between ₦21.67 and ₦28.67 at 90% confidence interval.

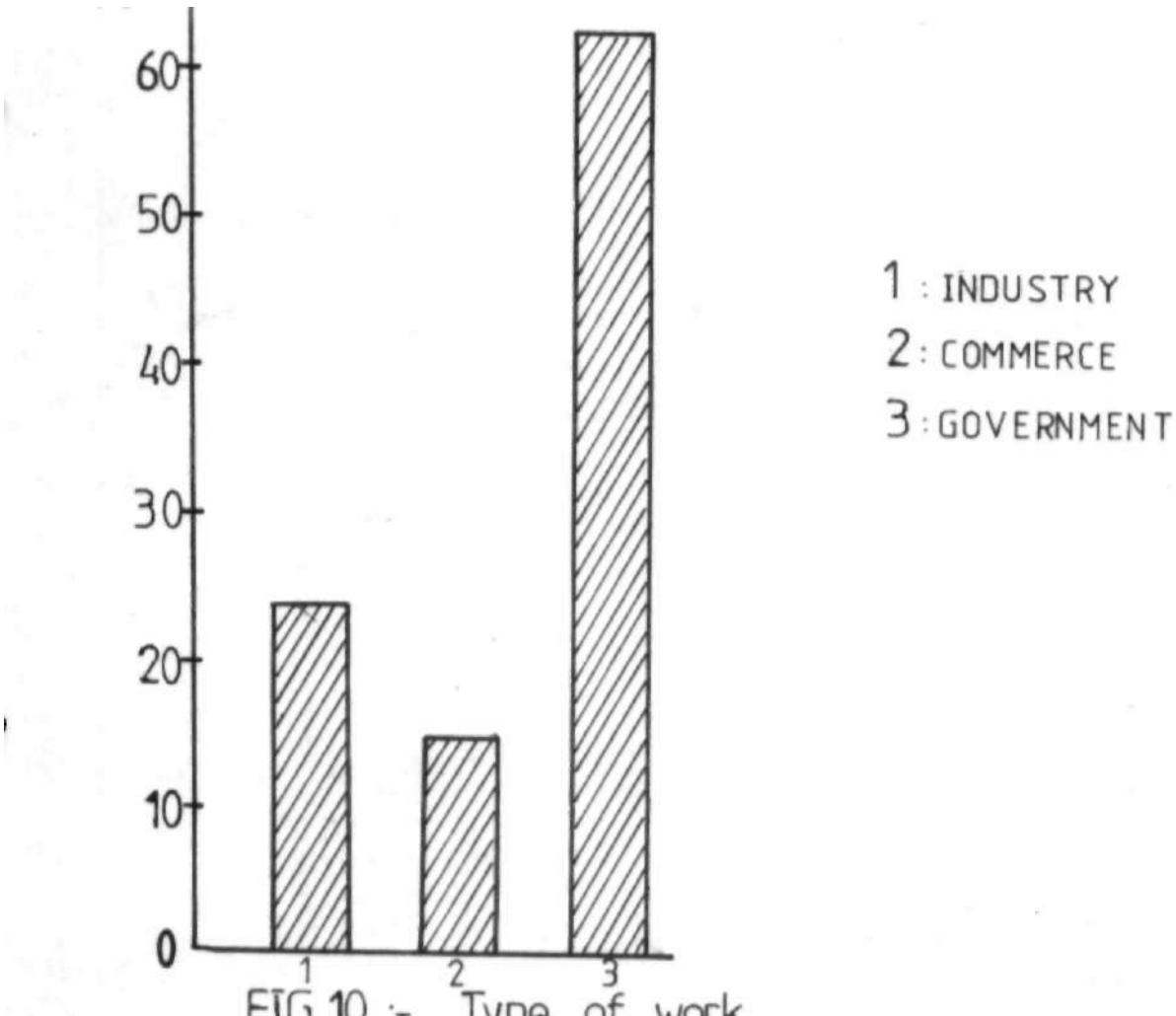


FIG 10 :- Type of work

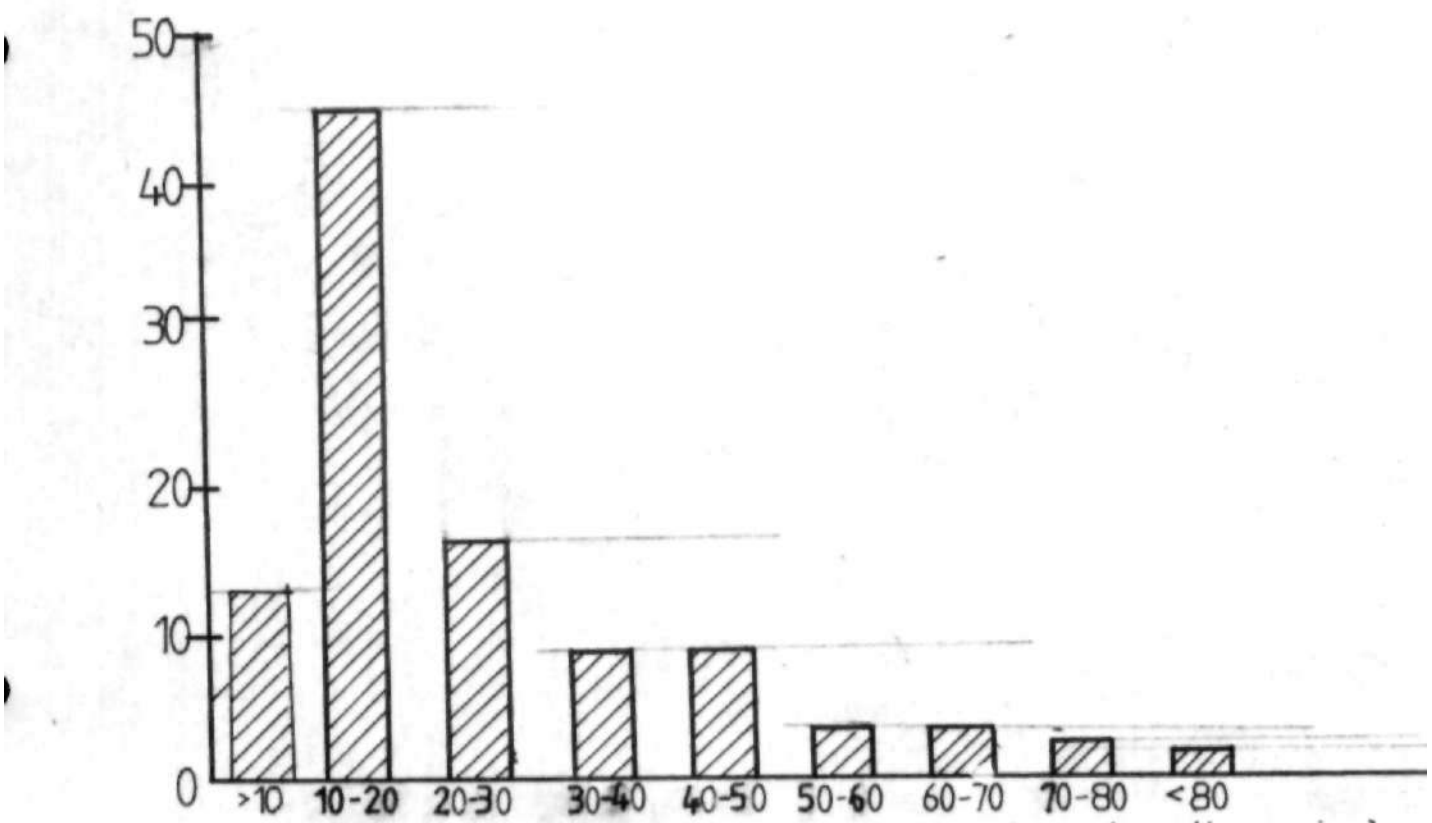


FIG 11 Expected amount on housing (in naira)

Table 4.1 gives respective values for different sectors and income groups.

TABLE 4.1

MEAN PERCENTAGES (EXPECT AND OBSERVED) OF SALARIES ON RENT AND TRANSPORTATION

EXPECTED RENT	EXPECTED RENT	ACTUAL RENT	*EXPECTED TRANSPORT FARE	*OBSERVED TRANSPORT FARE
ALL	10.84	14.30	4.24	5.53
INDUSTRIES(ALL)	11.62	15.64	4.99	6.79
" (Low Income)	13.77	17.31	7.64	10.44
" (Middle ")	8.28	13.35	2.27	3.20
" (High ")	10.35	14.95	2.03	2.43
COMMERCE(ALL)	9.99	14.77	3.79	5.94
" (Low Income)	8.56	12.96	2.45	3.67
" (Middle Income)	12.98	18.66	6.90	11.32
" (High Income)	11.53	15.84	2.55	2.78
GOVERNMENT(ALL)	10.72	13.67	4.05	4.94
" (Low Income)	10.89	13.42	2.86	3.39
" (Middle ")	11.83	15.79	7.51	9.90
" (High Income)	8.07	10.98	2.83	2.61

*Calculation based on 20 working days for government workers and 25 working day for industrial and commercial workers.

Source: Abeokuta Surveys, 1979.

4.7. TRANSPORT COST

The expected amount which workers are ready go vie up to transportation, like in the case of housing, varies from one person to the other. A total of about 52% are ready to give up an amount not exceeding 40K per day while 32.5% are ready to give up to between 40K and 80K per day. The analysis further shows that only 1.9% of the workers are ready to offer an amount above ₦1.00 for transportation per day. This is illustrated in Fig. 13. The mean amount of 29K and median of 25K was observed, with standard error of 1.46K and standard deviation of ₦11.08K. This gives a limit of between 27.5K and 31K for the mean at 95% confidence interval. As shown in Fig. 14, on the other hand the actual amount spent on transportation for workers indicated that only 6.2% are paying less then 20K per day while those paying between 20 and 40K account for 30.5% of the total workforce. Those giving up between 40K and 80K accounts for 51.4%. About 6.2% of the workers are at present paying more than ₦1.00 fare per day.

The mean value of the actual amount paid as fare is 44.36K with median value of 43.02K standard deviation of 28K and standard error of 2K. Compared to the limit for the expected fare on transportation, the limit between 40K and 48K. This shows that the lower limit of the actual amount paid on fare is higher than that for the expected and as such the variation is significant.

When the analysis was carried out for different sectors and also for different income groups within the same section, the level of their variations of the expected fare and the actual fare being paid becomes clearer (Appendix 4.85). See Table 4.1. for further analysis as it affects different sectors and income groups.

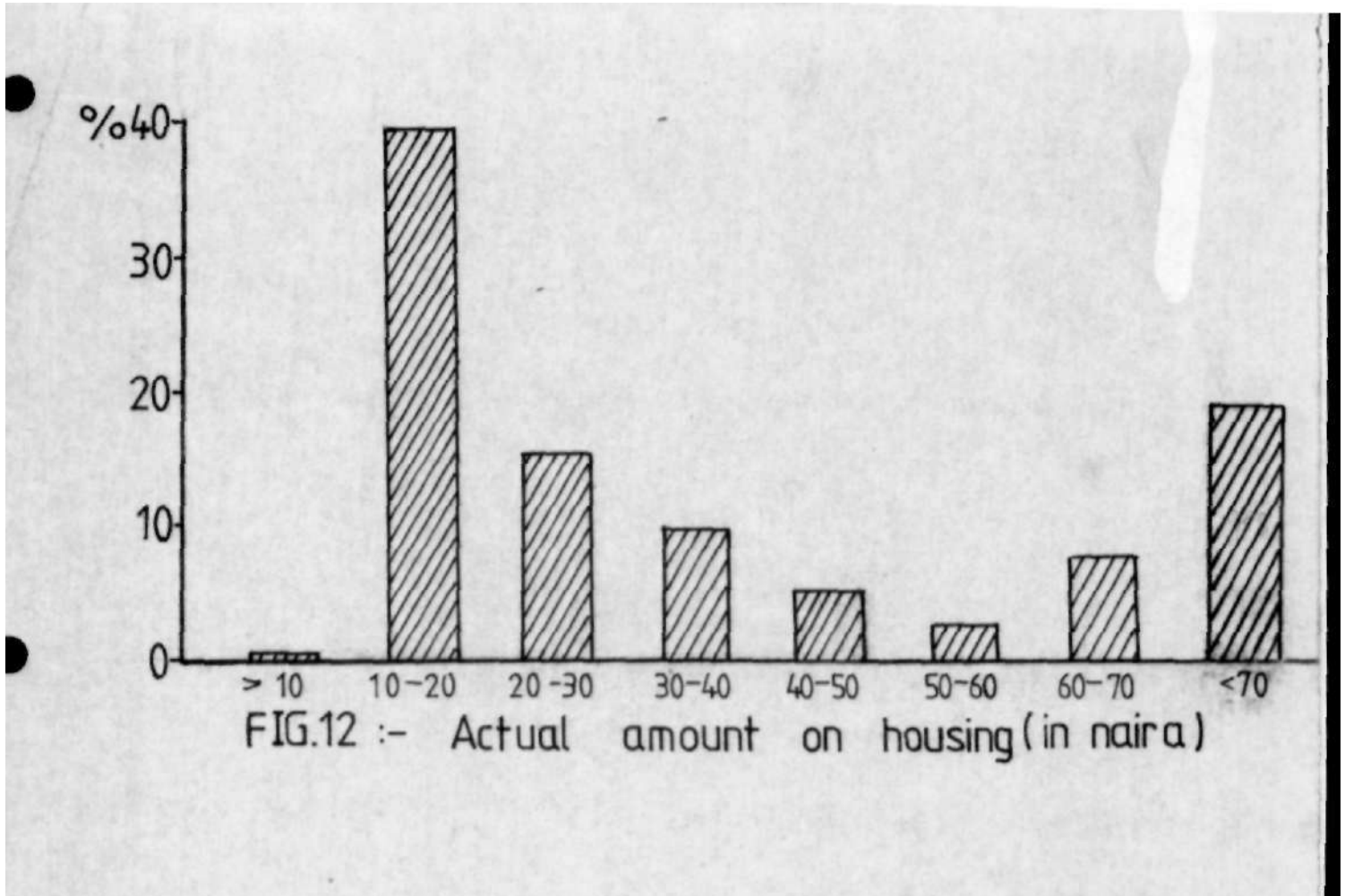


FIG.12 :- Actual amount on housing (in naira)

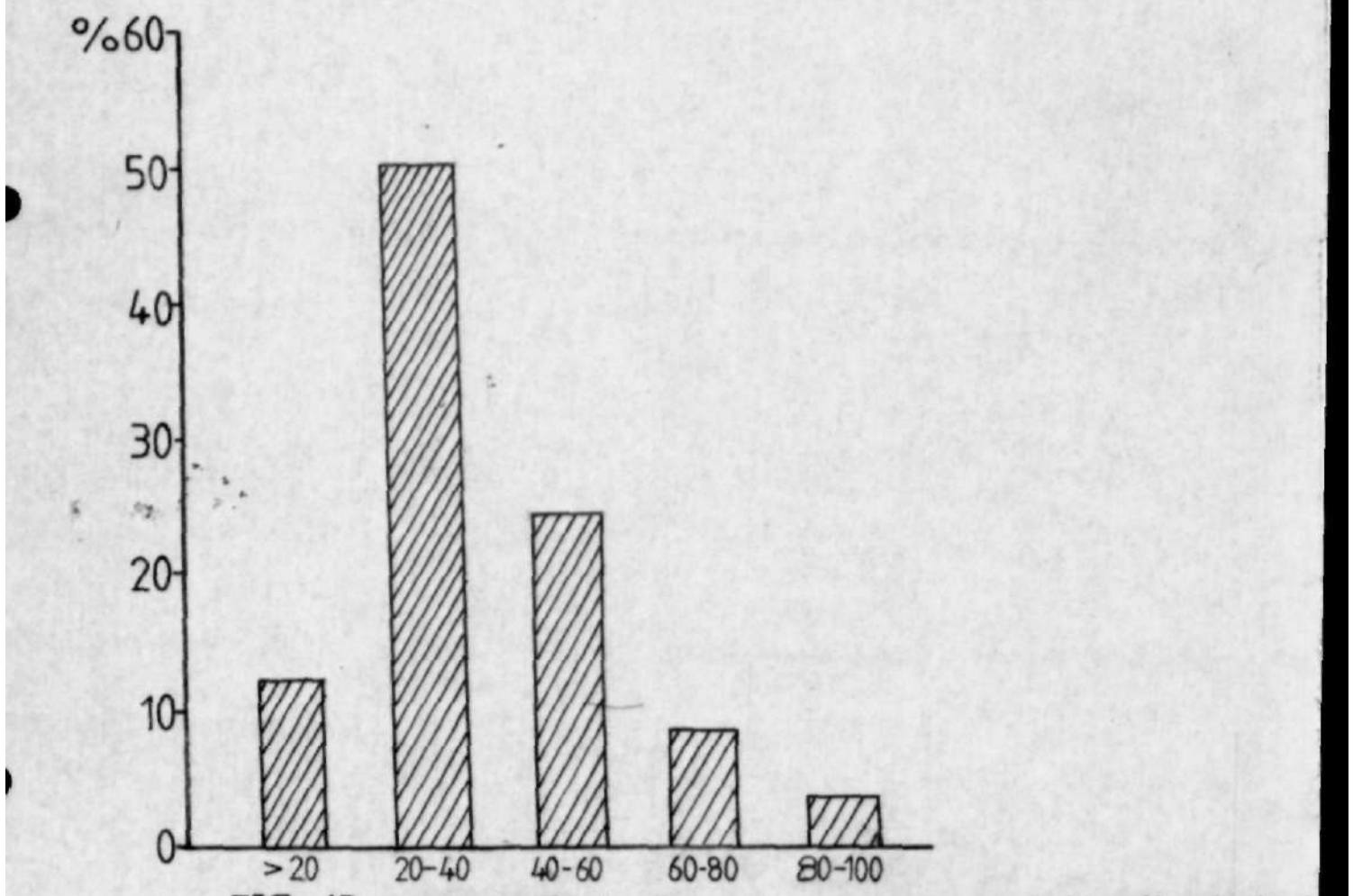


FIG. 13 :- Expected amount on transportation (in kobo)

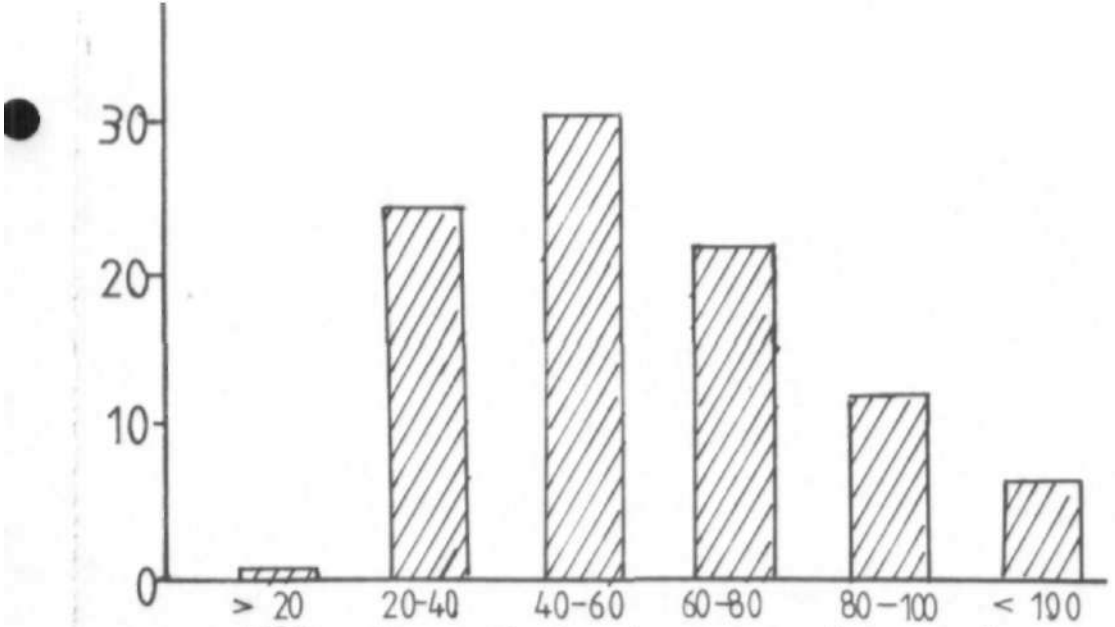


FIG. 14:- Actual amount on transportation(in kobo

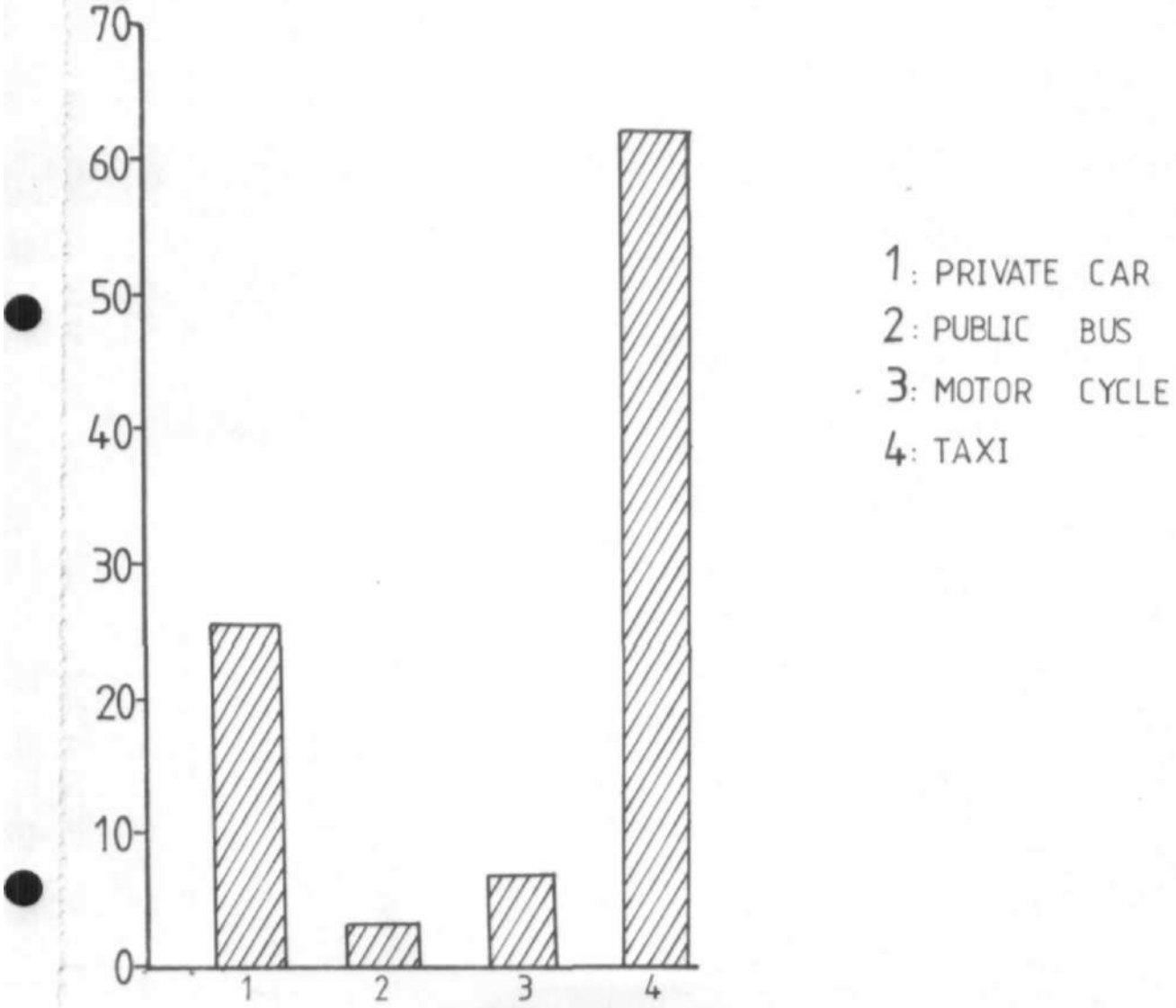


FIG. 15:- Mode of transport

4.8. TRANSPORT MODE AS AN ELEMENT:

The analysis (Fig. 15) shows that a total of 258 workers corresponding to 61.4% of the total respondent commute between home and workplace by taxi. Those using private cars accounted for 106 or 25% of the respondents. Other modes of transportation are not of much importance as only 10 people or a little above 1% walk from home to workplace, while 28 and 14 respondents respectively representing 6.7% and 3.3% of the total respondents commute to work by public bus and motorcycle.

The analysis shows that about 70% of the total workforce need one form of public transport or the other. The public bus patronage is taking care of few workers at present because only two routes are being plied by buses at present. These are Asero-Ibara and Asero-Ita-Osin roads. Most of the workers thus live at a distance likely to be too far from the bus route. Since the taxis operate throughout the city, it is likely to be prefered.

Presently most workers in the city do not change mode before getting to their respective places of work, as 60% of the respondent indicate. Another 25% change mode once.

4.9. TIME ELEMENT (JOURNEY TO WORK PLACE)

4.9.1. WALKING TIME:

It is still a short distance that workers walk from home to bus or vehicle stand. About 48% could get taxi or bus from their respective door steps while 70% could get to the vehicle stand in less than 5 minutes. Those who could not get to the stand in less than 15 minutes account for just 2.4% of the total workforce. The situation is illustrated in Fig. 16.

On getting to where individual drops, it is not unlikely that some might have to walk again for some time before getting to the workplace. Analysis show that 47.1% actually get to their

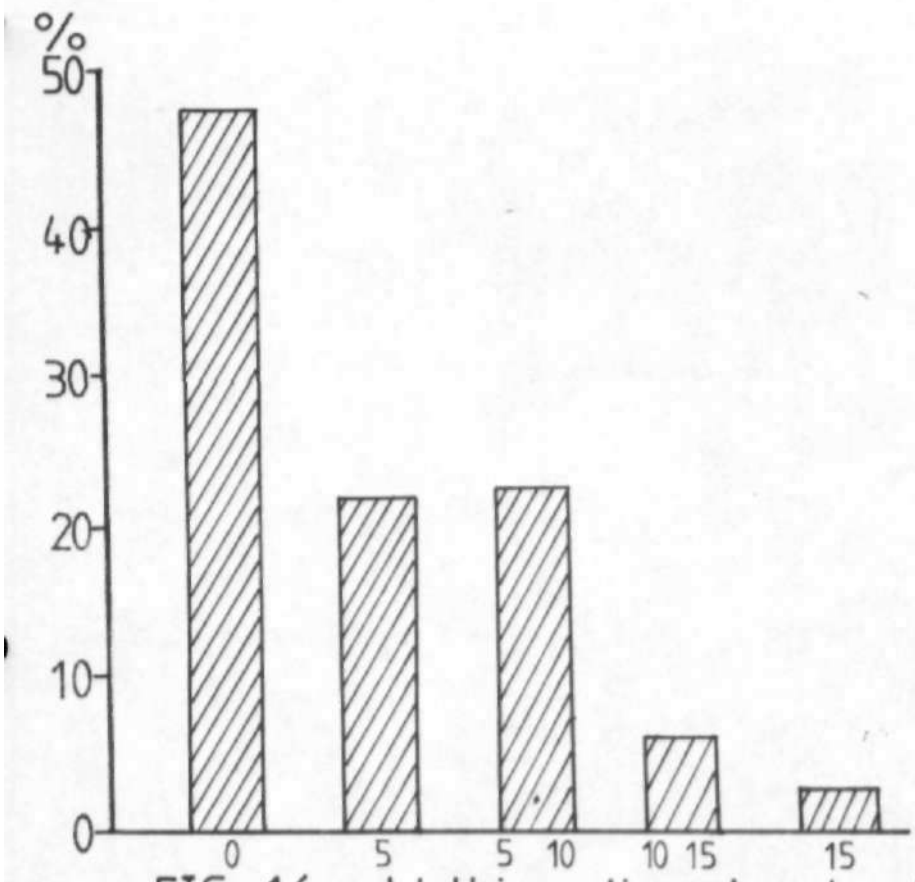


FIG. 16 :- Walking time to stand from home (in mins)

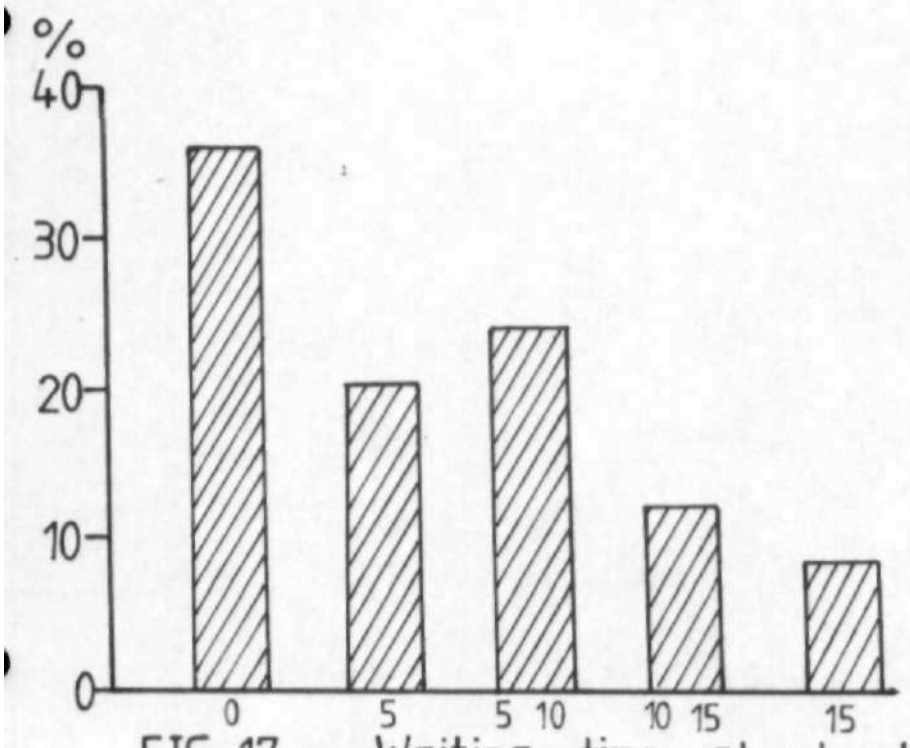


FIG. 17 :- Waiting time at stand to office (in mins)

workplaces before disemborking while another 29% has to do the walking for less than 5 minutes. On the whole only about 2.4% actually walk for more than 15 minutes from the point they disembark before getting to their workplaces.

4.9.2. WAITING TIME:

As Fig. 17 indicates whereever one takes transport, whether at the doorstep or at the stand the time spent waiting at the stand really exceed 15 minutes (2.4%). 35.7% of the workers do not wait at all. These are the group that goes on either private cars, motorcycle, bicycle or do the commiting wholly on foot. Considering those who uses one form of public transport or the other 31% do not spend more than 5 minutes waiting while 37% wait for as long as between 5 to 10 minutes. Only about 13.4% exceed 15 minutes at the stand.

4.9.3. DOOR-TO-DOOR TRAVELLING TIME:

The total time which accounts for the sum total of both walking, waiting time and in vehicle time illustrated in bar graph form in Fig. 18 shows that 67.1% of the total respondents spend between 10 minutes and 30 minutes to workplaces. Those spending between 30 and 50 minutes to their workplaces amount to 28%. Just about 3.8% spend more than 50 minutes on the way before getting to their workplaces.

The analysis gives a mean total travel time of 20.2 minutes with a medium value of 12.53 minutes.

4.10. TIME ELEMENT (JOURNEY FROM WORKPLACE)

4.10.1. WALKING TIME:

44.24% of the total workforce using public transport spends less than 5 minutes from office to the vehicle stand. (It is

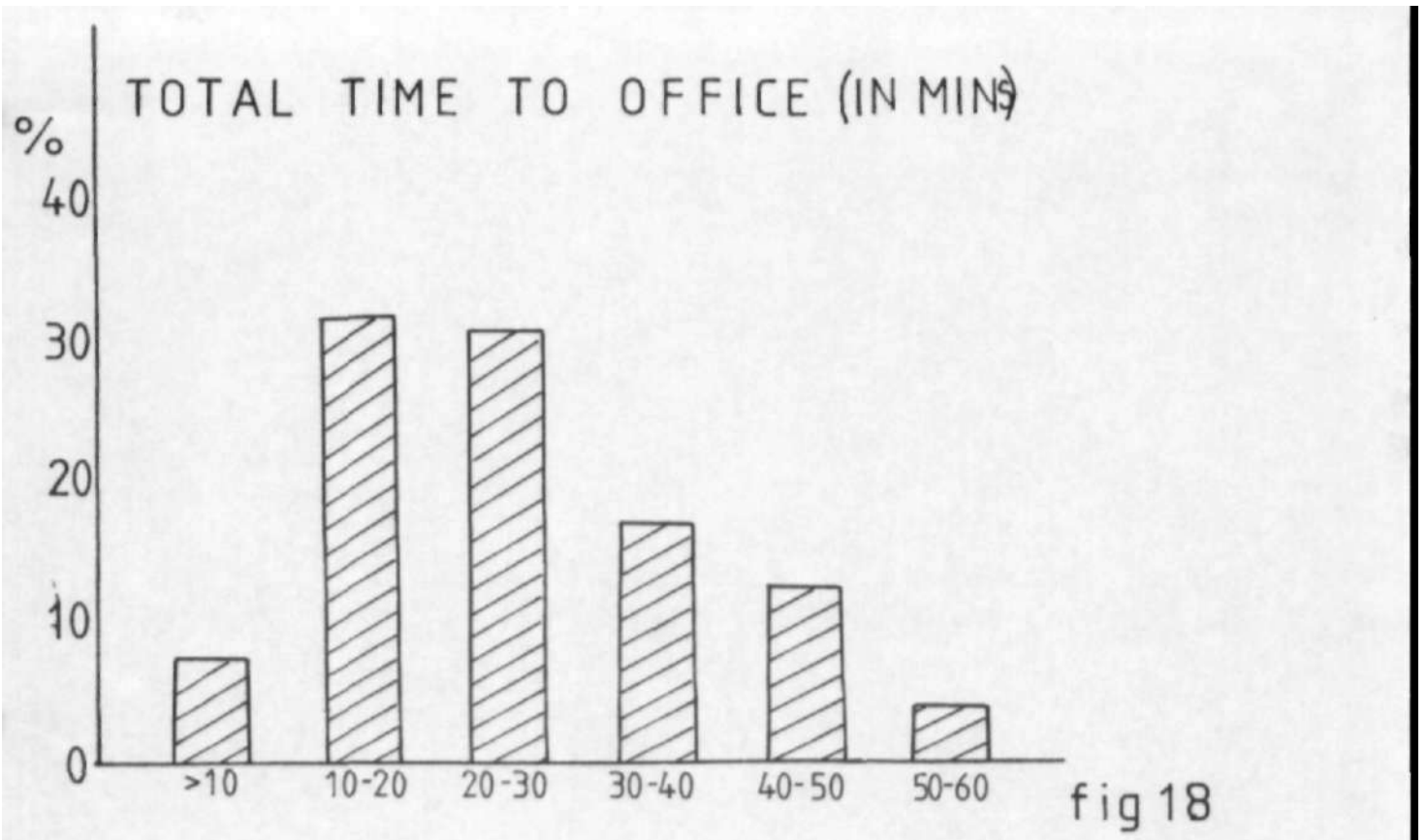

TOTAL TIME TO OFFICE (IN MINS)
%
40
30
20
10
0
>10
10-20
20-30
30-40
40-50
50-60

fig 18

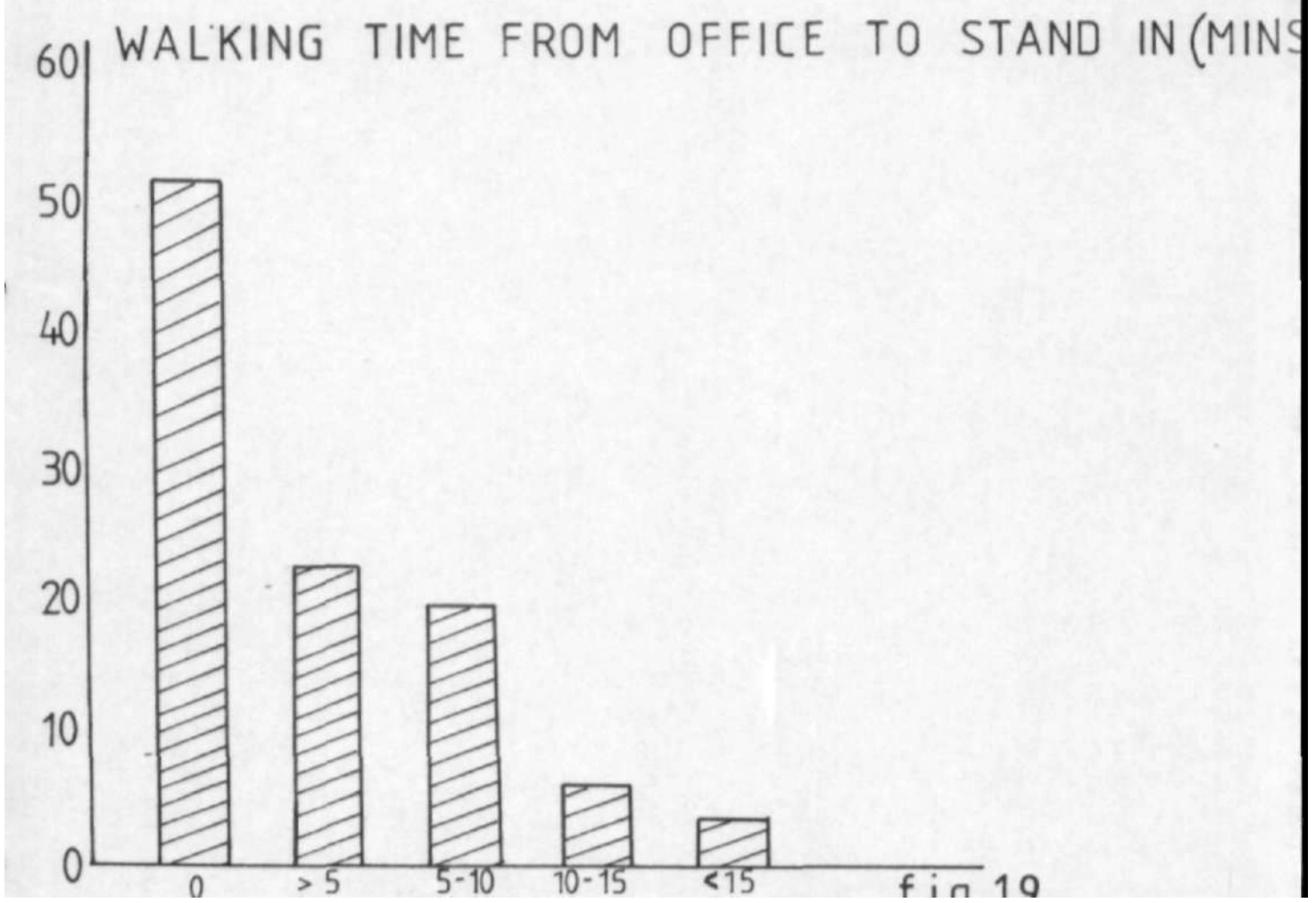

WALKING TIME FROM OFFICE TO STAND IN (MINS
60
50
40
30
20
10
0
0
> 5
5-10
10-15
<15

fig 19

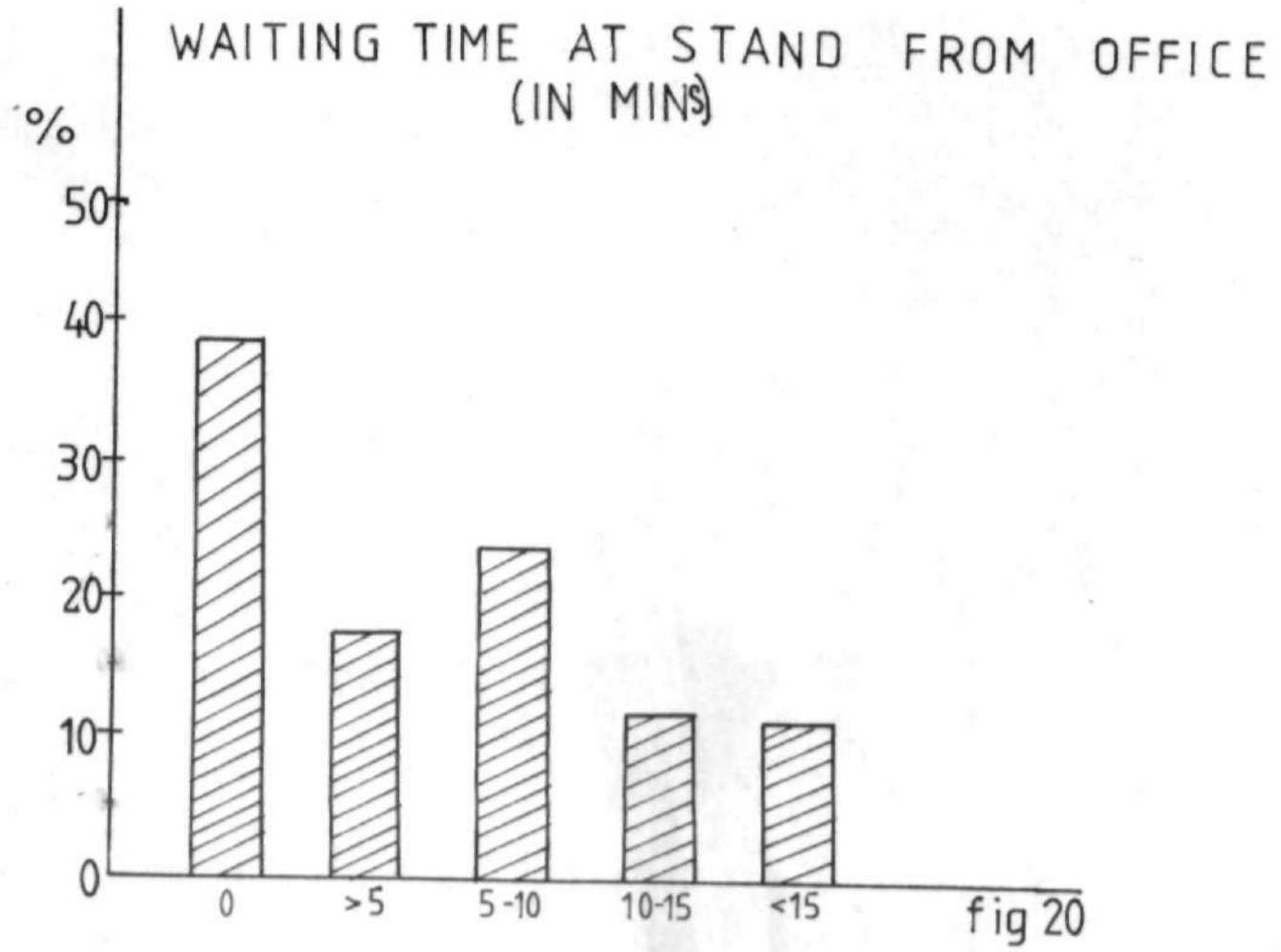

WAITING TIME AT STAND FROM OFFICE
(IN MINS)
%
50
40
30
20
10
0
0
>5
5-10
10-15
<15

fig 20

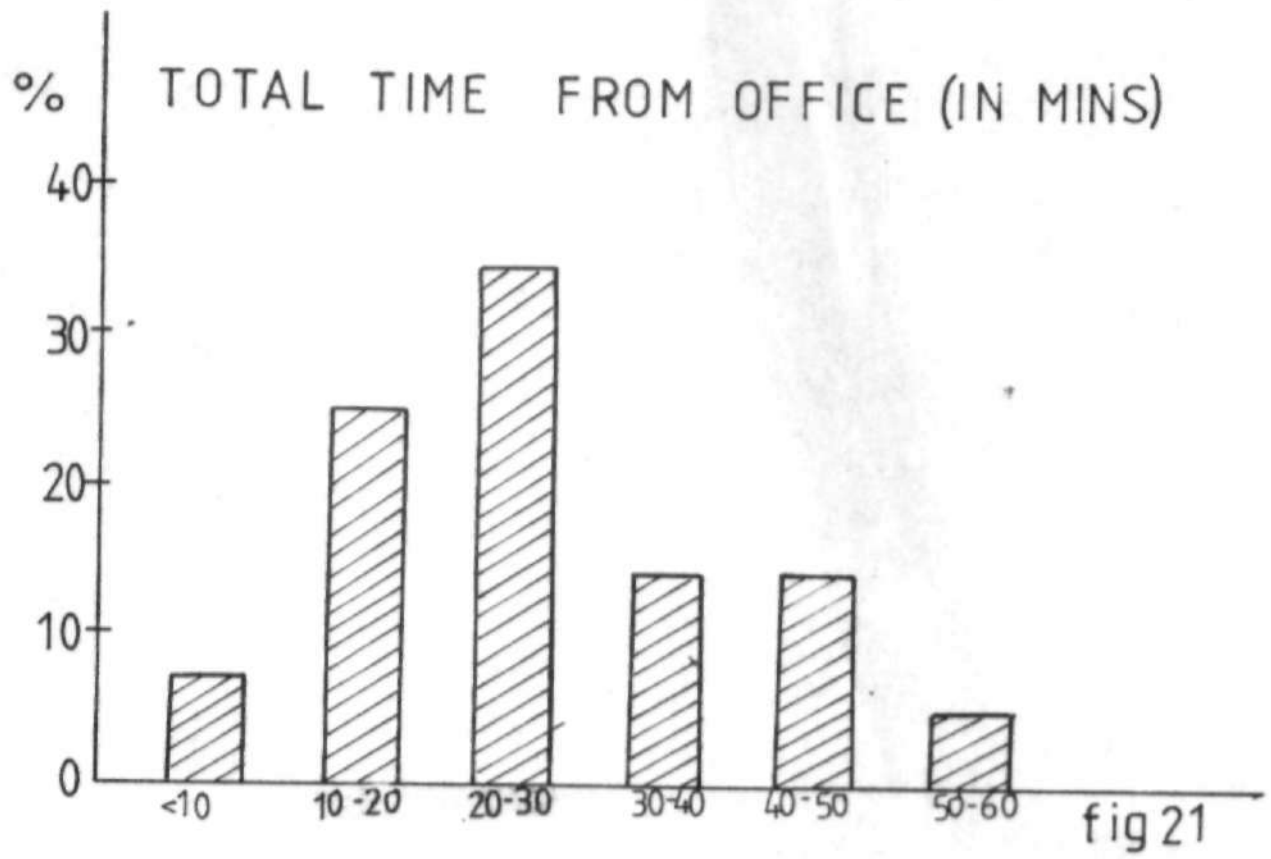

%
TOTAL TIME FROM OFFICE (IN MINS)
40
30
20
10
0
<10
10-20
20-30
30-40
40-50
50-60

fig 21

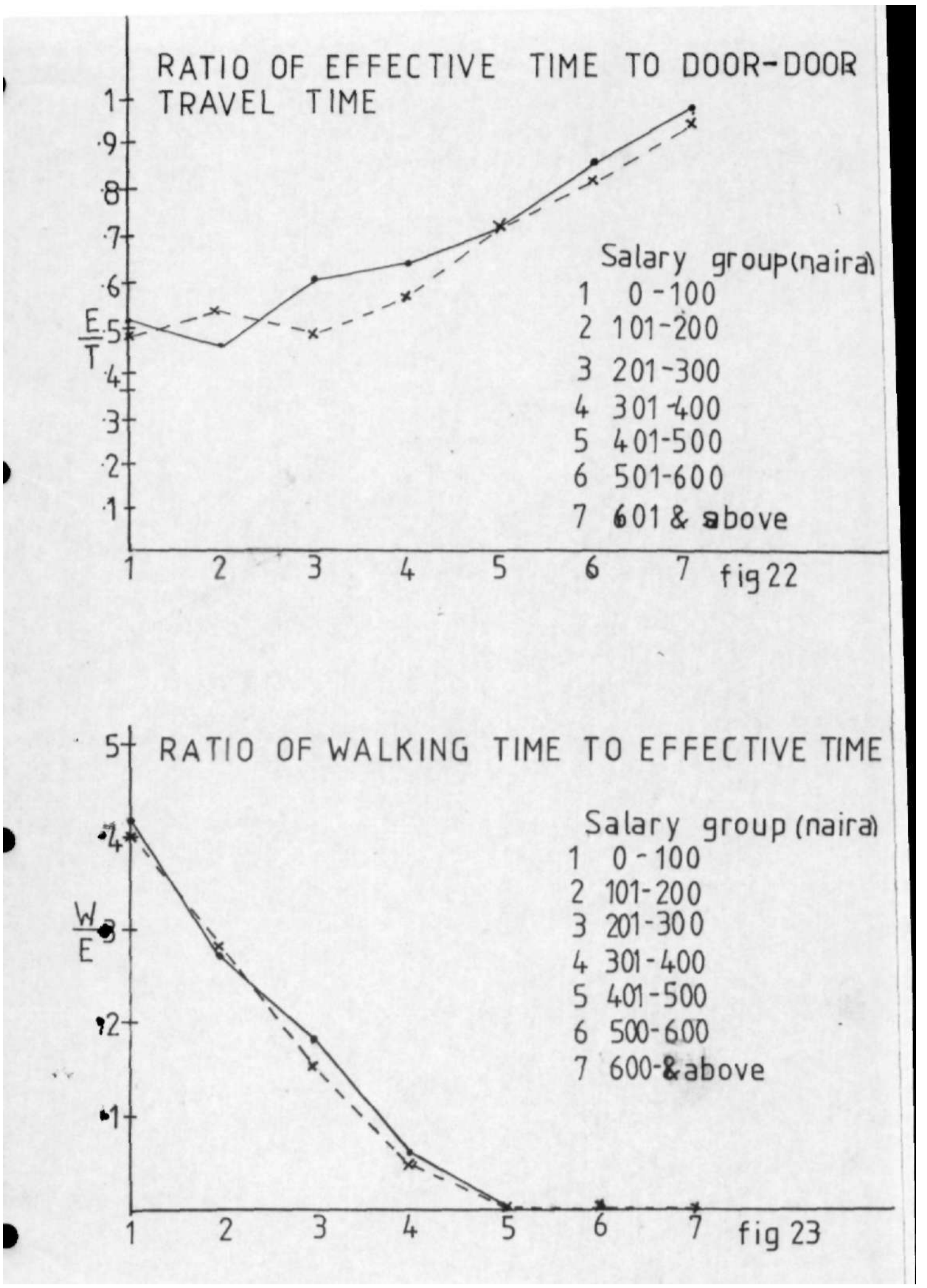

RATIO OF EFFECTIVE TIME TO DOOR-DOOR TRAVEL TIME
E/T
1
·9
·8
·7
·6
·5
·4
·3
·2
·1
1 2 3 4 5 6 7
Salary group(naira)
1 0-100
2 101-200
3 201-300
4 301-400
5 401-500
6 501-600
7 601 & above

fig 22

RATIO OF WALKING TIME TO EFFECTIVE TIME
W/E
5
·4
3
·2
·1
1 2 3 4 5 6 7
Salary group (naira)
1 0-100
2 101-200
3 201-300
4 301-400
5 401-500
6 500-600
7 600-&above

fig 23

pertinent to note that since the bus stands are unorganised, the walking time from where one disembarked from transport is not likely to be the same as the walking time from the workplace to vehicle stand). 38.4% others spend between 5 minutes and 10 minutes from the workplace to the workplace to the stand with about 6% walking for more than 15 minutes before getting a transport (Fig. 19).

4.10.2. WAITING TIME:

The waiting time shown in Fig. 20 for the afternoon journey back home shows a slight difference from that of the morning. This difference is reflected in a higher percentage of workers waiting for more than 15 minutes at the stand. 17.6% of the total respondents spend over 15 minutes as against 13.4% recorded for the morning trip. This is not unusual as almost all the workers leave workplaces at approximately the same time while in the morning people leave home at different time and at varied locations.

4.10.3. DOOR-TO-DOOR TRAVEL TIME:

The total time spent homewards (Fig. 21) is also at variance with that for the journey-to-work. A total of 59.1% of the total workforce spend between 10 and 30 minutes from workplace. This compares with the 60% recorded for the journey to work. For those spending more than 40 minutes this is accounted for 15.7% of respondents for journey to work and 19.5% for journey from work. The variation can partly be attributed to the longer time spent at the vehicle stand.

4.10.4.

From the analysis, (Fig. 22 and 23), the effective time

increase as the income of worker increases and that the difference between journey to work and journey from work is not significant. Considering the ratio of the walking time to the total effective time it was evident that the ratio of walking time to effective time is insignificant although the walking time was higher for the two earners.

4.11. PHYSICAL DISTANCES OF WORKERS TO WORKPLACE:

The distances which a worker travels from home to workplace illustrated in Fig. 24 is still very small compared to Lagos where a distance of more than 30 kilometres is being covered by many workers daily. The total stretch of Abeokuta is at present a little less than 12 kilometres. At present 1.9% of workers live within ½ a kilometre to workplace while about 11% live within 1 kilometre. A total of 47.6% live within 3 kilometres to workplaces. Those commuting between 5 and 8 kilometres account for 14.8% of the total workforce while those living beyond 8 kilometres on the whole are about 2.9% of the total workforce.

The mean distance of workers to their respective workplaces gives 3.586 kilometres with the median has a distance of 3.628 kilometres. This situation may change and workers might have to cover a longer distance when the city expands further and more development in term of industrialisation, commerce as planned for in the zoning map is implemented.

4.12 RESIDENTIAL LOCATION (SATISFACTION TEST)

The issue was to enquire as to whether workers are actually satisfied with their residential area in relation to their respective workplaces. Question 26 and 28 were asked to resolve

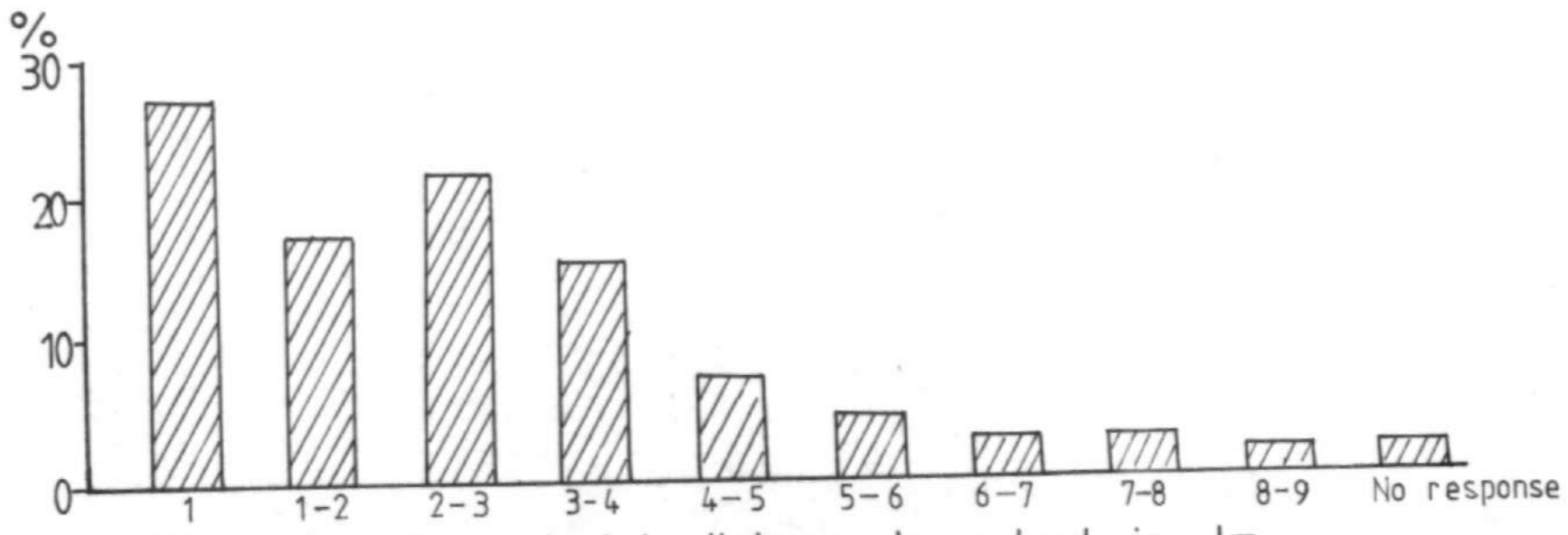


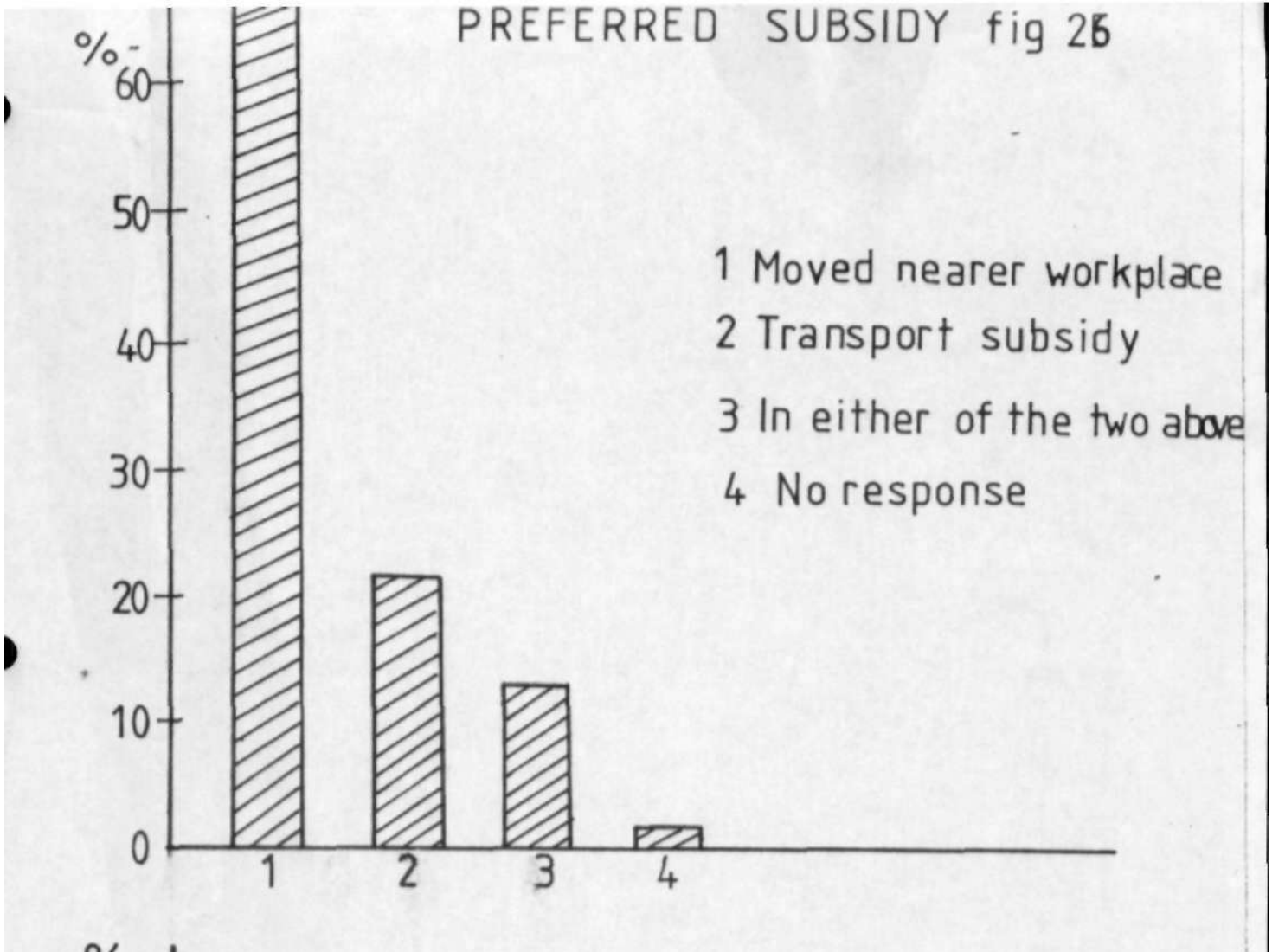
FIG. 24:- Dependants' distance to school in km.

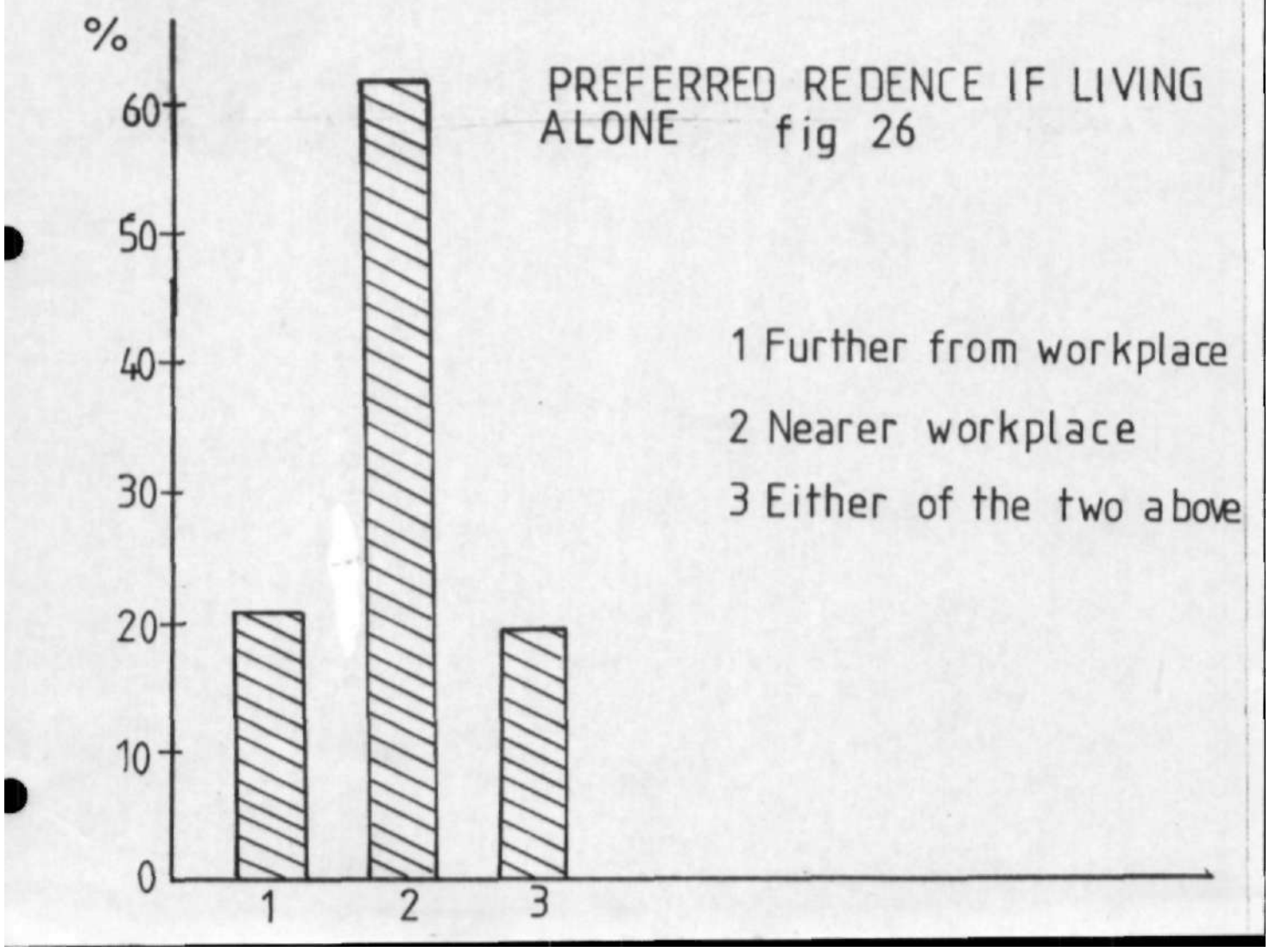
the issue. On the question of whether they would prefer being given transport subsidy or being provided with an alternative residence nearer to their place of work, 66% say they would prefer being moved closer rather than being given any transportation subsidy while the remaining respondents would either prefer being given transportation subsidy or feel indifferent (Fig. 25). Considering only those with dependants living with them, respondents were asked to indicate where they would have prefered to live if they were to be living alone. 60% would move closer to their places of work while 18% would have moved further. A total of about 20% would not mind either moving closer or further from their places of work (Fig. 26).

The deduction, one can make is that there is an attempt for worker to try to minimise cost, time in their decisions. This has to do with not considering one's self alone but the total members of the household. Workers therefore locate at a particular position that gives him an overall mimmal cost.

4.13. DISTANCE FROM RESIDENCE OF DEPENDANTS SCHOOL

Analysis of the distance of dependents school from residence presented in bar graph form in Fig. 27 shows that 27% of the dependents school within a distance less than 1 kilometre from residence while 17.6% school at a distance between 1 and 2 kilometres. Those living within 2 and 3 kilometes account for 21.9%. The percentages than reduce sharply from 15.2% for dependent within 3 to 4 kilometres to barely 1.0% at a distance of 8 kilometres. It thus means that a total of 82.3% of dependent school within a distance of 4 kilometre radius from residence.


PREFERRED SUBSIDY fig 25
%
60
50
40
30
20
10
0
1
2
3
4
1 Moved nearer workplace
2 Transport subsidy
3 In either of the two above
4 No response


%
60
50
40
30
20
10
0
1
2
3
PREFERRED REDENCE IF LIVING ALONE fig 26
1 Further from workplace
2 Nearer workplace
3 Either of the two above

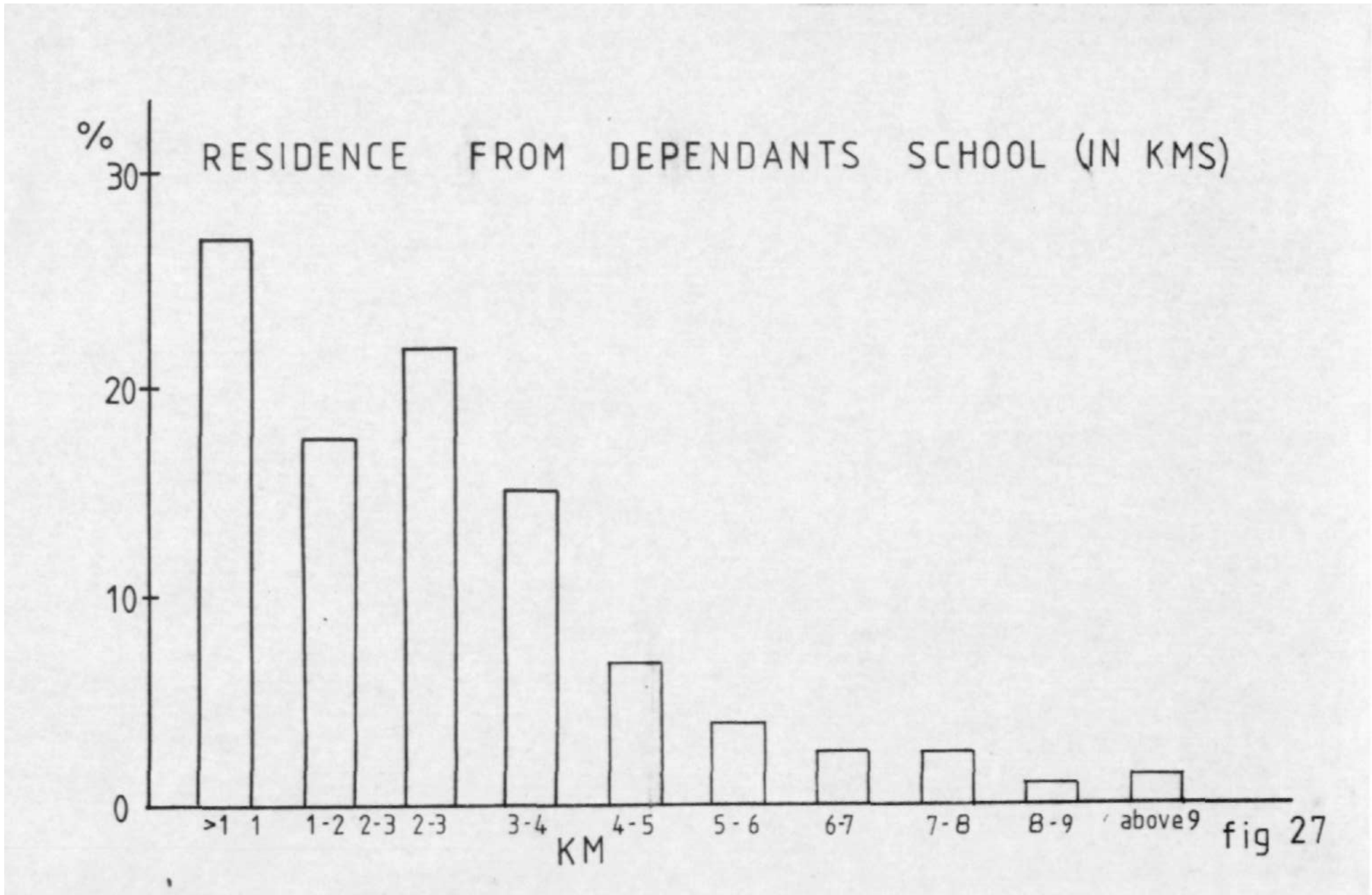
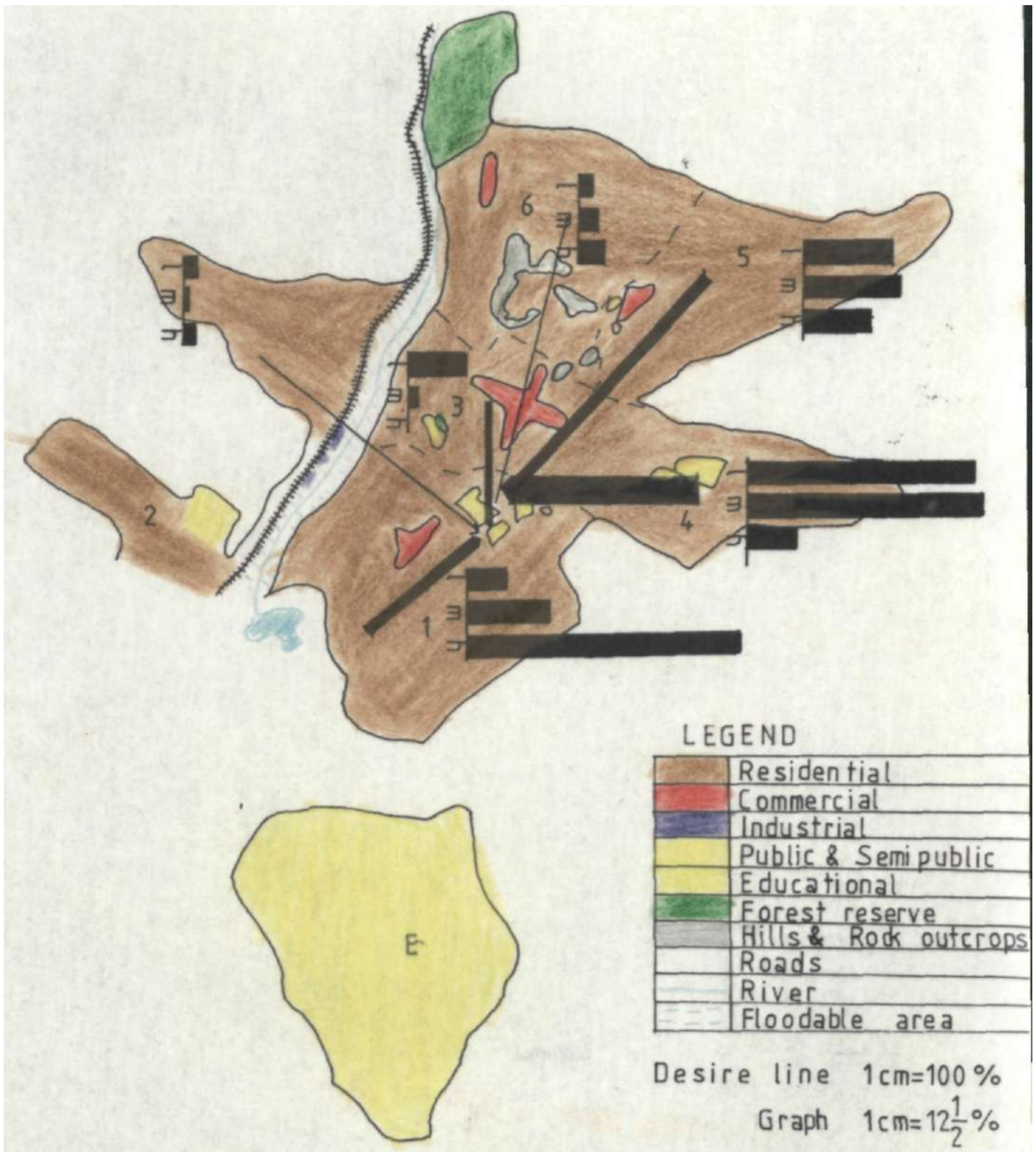

%
30
20
10
0
RESIDENCE FROM DEPENDANTS SCHOOL (IN KMS)
>1
1
1-2
2-3
2-3
3-4
4-5
5-6
6-7
7-8
8-9
above 9
KM

fig 27



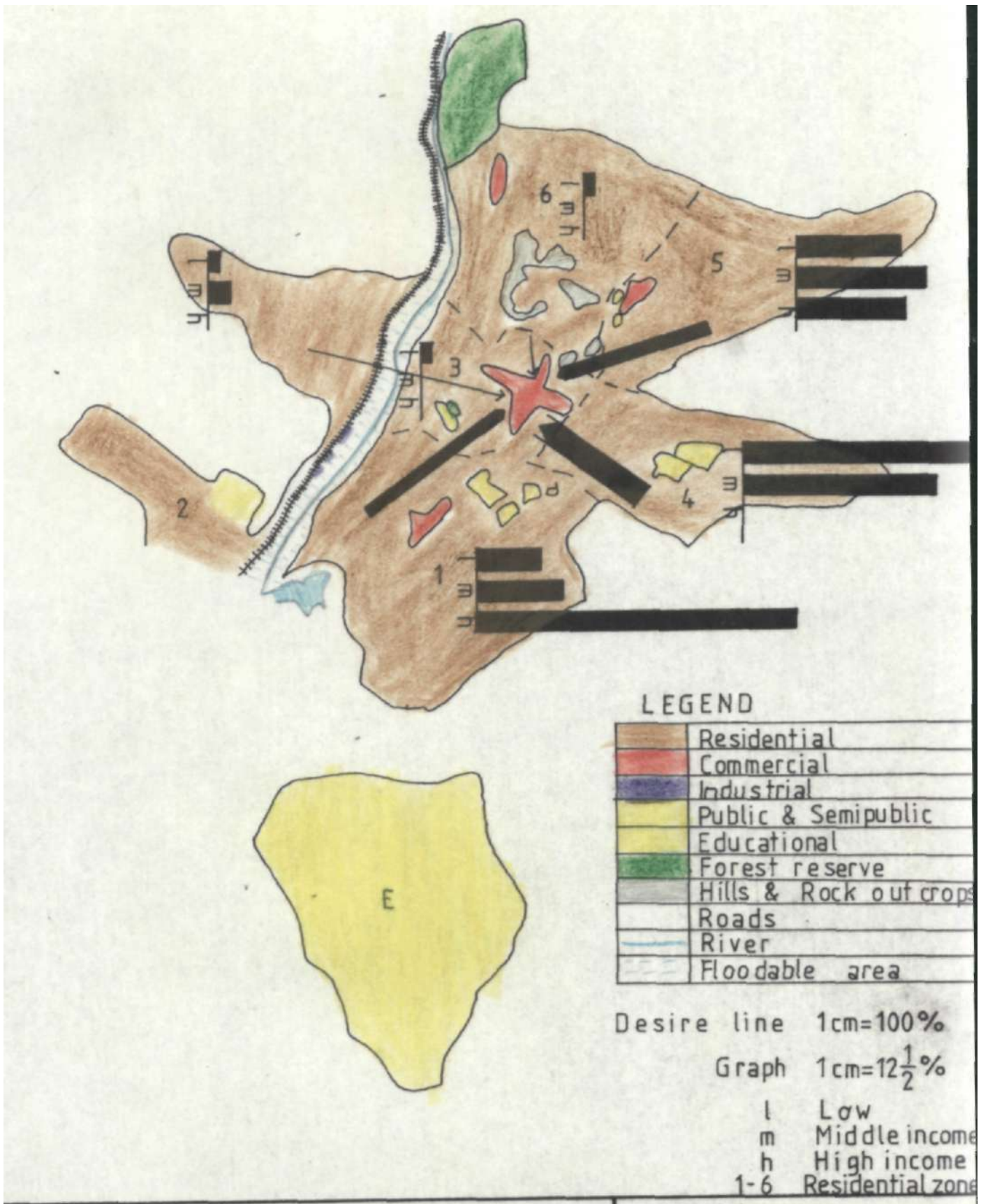
PATTERN OF MOVEMENT OF WORKERS TO THE SECRETARIAT

300 0 1200M

B·A·Daini fig 28

Dept· of U·R·P

ABU, Zaria.



PATTERN OF MOVEMENT OF WORKERS TO COMMERCIAL AREA

BA Daini fig 29
Dept of U·R·P
ABU, Zaria.

This shows that the mean distance for dependents schools from residence is about 3.04 kilometres with a median of 2.7 kilometres radius from residence.

4.14. RATIO OF DIFFERENT GROUPS OF WORKER TO RESIDENTIAL ZONES

On the basis of the six zones identified in Chapter 3, analysis was done to show the spatial distribution of different income groups into zones amongst government workers (Fig. 28).

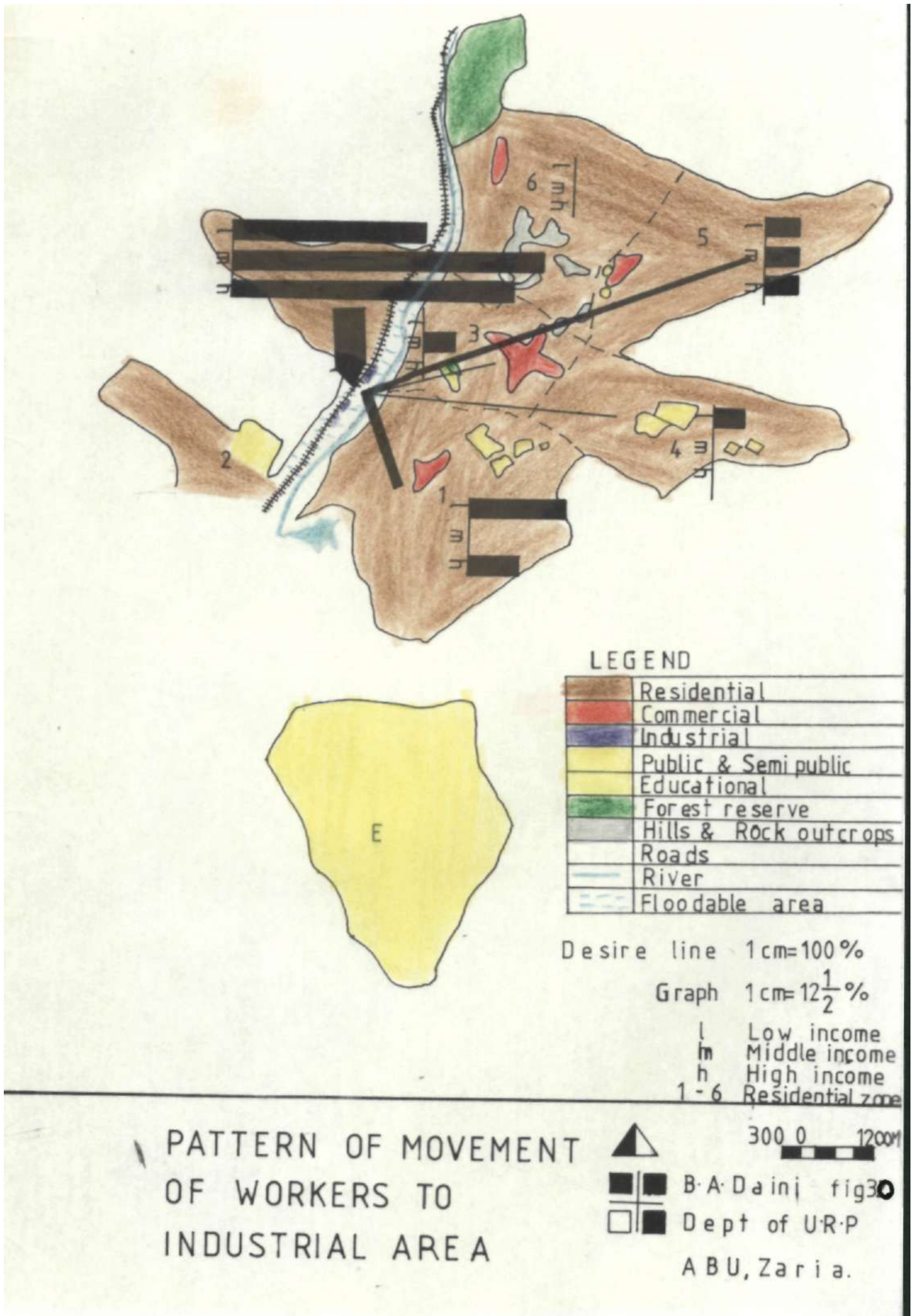
It was discovered that 65% of the total member of high income worker live in Zone 1 while the same zone has 18% and 9% respectively of middle and low income workers.

Zone 2 serves as residential area for only 3.4% of low income earners, 1.9% of middle income workers and 2.7% of high income group. Zone 3 on the other hand has 13.6% of low income workers, 1.9% middle income earners and no high income earners.

Zone 4 can be called a mixed residential area for both the low and the middle income earner. This is because 50.7% and 52.3% of low and middle income earners respectively reside in this zone. The high income group only has 10.8%.

Zone 5 is neither a residential area for a specific class of people nor is it for two classes as in Zone 4 but has a mix of the three classes. The zone has 20.8% of the low income group, 22% of middle income earners and 15.5% of high income earners. Few workers live in zone 6 and this is composed of 5.4% of high income earners, 3.7% of middle income earners and 2.7% of low income earners.

In the commercial sector (Fig. 29) 7.5% of high income earner reside in Zone 1 while 20% and 14.9% respectively of middle and low income group also reside here.



PATTERN OF MOVEMENT OF WORKERS TO INDUSTRIAL AREA

B·A·Daini fig30
Dept of U·R·P
ABU, Zaria.

Zone 2 accounted for 2.7% of low income group, 5% of middle income group and no high income group. For Zone 3 only 2.7% of low income group live here with none of either middle or high income workers. Zone 4 displays the same situation as in the government sector. It has residence population of 54% and 45% respectively of the low and middle income groups. The high income group is negligible.

Zone 5 also shows the same trend as in the case of government sector, 24.6%, 30% and 25% respectively of low, middle and high income workers reside in the zone. Zone 6 has a negiligible number of workers.

In the industrial sector (Fig. 30) Zone 2 becomes more mix in term of the status of workers residing with it. This might be attributed to nearness to the industrial zone and the fact that industrial workers operate on shift bases thereby compeling many to take up residence within the vicinity. The zone accounts for 50%, 81% and 73% respectively of low, middle and high income workers. Zone 1 has a respondent population of 25% and 13.3% low and high group. Other zones are virtually unimportant. Zone 4 still shows the element of mixed residential zone although it only accounts for 8.3% each for each of the three income groups.

When all the sectors are considered together, the spatial distribution of different income groups clearly show some evidence of segreation. Thus Zone 1 by having 51.17% of total sample of high income group can be rated as a status zone. While Zone 2 and 3 show a fair mix of the three income groups. The zones have 18.7%, 29.3% and 25.2% of low, middle and high income workers respectively while Zone 5 has a total respondent population of 17.8%

20% and 16.3% low, middle and high income groups.

Zone 4 comes out clearly as a residential area for both low and middle income group with only 3.6% of high incomes group compared to 37.5% and 32.4% of low and middle income workers.

Zone 3 and 6 do not attract workers as reflected in very low percentages of all the three groups of workers that live within the zone.

The analysis clearly show the following factors as the main factors for residential location:

(a) Location of workplace.

(b) Income group.

(c) The sector which one works.

4.15. Proportion of Idle Time to Total Time:

On the average about half of the total time spent by the low income group is idle (i.e. time spent waiting for public transport). The middle and the high income groups have idle periods of about 40% and 20% respectively. Considering the percentage of the walking time to effective time, it could be deduced that while the low and the middle income groups spend about 40% and 15% of the effective time walking, the high income group spends almost all their time in-vehicle. Both the morning and the afternnnn trends are similar (Fig. 22 and 23).

CHAPTER 5

SUMMARY OF FINDINGS, IMPLICATIONS, AND PROPOSALS

5.1. MAJOR FINDINGS

1. More than 60% of worker live within 5 kilometres to workplace.
2. More than 60% of workers prefer being moves nearer to workplace rather than being given any subsidy on transportation.
3. 72% of workers do not spend more than 40 minutes to workplace.
4. Workers are ready to give up 11% and 4% of income to housing and transportation respectively.
5. Using 95% confidence intervals, (8.7 - 12%) and 2.6% - 5.88% of income can be set as limits for house and transportation.
6. There is a significant difference between what low income earners in each sector is ready to give up to housing (14%, 11% and 9% respectively).
7. Similar differences as observed in (6) occur between middle income group in the three sectors (8%, 12%, 13%) variations observed for housing also occur in the case of transportation.
9. There is a significant difference between expected and observed averages for housing (10.35% against 14.3%).
10. There is significant difference between expected and observed averages for transportation (4.05% against 4.94%).
11. When disaggregated into sectors it is observed that variation exists between expected and observed amount on housing for the three sectors (industrial (12%) against (16%),

Commerce 10% against 15% and Government 11% against 14%).

12. Significant difference exist between observed and expected on transportation for commercial and industrial sectors (3.79% against 5.94% and 4.97% as against 6.79%) respectively.
13. There is a higher concentration of high income group in Zones 1 and 2 while higher concentration of low and middle income groups in Zone 4 and 5.
14. Only 3.1% of workers reside in Zones 3 and 6 constituting the core of the city.
15. About 80% of dependents live within 4 kilometres to school.
16. About 60% of workers having dependents indicated that they would have moved closer to workplace if living alone.
17. About 70% of worker with dependents living with them put their dependants into consideration before putting up where they live now.
18. Both immigrants and indigenes live in the same zones.
19. Up to $\frac{1}{4}$ of door-to-door travel time is wasted at the vehicle stand.
20. Lower income group do much walking then the higher income groups.
21. There are more low income earner than the middle and high income earners combined.
22. The most important mode of transportation in the town is taxi.
23. Majority of workers, indigenes inclusive live in rented apartments.

5.2. INFERENCES

1. Workers prefer living close to the place of work.
2. Workers are ready to give up between 8.7% and 12.95% of income for housing.
3. Workers are actually paying more rent than what they are ready to give up and that the difference is significant.
4. Worker are ready to give up between 2.6% and 5.88% for transportation.
5. The actual amount being expended on transportation is higher than what workers are willing to give up and that the difference is significant.
6. The 20% maximum of workers salary which the Third National Development Plan aims at achieving for house rent is too high compared to what workers are willing to give up or the actual percentage being given up to housing at present in Abeokuta.
7. There is segregation of high income group from other groups.
8. Dependants limit the choice of residential area of workers.
9. There is no specialised zone for migrants from different areas. This is because migrants put up at first with relation to which he has strong family tie.
10. A large proportion of door-to-door travel time is by low income group is idle.

5.3. INTER-RELATIONSHIP BETWEEN MODE OF TRANSPORTATION, INCOME AND DISTANCE TRAVELLED TO PLACE OF WORK: A CRITERIA FOR THE ANALYSIS AND PROPOSAL.

It is necessary to develop a principle which will guide the choice of mode for the low and some middle income earners that may not be able to afford the use of private cars. The principle makes use of:

(a) The characteristics of each mode.

(b) The amount of money which an individual is ready to give up to transportation.

5.3.1. CHARACTERISTICS OF MODES:

FOOT: This is the slowest mode of transportation and as such can only be used only if the physical distance between workplace and residence is not more than 30 minutes walk. Since on the average 10 kilometre distance can be covered on foot in one hour, a distance of 5 kilometres can be set as the limit.

BICYCLE: It is a faster mode of transportation compared to walking.

It stands a high accident risk especially in places where there is no special lane for bicycle.

Cycling can be tiring after an average distance of 8 kilometres and has a limited use during bad weathers.

MOTORCYCLE: It is a faster mode compared to either walking or cycling.

Like in cycling it stands a higher accident risk in places where there is no special lane for motorcycle.

It is mechanically driven and as such fueling is important.

It has a limited use, during bad weathers.

PUBLIC BUS: It has definite routes and there is also expected to be organised bus.

Stand although in some towns like Abeokuta, bus stands are unorganised.

It charges about half the fare of taxi for same distance at Abeokuta.

Depending on the type of bus used, the capacity ranges between 14 and 70.

TAXI: Ply all the major roads within the town.

The fare structure varies from one period to the other with peak fare structure at 20K per drop of about 2 kilometres.

Taxi has a carrying capacity of four persons and as such has a less carrying capacity than the bus.

PRIVATE CAR: It is the most suitable as it can be moved from one door step to the other because of its flexibility.

It also offers privacy, comfort and it is also fast.

It can be used during any weather conditions. Its purchase price makes it accessible to high income earners and some middle income earners also.

5.3.2. COST CONSIDERATION

Before a mode can be recommended the cost considerations become important.

As explained in Chapter 3, the percentages of income which different groups of worker are ready to give up to transportation differ. While low income workers are ready to give up 4.32%, middle income at 5.56% and high income 2.47%.

On the bases of these percentages, the low income workers on salary of ₦100 per month will be able to give up ₦4.32 for the month while a worker on ₦200.00 can afford ₦8.64. Similarly

a middle income worker on ₦300.00 per month will be able to give ₦16.68 to transportation. Those on ₦400.00 could afford ₦22.24 per month on transportation. Because the high income group has an open ended income bracket, ₦500 and ₦700 per month respectively were used to assess the cost of transportation. Based on the 2.47% of salary which high income workers are ready to give out, a total amount of ₦12.35 and ₦17.29 can be charged to transportation. It does not include other costs on the vehicle like maintainance, insurance since all high income group members have cars, exclusion of maintainance cost will definitely bias the result. Meyer/Kain and Wohl has estimated "the cost for repairs, replacement of tires and tubes, gasoline and oil for... as to be approximately ¢2.90 per vehicle mile... and people attaches no value to the driving".[11] If it had been possible to estimate accurately, the total, it is not unlikely that a percentage higher than that which the middle earners give up. Table 6 is demonstrated with Fig. 31, 32, 33 ~~and 34~~.

At the moment a litre of fuel sells for 16K, this means that a ₦100.00 per month worker commuting by motorcycles could purchase fuel to the tune of 27 tires per month while a ₦200.00 per month officer could purchase 54 litres per month. For a middle income workers on ₦300.00 and ₦400.00 per month respectively a maximum of 104.25 and 208.50 litres per month can be consumed. The high income earners on ₦500.00 and ₦700.00 respectively per month will be able to consume 77 and 108 litres of fuel respectively per month.

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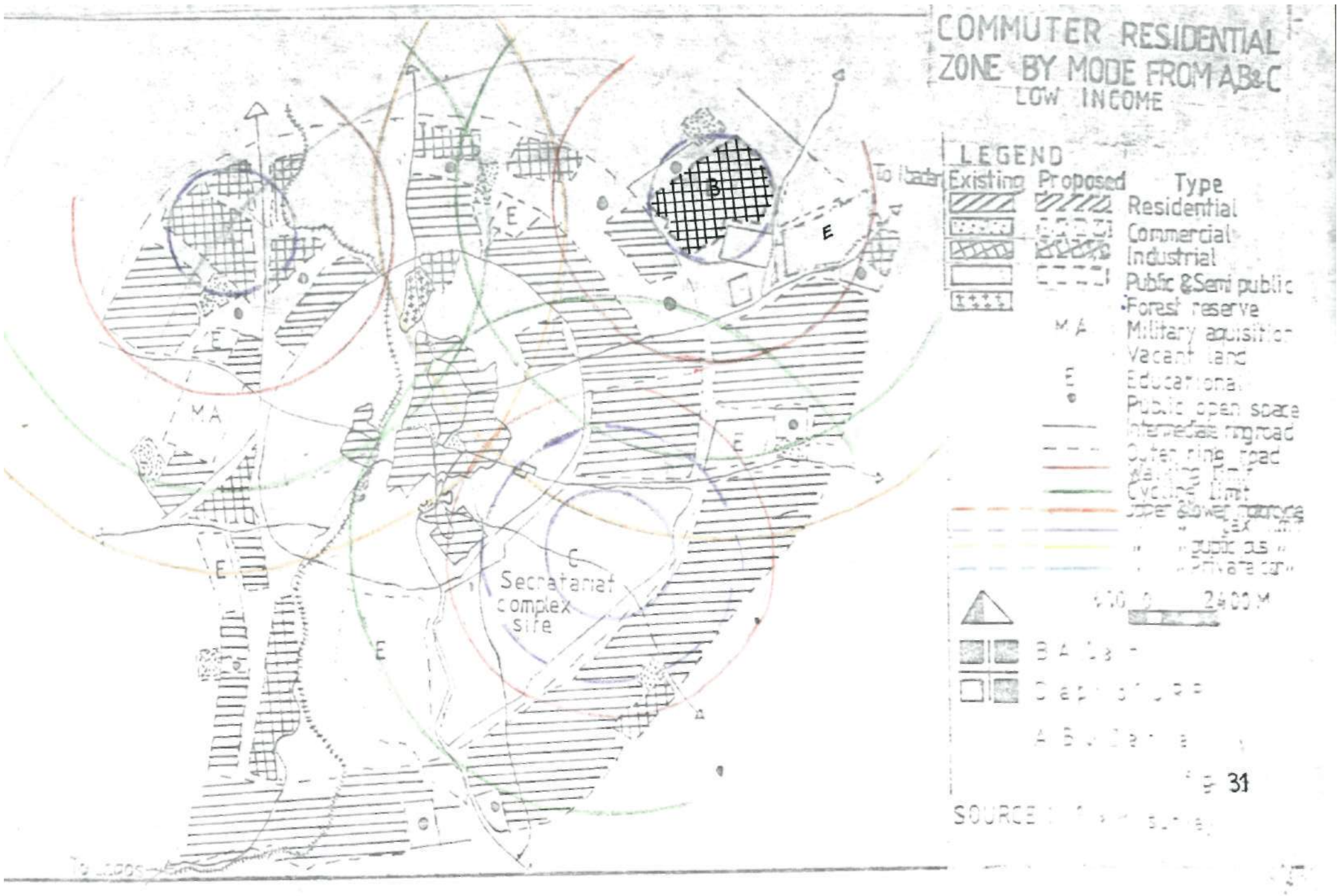
11. Meyer, J.R., Kain, J.F., Wohl, M. Ibid, p. 256.

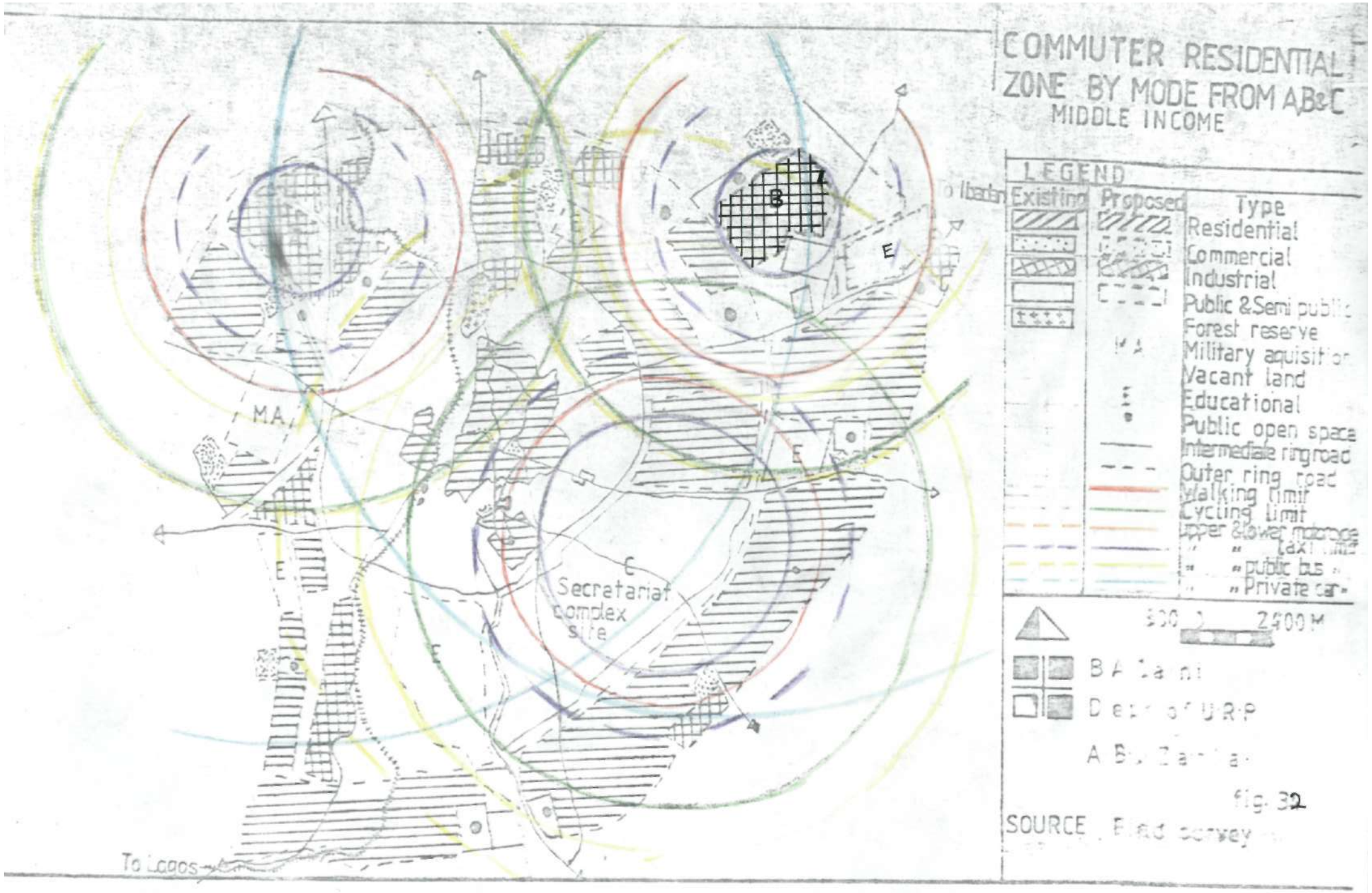
TABLE 5.1

INTER-RELATIONSHIP BETWEEN MODE OF TRANSPORTATION, INCOME AND DISTANCE TRAVELLED TO PLACE OF WORK

INCOME GROUP	% OF SALARY	MODE OF TRANSPORT	SECTOR	SALARY/ MONTH	MAXIMUM DISTANCE TO PLACE OF WORK (IN KM.)
		FOOT	ALL		5
		BICYCLE	ALL		8
		MOTORCYCLE	GOVERNMENT	₦100	14.4
				₦200	28.8
			INDUSTRY & COMMERCE	₦100	10.5
					21.0
LOW	4.32	TAXI	GOVERNMENT	₦100	-
				₦200	-
			INDUSTRY & COMMERCE	₦100	-
				₦200	-
		PUBLIC BUS	GOVERNMENT	₦100	2
				₦200	4
			INDUSTRY & COMMERCE	₦100	-
				₦100	2
		FOOT	ALL		5
		BICYCLE	ALL		8
		MOTORCYCLE	GOVERNMENT	₦300	58
				₦400	72
			COMMERCE & INDUSTRY	₦300	43
MIDDLE	5.56			₦400	59
		TAXI	GOVERNMENT	₦300	4
				₦400	6
			INDUSTRY & COMMERCE	₦300	2
				₦400	4
		PUBLIC BUS	GOVERNMENT	₦300	8
				₦400	10
			INDUSTRY & COMMERCE	₦300	6
				₦400	8
		PRIVATE CAR		₦300	16
				₦400	23.5
HIGH	2.47	PRIVATE	GOVERNMENT	₦500	16
				₦600	21
			INDUSTRY & COMMERCE	₦500	

SOURCE: ABEOKUTA SURVEYS 1979.


COMMUTER RESIDENTIAL ZONE BY MODE FROM A,B&C
LOW INCOME
LEGEND
Existing
Proposed
Type
Residential
Commercial
Industrial
Public &Semi public
Forest reserve
Military aquisition
Vacant land
Educational
Public open space
Secretariat complex site
MA
E
C
B
A
31



COMMUTER RESIDENTIAL ZONE BY MODE FROM A,B&C
MIDDLE INCOME

LEGEND

Existing	Proposed	Type
		Residential
		Commercial
		Industrial
		Public & Semi public
		Forest reserve
MA		Military aquisition
		Vacant land
		Educational
		Public open space
		Intermediate ringroad
		Outer ring road
		Walking limit
		Cycling limit
		Upper & lower motorcycle
		" taxi "
		" public bus "
		" Private car "

800 2400 M

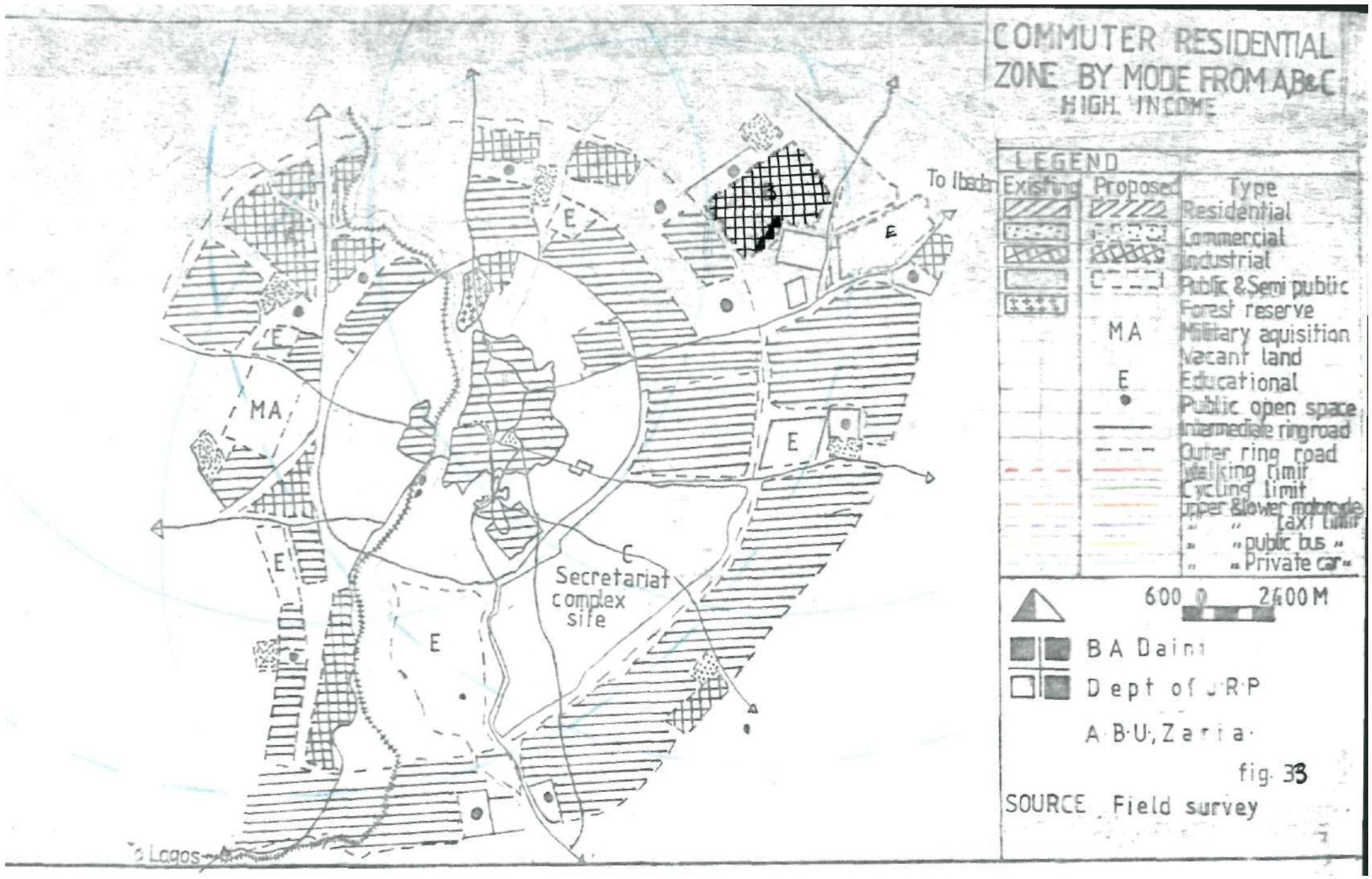
BA Zonal

Dept of URP

ABC Zonal

fig. 32

SOURCE : Field survey


COMMUTER RESIDENTIAL ZONE BY MODE FROM A,B&C
HIGH INCOME
LEGEND
Existing
Proposed
Type
Residential
Commercial
Industrial
Public & Semi public
Forest reserve
MA
Military aquisition
Vacant land
E
Educational
Public open space
Intermediate ringroad
Outer ring road
Walking limit
Cycling limit
upper & lower motorcycle
" " taxi limit
" " public bus "
" " Private car "
600 0 2400 M
B A Daini
Dept of U.R.P
A.B.U, Zaria.
fig. 33
SOURCE Field survey
To Ibadan
MA
E
C
Secretariat complex site
To Lagos

One important issue that should be put into consideration is the average number of days which an individual is supposed to work per month. This varies between one sector and the other, but generally since public servants do not work on Saturday, an average of 20 days working day per month is used while workers in commercial and industrial worker often have about 25 working days in the month.

Using the average working days for government, industrial and commercial worker, fuel consumption rates of 21 kms/l for motorcycle and 8 kms/l for cars various distances as shown in Table 5.1 can be conveniently reached.

The table shows that the middle income workers are able to give a higher percentage of their salaries to transportation than both the low and the high income. The 2.47% calculated as the percentage income which high income workers are ready to give up represents, fueling cost.

5.3.3. WHICH MODE FOR LOW AND MIDDLE INCOME GROUP FOR THE YEAR 2000

Having due considerations to the advantages and disadvantages of different modes which now operates in the town and also considering the expected population which the city may attain and the inflationary trend all over the world and which is affecting transport industry, it can only be expected that transport fare may continue to increase such that the general trend whereby 61.4% commute by taxi could not continue.

The cheaper modes such as foot, Bicycle and Motorcycle could not be suitable alternatives to the taxi because of the numerous disadvantages which limit their usefulness. It is

TABLE 5.2
LAND REQUIREMENT FOR LOW AND MIDDLE INCOME GROUPS

INCOME GROUP	% OF TOTAL WORK-FORCE	DEPEND-ENCY RATIO	GROSS DENSITY PER HA.	AREA OF INDUSTR-IAL SITE IN HA.	NUMBER OF WORKER	AVERAGE FAMILY SIZE NUMBER OF PEOPLE HOUSE-HOLD	AREA OF RESIDENTIAL SITE REQUIRED (IN HA.)
Low	57.1	4	150	1,000	34,260	171,300	1,142
Middle	26.2	4	100	1,000	15,720	78,600	786

Source: Abeokuta Surveys 1979.

While Table 5.3 shows the same for the Secretariat Complex Site.

TABLE 5.3
NUMBER OF WORKER UNPROVIDED FOR IN THE SECRETARIAL COMPLEX RESIDENTIAL AREA

INCOME GROUP	% OF TOTAL WORK-	DEPEND-ENCY RATIO	GROSS DENSITY PER HA.	AREA OF SECRETARIAT COMPLEX	WORKERS PROVIDED FOR	WORKERS UNPROVIDED FOR
Low	57.1	4	150	1,211.2	14,275	3 35
Middle	26.2	4	100	1,211.2	6,550	4,750
High	16.7	4	75	1,211.2	4,175	1,175

Adapted From: OSCHPDG Survey, 1977.

The remaining 35 low income workers could easily get accommodation around while the 4,750 middle income workers could get enough land area within 25 Km^2. within the public bus ring.

The high income earners could occupy the existing GRA and part of the 1,400 houses earmarked for construction by the housing corporation.

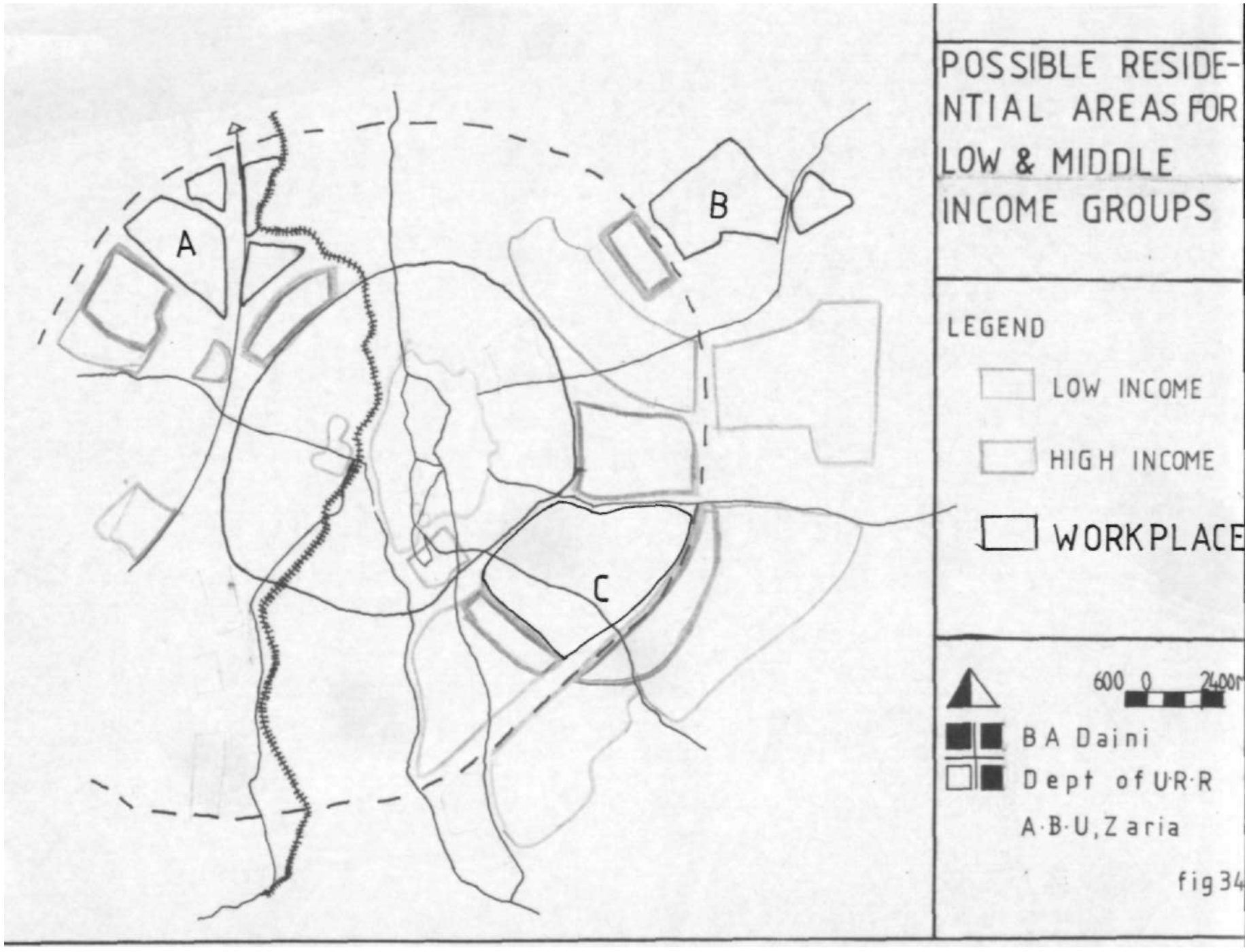

A
B
C
POSSIBLE RESIDE-
NTIAL AREAS FOR
LOW & MIDDLE
INCOME GROUPS
LEGEND
LOW INCOME
HIGH INCOME
WORKPLACE
600 0 2400m
B A Daini
Dept of U·R·R
A·B·U, Z aria
fig 34

TABLE 5.4

ADEQUACY OF LAND REQUIREMENT FOR LOW AND MIDDLE INCOME GROUPS

INCOME GROUP	TOTAL AREA REQUIRED	SITE A AVAILABLE AREA KM^2	AREA IN EXCESS KM^3	TOTAL AREA REQUIRED	SITE B AVAILABLE AREA KM^2	AREA IN EXCESS KM^2
Low	11.42	8.0	-3.42	11.42	2.0	-9.42
Middle	7.86	2.0	-5.86	7.86	25.0	+17.14
	19.28	10.00		19.28	27.	

SOURCE: ABEOKUTA SURVEYS, 1979.

suitable land area could meet the need of the low income worker while a site outside the outer ring road be allocated for the middle income earners.

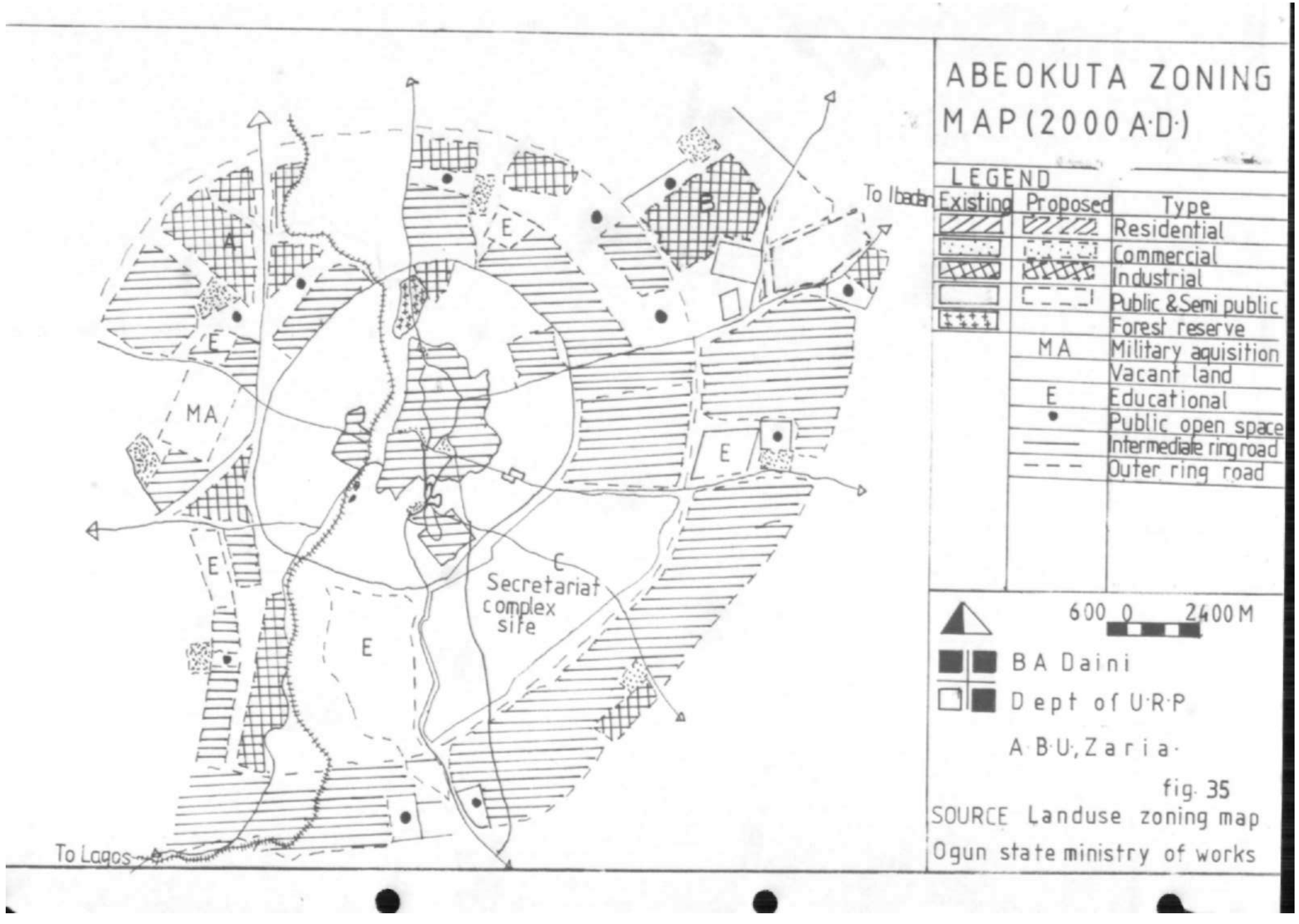
In the case of site B land is in excess for the residential need of middle income workers but another site for 9.42 km^2 has to be sought for.

The 2 km^2 industrial site affected in Site A was relocated along Odeda/Ibadan Road where it was found suitable in term of residential area need. The adjusted zoning map is shown in Fig. 36 while Fig. 35 unadjusted zoning map.

5.4. IMPLICATION OF FINDINGS FOR YEAR 2000

5.4.1. TRANSPORTATION MODE:

It is realised from the findings that, at the moment, the general mode of transportation amongst workers in Abeokuta is taxi. This trend can not definitely continue without causing undue hardship to the workers especially those within the low income bracket. This is because as the population increases and the size of the city increases, there



ABEOKUTA ZONING MAP (2000 A.D.)

LEGEND

Existing	Proposed	Type
		Residential
		Commercial
		Industrial
		Public & Semi public
		Forest reserve
	MA	Military aquisition
		Vacant land
	E	Educational
	•	Public open space
	——	Intermediate ring road
	- - -	Outer ring road

600 0 2400 M

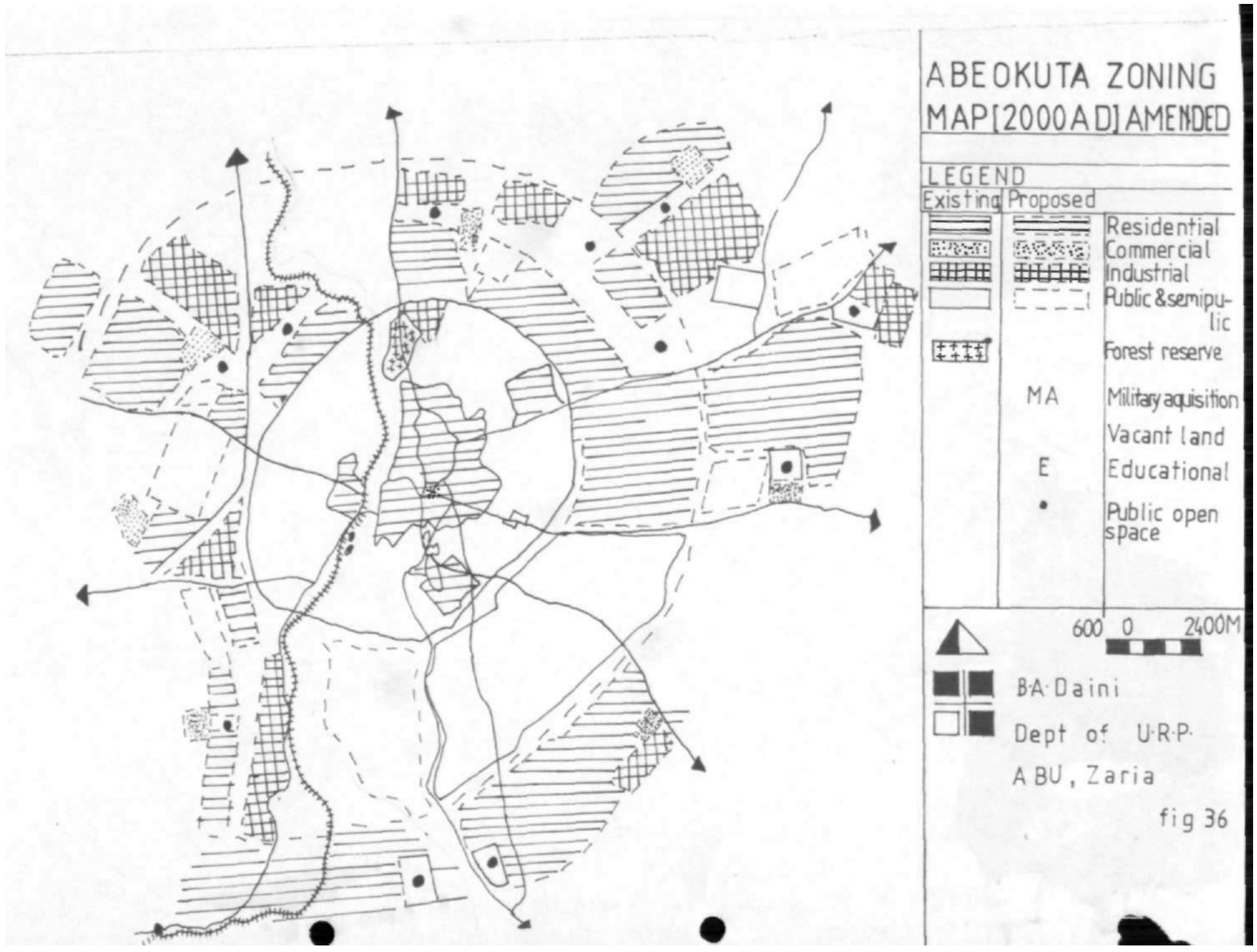
B A Daini

Dept of U.R.P

A.B.U., Zaria.

fig. 35

SOURCE Landuse zoning map Ogun state ministry of works


ABEOKUTA ZONING MAP[2000AD]AMENDED
LEGEND
Existing
Proposed
Residential
Commercial
Industrial
Public &semipu-lic
Forest reserve
MA
Military aquisition
Vacant land
E
Educational
Public open space
600 0 2400M
B·A·Daini
Dept of U·R·P·
A BU, Zaria
fig 36

is every tendency that workers residence for many workers might also increase in distance to workplace. This calls for higher fare by the affected workers.

As the present fare structure is, most workers are already paying more than they could normally afford. Workers might have changed to other cheaper and available mode like the public bus but at present only two routes are plied leaving most workers at the mercy of taxi owners. The implication is that better participation of public bus will be a necessity before the year 2000.

5.4.2. RESIDENTIAL LOCATION AND INCOME GROUPS.

It is one thing for every worker to wish to live closer to their respective workplaces, but in the actual sense all cannot occupy the same location at the same time. With this tendency to live close to place of work, the highest bidder normally, in economic sense will serve the nearest possible location, as lower income earner can easily be pushed off.

With the landuse zoning map, and the prospect for industries and commerce which it offers, a large population will be supported although still will a large proportion of low income earners. In free enterprise, therefore the type of residential areas that might likely develop close to this sites are high income residences hereby meaning that low income group may have to be pushed further. This is direct opposite of America situation where migrants occupy the centre. The implication is that high cost is borne on transportation.

One other implication of this is that average travel time for workers are likely to increase. The landuse zoning covers an area of about 12 kilometre radius, thereby meaning that the distance from one end to the other is going to be about 24 kilometres. Unfortunate workers who may not be able to secure a house near enough to workplace might have to change mode many times. This calls for more waiting time

5.5. PROPOSALS

Based on the findings of the studies on the existing situation and the implications which it may have on the future development of Abeokuta for the year 2000, the following proposals which can be classified into policies on housing and policies on transportation are made:

5.5.1. HOUSING POLICY

1. Low and middle income residential areas should be located at a maximum distances of 4 and 8 kilometres respectively from workplace while high income residential areas could be at the periphery. As such to prevent the displacement of low income group by higher groups housing types only suitable for low income earners should be enforced in the high density plots.
2. Low and middle income workers like the higher income earners should be given rent subsidy so that not more than 15% of their salary go on house rent.
3. There is the need to review the government policy in the Third National Development Plan to bring down the expected maximum of workers salary on house rent from 20% to 15%.
4. High density plots should be located closest to work-places for the provision of low income residences.
5. Primary schools should be located within a distance of 4 kilometres from residential areas.
6. In estimating housing need for worker by employers immigrants and indigenes should be given equal consideration.

5.5.2. TRANSPORTATION POLICY

1. Government should establish as a matter of urgency a transport corporation.
2. 14-16 seater mini-buses should be used as to minimise delay at the bus stand.

CHAPTER 6

POLICIES FOR IMPLEMENTATION AND CONCLUSION

6.1. HOUSING

The ability of the government to effectively control developments depends on a number of factors.

1. The enforcement of land zoning regulations and prompt attention to approval of building plans.
2. The availability of professionals to monitor and control development so that any unconforming land use can be removed as soon as they spring up. This can be achieved, if the government intensifies the training of professionals and also the necessary middle level manpower needed to supplement the efforts of the professionals.
3. The government should make adequate fund available for the purchase of necessary base maps.
4. It is necessary that site inspectors should not only inspect before approval is given to developers but visits at different stages should also be carried out so that non-compliance with the term of approval can be dealt with immediately.
5. Before approval is given for any major alteration, planning officer in charge should be convinced that such alteration will not in any way effect a change necessary to cause an imbalance in the existing land use.

6.2. TRANSPORTATION

Public transportation facilities as at now lacks centralised and coordinated city transportation system. Except for a few buses now being operated by private individuals, only taxi sharing is the

the common practice. This is likely to be inadequate to cope with the future transport demand. It is therefore necessary, as a matter of urgency, for the government to initiate a Transport Corporation to cater for intra-city travel in the state.

The role of the transport corporation when established should be:

(a) Providing service to complement the existing but inadequate public and private efforts.

(b) To serve as a cordinating organ for the transport industry in the state.

Since the corporation will be a new one, it is essential that enough initial capital be provided by the state government for the purpose of carrying out feasibility survey of the city to identify routes and stands. The stands are essential aspect of the industry which the corporation need make adequate, in term of parking spaces, sheds (covered to prevent passengers from adverse weather conditions) and to provide essential facilities there. The shed at the main stand should be elaborate since passengers are to change bus there while minor stands should be simple structures.

The situation at Lagos whereby toilet areas are not provided for, is bad. The corporation should also take into consideration hawking of goods which is part of Nigerian culture. Each stand should thus have an organised areas for hawkers while kiosks are also provide.

Licensing of privately owned buses are to be registered with the corporation so that routes where transport shortage is

acute can be allocated. This will help in even distribution of the existing public transport.

2. The major products of any transport industry are punctuality and reliability. It is therefore necessary that for the corporation to succeed, trips should be scheduled while adequate care must be taken to see to the maintenance of the vehicles in use and strict adherence to the schedule. It is therefore necessary that spare parts should not only be stocked in adequate quantity but it is also necessary that the purchase agreement of vehicles should take care of the constant supply of the spares for a given number of years after purchase.

3. Transport industry could make profit if adequate accounting system is operated, so that fraud is made impossible or minimised. It is good also to involve workers in the general operation if the corporation allows workers to be part-owners i.e. by allowing them to buy shares.

4. One major problem which can face the corporation when established is the availability of land to construct the bus stands. In the built up area of the city most of the houses have been built very close to the road. It is therefore necessary that some demolition be carried out. Owners of affected houses should be compensated before any construction work begins. If the corporation buses were to be carrying passengers along the roads it might cause some undue problems to the free flow of traffic, more so when the roads are narrow.

5. The corporation when established can either be owned fully by the state government, but with consideration for share holding by workers alone or the state government can go into

partnership with firms, Abeokuta Local Government or with individuals. In the later situation the state government should have a controlling share. The problem which wholly government owned transport bodies often have is the inability to attract private individuals to buy shares in the corporation since profit usually is lower than in other sectors.

6. Membership on the board should be based on experience in transport industry, but should as much as possible cut across all professionals having to do with transportation. It is therefore necessary that the board should have on its membership, a representative of the state government, a member of the drivers union if any in the city, a chartered accountant, a lawyer, a town planner and any member of the society which the government might be convinced will be an asset to the Board.

7. The Board when constituted, should have the power to effect any change, that it might find necessary during the course of its deliberations without undue interference from the government, although could seek necessary help from the state government.

8. The functions of the Board should as much as possible be defined in explicit terms so that it does not conflict with the functions of the management. The general manager should be made responsible to the Board, but at the same time could have the right to discipline some categories of workers except heads of departments within the corporation. The general manager could make major decision but have to get approval of the Board. These could include discipline of heads of departments, contract awards of an amount which should be stated.

9. The welfare of the workers is essential for the process of the industry, it is therefore necessary that a welfare committee be set up with a view to achieving a communication link within the rank and file of the corporation. Fig. 37 shows an organisation chart that can be applied to the transport corporation.

6.3. CONCLUSION

If the policies are translated into action, the zoning could achieve the functionality which the town-planning profession is seeking. The chaotic situation now being experienced in Lagos and other major cities of developing nations and which a newly created state capital like Abeokuta may face by the year 2000 would have been solved or at least minimised.

The creation of special area near workplaces will in no way lead to segreation which some people might express. This is because, most of the high income earners could be located in sites within the bus ring as long as no lower income earners are yet unprovided for. This may lead to a situation where only a few high income earners actually live in the peripheral zone.

AN ORGANISATION CHART FOR TRANSPORT CORPORATION

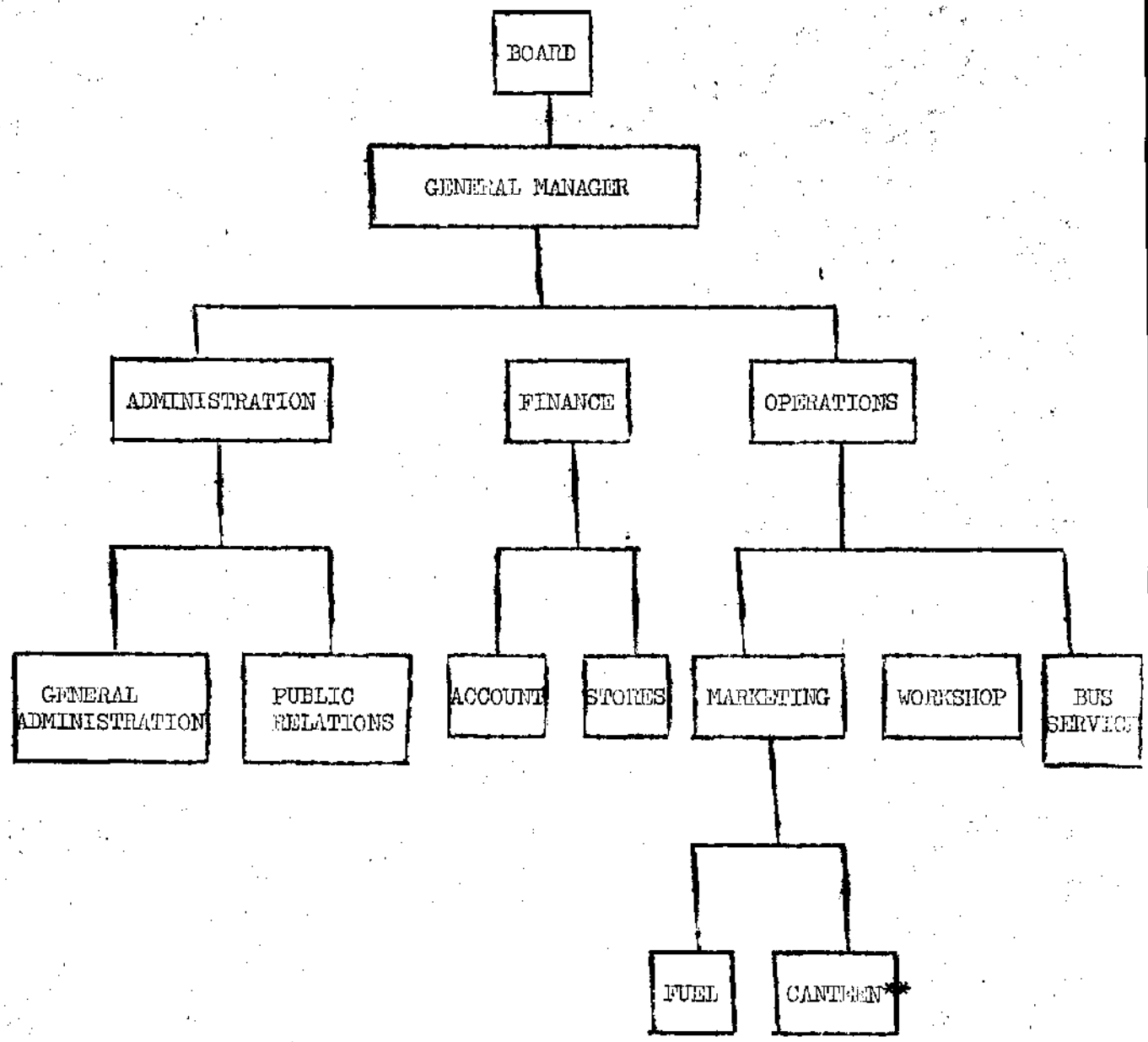


Fig. 37.

**This will not only serve the workers in the industry but travelling people also if located at the terminus.

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APPENDIX 1

SALARY GROUP OF WORKERS (IN NAIRA) PER MONTH

SALARY GROUP	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	CUMULATIVE FREQUENCY
0 - 100	1	72	21.9	21.9
101 - 200	2	150	35.7	57.6
201 - 300	3	60	14.3	71.9
301 - 400	4	50	11.9	83.8
401 - 500	5	34	8.1	91.9
501 - 600	6	14	3.3	95.2
Above 600	7	20	4.8	100.0
TOTAL		420	100.0	

MEAN ₦177.10 STANDARD ERROR ₦11.40 MEDIAN ₦228.70.

MODE ₦101-200. STANDARD DEVIATION ₦165.

APPENDIX 2

EXPENDITURE ON HOUSING (IN NAIRA) PER MONTH

EXPENDITURE IN NAIRA	CODE	ABSOLUTE FREQUENCY	RELATION FREQUENCY	CUMULATIVE FREQUENCY
Less Than 10	1	54	12.9	12.9
10 - 20	2	188	44.8	57.6
21 - 30	3	66	15.7	73.3
31 - 40	4	36	8.6	80.9
41 - 50	5	36	8.6	90.5
51 - 60	6	12	5.8	93.3
61 - 70	7	10	2.4	75.7
71 - 80	8	10	2.4	98.1
Above 80	9	8	1.9	100.0
TOTAL		420	100.0	

MEAN ₦ 29.5 STANDARD ERROR ₦1.23 MEDIAN ₦23.19

MODE ₦10.20 STANDARD DEVIATION ₦17.86.

APPENDIX 3.

ACTUAL RENT ON HOUSING (IN NAIRA) PER MONTH

RENT IN NAIRA	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	CUMULATIVE FREQUENCY
Less than 10	1	4	1	1.0
10 - 20	2	164	40	40.0
21 - 30	3	62	14.8	54.8
31 - 40	4	40	9.5	64.2
41 - 50	5	20	4.8	69.0
51 - 60	6	12	2.9	71.9
61 - 70	7	32	7.6	79.5
70 - 80	8	14	3.3	82.8
Above 80	9	72	17.2	100.0
Total		420	100.0	

MEAN: ₦33.81 STANDARD ERROR: ₦1.77 MEDIAN: ₦24.76.

MODE: ₦10 - 20 STANDARD DEVIATION: ₦17.86.

APPENDIX 4

EXPECTED FARE ON TRANSPORTATION (IN KOBO) PER DAY

FARE IN KOBO	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	CUMULATIVE FREQUENCY
Less than 20	1	52	12.4	12.4
20 - 40	2	210	50.0	62.4
41 - 60	3	102	24.3	86.7
61 - 80	4	34	8.1	94.8
81 and Above	5	22	5.2	100.0
TOTAL		420	100.0	

MEAN: 29.04K STANDARD ERROR: 1.46K MEDIAN: 25.04K

MODE: 20K - 40K STANDARD DEVIATION: 11.08K

APPENDIX 5

ACTUAL FARE ON TRANSPORTATION (IN KOBO) PER DAY

FARE IN KOBO	CODE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY	CUMULATIVE FREQUENCY
Less than 20	1	4	1.0	1.0
20 - 40	2	102	24.3	25.3
41 - 60	3	126	30.0	55.3
61 - 80	4	90	21.4	76.7
81 and Above	5	49	23.3	100.0
TOTAL		420	100.0	

MEAN: 44.36K STANDARD ERROR: .184 MEDIAN: 43.02K

MODE: 41-60K STANDARD DEVIATION: 28K.

APPENDIX 6

AHMADU BELLO UNIVERSITY

DEPARTMENT OF URBAN AND REGIONAL PLANNING

ABEOKUTA JOURNEY TO WORK SURVEY, 1979.

1. Place Residing .....
(PLEASE GIVE STREET NAME)

2. Name of Area: .....

2. Sex: Male/Female.

3. Marital Status: Single/Married/Others.

4. If married do you live in Abeokuta with wife/husband: Yes/No.

5. Occupation: 1. Government.
2. Industrial.
3. Commercial.

6. Are you a native of Abeokuta: Yes/No.

7. Is your place of residence: (a) Rented
(b) Owned by self.
(c) Owned by Parent or relation.

8. To which salary group do you belong in Naira per month.

0 - 100

201 - 300

301 - 401

401 - 500

501 - 600

above - 600

9. What amount of your monthly income do you think considering your salary should be spent on rent per month.

Less than 10 Naira

10 - 20

21 - 30

31 - 40

41 - 50

51 - 60

61 - 70

71 - 80

81 - 90 Above 90 Specify .....

10. What amount do you pay for rent now per month? (If you are occupying an allocated quarter pleased add your supposed subsidy to the rent always deducted from your monthly salary) before ticking.

Less than 10 Naira.

10 - 20

21 - 30

31 - 40

41 - 50

51 - 60

61 - 70

71 - 80

Above 80 Specify .....

11. What amount do you think should be spent on transportation per day?

Less than 20 Kobo.

20 - 40

40 - 60

60 - 80

80 - 1 Naira.

More 1 Naira.

12. What amount do you normally spend on transportation daily now.

Less than 20 Kobo.

20 - 40

40 - 60

60 - 80

80 - 1 Naira.

More than 1 Naira.

13. What is your regular mode of transportation to work?

Private car — Taxi

Public bus — Receiving lift

Motor cycle — Foot

Bicycle

(Tick whichever is applicable).

14. If you change mode of transportation before getting to your workplace, how many times do you change it.

Once, Twice, Thrice, More than Thrice.

(Tick whichever is applicable)

15. If your mode of transportation to place of work is by

receiving lift or the use public transport, how long do do trek to the place of getting the lift.

(a) Directly from door step.

(b) Less than 5 min.

(c) 5 - 10 min.

(d) 10 - 15 min.

(e) More than 15 minu.

16. How long do you normally wait for the person giving you the lift or for the public transport at the point of taking lift or public transport to workplace.

(a) Less than 5 min.

(b) 5 - 10 min.

(c) 10 - 15 mins.

(d) More than 15 mins.

17. If the person giving you lift or the public transport could not carry you to the doorstep of your workplace, how long does it take you to trek from the place you are dropped to your workplace.

Less than 5 mins.

5 - 10 mins.

10 - 15 mins.

More than 15 mins.

18. If at the close of work you were usually given lieft or public transport, were you always picked at doorstep of your place.

Yes/no.

19. If the answer to 23 is No how long does it take you to trek from your workplace to the point you usually receive the lift or take public transport back home.

Less than 5 min.

5 - 10

10 - 15

More than 15 min.

20. How long do you normally wait at the point you are giving lift or take public transport?

Less than 5 min.

5 - 10 min.

10 - 15 min.

More than 15 mins.

21. How far is your workplace to your place of residence in kilometer?

Less than $\frac{1}{2}$ kilometer

$\frac{1}{2}$ - 1

1 - 2

2 - 3

3 - 4

4 - 5

5 - 8

8 - 12

More than 12 Specify: .....

22. When do you generally leave home for workplace.

23. When do you usually get to workplace.

24. When do you close at workplace.

25. When do you normally get back home.

26. Which way would you prefer to be give an additional income equivalent:

    (a) To your transport cost.

    (b) The same salary and move closer to your place of work.

    (c) Either (a) or (b).

    (Tick whichever is applicable)

27. How many dependants live in the same house with you that are: (Please do not count paid maids along).

    (a) Working ..... No .....

    Distance to place of work from home:

    1

    2

    3

    4

    5

    (b) Attending school ..... No .....

    Distances to school from home:

    1

    2

    3

    4

    5

28. In choosing residence do you put the distances of your dependants school/workplace into consideration? Yes/No.

29. If answer to 28 is Yes, where would you have loved to live if you were to live alone.

    (a) Nearer to workplace.

    (b) Further from workplace.

    (c) Either (a) or (b).