ANALYSIS OF THE SPATIAL STRUCTURE OF RETAIL TRADE IN PHARMACEUTICAL PRODUCTS IN KADUNA METROPOLIS, NIGERIA

BY

YAKUBU DAN
Ph.D/ Sci/34175/2002-2003

A DISSERTATION SUBMITTED TO POST GRADUATE SCHOOL, AHMADU BELLO UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE DOCTOR OF PHILOSOPHY IN GEOGRAPHY

DEPARTMENT OF GEOGRAPHY AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

Declaration

I hereby declare that this dissertation has been written by me and that it is a record of my own research work, it has not been presented in any previous application for a higher degree. All quotations are indicated and the sources of information are acknowledged by means of references.

.....	.....	.....
Name of Student	Signature	Date

Certification

This dissertation entitled " ANALYSIS OF THE SPATIAL STRUCTURE OF RETAIL TRADE IN PHARMACEUTICAL PRODUCTS IN KADUNA METROPOLIS, NIGERIA" meets the regulation governing the award of the degree of Doctor of Philosophy (Geography) of Ahmadu Bello University, Zaria, and is duly approved for its contribution to knowledge and literary presentation.

Chairman Supervisory Committee	Date
Member Supervisory Committee	Date
Member Supervisory Committee	Date
Head of Department	Date
Dean Postgraduate School	Date

Dedication

This thesis is dedicated to my wife, Dr (Mrs.) Victoria Moltong Yakubu Dan, and to our children Kabati, Amdo, Noah and Ladkiwa, whose love and unlimited sacrificial supports steered this work to completion. It is also dedicated to Nigerian retailers most of whom eke out a living, but knowing or unknowingly build the foundation of and contribute immensely to the economic growth of their communities and nation.

Acknowledgements

I earnestly and sincerely appreciate the grace and guidance of the Almighty God from the commencement of this programme at the verge of my retirement from military service to its completion. He marvelously led and sustained me every step of the way, encouraging and providing all that were needed to produce this thesis.

I owe unfathomable gratitude to my main supervisor, Professor J A Ariyo whose keen interest in me, and my work, forbearance, encouragement and well focused guidance greatly led to the success of this work. His thorough intellectualism and wealth of knowledge that were brought into this research, inspired me to a great extent. My special thanks to Dr. E. O. Iguisi, the Head of Geography Department, for his concerns and contributions to the success of this thesis. To Professor I A Jaiyeoba, I am deeply indebted for the special encouragement he gave me throughout the duration of this study. A depth of gratitude is owed to Professor B Dogo who greatly assisted me in pursuing this programme. I am very grateful to all the lecturers of the department for their moral supports and counsel. I appreciate the non-academic staff of the department for the various ways they assisted me. Professor J B Kaltho deserves special thanks for his encouragements, intellectual assistance and guidance.

The patience, hard work and intelligent efforts of Mr. Ibrahim Bala, Mr. Kharbal J. B. Kaltho and Mr. Emmanuel P. Bako in producing all the maps needed in this work is highly appreciated. Mr. H Bernard and his team

are acknowledged for the pains and sacrifices made in obtaining details on drugstores in the whole of Kaduna metropolis.

Also I express my heart-felt gratitude to all my informants such as the Pharmaceutical Council of Nigeria Kaduna Branch, the staff of Kaduna State Urban Planning and Regional Development Authority, Ministry of Health, Kaduna State and all individuals and agents that deal with pharmaceutical products in Kaduna metropolis. I owe lots of gratitude to the Gombe State Government, and particularly the chairman of the Scholarship Board, Alhaji Musa Yahaya and his staff for their supports. I must express my profound gratitude to my family who painstakingly endured many things for so many months while I was studying, that despite the denials of my expected roles they radiated love, were full of joy and specially encouraged me. I am sincerely most grateful.

To all the unnamed but who in one way or the other contributed to the success of this research, I humbly express my deep gratitude. All your contributions and concerns went a long way in lifting me up to this level. May all our desires and labour uplift and sustain the course of human development.

Abstract

This study examines the effects of changes in government policies on the evolution of the spatial structure of retailing in pharmaceutical products over a period of forty years (1966-2006) in Kaduna metropolis. Use was made of a base map of the metropolis to indicate all the drugstores (pharmacy and patent medicine stores) according to their coordinates obtained from the field by means of the Global Positioning System. A total of 430 establishments selling drugs which were thus identified consisted of 122 registered drugstores and 308 patent medicine stores. The 122 registered drugstores formed the sample population for the questionnaire administration on issues such as reasons for the choice of location of drugstore year of location, sources of drugs and government policies that facilitated entry into the drugs trade. The study revealed that the evolution of the spatial structure of retail trade in pharmaceutics in Kaduna metropolis over the study period was a concomitant of the growth of the metropolis in terms of area and population. In addition government (i) regulatory policies, (ii) macro-economic policies and (iii) land use policies greatly influence the development of the spatial pattern of drug retailing in the metropolis. The study also revealed that the spatial structure of retailing in Kaduna metropolis has evolved into a three tier hierarchy. Wholesale and registered large retail pharmacy stores occupy the top of the hierarchy and are found mainly in the central market area. Below that level, are registered retail stores located in the Government Reservation Areas (GRA), and major streets. Patent medicine stores selling only non-prescription drugs occupy the bottom of the hierarchy and are located mostly in the low income areas of the city. The observed spatial distribution of pharmaceutical stores in Kaduna metropolis conforms to the distance decay hypothesis of urban land rent theory which stipulates that land value tends to decrease with increasing distance from

the city centre. The study unveiled the influence of policy dynamics as a major factor in the evolution of the spatial structure of retail trade over the forty years period, in Kaduna metropolis The knowledge of the workings of past policies which this study provides can be useful tool for future improvement of retail trade in Kaduna and similar cities.

.

CONTENTS

Title		i
Declaration		ii
Certification		iii
Dedication		iv
Acknowledgements		v
Abstract		vii
Contents		ix
List of Tables		xv
List of Figures		xvi
List of Appendices		xvii
CHAPTER ONE: INTRODUCTION		
1.1	Background to the Study	1
1.2	The Research Problem	3
1.2.1	The Research Question	6
1.3	Study Aim and Objectives	6
1.4	The Scope of the Study	7
1.5	Justification for the Study	7
1.6	Expected Contributions to Academic Knowledge	9
1.7	Definition of Terms	10
CHAPTER TWO: THE STUDY AREA		
2.1	Location and Origin of Kaduna	13
2.2	Physical Setting	16
2.2.1	Geology, Relief and Drainage	16
2.2.2	Weather and Climate	16

2.2.3 Vegetation and Soil 16

2.3 Human Setting: Size and Population Dynamics of Kaduna Metropolis 17

CHAPTER THREE: LITERATURE REVIEW

3.1 Concepts of Urban Form and Patterns of Growth 21

3.1.1 Concentric Zones Model 21

3.1.2 The Sector Theory 22

3.1.3 Multi-Nuclei Model 22

3.2 Contemporary Factors Affecting Urban Form and Growth Pattern 25

3.2.1 The Central Place Theory 25

3.2.2 Concepts related to Centrality and Retailing of Goods 26

3.3 Urban Systems 29

3.4 Central Place Theory: The Nigerian Application 29

3.5 Attempts at Urban Retail Centre Classification 31

3.5.1 The Central Business District 31

3.5.2 The Outlying Business Centre 34

3.5.3 The Principal Business Thoroughfare 35

3.5.4 The Neighbourhood Business Street 36

3.5.5 Isolated Store Cluster 36

3.5.6 The General Spatial Structure of Retailing in Urban Areas 37

3.6 Government Policies and the Evolution of Spatial Structure of Retail Trade 40

3.7 Hierarchy and location of Establishments in Urban Areas 41

3.8 Retail Trade 44

3.8.1 The Concept of Retail Trade 44

3.9 Factors Affecting Location of Commercial Activities in Urban Areas 47

3.9.1 Accessibility 47

3.9.2 Customer Behaviour 48

3.9.3 Taste of Customers 49

3.9.4 Choice of Market 49

3.9.5 Choice of Site 49

3.9.6 Store Location Potential 50

3.9.7 Government Policies 50

3.10 Type and Contributions for the Registration of Drugstores 50

3.10.1 A Licensed Pharmacy/A Drugstore or Pharmaceutical Store 50

3.10.2 Guidelines for Registration of Licensed Drugstores 51

3.10.3 Patent Medicine Stores 51

3.11 Pharmaceutical Products 52

3.11.1 Need for Standardization and Legislation 52

3.11.2 International Organization and Pharmaceutical Products Standardization and Legislation 53

3.11.3 The Nigerian Drug Policy 54

3.12 Kaduna State Land use Guidelines 55

CHAPTER FOUR: METHODOLOGY

4.1 Types and Sources of Data 58

4.2 Field Survey and Mapping of Drugstores 58

4.3 Selection of Pharmaceutical Stores for the Study 59

4.4 Administration of questionnaires 59

4.5 Analysis of Data 60

4.5.1 Techniques used in Data Analysis 60

4.5.2 Nearest Neighbour Analysis 61

4.6 The Study Area Period 61

CHAPTER FIVE: PRESENTATION AND ANALYSIS OF DATA

5.0 Presentation and Analysis of Data 63

5.1 Growth of Drugstores Overtime 63

5.1.1 Licensed Drugstores and patent Medicine Stores 63

5.1.2 The Spatial Distribution of Pharmacies and Patent Medicine Stores 64

5.2 The Spatial Distribution of Hawkers' Daytime Retailing Activities 66

5.3 The Spatial Distribution of Drug Retailing Between 1966-1970 67

5.4 Policy Effects on Spatial Pattern of Drugs Retailing Between 1966-1970 69

5.4.1 Government Regulatory Drug Policies 69

5.4.2 Macro-Economic Policies 69

5.4.3 Political Development 69

5.4.4 Land use Policies 70

5.5 Spatial Distribution of Drug Retail Activities 1971-1984 70

5.5.1 Spatial Distribution of Drugstores (Registered with PCN) 71

5.5.2 Distribution of Patent Medicine Stores 1971-1984 74

5.6 Policy Effects on Spatial Patterns of Drugs Retailing 1971-1984 76

5.6.1 Government Regulatory Policies 76

5.6.2 Implication of Nigerian Indigenisation Decrees 77

5.6.3 `Macro-Economic Policies 77

5.6.4 Land use Policies 78

5.7 Spatial Distribution of Drug Retail Activities during the Structural Adjustment Programme (SAP) Period 1985-1995 79

5.7.1 Spatial Distribution of Drugstores (Registered with PCN) 80

5.7.2 Distribution of Patent Medicine Stores 1985-1995 82

5.8 Policy Effects on Spatial Pattern of Drugs Retailing Between 1985-1995 84
5.8.1 Government Regulator Policies 84
5.8.2 Macro-Economic Policies 85
5.8.3 Land use Policies 85
5.9 The Period of Growing the Private Sector and Promotion of Commercial Activities 86
5.10 Spatial Distribution of Drug Retail Activities 87
5.10.1 Spatial Distribution of Drugstores (Registered with PCN) 87
5.10.2 Distribution of Patent Medicine Stores 1996-2006 89
5.11 Policy Effects on Spatial Pattern of Drugs Retailing Between 1996-2006 91
5.11.1 Government Regulatory Policies 91
5.11.2 Macro-Economic Policies 91
5.11.3 Land use Policies 91
5.12 Effects of Government Policies on Business Turnovers of Registered and Patent Medicine Stores 92
5.12.1 Business Turnovers of Registered Drugstores 93
5.12.2 Business Turnovers of Patent Medicine Stores 94
5.13 Location Factors in the Spatial Structure of Drug Retailing in Kaduna 95
5.13.1 Accessibility to Market 95
5.13.2 Proximity to Hospital 98
5.13.3 Government Directives 99
5.13.4 Security 99
5.14 Nearest Neighbourhood Analysis and Compliance to Guidelines 99
5.14.1 Barnawa Area 100
5.14.2 Kakuri Area 100

5.14.3 Sabon Tasha Area 101

5.14.4 Doka/Central Kaduna Area 101

5.14.5 Unguwan Rimi Area 101

5.14.6 Kawo/Kurmin Mashi Area 102

5.15 Contribution of Hawkers to Drug Retail Trade in Kaduna 103

5.15.1 The Nature of Hawking Drugs 103

5.15.2 Duration of Employment as Hawkers of Drugs 104

5.15.3 Hawkers' Customer 104

5.15.4 Drug Sources for Hawkers 105

5.15.5 Types of Drugs Sold by Customers 105

5.15.6 Earnings from Hawking Drugs 106

5.16 Manufacturers, wholesalers and Retailers Relationship 107

5.16.1 Status of Dealers in Pharmaceutical Trade 107

5.16.2 Sources of Drugs 108

5.16.3 Drug Manufacturers 108

5.17. The observed spatial structure of pharmaceutical products retail stores in Kaduna metropolis 110

CHAPTER SIX: SUMMARY AND RECOMMENDATIONS

6.1 An Overview of the Study 113

6.2 Conclusion 115

6.3 Recommendations 116

6.4 Areas for Further Studies 117

6.5 Contribution to Academic Knowledge 118

REFERENCES 120

List of Tables

Table	Title	Page
5.1	Drugstores Established in Kaduna by Period	64
5.2	Areas of retailing of Drugs by Hawkers in Kaduna	66
5.3	Establishment of Patent Medicine Stores 1996-2006	89
5.4	Business Turnovers of Registered Drugstores on Weekly Basis in Kaduna	93
5.5	Business Turnovers of Patent Medicine Stores on weekly Basis in Kaduna	94
5.6	Reasons for Choice of Drugstore Premises in Kaduna Metropolis	96
5.7	2005 Projected Population of Kaduna Metropolis by Area	97
5.8	Location Factors of drugstores by Periods in Kaduna Metropolis	97
5.9	Location Factors of Drugstores by Area in Kaduna Metropolis	98
5.10	Nearest Neighbour (Rn) by Area	102
5.11	Hawkers by the Period they Commenced Drug Business	104
5.12	Customers to Whom Hawkers Sell Drugs to in Kaduna	105
5.13	Hawkers' Sources of Drugs in Kaduna	105
5.14	Types of Drugs Sold by Hawkers	106
5.15	Business Turnovers of Hawkers on weekly basis in Kaduna	106
5.16	Status of Wholesalers and Retailers	107
5.17	Distribution of Drugstores by Source of drugs in Kaduna	108
5.18	Identified Manufacturers of Drugs Sold in Kaduna by Wholesalers and Retailers	109

List of Figures

Figure	Title	Page
2.1	Kaduna Metropolis in the Context Kaduna State	14
2.2	Kaduna Metropolis	20
3.1	Traditional Models of Urban Structure	24
3.2	The Retail Structure of Lagos	32
3.3	The General Structure of Retail Activities in Urban Areas	39
5.1	Spatial Distribution of Licensed Drugstores and Patent Medicine Stores1966-2006	65
5.2	Spatial Distribution of Licensed Drugstores 1966-1970	68
5.3	Spatial Distribution of Licensed Drugstores 1971-1984	73
5.4	Spatial Distribution of Patent Medicine Stores 1971-1984	75
5.5	Spatial Distribution of Licensed Drugstores 1985-1995	81
5.6	Spatial Distribution of Patent Medicine Stores 1985-1995	83
5.7	Spatial Distribution of Licensed Drugstores 1996-2006	88
5.8	Spatial Distribution of Patent Medicine Stores 1996-2006	90
5.9	Types of Drugstores by Location 1966 - 2006	111
5.10	Spatial Structure of Drugs Retail by Zones in Kaduna 1966 – 2006	112

List of Appendices

Appendix	Title	Page
A.	Questionnaires Administered to Drugstores	124
B.	Questionnaires Filled by Hawkers	128
C.	Names, Coordinates and Years of establishment of Drugstores in Kaduna	129
D.	Population Projection for Kaduna Metropolis, 1991-2005	133

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

From a global perspective research in commercial activities generally has received a lot of attention from social scientists and those in related disciplines. The patterns of trade the world over have been areas of great concern to scholars. Studies by planners and geographers have been concerned with the elements of spatial organization and their relationship to commercial activities on global and national levels as shown by, for example, the works of Marshall (1971), Abler *et al* (1972), Sada (1984), Hagen (2003) and Harry (2004).

In dealing with the details of spatial organization and their relations to commercial activities many interdisciplinary studies have been carried out among which, at the theoretical level, are those of the central place theory by Christaller (1933, as elaborated in Marshall. (1971), and those of Burgess (1928), Hoyt (1939), Harris and Ullman (1945), and Mann (1969) as found in Daniel and Hopkinson (1986), at the urban level. It should be noted that the major focus of research has been on the general aspects of urban and regional structures and their implications for spatial planning and commercial activities in developed countries (Scott, 1997; Sada, 1984; Persson, 2003; Hagen, 2003; Harry, 2004 and Ligthelm, 2004).

The evolution of retail trade and the analysis of its structure in the developed world have been carried out in greater details while few studies in this respect have been carried out in the developing countries. Research on retail trade in the developing countries have been concerned with a general analysis of the structure of retail trade or commercial activities of specific urban areas, for instance, the retail

structure of Lagos and traditional markets carried out by Mabogunje (1964) and Vagale (1972). Only one study undertaken by Iro (2000) is known to this writer that has presented a detailed analysis of the retail activities showing its movement from the producer to the consumer through a hierarchy of intermediaries. The study was carried out in Nigeria and focused on livestock transportation, marketing and retailing of meat. This study however did not focus on the spatial aspect of retailing. More geographical research on retail trade is welcomed in this field that hitherto had received limited scholarly attention in the developing countries. This is important because it is often alleged, without sound verifiable empirical basis, that tertiary rather than secondary activities tend to dominate the urban areas of the developing countries that are supposed to be in transition from primary to secondary (manufacturing) activities.

Moreover, geographical studies of urban retailing in both developed and developing countries have been concerned with the spatial structure of specific urban or parts of a metropolis using the variables of prices of some commodities or land value as factors for explaining the differences in retailing. The effects of government policies and accompanying spatial changes of the retail trade sector over time have been left out such as in the studies of Mabogunje (1964), Heal (1980) and Ligthelm, (2004). In addition, geographical studies of retail trade in both developed and developing countries have lacked the required retrospective focus and analysis of the evolutionary process of the spatial structure of retail trade, and have not considered how policy changes over time can influence the spatial structure of retailing.

In addition, the economies of many developing countries have experienced serious declines in recent years, with hardly any hope of getting out of the vicious circle of poverty or under-development. Consequently, countries like Nigeria, which

have been experiencing these woeful economic trends have had to turn to policies of structural adjustment which entailed retrenchment of workers, especially in the public sector. Many of such retrenched workers and other job seekers have taken up one form of retailing activity or the other. Such retail trading, induced, in part, by the structural adjustment programme policies, has not featured in geographical studies.

1.2 THE RESEARCH PROBLEM

Geographical studies of retail trade in developed countries have been done in great detail, especially for items like clothing and textile, electrical goods and electronics and other consumables such as foodstuffs. Such studies dealt with the pricing and sales of these commodities in developed and developing countries (Fundafunda, 2000; Heal, 1980; Prochilo, 2002). In some of such retail trade studies the focus has been on retailing as a concomitant of urban sprawl (Heal, 1980).

Apart from a few studies on retail trade in Nigeria as those of Lagos by Mabogunje (1964) and Ibadan by Vagale (1972), research into the spatial aspect of retailing has not attained the level of analysis of those in the developed world. Kaduna, unlike Lagos and Ibadan, has had limited research conducted on its commercial activities despite its rapid growth from a mere colonial military administration camp to a multi-functional metropolis. The rapid growth of Kaduna has resulted in changes in the spatial structure of the various commercial activities. Retail trade development in the metropolis is now carried out on a larger scale. Many markets have been established while modern shops and stalls have been built along major streets to take the place of poorly built shops and stalls. The variety of goods and the volume of commodities have also increased as larger population and capital

resources go into commercial activities. Moreover products come in from many countries outside Nigeria in addition to the many goods that are produced locally and traded in the metropolis.

Among the few studies that have been carried out in Kaduna are those of Lock (1967) and the review by the students of the Department of Urban and Regional Planning, Ahmadu Bello University Zaria, (Kulshrestha, 1984). The 1967 Max Lock study identified three levels in the hierarchy of the Kaduna market system that had already developed from the colonial era. The areas so identified that formed the main commercial centres in the metropolis were along Ahmadu Bello Way and the Central Market. The district markets of Kawo, Kakuri and Ungwan Rimi formed the second level in the hierarchy, while the third level in the hierarchy of markets consisted of commercial activities in some buildings and kiosks.

In the review of the 1967 Master Plan of Kaduna, Kulshrestha (1984) categorised commercial activities into a formal type, found on Ahmadu Bello Way and the markets in other parts of the town. Also identified was the informal type of commercial activities by hawkers, and others engaged in a mixed form of commercial activities where buildings were used for both commercial and residential purposes. It was also found that the density of commercial employees is highest in the Central Market and that the market has gone through tremendous growth in terms of commercial interactions. Other aspects of the review showed that Kaduna has specialized markets for the sale of automobile spare parts and livestock. Thus, while commercial activities in Kaduna have been studied, the evolutionary process of the retail structure of the town was totally neglected. Without a deep insight into how the retail structure came into being, policy prescriptions for its functional improvement will not be knowledge-based. The previous studies have simply described what “is”

"where" at a given point in time without going into "how" the spatial pattern being described has emerged. There is, therefore a gap in our knowledge about the process of evolution of urban spatial retail trade structure.

Urban retail studies in Nigeria and elsewhere have mainly focused on the general analysis of the spatial retail structure of specific urban areas at particular points in time using pricing and land value as explanatory variables of the differentiations observed (Proudfoot, 1937; Vagale, 1972; Scott, 1997 and Persson, 2003). Such studies neglected the importance of the underlying policy dynamics over time, which are the true explanatory variables of any observed specific differentiation. Various government policies when carried out leave landmarks and legacies on the townscapes, whether positively or otherwise, and these, in turn, make up the total urban structures. Where the consequent configuration and effects are adverse, policies and programmes have to be designed to tackle them. It is in this light that a research like this is invaluable.

The most productive way to gain an insight into the evolution of urban spatial retail structure is through the study of the historical development of the spatial structure of retail trade in single products or services, or multiple products and services paying particular attention to government policies that might have influenced its development over the years. It is along this line of thinking that the present study undertook an in-depth retrospective analysis of the evolution of the spatial structure of retail trade structure of a single product in Kaduna. The product selected consists of the wide range of pharmaceutical products being retailed in every nook and cranny of the metropolis. The study examines the underlying factors that have been responsible for the development of the pharmaceutical retail trade structure in Kaduna over time.

1.2.1 The Research Question

The specific question the study seeks to answer is, "What is the spatial structure of retail trade in pharmaceutical products in Kaduna metropolis and what factors are responsible for its evolution?"

1.3 STUDY AIM AND OBJECTIVES

The aim of the study is to trace the evolution of the spatial structure of retail trade in pharmaceutical products in Kaduna metropolis with the view of determining the policies that have given rise to the observed structure. The following specific objectives were pursued in order to achieve the aim of the study:

(i) To identify the location of retail outlets of pharmaceutical products in Kaduna metropolis, their years of establishment and type of operation.

(ii) To determine the significant periods in the development of retail trade in pharmaceutical products in Kaduna metropolis and map the spatial structure of the trade for each period.

(iii) To identify the policy variables responsible for the development of the retail trade spatial structure of pharmaceutical products in Kaduna metropolis over the years.

(iv) To determine the functional relationships between the retail trade outlets of pharmaceutics within Kaduna metropolis and other related businesses in the metropolis.

1.4 THE SCOPE OF THE STUDY

This study investigated the following aspects of retail trade structure of pharmaceutical products: its evolution, spatial spread and the transactions between establishments and their relationships in Kaduna. In this connection the location of pharmaceutical retail activities in the metropolis from 1966-2006 were mapped. Also

examined in this study were the underlying national, state and local government policies that could have been responsible for the development of the retail trade structure of pharmaceutical products in Kaduna from 1966-2006. Due to the various unfolding political and socio –economic conditions and the country has been going through this study period was chosen. The commercial chain from the point of manufacture through the wholesalers to the retailers and consumers were examined. Drugs retailing is not an activity limited to wholesalers and retailers, hawkers who parade the street selling drugs ware also examined. The study was not involved in the nitty-gritty of pharmaceutical sciences.

1.5 JUSTIFICATION FOR THE STUDY

Kaduna developed from its foundation as a military administrative camp to its present state of a complex metropolitan settlement. Its growth followed the basic process of urbanization in developing countries in which the phase of manufacturing as a major factor in the urbanization process has been largely skipped. What has happened is a transformation from settlements dominated by primary activities into urban centres in which tertiary activities such as trading and services dominate their initial developmental phase. In a similar manner, Kaduna metropolis went through the process of urbanization without industrialisation, or at best, urbanization with a very narrow industrial base, as the city is characterized by a very narrow industrial based which is dominated by the tertiary sector, including retail trading.

The single-commodity approach adopted in this research for examining the evolution of the retail trade spatial structure of Kaduna metropolis should provide a deeper insight into the factors that underlie the development of retail spatial structure in urban centres in general, especially urban centres in developing countries. In the

same vein pharmaceutical products have been chosen because they are regulated products whose retailing is subjected to stringent laws. These highly regulated products also provide a deep insight into the role of policies in the evolution of retail trade spatial structure- the extent to which the enforcement of and compliance with regulations determine locational decisions in an urban setting. .

It is also expected that the structural adjustment programme which has brought a "boom" to retail trading in Nigeria in general has extended to the retailing of pharmaceutical products (even though they are supposed to be highly restricted) in Kaduna metropolis, both in terms of the number of actors in the trade as well as its spatial extent. The degree to which the location of pharmaceutical products retailing outlets in Kaduna metropolis is legal or otherwise should be of immense interest to policy makers. Another rationale for this study, is the boost in retail trade in general that resulted from the structural adjustment programme initiated in 1986. This economic strategy emphasized restriction of imports and reduction in government expenditure on social services. In addition the private sector was recognized as the engine of growth of the economy through commercialization and privatization of government enterprises. The implementation of the structural adjustment programme had adverse effects as it led to closures of many factories, retrenchment of workers, low incomes, high inflation, and a general down turn in the Nigerian economy (NCEMA, 2004).

1.6 EXPECTED CONTRIBUTION TO ACADEMIC KNOWLEDGE

Research works on retailing have mainly dealt with the general analysis of the spatial structure of retail trade of some urban areas at particular points in time. In such cases pricing of commodities and land value were used as explanatory variables

of the observed differentiation (Proudfoot, 1937; Mabogunje, 1964; Vagale, 1972; Scott, 1997 and Persson, 2003). The important aspect of government policy changes and their effects on the development of retail spatial structure have been neglected. There is the need to recognize the importance of policy dynamics in the development of socio-spatial structures because such structures are the product of policies. This study therefore undertakes an in-depth retrospective analysis of the historical development of the spatial structure of retail trade and the influence of policy dynamics in its evolution. The study focuses on a single commodity or product, pharmaceutics, in Kaduna, paying particular attention to government policies that might have influenced the development of its spatial structure over the years. This approach, it is hoped, will link pattern (spatial structure) to process (policies and actions), a link that is often missing in studies of spatial patterns in human geography.

1.7 DEFINITION OF TERMS

Some of the concepts and terms used in the study and their definitions are presented briefly below. It is however important to note that some of the terms are very related and are sometimes used interchangeably.

Retail trade: This is the act or occupation of selling goods direct to customers, usually in small quantities or parcels and not for resale.

Retail structure: The spatial pattern of retail activities in a settlement.

Establishment: This is a single physical location where business is conducted. It is not identical with a company or enterprise that may consist of one establishment or more.

Store retailers: These retailers operate in fixed point-of-sale locations. The stores are located and designed to attract a high volume of walk-in customers. Their goods are sold to the public for personal or household consumption, though they may also serve business and institutional clients.

Non-store retailers: These retailers reach customers by mail order, door-to-door or home delivery and hawking. Hawkers reach customers along streets and areas of population concentrations as parks, motor garages, sports and game venues and road intersections to sell their products.

Departmental store: A large store organized into departments that sell different goods.

Distributors/ wholesalers: The traders in this category make up the bridge between producers and retailers. They collect, store in warehouses and disburse products to retailers.

Producers: *Companies whose sole function is the processing and packaging of goods in a suitable form for consumption.*

Drug: Any substance or medicine or pharmaceutical product for human or veterinary use that is meant to modify or explore physiological systems or pathological states for the benefit of the consumer.

Essential drugs: These are drugs that satisfy the health needs of most people in a community as stipulated by government.

Promotion: This includes advertising and refers to all informational and persuasive activities by manufacturers and distributors to induce the prescription, supply, purchase and/or use of drugs.

Quality control: This is the application of standards on starting materials, intermediaries and finished products to ensure that necessary and relevant tests of drugs meet required standards. It includes sampling, specifications and testing, organization, documentation and acceptance or rejection of the finished product.

Spatial economics: The study of how space (distance) affects economic behaviour.

Commercial activity: Human operations concerned with bridging the distance between buyers and producers. It is space-bridging between those who produce and sell, and consumers.

Drugstore/ pharmaceutical store This is an establishment engaged in the business of buying and selling of pharmaceutical products.

Pharmacy: This is a licensed pharmaceutical store with a superintendent pharmacist who is primarily responsible for the observance of proper standards of conduct of its operations.

Patent medicine store: An establishment that retails drugs and the services of a pharmacist may not be a condition for its operations and neither does it have a superintendent pharmacist.

Kaduna: This is the name of the capital of a state bearing the same name in central Nigeria. Where the entire state is intended in this study, the term Kaduna State is used. But where the state capital-the focus of the study-is intended, the term "Kaduna" or Kaduna metropolis is used.

CHAPTER TWO

THE STUDY AREA

2.1 LOCATION AND ORIGIN OF KADUNA

Kaduna metropolis is located where the Lagos-Kano railway line crosses the Kaduna River. Its coordinates are $10^{O}30'N$ and $7^{O}30'E$ and its sphere of influence is bordered in the north by latitude 11^{O} North, to the West its limit extends to longitude 7^{O} East, on the East its border runs along longitude 8^{O} East (Figure 2.1). Its natural sphere of influence covers approximately 122 km east to west and 80 - 96 km north to south (Lock, 1967).

The general area on which Kaduna is located was secured in 1902 by a colonial proclamation when the area was declared an administrative station, after the occupation of Northern Nigeria by the British. A military and administrative camp was sited and surveyed in this particular location by a detachment of the West African Frontier Forces (WAFF) then located in Kano and Zungeru (ibid).

After the survey, the gently rolling Guinea savanna grassland area was recommended for development purposes Kaduna as the protectorate's headquarters. For development had on the east the Kaduna River, on the west the Lagos-Kano rail line, to the north by the detour of the Lagos-Kano rail line and to the south by the western detour of the Kaduna River (ibid).

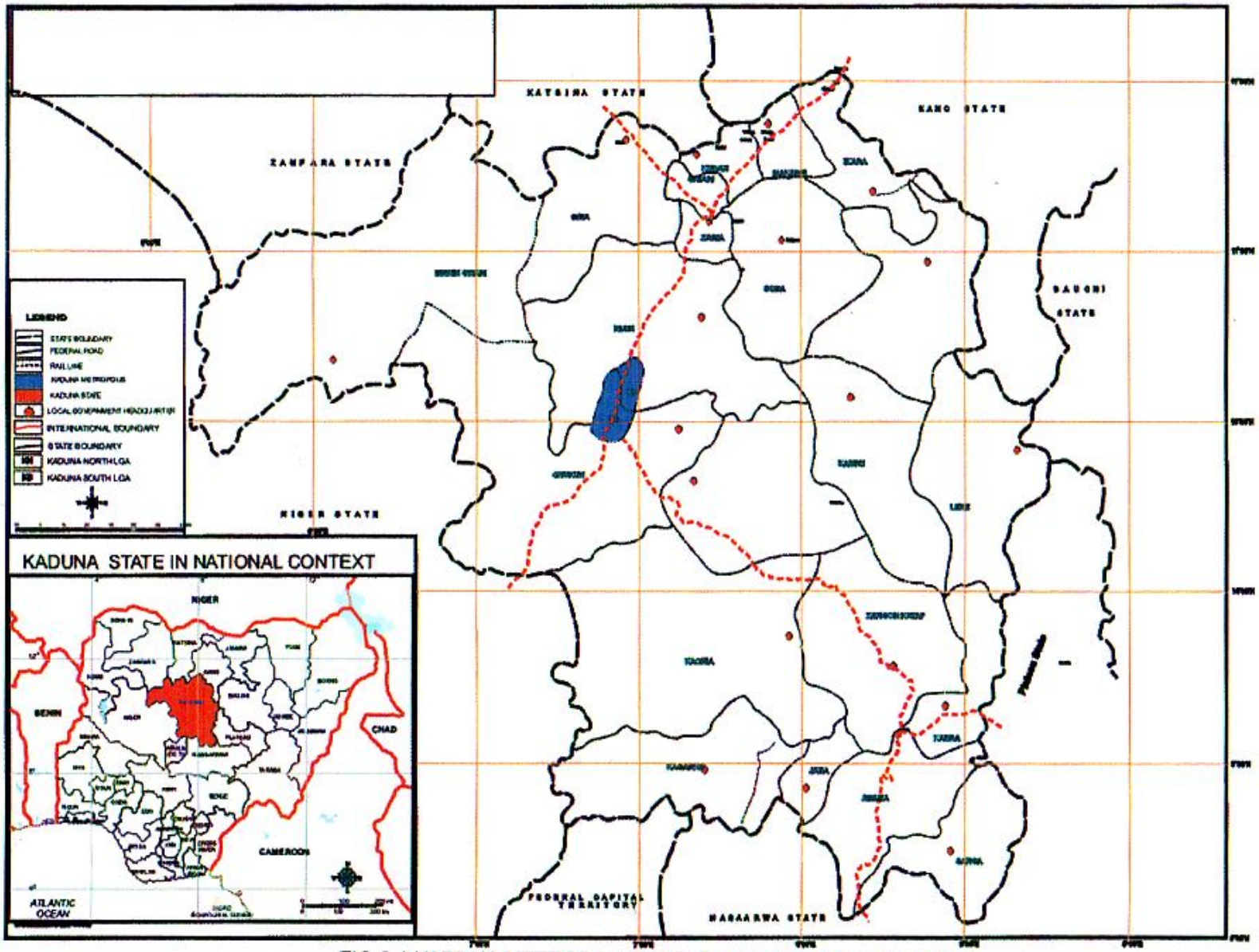


FIG.2.1:KADUNA METROPOLIS IN THE CONTEXT KADUNA STATE

Source: Kaduna State Ministry of Land and Survey. 2005

Kaduna is in the class of Nigerian modern cities that originated in direct response to the administrative and economic initiatives of the colonial period. This settlement came to prominence in 1917 when Lord Lugard re-located the seat of government of the then Protectorate of Northern Nigeria from Zungeru to Kaduna. Lord Lugard arrived Kaduna location, his new administrative headquarters, by the Lagos-Kano rail that was built in 1909 and commissioned in 1911. He preferred Kaduna to Zungeru as the headquarters of the then Northern Nigerian Protectorate for more effective governance, control of and communication with the British troops stationed in Zaria. It became the capital of Nigeria's former Northern Region from 1917 to 1967. It was the capital of North Central State from 1967 to 1976, the capital of Kaduna State from 1976 to 1987 and is still the capital of new Kaduna State after Katsina Province was excised from the old Kaduna State to form Katsina State in 1987. It emerged from an army encampment to become a centre of administration, commerce, industry, education and military establishments in the northern part of the country (Chawa, 1989).

The modern city of Kaduna was founded within the then powerful Zazzau Emirate in an area inhabited by the Gbagyi (Gwari), a predominantly non-moslem ethnic group. Their rural settlements were largely scattered in this savanna grassland though they were self-sufficient. The population operated a subsistence agricultural economy after occupying the environment in the 13th and 14th centuries before the gradual settling down of the Hausa among them, especially north of the present Kaduna (Lock, 1967).

2.2 PHYSICAL SETTING

2.2.1 Geology, Relief and Drainage

Kaduna environ consists of magmatic streaky granite having darker bands in some places. Most of the granitic rocks have decomposed to form laterite. The Kaduna river is the major river that flows in the area. Small streams drain the surface cutting deep gullies with steep edges. Generally the topography of the environment is therefore an undulating terrain of about 700 metres above sea level on the average (Lock 1967).

2.2.2 Weather and Climate

Kaduna belongs to the general pattern of the West African interior/continental climate with marked dry and wet seasons. The dry season lasts from November to March during which period the cold dust-laden harmattan blows over the area from a northeasterly direction straight off the Sahara Desert. Its rainy season starts in April, brought in by the moist southwest wind that blows over the Atlantic Ocean. From May to October each year the winds become continuous and the average of 125cm are recorded with peaks in August when the rains are more intense. The highest temperatures for Kaduna are recorded in April and the range is between 35^{O}C and 41^{O}C, the lowest temperatures are recorded in January and range between 7^{O}C and 13^{O}C, when the cold harmattan winds are fierce and dominate the region generally (ibid).

2.2.3 Vegetation and Soils

Kaduna is located in the Guinea Savanna vegetation zone. In its natural state this zone is supposed to have slightly thick woodland and tall grasses. It is expected to

have a continuous cover of well-developed trees some 8-15 metres tall. However the vegetation in this zone has been modified over the centuries by intense cultivation, grazing and burning. This vegetation zone is therefore now classified as open and park-like grassland.

Soils in the Kaduna environ are similar to those in the northern plains of Zaria and Kano. The top-soils are made up of oealian deposits blown from the Sahara Desert and cover the solid sedimentary and Pre-Cambrian Basement Complex Rocks. Such deposits reach up to 5 metres in depth in places. Soils in the region have favoured the growth of many crops such as maize, sorghum, millet, yams, tomatoes and so on, as well as cotton the popular raw material for Kaduna textiles (ibid).

2.3 HUMAN SETTING: SIZE AND POPULATION DYNAMICS OF KADUNA METROPOLIS

Kaduna metropolis stands astride River Kaduna, a northern tributary of the River Niger. To the northern part of River Kaduna the settlement consists of residential quarters, government establishments, headquarter buildings of many Federal parastatals and the then Regional Government offices, markets, shops, stalls and the stores of giant commercial enterprises along major streets. In the southern part of River Kaduna the metropolis consists of residences, market and shops as well as the industrial layouts of textiles, beverages, ordinance, and automobile assembly and petroleum refinery plants (Figure 2.2).

Kaduna metropolis has experienced very rapid population growth in the last three decades, especially from the oil boom of the 1970s to the early 1980s. The 1963 census gave the population of Kaduna town as 149,910. Max Lock (1967) estimated the immediate area of urbanized Kaduna to be 120 sq km accommodating 350,000 by

the mid-1970s and so its gross density of population would have been 2919.75 persons per square kilometre in the mid-1970s. It was estimated that at a higher density, the population of the city would have been about three quarter of a million. By 1982 the population of Kaduna was estimated to have been half a million and would have risen to one million in 1990. The 1991 population census figure for Kaduna was 1,076,283 and this consisted of Kaduna North and Kaduna South Local Government Areas, and parts of Igabi and Chikun Local Government Areas. The projected 1991 population size for Kaduna for 2005 at the rate of 3.75 percent is 1,889,197.The breakdown of the 1991 population size and the projections for 2005 for the metropolis is in Appendix C.

Kaduna a nodal town with roads, railway and air transport connecting it to eastern, northwestern and southern parts of the country. It has been a major rail junction and a passenger exchange point for trains from Kano, Port Harcourt and Lagos since 1927. Kaduna is one of the fastest growing metropolis in the Northern States. Apart from its central location in the north it has distinguished itself as a home for some important groups of activities. It is esteemed for hosting the military establishments like the infantry division and other units serving in the division, others are the air force, the Nigerian Defence Academy (NDA), Joint Command and Staff College Jaji. Also present are the Police College and the other paramilitary establishments like the Customs Excise, Immigration Service and Civil Defence Corps. The Federal parastatals include the NBTE, Federal Livestock Department, Federal Water Institute, Geological Survey Office, among others. The metropolis is also known for a myriad of industries and inclusive are NNPC, textiles, beer and bottling companies and many others.

Moreover it serves as a major commercial centre for locally manufactured goods and agricultural produce from within and the neighbouring states. Agricultural commodities and manufactured goods from other parts of the country and those imported are also found in the commercial centres of the metropolis.

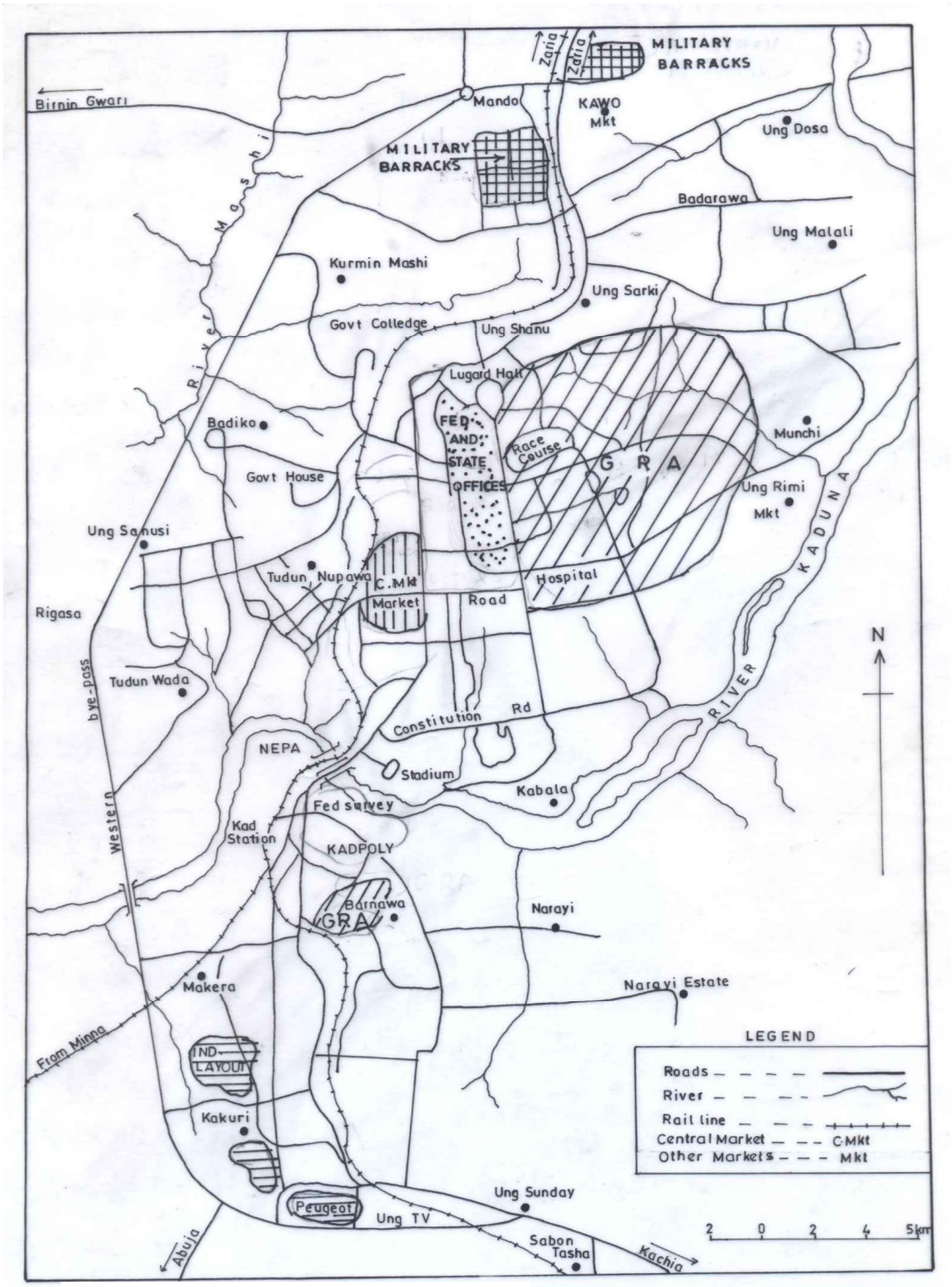


Figure 2.2 Kaduna Metropolis
Sources: Ministry of Land and Survey 2005

CHAPTER THREE

LITERATURE REVIEW

3.1 CONCEPTS OF URBAN FORM AND PATTERNS OF GROWTH

3.1.1 Concentric Zones Model

The first major study of the spatial structure of cities was undertaken by Burgess (1929), and followed by Hoyt (1939). Burgess (1929) proposed concentric zone theory of city development from his study of the growth of Chicago, a city on a flat plain by the side of Lake Michigan. He identified five concentric zones in Chicago. The first is the central zone which he termed the central business district (CBD) where department stores, shops, office buildings, clubs banks, hotels and civic buildings were located. Surrounding the CBD was a zone marked by deteriorating residences due to encroachments from the CBD. It also had factories in the inner belt, and an outer belt of declining neighbourhoods, rooming house districts, and generally blighted residences. It was the residence of first generation immigrants.

Independent workingman's home where second generation immigrants lived form the third zone. Zone four had better residences where the middle class lived in single-family units. Local business clusters were found in this zone and Burgess likened them to satellite CBDs. The next was zone five and was found at the periphery beyond the area of better residences, consisting of surrounding small cities, towns and hamlets. It was a zone inhabited by a population that commuted to work in the city.

The main feature of the concentric model of city growth and pattern was the radial growth of the city with each zone expanding outward into the next. Moreover the model had a single city centre, a heterogeneous population, mixed commercial and

industrial base, and an economic competition for highly-valued and severely limited space in the centre.

3.1.2 The Sector Theory

The second model of growth and pattern of American cities was the sector theory developed by Hoyt in 1939. He formulated that different sectors, particularly high-income sectors, were also found in Burgess' concentric zones. He developed the ecological approach to city growth by considering the change in land uses overtime which is called succession and invasion. From his study of rent levels, he found out that where a sector of the city developed a high, medium or low rental residential area, it maintained its features for long distances as it projects outwards as the city grows. The model takes into account both distance and direction from the city centre and so it is an improvement on Burgess concentric model.

3.1.3 Multi-Nuclei Model

The model formulated by Harris and Ullman (1945) was a modification of the concentric and sector models. They observed that the city land use pattern grows from more than one centre and so may consist of several district nuclei. The multiple-nuclei model had several centres of business in a city in addition to the central business district. These centres of business and commercial activities evolved due to diversification, decentralisation and growth of the urban population and boost in commercial and industrial activities.

They observed that the nuclei elements in some cases existed from the origin of the city and have developed during growth of the city. Also the urban nuclei around which growth occurred might include the original retail district, a port, a railway station, a factory area or an airport. They recognized that in most American cities the

CBD usually included or was adjacent to the original retail area, while the wholesale and light manufacturing district was located near the city edge where there was large tracts of land and rail or water transport were available. The residential districts consisted of the high-class districts situated on choice and desirable sites while the low class districts located near the noisy and smoky areas close to factories and railways. The industrial and residential land uses were located at the periphery of the cities while satellites were further away. See Figure 3.1 for the Burgess (1929), Hoyt (1939), and Harris and Ullman (1945) models of urban structure.

Retailing in urban areas is part and parcel of the urban system and so irrespective of the urban pattern and growth certain districts or streets are known for such functions. In the concentric zones model retail trade took place in the CBD and its neighbourhoods. The fourth zone also had local business clusters where retailing took place. In the sector model where apart from the concentric zone commercial activities expanded as the city grows from the city centre, retailing could be found in sector patterns or in the various zones in the urban areas. The implication of the multi-nuclei model is the multiplicity of business centers associated with the nuclei in addition to the CBD.

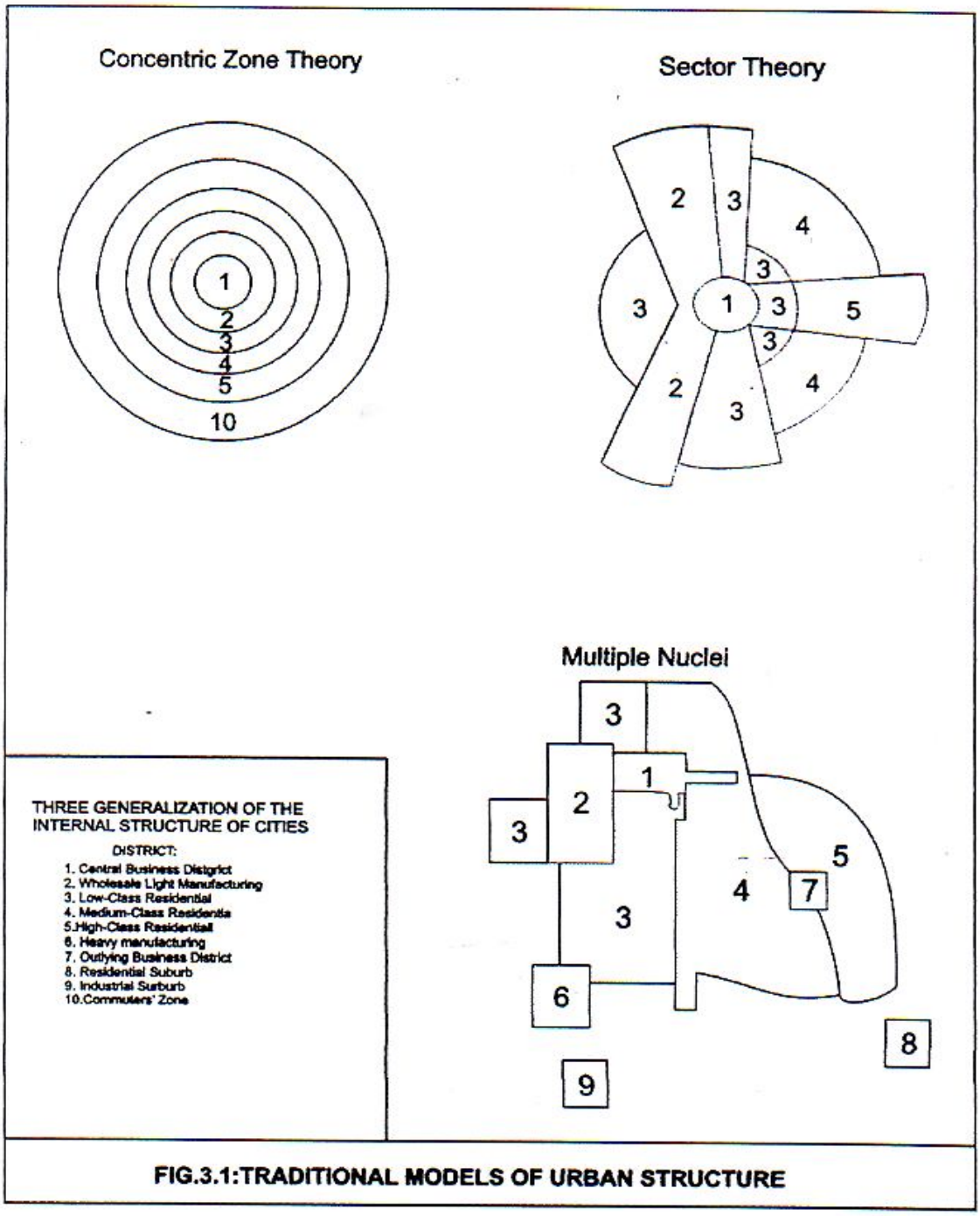


FIG.3.1:TRADITIONAL MODELS OF URBAN STRUCTURE

Source: **Bourne, L. S. (1971) ed. Internal Structure of the City Oxford University Press London**

Figure 3.1 **Traditional models of urban structure**

3.2 CONTEMPORARY FACTORS AFFECTING URBAN FORM AND GROWTH PATTERN

Christaller (1933) location economist's traditional model offers explanation for contemporary factors affecting urban form and growth patterns. He assumed an isotropic plain, a physiographically uniform surface having a farming population that has a constant density with a constant disposable income per family. On the isotropic plain movement is unrestricted in all directions from all points and transport costs are directly proportional to distance travelled. The economy in this set up is that of perfect competition as individual transactions are too small to affect commodity prices and there is no competition between suppliers (Marshall, 1971).

The introduction of location into this perfect competition affects the competitive position of each supplier. The basic principle of perfect competition is modified by the factor of location. In buying any good supplied the consumer pays for the good as well as for the cost of travelling from his farm and back. This cost varies with distance from the supplier. The actual cost of the good therefore increases with distance from the point of supply (ibid).

3.2.1 The Central Place Theory

The concept of centralization evolved by Christaller (1933) is basic to central place theory and this explains the variations in land uses. The centralistic principle implies an elementary form of order in settlements as shown by the region – serving importance of settlements and the higher population that are necessary to support rare services and purchase of goods. The model proposed a hierarchical arrangement of settlements in hexagonal form (ibid).

The central place theory was advanced to explain the spatial distribution of urban centers in a region or country. Each urban area has its specific spatial limits.

The urban areas perform the first step in the distribution process of outgoing commodities and are primarily involved in the final process of distributing products for consumption. This consumer orientation of retail facilities is essentially the principle of central place theory.

The central place theory describes the relationship between central places, cities and the hinterland they serve. The central place is a settlement or a nodal point that serves the area around it with goods and services (Argawai, 2004). Centrality of the town represents the extent to which surplus goods are sent out of the central place to the region of which it is part. Christaller (1933) focused not only on a single system but on systems of central places. This theory explains therefore the centrality and growth of urban centres and why they are commercial magnets.

3.2.2 **Concepts Related to Centrality and Retailing of Goods**

Three concepts that relate to centrality as postulated by Christaller (1933) consist of the following. The first concept is "threshold population" or the minimum demand that is needed to bring about a product or service into existence and keep it on. Goodall (1972) in his discussion of the central place theory and retailing in urban areas added that threshold is the minimum size of the demand below which a shop will not be justified in supplying a good. This corresponds to the volume of sales that permits a business to earn normal profit. The threshold sales level is therefore, the entry condition for business to commence and locate in a certain place. The second concept is "range of a good". This is the average minimum distance that people travel between centres to buy goods or obtain services The range of a good has both an upper limit beyond which a shop is unable to pull consumers for a commodity, and a lower limit below which is the minimum level of demand for the good to be offered in the first place. The two limits meet at a perfectly competitive equilibrium situation.

Thus the range is the market area of the shop for a good (ibid). So in retailing of goods shops are located to supply their thresholds most efficiently and make maximum profits possible. It follows therefore that the number and location of shops in an urban area reflects to a great extent the level and distribution of demand. The third concept is that of "least effort" which explains consumer travelling behaviour in which the norm is to cover the least distance possible to obtain goods and services from the nearest central place. Frequently purchased goods like vegetables and milk are available on a widely dispersed basis while goods that are purchased occasionally like cars are located in a few central places.

Thus retail activities within urban centers are located in such a way that each retail unit would supply its own threshold market more efficiently. However a larger threshold market area is needed to support the profitable operation of a shop selling a commodity that is purchased less frequently than the first one. Such a commodity will therefore be obtained from a second higher order urban area. The spatial organization of the system means that the higher order urban areas supply all goods of lower order as well as the higher order goods and services. Also consumers go the shortest distance possible to buy commodities they often need. The spatial organisation of retailing in urban areas is patterned after accessibility to market and the availability of products. This means that from the retailing of convenience goods in which the consumer goes a short distance to the neighbourhood to get his supplies, to that of the consumer buying goods from the lower order urban areas covering longer distances, and finally the consumer travels longer distance still to purchase products as cars supplied by higher order urban areas.

Intra-urban studies of retailing and the location of establishments show that competition between shops that retail similar goods may cause them to locate

separately. On the other hand demand may be very high and several times greater than the threshold level for one retailer as in densely populated parts of the town, where more traders dealing in the same good may be supported in the same centre. In essence the intra-urban distribution of a commodity is dependent on the distribution of purchasing power of the residents as well as the umland of the urban centre. Shops cluster where the purchasing power of consumers in an area is high. Where the purchasing power per unit area decreases the range needed to ensure the required threshold increases and so shops of a given type are few and widely spread (Goodall, 1972).

In discussing the central place theory Berry (1967) observed in his study of markets and retail distribution in southwestern Iowa in the United States that "markets, and the retail and service businesses located in them, conform in their spatial pattern to that of consumers, because only those centrally located in markets areas can attract patronage from consumers eager to economise on travel".

Thus the location of retail and service businesses in central places is closely related to the distribution of consumers. However changes in technology of retailing, distribution and consumer preferences over time, have led to continual alterations in the pattern of central places. The alteration could also be attributed to the foresight of some business entrepreneurs who successfully locate businesses away from market centres but along newly developed highways and urban areas, even before the improvement in technology set in.

3.3 URBAN SYSTEMS

The urban system consists of the large settlements in region or country and interrelationships and interactions among them. These interrelationships give rise to

the spatial structure of urban areas. The urban system is thus made up of interdependent set of urban areas of varying sizes and functions that result from a series of decision processes. The series of urban development is complex and moulds as well as directs urban development. The urban system therefore is not static in terms of growth but is ever growing due to interactions of the sub-systems in the urban area (Goodall 1972).

The concept of urban systems evolved from Christaller (1933) central place theory to the extent that urban areas serve as centers from which goods and services are sent out.

3.4 CENTRAL PLACE THEORY: THE NIGERIAN APPLICATION

Very few studies have examined the Nigerian urban system from the perspective of the central place theory. Even then their studies did not go beyond developing a hierarchy of urban settlements for Nigeria. They did not examine the internal structure and internal functions of the urban centers and the threshold market areas of goods they supplied lower order centres.

In his study of Nigerian settlements Mabogunje (1968) identified two traditional systems of central place, one each in the northern and western parts of the country. He found that the two systems were gradually integrated with other parts of the country. A process of the integration has been through changes in urbanization during the colonial era. The features of the urbanization process of the colonial era that were common to both the northern and the western parts of the country include among others the deliberate setting up of separate residential quarters and facilities for colonial administrators called the Government Reservation Area (GRA) away from the native residences, the application of grid pattern for buildings with streets and roads in the cities, the allocation of land for various uses as industrial layouts,

commercial, military, educational, health, and recreation. The construction of the railways between 1895 and 1927 had complex effects on urbanization in the country such that irrespective of their traditional size and importance, settlements that were not located on the rail routes had weak urban economic base and their population growth was stunted (Sada, 1984).

In studying the spatial distribution pattern of Nigerian settlements on the basis of the Christallian central place theory, Abiodun (1967) as presented by Sada (1984), identified a five-tier hierarchy urban system in Nigeria. The first three groups were urban centres, the fourth group was transitional urban-rural and the fifth was basically rural. In his study of Nigerian settlements Ukwu (1980) found out that the largest towns were found in the south-west, in Oyo and Ondo states while in the middle belt states of Gongola and Benue as well as the south eastern states there were no settlements with populations of over 80,000 in the 1960s census. In ranking settlements Ukwu (1980) identified six groups consisting of the capital city, five metropolitan centres, 13 regional centres, 18 sub-regional centres, 40 zonal centres and 57 district centres. However this ranking system undertaken by Ukwu (1980) gave a form of hierarchy without explaining or giving the quantitative definition of the relationship between each set of centers (Sada, 1984).

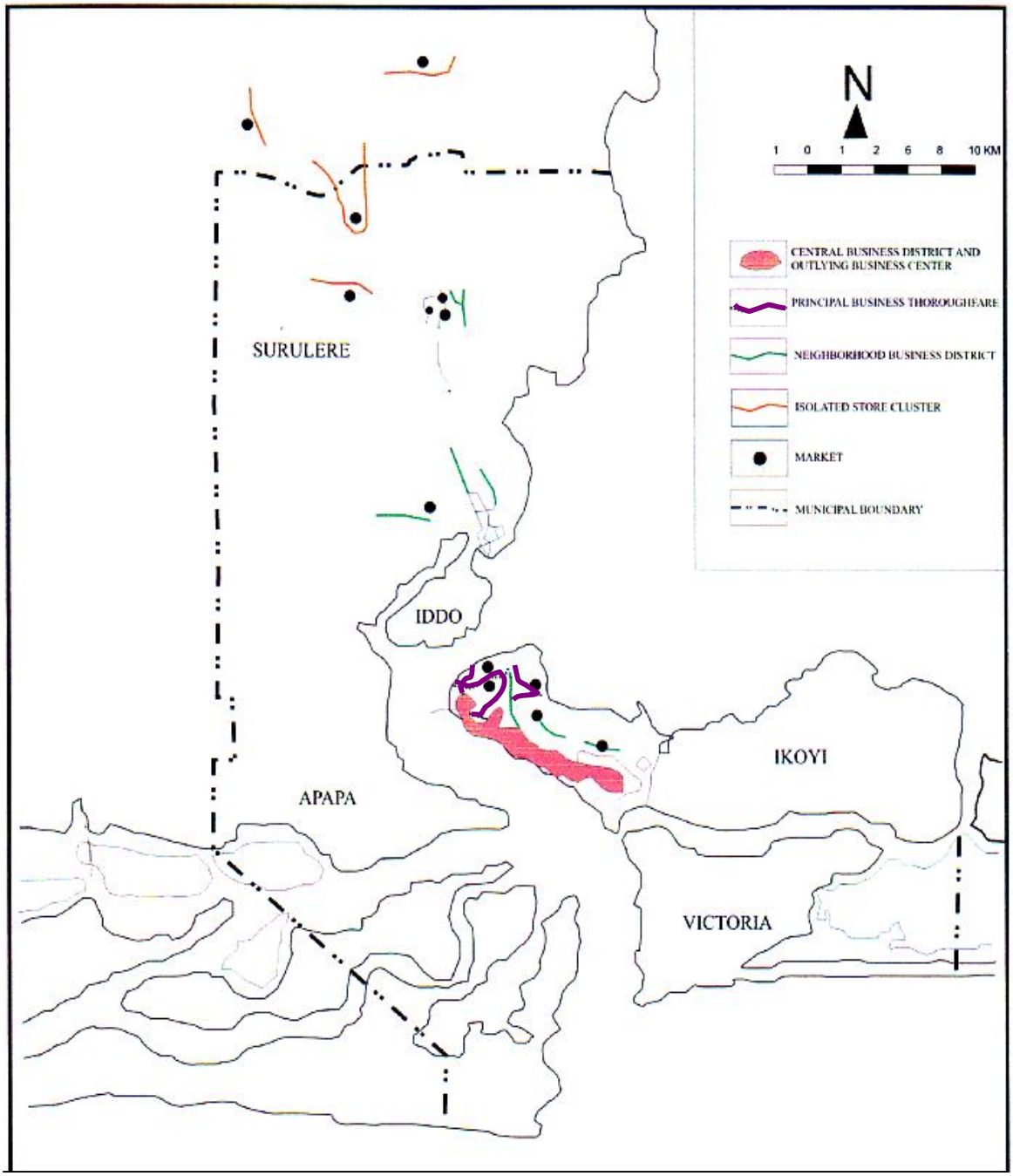
3.5 ATTEMPTS AT URBAN RETAIL CENTRE CLASSIFICATION

Having had a general view of the development of spatial economics models, the study now focuses on a concept that is more closely related to this topic. Proudfoot (1937) (in Mabogunje, 1964) provides a classification system of retail areas in an urban area that can be used to analyse the evolution of business area of a given city. Proudfoot conceptualized that the principal cities of America, in the most part, had a retail structure of five parts. These were:

a. *The central business district*
b. *The outlying business centre*
c. *The principal business thoroughfare*
d. *The neighbourhood business street*
e. *The isolated store cluster*

3.5.1 The central business district

In Proudfoot's (1937) classification of the retail structure of the American cities the central business district was the area of the city where the essential business functions were the retailing of goods and services for a profit. This part of the city was also the centre for various office functions as wholesaling, finance, government administration, religion, and education, and other non-profit making institutions. Murphy and Vance (1954) as in Mabogunje (1964) confirmed these observations, pointing out that the various activities carried out in the central business district added to crowding and problems of the city. In his research on retail structure of Lagos, Mabogunje (1964) also identified a structure of five parts (Figure 3.2).



Sources: Adapted from Mabogunge, A. L. (1962) "the Evolution and Analysis of the Retail Structure of Lagos, Nigeria "Economic Geography Vol. 40, No.4, Oct. 1964, p. 302 – 323.
Figure 3.2 The retail structure of Lagos

The first part occupied the southern area of Lagos Island and had a concentration of buildings with multiple functions such as wholesaling, retailing,

financing and administration. He further described the Lagos Island central business district as " an area of great intensity of land use. It draws to itself a large daytime population from all parts of the city and sometimes from towns such as Abeokuta and Ibadan". In his detailed analysis of Lagos central business district three parameters were used. First to be observed was building heights, since business districts of most cities tend to stand on the whole as areas of more than average-height buildings. This method was useful in identifying the internal differentiation in the central business district itself. The second parameter was the use of ground floor. The central business intensity index (measure by the volume and category of commodities sold and profit made) was the third one used. The last one was an assessment of the proportion of floor space in each of the buildings in the central business district that was utilized for non-residential purposes. In using this classification system Mabogunje (1964) found that the central business district in Lagos Island then ran from west to east consisting of five sub-districts:

a. A ware house and wholesale district
b. A retail sub-district
c. A finance sub district
d. An institutional sub-district
e. An administrative sub-district

3.5.2 The outlying business centre

The outlying business centre, according to Proudfoot (1967) had a retail structure similar to that of the central business district. It had a concentration of

establishments that were closely spaced carrying out businesses that were rated next to the central business district in volume. The outlying business centre consisted of clothing, furniture and shoe stores, one or more department stores, along with convenient shops. However in his work, Mabogunje (1964) did not find such to be well developed but observed that there were rudiments of outlying business centers in Lagos. At each of these he observed there were a department store and a bank. The evidence of a growing intensity of land-use was seen in the increasing development of multi-storied buildings whose ground floors served as shops. In terms of location such outlying business centres were found at the junctions of two business thoroughfares. The nucleation of businesses appeared as peak development in the business thoroughfare and the dividing line between the business thoroughfare and the trade areas became arbitrary (ibid).

In addition, Mabogunje stated that another probable location for nucleation was "the focal point of intra-city transportation whose pedestrian traffic is increased by passengers of mass and vehicular conveyance". The large size population in a location like this means a concentration of trade, notably retail activity. Proudfoot (1937) conception of these patterns was that "although individual outlying business does not draw customers from all parts of the city, they frequently attract them from long distances".

3.5.3 The principal business thoroughfare

In the model propounded by Proudfoot (1937) the principal business thoroughfare is made up of streets that combine the functions of business streets and traffic arteries. As business streets they differ from the central business district in not

having much depth beyond the frontage of the street. They are made of single or two–storey buildings. The typical shop has a floor space of between 18 to 36 square metres, and yet the intensity of land-use is not as high as in the central business district. When considered as a traffic artery the business thoroughfare carries a very heavy density of pedestrian and motor traffic that converge on the central business district. Establishments along the principal business thoroughfares draw customers passing by to the central business district.

The specialized retail character of principal business thoroughfares was noticed in other United States cities as Proudfoot's study of Philadelphia showed that sixty seven per cent of the total sales recorded for business thoroughfares accrued from food stores and automobile establishments. Proudfoot explained that the high volume of automobile traffic passing through these shops which, with their wide spacing, offer a lot of parking space for vehicles and the passengers buy convenience-goods or vehicles and accessories.

However, Mabogunje noted a different spatial expression of the local trade organization for Lagos. Large European firms in the Lagos case import textile and which they sold to Syrian wholesalers and African businessmen. These wholesalers occupied establishments in the principal business thoroughfares, as they were unable to compete for land in the central business district.

Moreover the thoroughfares had another form of trade organisation, a commercial linkage whereby the Syrian wholesalers who owned most of the shops along the thoroughfares allowed African women to place their moveable wooden shelves in front of their shops. Both groups co-habited the streets and mutually carried out business as the African women retailed goods obtained from the Syrian shops.

3.5.4 The neighbourhood business street

The fourth type of retail trade structure according to Proudfoot's model is the neighbourhood business street that draws most of its customers from people coming to the market or living close by. In his study Mabogunje (1964) found that intensity of land use in this retail area was lower when compared to the principal business thoroughfares as a large part of the buildings were used for residential purposes. He also noticed that the Africans operating in this business had very little capital and small shops were in some cases shared by retailers. He also observed that women in these business district owned more shops than in any other retail structure. Among the types of shops in this location the most notable ones included those selling imported tinned food and drinks, drugs, books and electrical goods.

The neighbourhood business streets were extensions from the markets along the principal mass transportation routes and did not go far along the streets. Mabogunje (1964) also observed "that the retail activities along these streets were so closely related to their nearness to markets such that there was almost an abrupt break in the succession of shops some distance away from the market". The presence of the neighbourhood business street was an indication that the market was not far.

3.5.5 Isolated store cluster

This form of retail structure observed by Mabogunje in his study of Lagos is in consonance with Proudfoot's retail structure as the least significant type of modern retail structure. In the United States they were featured as having two or more complimentary rather than competitive convenience-goods shops. Stores in this category include drugstores, grocery stores, butchers' shops, fruit and vegetable stores and places for snacks or meals. Such a cluster is often found at street intersections (Proudfoot, 1937).

In the Lagos study, Mabogunje (1964) observed that except drugstores the other types of stores did not exist anywhere in Lagos. Most isolated clusters in Lagos contained, in addition to the drugstores, food and provision stores and a variety of other goods, which were sold at the lowest unit possible. The isolated cluster had stores that supplied the convenience-goods of small localities. Those stores were very accessible to familiar families in the area to whom short-term credits were offered.

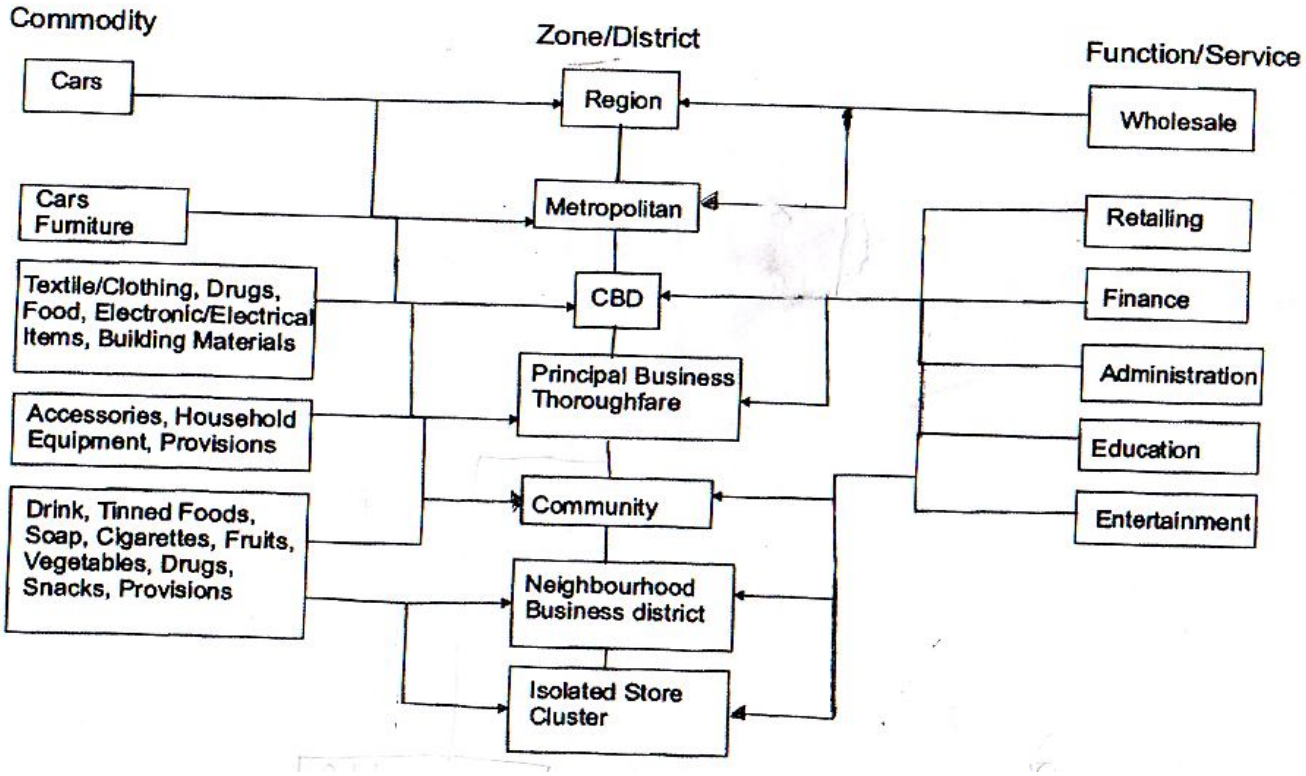
At the frontage of houses in residential neighbourhoods were the common retail type known as the "counter", owned by housewives (ibid). The "counter" was a wooden structure of about one to one and a half metres high and a metre wide constructed with tiers on which convenience-goods like tinned food, toilet items, biscuits, cigarettes and soft drinks were displayed for sale. This form of retail provided the housewife with extra income. Mabogunje (1964) stated that this form of retailing "can be moderately profitable particularly in residential districts where zoning regulations prevent shops from being established".

3.5.6 The general spatial structure of retailing in urban areas

The evolution of the spatial structure of retailing in urban areas is tied to the growth and patterns of cities. The implication of the models of city form outlined above (Burgess, 1929; Hoyt, 1939; Harris and Ullman, 1945; Proudfoot 1937 and Mabogunje, 1964) for spatial structure of retailing is illustrated in Fig 3.3.

In their observations the CBD was commonly identified as the core of commercial activities and this pattern obtains in urban areas of developed and developing countries. It is from the CBD that strings of establishments sprout up along the streets even as other retail districts evolve in other parts of cities and in specialized centres as automobile rows and medical centers.

The neighbourhood business streets and the isolated store clusters (Proudfoot, 1937 and Mabogunje, 1964) are identical to the suburban and highway establishments recognized in the works of Burgess (1929), Hoyt (1939), Harris and Ullman (1945). Thus from the studies of the above authors the evolution and patterns of retailing in urban areas of developed and developing countries generally follow similar patterns as the cities grow.



Source: Adapted from Bourne, L. S. (1971) Internal Structure of the City

Oxford University Press London

Figure 3.3 The General Structure of Retail Activities in Urban Areas

3.6 GOVERNMENT POLICIES AND THE EVOLUTION OF THE SPATIAL STRUCTURE OF RETAIL TRADE

The general policies that determine commercial activities and the evolution of their spatial structure include:

(a) Regulatory policies These are laws that guide access into the practice of some professions and business activities. These policies dictate the requirements for practicing certain professions such as medicine, engineering, architecture, law, pharmacy, and so on. Such policies spell out the educational qualifications as well as professional training required by an individual or group to practice and the legal requirement for setting up an establishment where such professional services may be rendered.

(b) Macro-economic policies: These are policies a government pursues to promote economic development. They include interest rate policies, inflation control policies, trade (domestic and external) policies, energy policies, infrastructure development policies, economic sector policies (agriculture, industry, mining, poultry, fishing, and so on).

(c) Land use policies: These are policies designed to shape settlement form. They specify the location and development of property and where various economic, commercial, residential and social (education, health, recreation, and so on) may take place.

Policies, be they regulatory, macro-economic or land use are not static. They are dynamic and their drivers are population growth (increasing population requires more space and more services), economic growth and diversification (more space, more refined policies); advancement in transport technology (makes people more

mobile and leads to spreading out of urban centers and economic activities along transport arteries); advancement in building technology (allows more intensive use of space as in the cases of sky-scrappers, underground railway and shops); and growing income (makes people able to consume high quality products).These new technologies require new policy regulations (land use regulations and laws about new businesses).

These policies are subject to change and in turn effect related changes in urban centers and the nation at large. For instance the efforts of the Federal Government in pursuing indigenisation has led to greater ownership and transfer of industrial, banking, commercial, communication and transport activities to Nigerians. Moreover further changes are being recorded in urban growth as population grow, income increases and new buildings and roads are constructed. Developments and changes in Nigerian cities are propelled by policy implementation at various levels of government. Related to land use are government policies of renewals of older city areas as in the central business districts in some urban centers. Suburban growth and cities expanding regions are dynamic factors that change the shape and form of cities and determine the structure and growth of retailing.

3.7 HIERARCHY AND LOCATON OF ESTABLISHMENTS IN URBAN AREAS

The issue of location of establishments in urban areas is very closely tied to accessibility to customers. Commercial centres and shops are sited where commodities can be easily sold and at a profit.

Within a city there exist various categories of establishments. To some extent the ability of the establishments to pay rents determines their locations. Shop types categorized by Berry (1963), in Bourne, 1971, and Daniel and Hopkinson (1986), were vividly identified in studies of American and British cities. There were four levels of the hierarchy of establishments, apart from that of the CBD, identified by these authors. The first category was the convenience goods shops and street corner developments that dealt in basic foodstuffs that included bread, meat and vegetables bought frequently. These goods were low range and so were readily available to customers within short distances. They had low threshold population as a small number of customers could sustain and make the shops profitable. These shops were mainly located along streets and intersections and served the residents within a few block radius of the street corner.

The second level of shops consisted of the neighbourhood business centres. A shop at this level sold grocery items, and the centre could have a supermarket, drugstores, laundries and dry cleaners, barber and beauty shops and a small restaurant. Establishments in this category were mainly located on streets and at intersections, and retailers sold goods to those in the residents in the neighbourhood and to walk-in customers.

Third level in the hierarchy of establishments in urban areas consisted of community business centers. They retailed goods and offered services as in the second level of the hierarchy of establishments but in addition they had a variety of clothing shops, bakeries, dairies, confectioners, jewelry stores, florists, a post

office, and may be a bank. These goods were bought less frequently than those in the first category and the shops were located mainly in the market centres, along major streets and at the periphery or suburban areas and sold commodities that had high threshold population. They also had a very wide range with their customers coming from long distances, sometimes from other regions and countries (ibid).

The fourth level in the hierarchy was the regional centers that had department stores, shoe stores, specialized music, record, hobby, and toy stores, and photographic stores. These centers also had wide range of customers and high thresholds goods. They were located in core districts of cities (ibid).

Retail studies have revealed that development of establishments on the periphery of urban areas have become synonymous with urban sprawl. In rapidly growing urban areas with high rates of urban sprawl as in the United States more land is progressively occupied outwards and individual housing sub-divisions are well spaced, leaving large areas of undeveloped land between them. The growth of new zones at the urban outskirts calls for establishing new shops to carter for the needs of populations in these zones. The new commercial areas of these locations rival those in the central business districts in terms of scale and design.

Another group of retail operators engaged in commercial activities are those in the informal retail sector like hawkers. These obtain commodities from wholesalers and retailers who have more capital and goods and sell along streets, parks, garages, offices and homes (Heal, 1980; Ligthelm, 2004).

3.8 RETAIL TRADE

3.8.1 The Concept of "Retail Trade"

The North American Industry Classification System NAICS (1997), conceived the retail trade sector as "establishments primarily engaged in selling goods to end users generally without transformation and rendering services to customers incidental to the sale of merchandise". Retail trade entails selling goods in small quantities to the general public for consumption.

Retail trade plays a significant role in terms of national economic development. Its operators engage in retailing items as food, personal and household goods, drugs, vehicles, confectionaries, office equipment, textile and clothing. These goods are purchased from domestic and in some cases international manufacturers and wholesalers. In most cases operators retail these goods through their stores to the general public for private use. Retailing does not include service-oriented businesses as cafes, restaurants, hotels and motels. Rather, the retail sector includes all units, establishments or individuals engaged in selling of new and old goods to final consumers. Some businesses that engage in retail include establishments as department stores, drugstores, vehicle retailers, vending machine operators and consumer cooperatives. The retail trade turnover of any country can be a good measure of economic progress of that country. An economically poor country will have a very low turnover in its retail trade (IBIS World, 2004).

Retail trade is the last step in the chain of collection, manufacture and marketing of commodities. It is an important phase in the process of manufacture and distribution of merchandise, with the customer or user at the tail end of the chain.

A strong retail trade sector is seen as a vital part of a successful community and economic development plan. Numerous benefits are produced for the community such as increased tax revenues generated through property tax or sales tax. Also jobs created and money earned through the business will normally be retained for its development. Consequently the community's quality of life will be enhanced.

The socio-economic characteristics of a population influence retail growth. Fluctuations in the population, age, income and ethnic mix may change the demands for specific retail products in a community, making them important factors to be considered in an analysis of individual retail sectors. A critical understanding of the pattern of retail spending within a community can be related to the spending pattern in the region. A retail sales surplus means that a community pulls consumers from outside the community, and so indicates that the retail trade location serves as a regional market. On the other hand, within a community, consumers go out to other communities to shop. This creates retail leakages, draining whatever could have accrued to the community in form of revenues (ibid).

Abler *et al* (1972) noted the importance of retail activity in land use. In the categories of urban activities of the developed countries like the United

States manufacturing, and goods processing activities such as warehousing, wholesaling and trans-shipment, use highly valued land. The second category that uses land with high rents are local retail trades business and personal services. These two categories are traditionally found at the core of urban areas. Most of the urban land is used for residential purpose. In terms of ceiling rent, industry and commerce relegate residential land use to the background so that residential housing make do with land leftover by industry, commerce and services. Abler *et al* (1972) succinctly explained that, "Residential ceiling rents are usually substantially less than those offered by even the lowest bidding non-residential users. As a consequence, it has been traditional in American cities for residential activity to settle on the periphery and for non-residential uses to cluster at the core". Also government programmes have consequences on city structure at local and regional levels, which is reflected in the retail trade structure.

Areas of high density of population and commercial activities in most urban areas, whether in developed or developing countries, are often found in the central business district. The clear absence of manufacturing in the central business district of the advanced countries, is true of cities of the developing world including Nigeria. In the central business districts of cities clusters of shops and markets most of which have developed to modern standards abound. Moreover, parts of the streets closer to markets, wards and transportation network intersections have grown to become areas of high-level retail activity. This is in addition to retail trade that takes place in residences and offices and by

home delivery methods whereby items like newspapers and office equipment are supplied to customers.

An aspect of retail trade that least draws attention is retail trade in transit areas. By transit area is meant junctions in a transportation network or at the transition of two different networks. They are characterized by increased traffic volume and are found at railway stations, air-and seaports. Klein (2000) observed that goods that make up the transition supplies at transit areas like confectionary, tobacco and newspapers have high demands at these locations. Moreover, the suppliers who are the retailers benefit from the extended shopping hours at these areas as laws favour their business.

3.9 FACTORS AFFECTING LOCATION OF COMMERCIAL ACTIVITIES IN URBAN AREAS

From the foregoing conceptual exposition we can derive several factors that affect the location of commercial activities, including retailing, in urban centers.

3.9.1 Accessibility

Selling of goods to end-users is a commercial activity that is highly dependent on the location of the shops. The ease with which customers can reach the location of any establishment affects its volume of sales. Attraction of customers to their shops by retails is considered paramount but the number of profitable sites for retailing is limited. This situation makes retailing offer the highest prices for locations with the greatest relative access advantages. Before the advancement of non-store retailing where electronic broadcasting and courier delivery are used, the mutual attraction of shops and residences is reflected in retailing been influenced by population distribution to the extent that retail facilities encourage residential development in

certain urban areas (Goodall, 1972). Also a review of the central place theory covers the distribution of retail and service activities within urban areas. Shops, according to Christaller (1966) as in Chau and Pretorius (2002), are located where they supply their thresholds, that is, the minimum size market below which the retailer will not make a profit. In some urban areas the population density is high and customers have many shops or centres of varying attractions within reach. Such a situation can sustain many retailers in the same area and alternative methods of retailing may boost the threshold size and thus introduce irregularities in the spatial pattern. However, innovations in retailing as the modern electronic broadcasting and the retailer delivery of goods, bring additional spatial elements into the pattern of retailing and more profit making than would have otherwise been expected.

3.9.2 Customer Behaviour

Customer behaviour as a factor in the location of commercial activities revolves around expenses incurred on shopping trips, types of goods to be bought, taste of customers and facilities provided by the retailer. Retailers consider the customer preferences in locating and selling their goods.

The central place theory treatment of location of commercial activities emphasizes customer attraction because the customer wishes to minimize expenses incurred in shopping. The shopping trips of the customer varies depending on the type of commodity required, how urgently the goods are needed, the frequency of the purchase, the degree of the selection desired, and the value of the commodity relative to the customer's income.

The cost of a trip to buy goods is directly related to the value of purchases, such that the nearer the shop where the goods are bought, the lower the expenses incurred on the trip. For instance, low-order or convenience goods, such as bread and

vegetables are purchased by consumers at regular short intervals from the nearest shop. Therefore the retailer selling low-order goods must locate close to customers' residences. Profit-maximizing site for such a retailer comes from the greatest access to the local population who buy his goods.

Purchase of high-order goods, on the other hand, are seldom and done at irregular intervals. High-order goods include cars, furniture, electrical goods and electronics for which consumers take time to purchase and they travel longer distances to buy them. Shops retailing high-order goods need high populations and higher thresholds. Retailers of such goods need access to the urban population as a whole and so establishments locate at convergence points and wherever visibility and space are adequate. For a consumer to go on a shopping trip for such goods, the items to be purchased must be many or costly enough to cause the consumer to make the trip.

3.9.3 Taste of Consumers

Another factor that influences the location of shops is the taste of consumers. Consumers have different tastes and incomes and where their homes are spatially separated, therefore shops provide goods differently to the income groups.

3.9.4 Choice of market

According to Chau and Pretorius (2002), one of the factors that guide a retailer's decision of choice of retail location is the market for the goods in that area or region. There has to be a demand for the goods to be retailed and so conditions like a booming economy of the country, favourable market forces, and a high total urban expenditure must be carefully studied.

3.9.5 Choice of Site

The next factor in deciding locations for shops is the choice of a site that will give the retailer maximum profit possible. He is guided by two principal locational considerations in making the choice of site for his shop. These are first of all, the consideration of specific location options for their desirability relative to immediate physical urban structure variables such as public transportation, infrastructure, other sources of accessibility and facilities. The second consideration in this factor is the desirability of zones with particular characteristics that might have developed within the centre, for example the choice between clusters of older properties compared to clusters of newer properties. This consideration guides the retailer to make the best choice that is most likely to optimize his performance given urban development and urban structure characteristics.

3.9.6 Store Location Potential

This is an important factor in deciding the location of a retail store given the physical and institutional requirements within the district. The physical environment must be favourable for the location of the store. Moreover the institutional requirements like policies relating to access to the business and zoning regulations should be met before retail stores are located (Forgey etal, 1995).

3.9.7 Government Policies

Government policies play a major role in the location of commercial activities. Policies as those of government regulatory, macro economic and land use affect retailers' decisions to locate shops. Such government policies are often enacted in the interest of the traders and the society at large.

3.10 TYPES AND CONDITIONS FOR THE REGISTRATION OF DRUGSTORES

3.10.1 A licensed pharmacy (a drugstore or a pharmaceutical store)

The terms pharmacy (pharmaceutical store) and patent medicine store are differentiated by status and functions.

This refers to a shop where drugs wholesaling or retailing are carried out. Such a store must have its premises registered with the Pharmaceutical Council of Nigeria (PCN) and a pharmacist who is registered with the Pharmaceutical Society of Nigeria (PSN) in the State. The pharmacist is in personal control of the pharmacy, and is primarily responsible for the observance of proper standards of conduct in connection with its operations. The licensed pharmacist dispenses control drugs, sells poisons and off-the-counter drugs. Such drugstores may also sell non-pharmaceutical products like toiletries, cosmetics and beverages.

3.10.2 Guidelines for registration of licensed drugstores

The guidelines for the registration of licensed pharmaceutical stores are:

a) the company must be registered with the PCN and have a pharmacist as the managing director.
b) registration with the PCN after certifying stipulated conditions and the payment of fees for both the premises and the pharmacist.
c) premises should be located within at least 200 metres apart and not more than 3 premises within a shopping complex.
d) Annual inspection report by the PIC (Pharmaceutical Inspection Committee) of the respective Ministry of Health in the states.
e) Annual registration with the PCN.

3.10.3 Patent medicine stores

A patent medicine store could be licensed and registered at the local government level or state. It is primarily engaged in retailing off-the-counter drugs to customers. Other goods like toiletries, confectioneries, matches, beverages, food stuff, cosmetics, perfumes and hair cream, GSM airtime credit cards, soft drinks and other non-pharmaceutical products are also sold in such stores. Moreover such a drugstore does not have to have a superintendent pharmacist in attendance for observation of proper standards of conduct of operations. Its operators are people with or without basic knowledge in the filed of drugs but must have the capital to go into the business. Drugstores in this category do not sell control drugs and do not stock poisons.

3. 11 PHARMACEUTICAL PRODUCTS

3.11.1 Need for Standardization and Legislation

The need for standardization of and legislation about pharmaceutical products cannot be overemphasized given its importance to the survival or otherwise of the end-user. Drugs consist of preparations made for human or veterinary use with the sole intention of modifying or exploring physiological systems or pathological states for the end-user. The acquisition, production and marketing of these products are harmonised globally under agreed guidelines and specifications. The understanding of this background is important to the sale of these products on international level and the operations of manufacturers, wholesalers and retailers. Understanding these agreed guidelines and standards shed more light on the form of the chain in the trading activities involved in pharmaceutical products. Member companies and organisations dealing in drugs adhere to World Health Organisation guidelines from the raw material stage to marketing and prescription. The promotion of prescription of

medicines to health-care professionals is so important in the process of developing new and improved method of preventing and treating illness (IFPMA, 1994).

3.11.2 International organization and pharmaceutical products standardization and legislation

On the global scale an organization like the International Federation of Pharmaceutical Manufacturing Association (IFPMA) was founded in 1968. The aim of the Federation as set out by its founder members is "to promote and support continuous development throughout the pharmaceutical industry of ethical practices voluntarily agreed on" and "to coordinate the efforts of its members toward the realization of the above objects"(IFPMA, 1994). The Federation's current version of the code is still valid and applicable to all areas of concern. It also states the universally applicable baseline standards of marketing practices. It is worth-noting that the fifty-one member nations of IFPMA have their own codes of practices while others are based on IFPMA Code, but modified to suit national circumstances and conditions. However, in some cases, member companies adopted codes that existed before the IFPMA Code was initially introduced.

The commitments of the international pharmaceutical industry are:

a. Improvement of the health of mankind through research and development of new medicines.

b. The production and marketing of pharmaceutical products of reliable quality in accordance with internationally defined standards of good practice.

c. The industry is also obliged and responsible for providing accurate information about its products to health-care providers in order to provide a clear understanding of the appropriate use of prescription medicines.

The commitment of IFPMA to the improvement of the health of mankind in general and the efforts of Nigeria in achieving similar objectives made this country a participant and beneficiary of these drug policies, manufacturing and marketing. Nigerian wholesalers and retailers of pharmaceutical products have become stakeholders in this international business. The extent of the spread of wholesaling and retailing of drugs in Nigeria is reflected on the streets of Nigerian towns and cities in the increasing number of retail drugstores over the years.

3.11.3 The Nigerian Drug Policy

The production, storage and marketing of pharmaceutical products operate under controlled and scientific conditions guided by world and national standards and laws. Dealing in pharmaceutical products, poisons inclusive, demands that storage and trade in such controlled products be organized and supervised closely by respective national bodies. This informed the establishment of the Pharmacists Council of Nigeria (Decree 1992). The Council was charged with responsibilities pertaining to drugs, Part I section (1d) states, "regulating and controlling the practice of the profession in all its aspects and ramifications". The trade in pharmaceutical products is a controlled activity that (and so it) has been given all the necessary legal backing by the Federal Government of Nigeria.

Part IV 10 (1) of the Pharmacists Council Decree 1992 clearly states the condition for registration and participation in the distribution of drugs that "A person shall not hold an appointment or practice as a pharmacist in Nigeria unless he is

registered with the Council under the provision of this decree". Meeting the conditions for being a pharmacist is not enough qualification for the distribution of pharmaceutical products because the premises where these products are sold must be registered as well. These conditions are stated in Part II 3 section (1) of the Poisons and Pharmacy Act as follows: "A selling dispenser or chemist shall cause all the sets of premises where his business is being carried on to be registered under this Act".

In pursuance of compliance to its policy on drugs, the Council in section 4 (1) of the Poisons and Pharmacy Act states that "A selling dispenser or chemist shall in the month of January each year send to the registrar a list of all premises where his business, so far as it comprises the sale of drugs, is being carried on and the name of the selling dispenser or chemist having the personal control of the business on each premises". Participation in the distribution of drugs, the registration of premises for shops and the day-to-day activity of pharmacists are carried on under laid down laws and regulations supervised closely by the Pharmacy Council of Nigeria.

Although drugstores are compatible with many non-polluting enterprises, the stringent control measures stipulated by the government and pharmaceutical control bodies, mean that they would not be ubiquitous in urban centers.

3.12 KADUNA STATE LAND USE GUIDELINES

Lugard's initial plan for Kaduna in 1913 was precise and rank conscious, with senior and junior officers' houses sited closer to the governor's house on the highest ground in the European reservation area. The rest of the plan showed residences further away from this peak, and the lower the rank, the smaller the plots, and the closer together the houses. Commercial and traditional establishments were sited further south west of Lugard Hall near the rail line in Sabon Gari (now the Central

Market area). In the 1950s the colonial administration's survey department drew up a series of plans for Kaduna's development. In 1962 a draft development plan for the city was produced by the town planning office in the Ministry of Land and Survey. The plan designated parts of the city as military land, commercial area, residential, industrial, schools and social services zones. This zonation sets the initial pattern for the location of activities and of development of Kaduna metropolis. It laid down a phased programme of development. Efforts made to make zoning proposals for Kaduna were at the initial stage when the Nigerian civil war broke out and the Northern Region for which Kaduna was the capital was divided into six autonomous states, resulting in massive transfer of personnel. The allocation of urban land for different uses is currently the responsibility of the Kaduna State Urban Planning and Development Authority (KASUPDA). The power to allocate and control the use of urban land is conferred on KASUPDA by the Nigerian Urban and Regional Planning Law Decree No. 88, 1992. The Development Control department of KASUPDA ensures that lands are used for the specific purposes they are allocated and that structures are built according to approved plans.

Retailing drugs is an important commercial activity and so it has similar guidelines of land use as other commercial activities in Kaduna. Generally commercial activities and structures in which they are carried out may be permitted by law on plots that are:

(a) located within commercial layouts,

(b) whose owner's documents allow for commercial use,

(c) up to 60 percent of plot would be developed,

(d) adequate parking space is provided especially where the location of site warrants, and

(e) commercial buildings serving or attracting substantial number of people shall provide public facilities and conveniences.

Retailing of pharmaceutical products is regarded as non-polluting, so it is an activity that is compatible with many other commercial activities and may, and are indeed, found located amongst many other commercial establishments. Consequently pharmaceutical stores tend to spread with the growth of commercial activities in urban centers.

CHAPTER FOUR

METHODOLOGY

4.1 TYPES AND SOURCES OF DATA

Both primary and secondary data were used in this study. Primary data were obtained essentially by the administration of questionnaires to selected wholesalers and retailers of pharmaceutical products, as well as mapping of drugstores throughout the length and breath of Kaduna. The secondary data included information from published reports, maps, Kaduna State government guidelines on land use and materials from the internet. These were obtained from related ministries such as the Ministry of Health. Other sources included hospitals, medical centers, clinics, KASUPDA (Kaduna State Urban Planning and Development Authority), as well as the medical and para-medical professionals involved in drug business. For information on government policies that influenced the locational decisions of drug retailers as well as the decision to go into retail trading in general, individual drugstores, personnel of the appropriate Federal, State and Local Government agencies were interviewed.

4.2 FIELD SURVEY AND MAPPING OF DRUGSTORES

A field survey of the establishments dealing in pharmaceutical products was carried out in 2004. The locations of the establishments selling drugs on each street in Kaduna metropolis were marked on a current street map of Kaduna. The dates of establishment and the coordinates of each drugstore were recorded using the Global Positioning System. A pre-test of the questionnaires was carried out at this stage of the study.

4.3 SELECTION OF PHARMACEUTICAL STORES FOR THE STUDY

A total of 430 establishments selling drugs were identified during the 2004 field survey. They were found spread all over Kaduna, particularly on major streets and in market areas. For the purpose of this study only pharmaceutical stores registered with the Kaduna State Government and with the Pharmacists Council of Nigeria were considered for the administration of questionnaires. By these criteria a total of 122 drugstores in Kaduna metropolis were identified and these form the sample population for the administration of questionnaire for this study. The rest of 308 drugstores fall in the category of patent medicine stores.

4.4 ADMINISTRATION OF QUESTIONNAIRES

The administration of questionnaires was carried out by face-to-face interviews with respondents who were the proprietors or topmost senior persons in each establishment to ensure authentic and adequate data and information acquisition including reasons for moving into drug business. Also data and information were gathered from the drugstores about their commercial activities with wholesalers and distributors of drugs. Patent medicine stores retailers were interacted with to get information on government policies and reasons for going into the retailing of drugs.

In 2005, interviews were conducted and questionnaires were administered to thirty hawkers of drugs who were found along the streets, public places and market areas in Kaduna metropolis. Five questionnaires each were administered to five hawkers found along the major streets in each of the following six zones in Kaduna, namely, Sabon –Tasha, Kakuri, Doka/Kaduna Central, Ungwan Rimi and Kawo/Kurmin Mashi.

4.5 ANALYSIS OF DATA

4.5.1 Techniques Used in Data Analysis

Descriptive statistical techniques were employed to summarise data collected. Also nearest neighbour analytical technique was used specifically to calculate the degree of compliance of the drugstores to government regulation which stipulates that drugstores should be 200 metres apart in various areas of the metropolis.

To determine the significant periods in the development of retail trade in pharmaceutical products in Kaduna the coordinate system of each drugstore identified supplemented by the current base map of the metropolis, as well as some of the items in the questionnaires, such as years of establishment of the drugstores were used in categorizing the drug stores by period.

The study period, 1966 to 2006 was divided into four periods, 1966-1970, 1971-1984, 1985-1995 and 1996-2006. Using these four periods, the 122 pharmacies and 308 patent medicine stores were each grouped according to their years of establishment to produce maps of the spatial distribution of establishments for each period. By so doing the significant periods in the development of the spatial retail structure of pharmaceutical products in Kaduna were determined.

Data and information gathered for identifying policy variables responsible for the development of the retail trade spatial structure of pharmaceutics in Kaduna which included the years of establishment of drugstores, the regulatory policies, macro-economic policies and land use policies of the government for the four periods of the study (1966-1970, 1971-1984,1985-1995 and 1996-2006) were used.

The data and information obtained for the analysis of the functional relationship between retail trade outlets of pharmaceutics within Kaduna and other

related businesses included the list of manufacturers (local and foreign) and wholesalers/retailers. Respondents indicated their status in the drug trade, whether they were wholesalers or retailers or both. They were requested to indicate their sources of drugs, whether locally purchased or supplied by foreign pharmaceutical companies.

4.5.2 Nearest neighbour analysis

The guideline set by government between drugstore premises is 200 metres. In the analysis it was therefore considered that any nearest neighbour value of less than 200 metres between two drugstores meant that the drugstores were located wrongly, too close to one another. The nearest neighbour statistic formula is:

$$Rn = \frac{\bar{D}\ (Obs)}{0.5\sqrt{a/n-}}$$

where Rn = nearest neighbour value.

D (Obs) = mean observed nearest neighbour distance.

a = area under study.

n = total number of points.

4.6 THE STUDY PERIOD

The study covers the period 1966 to 2006, that is, the time the Nigerian Civil War commenced. The selection of this duration is significant because most policies affecting development in Nigeria were inaugurated after the civil war, and Nigeria then started pursuing economic self-reliance more vigorously.

Data were collected and analysed based on this duration. For the purpose of analysis the duration of study was divided into four as follows:

i. The period of the Nigerian Civil War, rehabilitation and reconstruction 1966 – 1970.

ii. The oil boom period 1971 – 1984.

iii. The structural adjustment programme of 1985 – 1995.

iv. The period of privatization of public enterprises and promotion of a private-sector-led economy (1996 – 2006).

CHAPTER FIVE

5.0 PRESENTATION AND ANALYSIS OF DATA

This chapter consists of the analyses and description of the spatial distribution of drugs retailing in Kaduna metropolis. It also identifies global events, national and state policies that influenced the evolution of the spatial structure of retail trade of pharmaceutical products in Kaduna metropolis over the study period (1966-2006). Also contained in this chapter are the analyses on the location factors in the spatial structure of drugs retailing, the nearest neighbour analysis and compliance to land use guidelines, contribution of hawkers to drugs retailing, and the relationship between manufacturers, wholesalers and retailers of drugs in Kaduna.

5.1 GROWTH OF DRUGSTORES OVER TIME

5.1.1 Licensed Drugstores and Patent Medicine Stores

The growth of drugstores in Kaduna started slowly in the 1966-1970 period when only two pharmacies were established. Between 1971-1984 five licensed drugstores and three patent medicine stores were established. There was an astronomical growth in the number of licensed drugstores and patent medicine stores between 1985- 1995 from five to thirty pharmacies and from three to forty -seven patent medicine stores. Also between 1996-2006 84 pharmacies and 248 patent medicine stores were established. A total of one 122 pharmacies and 298 patent medicine stores were established in the four periods of the study (Table 5.1).

Table 5.1: Drugstores Established in Kaduna by periods

Periods	Pharmacies	Percent	Patent medicine stores	Percent
1966-1970	2	1.6	-	-
1971-1984	5	4.1	3	1.0
1985-1995	30	23.8	47	13.6
1996-2006	85	69.7	248	83.4
Total	122	100	308	100

Source: Fieldwork 2006.

5.1.2 Spatial Distribution of Pharmacies and Patent Medicine Stores

The distribution of the 122 pharmaceutical stores in Kaduna metropolis is very irregular with high concentrations along some streets in some parts of the town. These high concentrations of wholesalers and retailers are found along Warri, Benin, Calabar and Ibrahim Taiwo Streets in the central market area of Kaduna where the total and the highest number of stores reached 35 (28.7 per cent). The next area of high concentration of drugstores is Ungwan Rimi particularly along Buhari Way, as well as Constitution Road, Ibadan Street, Junction and Sultan Roads, a total of 34 (27.9 percent). Another area of high concentration of drugstores is Barnawa Shopping Complex area with a total of 18 (14.8 per cent). In Kawo-Kurmin Mashi area a total of 20 (16.4 per cent) drugstores are located along Rabah Road, Ribadu Cantonment, and the Military Reference Hospital. 2 (0.7 percent) each (Figure 5.1).

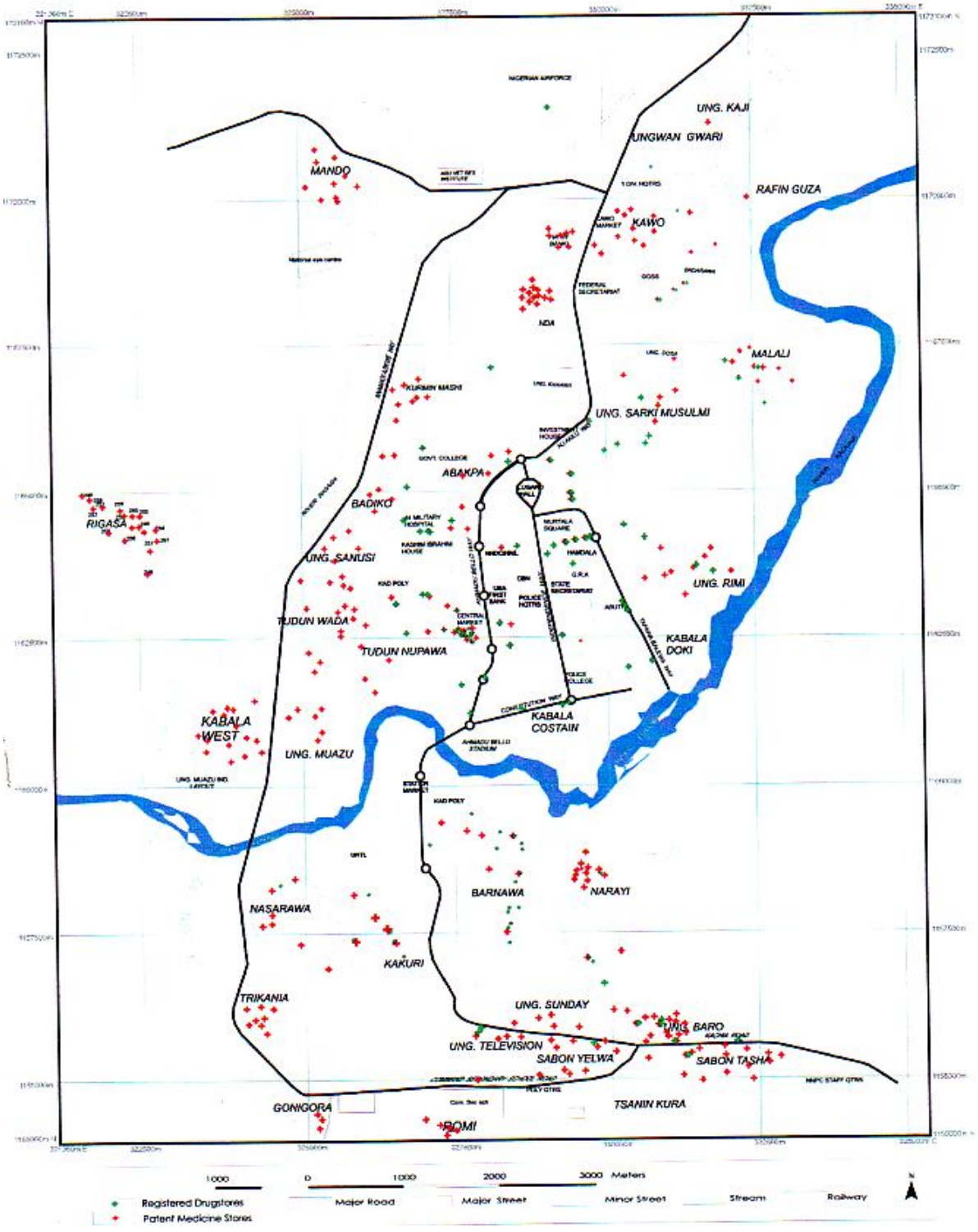


Figure 5.1 : Spatial Distribution of Registered Drugstores and Patent Medicine Stores in Kaduna 1966 - 2006

5.2 THE SPATIAL DISTRIBUTION OF HAWKERS' DAYTIME RETAIL ACTIVITIES

Hawkers of drugs sell their products in public places and along streets in Kaduna metropolis. The main areas where customers are found are market centers of the metropolis 69.6 percent consisting of Central Market, Tudun Wada, Kawo, Kakuri and Sabon Tasha market centers. Other areas are motor spare parts market/motor mechanic workshops as in Panteka, and the Zango market where animals are sold in Tudun Wada. Motor parks are other retail areas as in Kawo, Television, Mando, Sabon Tasha and Abuja junction. Hawkers also sell their drugs along streets and highways 9.0 percent to pedestrians and passers by, as well as to those in private and government offices, stalls and in residences as along Ahmadu Bello Way, Nnamdi Azikwe by pass, Independence Way and many of the streets in the metropolis. Ten percent of the hawkers indicated that they go to the village markets around Kaduna to sell their drugs. (Table 5.2).

Table 5.2: Areas of retailing of drugs by hawkers in Kaduna, 2006.

Retail Area	Frequency	Percentage
Streets	12	9.0
Motor parks	16	10.7
Markets	106	69.6
Village markets	15	10.0
Health centres	1	0.7
Total	150	100.0

5.3 THE SPATIAL DISTRIBUTION OF DRUG RETAILING BETWEEN 1966-1970

This was a time of instability in Nigeria just after five years of independence when the country should have been laying a solid foundation for development. Unfortunately, economic activities were grounded to a standstill as large national resources were diverted to war and reconstruction after the crisis. Government policies and programmes committed resources to seeking peace, stability and reconstruction with little or nothing to economic growth and development, talk less of commerce and particularly the drug business.

The urge to venture into pharmaceutical business during the civil war and the subsequent years of rehabilitation and reconstruction was very limited. There were no inducements or reasons to go into retailing drugs because drugs were subsidized, centrally issued from the government medical stores and the demand was very low. Patients who attended hospitals for treatment whether government or private were given prescribed drugs either free (as in government hospitals) or at affordable prices as in private hospitals. As a result only two out of a total of 122 registered drugstores were established in this period, 1966-1970, one in the Government Reservation Areas (GRA) and one in Kakuri (Figure 5.2).

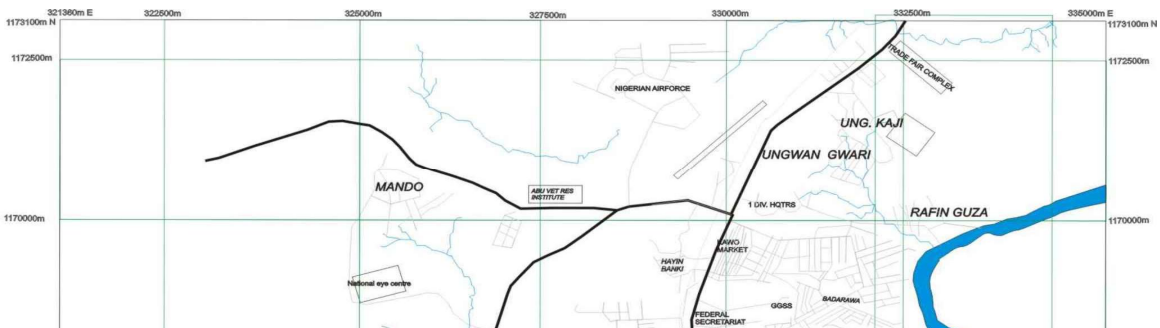


Fig 5.2: Spatial Distribution of Licensed Drugstores in Kaduna 1966 - 1970

5.4 POLICY EFFECTS ON SPATIAL PATTERNS OF DRUGS RETAILING BETWEEN 1966-1970

5.4.1 Government Regulatory Drug Policies

Very few regulatory government policies were inaugurated during the period 1966-1970. The only government policies that provided access to the retailing of drugs in Kaduna metropolis were the Dangerous Drugs Act of 1935, promulgated by the British colonial government. It is an Act to regularize the importation, exportation, manufacture, sales and use of opium and other dangerous drugs. In addition, the Poison and Pharmacy Act was set up on 1 January 1947. This is an Act that regulates the sale and distribution of drugs and poisons. Though limited in number these Acts favoured drugs trade and served as a foundation for retail in pharmaceutics and thus a couple of retailers went into the drugs business in this period.

5.4.2 Macro-economic policies

During the Nigerian civil war, rehabilitation and reconstruction period (1966-1970) in the country, conditions were not favourable for international trade and the economy suffered as attention and most resources were diverted to the war and to reconstruction after the war. Due to these situations of instability, uncertainty and low demand for drugs, only two drugstores were established in this period.

5.4.3 Political development

What contributed to low demand in drugs and the very few drugstores established in this period in Kaduna was the creation of six states (North West State, North Central State, Benue Plateau State, North East State, Kwara State and Kano State) in the northern part of Nigeria and the temporary depopulation of the town as a result of the deployment of many civil servants to their new states of origin. Hitherto Kaduna served as headquarter of the northern region serving all the provinces in the north of the country.

5.4.4 Land use policies

The guidelines for land use in Kaduna then were originated by the British colonial administration. Commercial activities were limited to the market centers in Sabon Gari (the strangers quarters), and the traditional market centers of Kawo, Kakuri, Ungwan Rimi and Tudun Wada. Retailing was carried out only on a few major streets in mixed-land use where goods were sold from residential buildings.

The establishment of the two drugstores between 1966-1970 in Kaduna was driven by economic motive given the demands in Kakuri and GRA, and facilitated by government policies. However while the one in Kakuri was motivated by the increase in population following the establishment Kaduna Textile Limited in 1956, the one in GRA served the interest of the high and middle classes.

5.5 SPATIAL DISTRIBUTION OF DRUG RETAIL ACTIVITIES 1971-1984

The second period in the duration of the study covers 1971-1984. It was a period of further rehabilitation and reconstruction, and the government resource base had started expanding following substantial revenue from petroleum. Government then had started focusing its attention on economic growth and development. Mechanisms for service delivery to Nigerian population were put in place as the private sector was organised and formal business was encouraged and supported. The atmosphere became conducive for government, organizations and individuals to launch into commercial activities and so 5 drugstores were established in this period.

The reasons for the rapid recovery of population of Kaduna after the civil war were the peaceful and conducive commercial environment that in turn induced the return of the Ibos and others who fled during the war. From a single Kaduna Textile Limited in 1956, textile manufacturing expanded in Kakuri and Makera districts. Military establishments in Kaduna also expanded and formations and units like 1 Mechanised Division, Nigerian Defence Academy, the Airforce, Command and Staff

College Jaji, the Police, Customs and Excise and the Nigerian Prisons were established. Moreover Federal Government parastatal headquarters were also established, for instance the Board for Technical Education and the Livestock Unit in Mando.

Other reasons for the rapid recovery and growth of Kaduna population include the establishment of more institutions of learning at all levels. The calm in Kaduna also induced rural urban migration. The upsurge in Kaduna population after the civil war was policy induced as witnessed by the increase in government establishments and organizations, and this consequently created a much greater demand for drugs than in the previous periods.

5.5.1 Spatial Distribution of Drugstores (registered with PCN)

This period which is marked by major events; (i) a substantial expansion in government revenue from petroleum and expenditure which made possible the development of institutional mechanisms for service delivery to the Nigerian population and (ii) a rapid recovery of population of Kaduna town which greatly reduced by the exodus of people of eastern Nigeria origin and the deployment of civil servants to many of the newly created states in Northern Nigeria. The peaceful and conducive environment after the civil war induced the return of the Ibos and others who fled during the war. The rapid growth in Kaduna's population created a much greater demand for drugs than in the previous periods. Additional five registered drugstores were established during this period. Four of these drugstores were located in the central market area of Kaduna metropolis (the CBD) while fifth store was located in the GRA (Fig. 5.3).

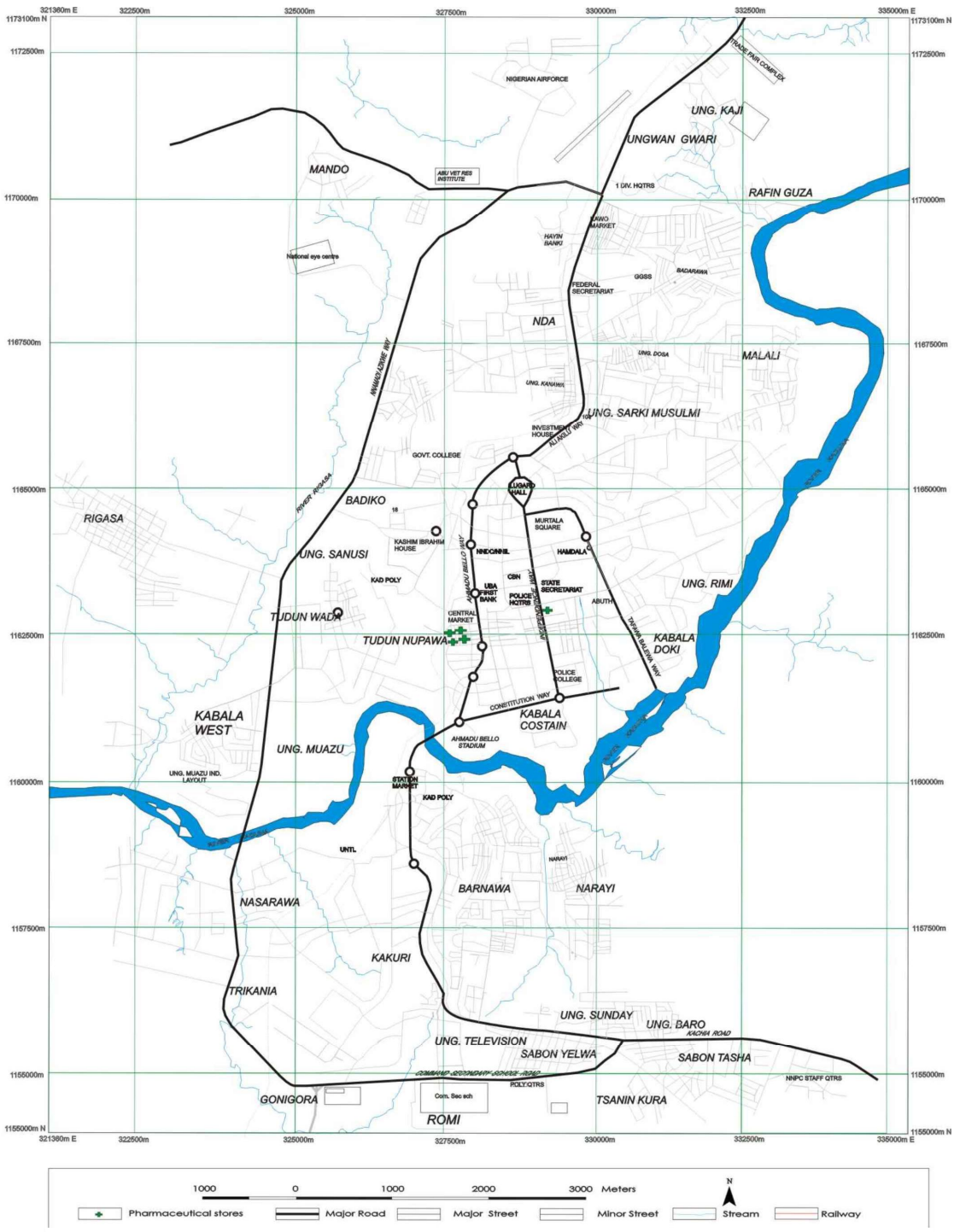


Fig 5.3 Spatial Distribution of Licensed Drugstores 1971- 1984

5.5.2 Distribution of Patent Medicine Stores 1971-1984

During this period, 1971-1984, Nigeria earned a lot of revenue from petroleum and government had stated emphasizing growth and development. Entrepreneurs picked up retailing among which was the retailing of drugs. It was in this period that the first 3 patent medicine stores were set up, two in the central market area and one in Kabala West (Figure 5.4). The establishment of these patent medicine stores was also informed by the growth in demand for cheap and non-prescription drugs occasioned by the rapidly growing population of Kaduna. The majority of immigrants and those who made up the population of Kaduna in this period were mainly from the low income bracket and could do with drugs purchased from patent medicine stores.

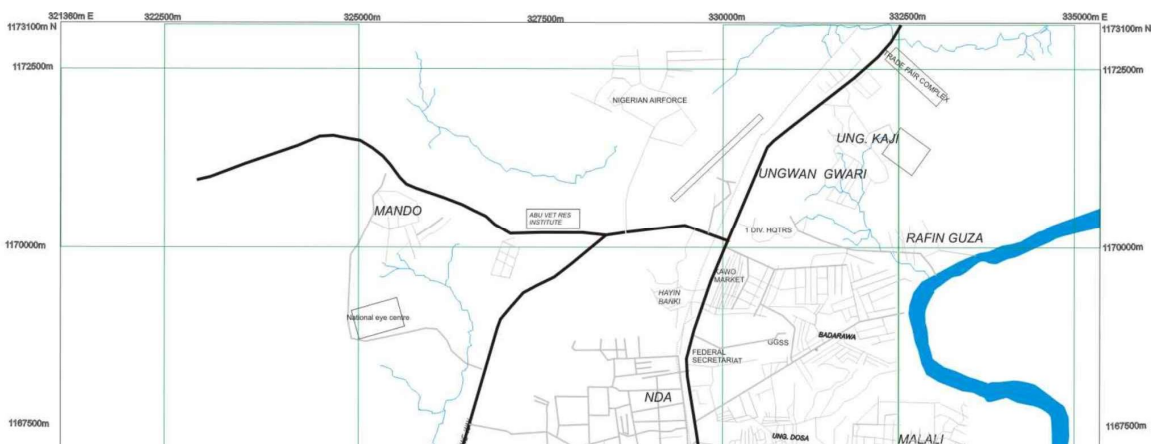


Fig 5.4 Spatial pattern of patent medicine stores 1971-1984

5.6 POLICY EFFECTS ON SPATIAL PATTERNS OF DRUGS RETAILING

1971-1984

5.6.1 Government regulatory policies

In addition to the pre-independence Dangerous Drug Act of 1935 and the Poison and Pharmacy Act of 1947 enacted by the colonial administration the Nigerian government promulgated the Food and Drugs Act of 1976. The pre-independence Dangerous Drug Act of 1935 was strictly enacted to regulate the importation, exportation, manufacture, sale and use of opium or coca leaves and other dangerous drugs. The Poison and Pharmacy Act of 1947 was enacted to regulate the sale and distribution of drugs and poisons. The Poison and Pharmacy Act of 1947 was elaborate in its guidelines on procurement and supply of pharmaceutics. The Part II of the Act specifically authorized the sale of drugs (non-dangerous drugs) and the registration of drugstore premises.

The Food and Drugs Act of 1976 was enacted to regulate the manufacture, sale and advertisement of food drugs, cosmetics and devices, and repealed the then existing State Laws on those matters. Apart from dealing with drugs the Act was promulgated to take care of food items, cosmetics and devices as well.

Thus the improvements on guidelines for the manufacture, sell and buying of drugs from the Dangerous Drug Act of 1935 to the Poisons and Pharmacy Act of 1947 and to the Food and Drugs Act of 1976 facilitated more orderly and controlled drug retailing of more non-dangerous drugs. These situations coupled with the growth in demand for drugs and health services in Kaduna boosted drug sales and more drugstores were set up in this period.

5.6.2 Implications of the Nigerian indigenisation decrees

The Nigerian Enterprises Promotion Decrees (NEPD) were promulgated, in 1972 and its successor in 1977, for the purposes of ensuring increased participation of Nigerians in the economy. It was the first deliberate attempt by the Federal

Government to indigenize ownership of business enterprises. A major success of NEPD 1973 was on the short-term basis of transferring equity ownership from alien companies to Nigerians citizens. This meant that the ownership and control of industrial investment were very low and there were no headways recorded in indigenous ownership and control in strategic industrial areas. In addition the local retention of profit was still poor and the net individual contribution to the economy was very low (Oyediran, 1984).

One of the adverse consequences of the indigenisation decrees was the sudden laying off of many workers from the industrial sector previously solely owned by foreigners. Many of these retrenched workers had to go into retailing (the retailing of drugs inclusive), a business that demands low capital to start.

5.6.3 Macro-economic policies

The period of the oil boom, 1971-1984, was a transition period as the economy of Nigeria changed from an agricultural based economy into a relatively rich, oil-dominated one. The oil sector accounted for 30 percent of the GDP, oil exports totaled 25 billion US dollars or 96 percent of total exports, per capita income was more than 1100 US dollars. The non-oil export sector, on the other hand, declined as agricultural exports contributed very little to total exports. It was during this period that oil production reached its peak, specifically in 1986 (Dollar and Svenson, 2000).

This period witnessed rapid urbanization in Kaduna caused by urban-biased development that induced massive rural-urban migration as in other major urban centres in the country. The growth in population in Kaduna in this period accounted for the greater demand for health care services and particularly that of pharmaceutical products.

5.6.4 Land use policies

The land use policies and the allocation of land for various activities in the 1970s and the 1980s were principally based on guidelines set by Lock (1967). The Ministry of Land and Survey then implemented the guidelines as contained in the Kaduna Master plan of Lock (1967), adhering strictly by allocating plots and supervising the development of areas designated for activities as commercial, residential, military, schools, recreation and industrial layouts.

In accordance with the stipulated guidelines for commercial land use that, the area must be a commercial layout, with adequate parking space and the property attracting great number of people so that public facilities are provided, some areas and streets in Kaduna were designated for drugs retailing, as the central market area, Independence Way and Tafawa Balewa Way in the GRA, where drugstores were located in this period.

The process of rapid urbanization of Kaduna between 1971-1984 was also the period of expansion for the city. Government's deliberate effort of creating a western by-pass and the new development areas of Rigasa, Kawo, Sabon Tasha and Barnawa as a result of increasing population meant the allocation of land for commercial purposes in these areas. Therefore markets, stalls, and other retail points have been constructed and are in operation in these newly developing areas of Kaduna metropolis.

5.7 SPATIAL DISTRIBUTION OF DRUG RETAIL ACTIVITIES DURING THE STRUCTURAL ADJUSTMENT PROGRAMME (SAP) PERIOD (1985-1995)

Given the events of the 1970s of an oil-dominated economy and the general down turn in the economy with its adverse consequences of worsening economic

fortunes in terms of declining economic growth, and increasing unemployment, galloping inflation, high incidence of poverty, worsening balance of payment conditions, very high and worsening debt burden and increasing unsustainable fiscal deficits, the stage was set for critically re-examining the Nigerian economy and strategizing to reverse these woeful situations.

The Structural Adjustment Programme of 1986 was the policy instrument the Federal Government put forward in September to tackle these economic problems. SAP relied on market forces as the private sector for dealing with the fundamental problems of the Nigerian economy.

Some of the measures carried out in SAP were the restriction on imports such that raw materials were sourced locally. Bans were also placed on the importation of luxury and consumer goods. Moreover the Federal Government then reduced subsidies on certain commodities as petroleum products. Other efforts carried out in SAP included the right-sizing of the workforce whereby workers in the government and industries were retrenched, the Nigerian currency, the naira was devalued while the foreign exchange market was de-regulated. In addition the international trade was also de-regulated.

The implications of these SAP measures were generally devastating for a developing country like Nigeria. Among the effects was the closure of many industries for lack of raw materials that were hitherto mainly imported. The products from industries that were operating then could not compete effectively with foreign goods and so eventually closed down. The closure of industries and the deliberate policy of right-sizing of workers meant many workers were laid off their jobs. The period also witnessed decline in health care provision as hospitals ran out of drugs and drugs prescribed had to be purchased elsewhere.

Thus retrenched workers with the team of unemployed moved into the informal sector to eke out a living. Many took up small scale trading or retailing of goods because they were most attractive and required little capital to start. In addition the high population of low income and unemployed coupled with very low health care provision by hospitals meant the demand for cheap drugs to be purchased out of the hospitals went very high. These implications and effects of SAP are evidenced by the establishment of 30 drugstores in this period of the study as compared to only 5 drugstores established in the previous period.

5.7.1 The Spatial Distribution of Drugstores (registered with PCN)

Thirty drugstores were established in this period all over Kaduna. They were located in Ungwan Dosa, Malali, Ungwan Sarki, Badiko, Tudun Nupawa, Barnawa, Sabon Yelwa, Sabon Tasha, Kakuri and the central market area (Figure 5.5).

.



Fig 5.5 Distribution of licensed drugstores 1985-1995

5.7.2 Spatial Distribution of Patent Medicine Stores 1985-1995

The Nigerian economy in this period was characterized by declining economic growth, retrenchment and increasing unemployment. The fall in the purchasing power of most Nigerians and reduction in quality of public health services during the SAP period resulted in a sharp increase in the demand for cheap non-prescription drugs offered by patent medicine stores.There was a sharp increase in the number of patent medicine stores established as their numbers rose up from 3 (1.0 percent) in 1971-1984) period to 47(15.6 percent) in 1985-1995 period. This sharp increase is mainly attributed to the hard economic conditions due to the retrenchment of workers in the public and private sectors. This group of people sought livelihood in retailing manufactured goods, food items and drugs. The set of patent medicine stores in this period were established in the following areas Doka/Central Market area, Sabon Tasha, Tudun Nupawa, Ribadu Cantonment /NDA, Ungwan Television, Narayi and Sabon Yelwa (Figure 5.6).

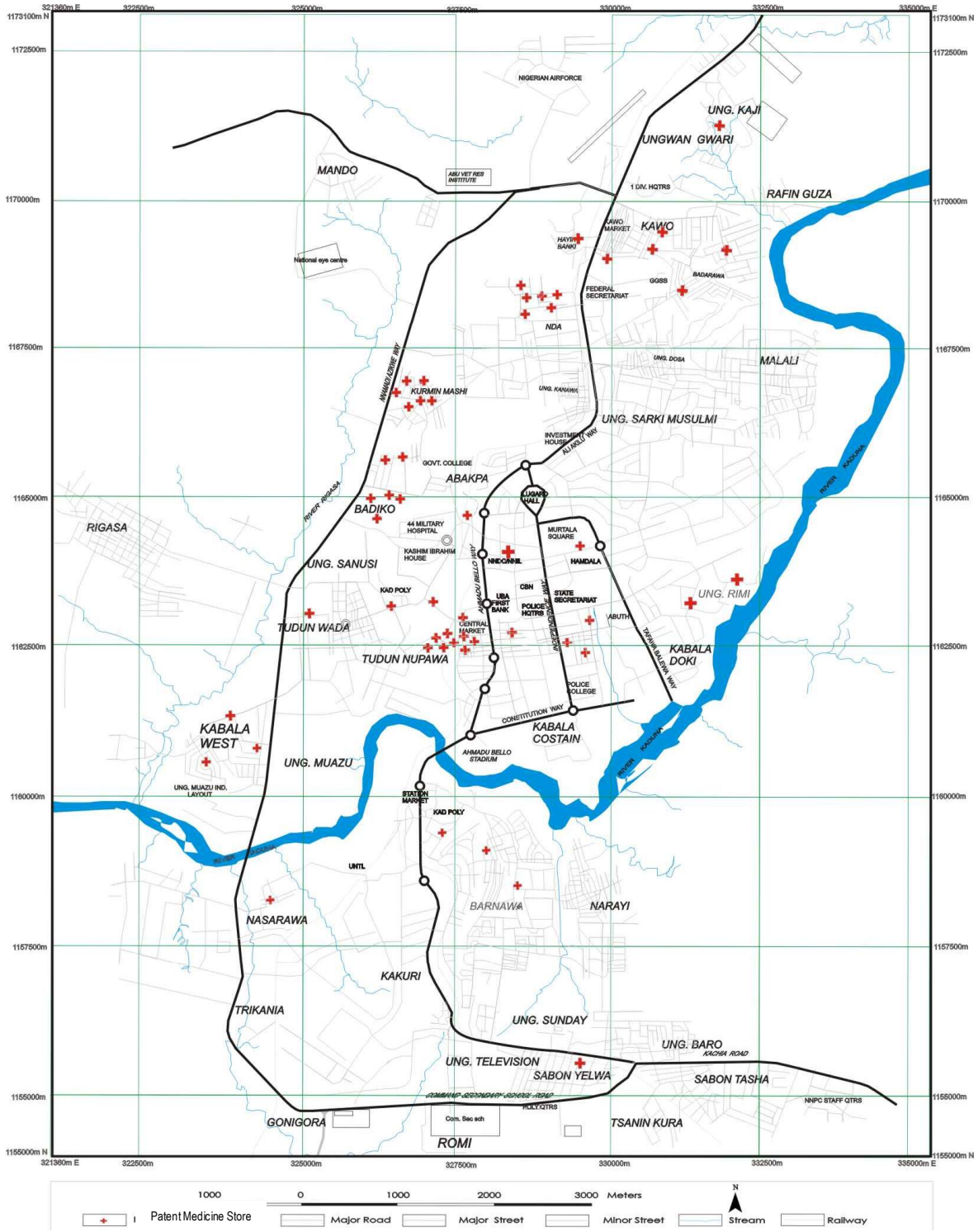


Fig 5.6 Distribution of patent medicine stores 1985-1995

5.8 POLICY EFFECTS ON SPATIAL PATTERNS OF DRUGS RETAILING 1985-1995

5.8.1 Government Regulatory policies

More policies guiding the production and sale of drugs promulgated in addition to the ones mentioned in the previous periods. These include the National Drug Law Enforcement Agency (NDLEA) Act of December, 1989, establishing that institution to enforce laws against the cultivation, processing, sale, trafficking, and use of hard drugs. The NDLEA was also empowered to investigate persons suspected to have dealings in drugs and other related matters.

The second policy was set up on 13 December 1989 and was called the National Drug Formulae and Essential Drug List Act. This Act prohibits importation and manufacture in Nigeria of any drug not on the specified list. The third policy that controls the chances of people going into the drugs business was the setting up of the Pharmacists Council of Nigeria by a decree on 15 December 1992. This council was set up to determine the standard of knowledge and skills, among other things, to be attained by persons seeking to become registered members of the pharmacy profession and reviewing those standards from time to time as circumstances may require.

The fourth policy was called the National Agency for Food and Drug Administration (NAFDAC), established in 1993 to, among other things, provide penalty for contraventions. The Drugs and Related Products Act was promulgated in 1993 by a decree as well to, among other things, prohibit the manufacture, importation, advertisement, sale or distribution of drugs, drug products, as cosmetics or medical devices that are not registered under these provisions. These regulatory policies set the standards and guidelines for pharmacists or anyone interested in the drug business.

5.8.2 Macro-economic policies

The retrenchment of workers mainly from the public sector, in addition to high unemployment rate, high inflation and poverty levels forced this group of people into various forms of retailing to earn a living, particularly the informal sector of retailing drugs. This resulted in the sharp increase in the number of drugstores established from 5 in the previous period to 30 in this period.

5.8.3 Land use policies

The functions of development control and zoning of land use in Kaduna was performed by KASUPDA in this period. The guidelines set by Lock (1967) for various land uses in Kaduna were used as guidelines for the allocation of land for various activities. The guidelines on the allocation of land for commercial activities specifically served as useful tools for directing Kaduna government on the allocations of land and property for drugstores. As a result the establishment of drugstores became more common in areas as the central market area, Malali, Ungwan Sarki, Sabon Tasha, Barnawa, Tudun Nupawa, Ungwan Rimi and Kakuri.

5.9 THE PERIOD OF GROWING THE PRIVATE SECTOR AND PROMOTION OF COMMERCIAL ACTIVITIES

This period runs from 1996 to present The period especially as from the end of the 1990s has been characterized by vigorous privatization of public enterprises and the promotion of small and medium scale enterprises, right-sizing the civil services, training of man power in the fields of business and commercial activities, the granting of loans by banks with low profit margins to entrepreneurs. These deliberate government policies induced those laid off and the unemployed to venture into small-scale enterprises and petit trading, as they took up opportunities of the loans and the training to earn a living independent of the government.

The foundation for individual and group participation in the national economy was laid in the previous period of the structural adjustment programme. This strategy enhanced economic awareness further and increased private sector participation in the economy. Moreover necessary controls, application of standards in business opportunities got more people involved in contributing positively to the Nigerian economy. Business opportunities were not limited to regularized trade in pharmaceutics but a larger number of people increasingly got engaged in small and medium scale enterprises as in communication especially the Global System for Mobile Telecommunication, agro-allied industries, construction and transportation.

5.10 THE SPATIAL DISTRIBUTION OF RETAIL ACTIVITIES

5.10.1 Spatial Distribution of Drugstores (registered with PCN)

A total of 85 pharmaceutical stores were established in this period, 1996-2006, alone. These drugstores were located along Independence Way, Buhari Way, Babiko, Constitution Road, Tafawa Balewa Way, Ungwan Rimi, Badiko, Malali Kabala Doki, Barnawa, Kakuri, and Sabon Tasha, with the highest concentration in the central market area (Figure 5.7).

A hierarchical pattern in spatial distribution of drugstores emerged. Wholesalers cluster mainly in the central market area where retailers obtain their supplies. The pharmacies dominate the GRA and high income areas of Ungwan Rimi and along major streets like Independence Way,Buhari Way,Tafawa Balewa Way and Constitution Road. The patent medicine stores on the other hand are located in the low-income zones as Kakuri, Badiko, Tudun Wada and Kawo.

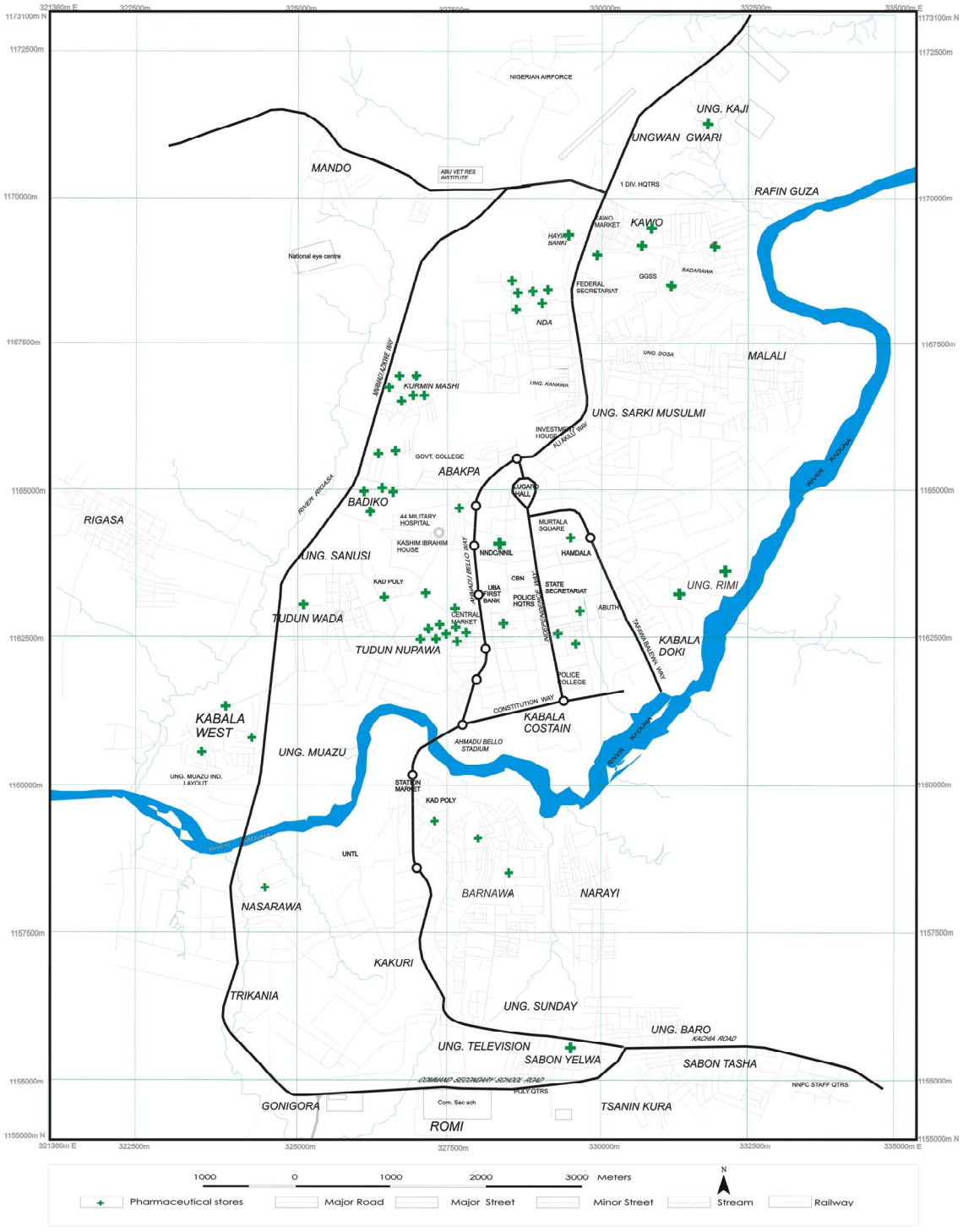


Fig. 5.7: SPATIAL DISTRIBUTION OF LICENSED DRUGSTORES IN KADUNA 1996 - 2006

5.10.2 Spatial Distribution of Patent Medicine Stores 1996-2006

Most of the patent medicine stores in Kaduna metropolis were established during this period with 76.0 percent being recorded between 1999 and 2002. It can be said therefore that more people in Kaduna metropolis and probably elsewhere in the country went into drug retail at during this period. The areas of concentration of patent medicine stores in the metropolis are Sabon Tasha, Ungwan Boro, Central Market, Tudun Wada, Ungwan Sanusi, Trikania, Rigasa, Kawo and Mando (Table 5.3 and Figure 5.8).

Table 5.3 Establishment of Patent Medicine Stores 1996-2006

Year	No. of Respondents	Percentage
1997	7	4.1
1998	8	4.8
1999	34	20.4
2000	59	35.3
2001	34	20.4
2002	23	13.8
2003	1	0.6
2006	1	0.6
Total	**167**	**100.0**

Source: Field work 2006

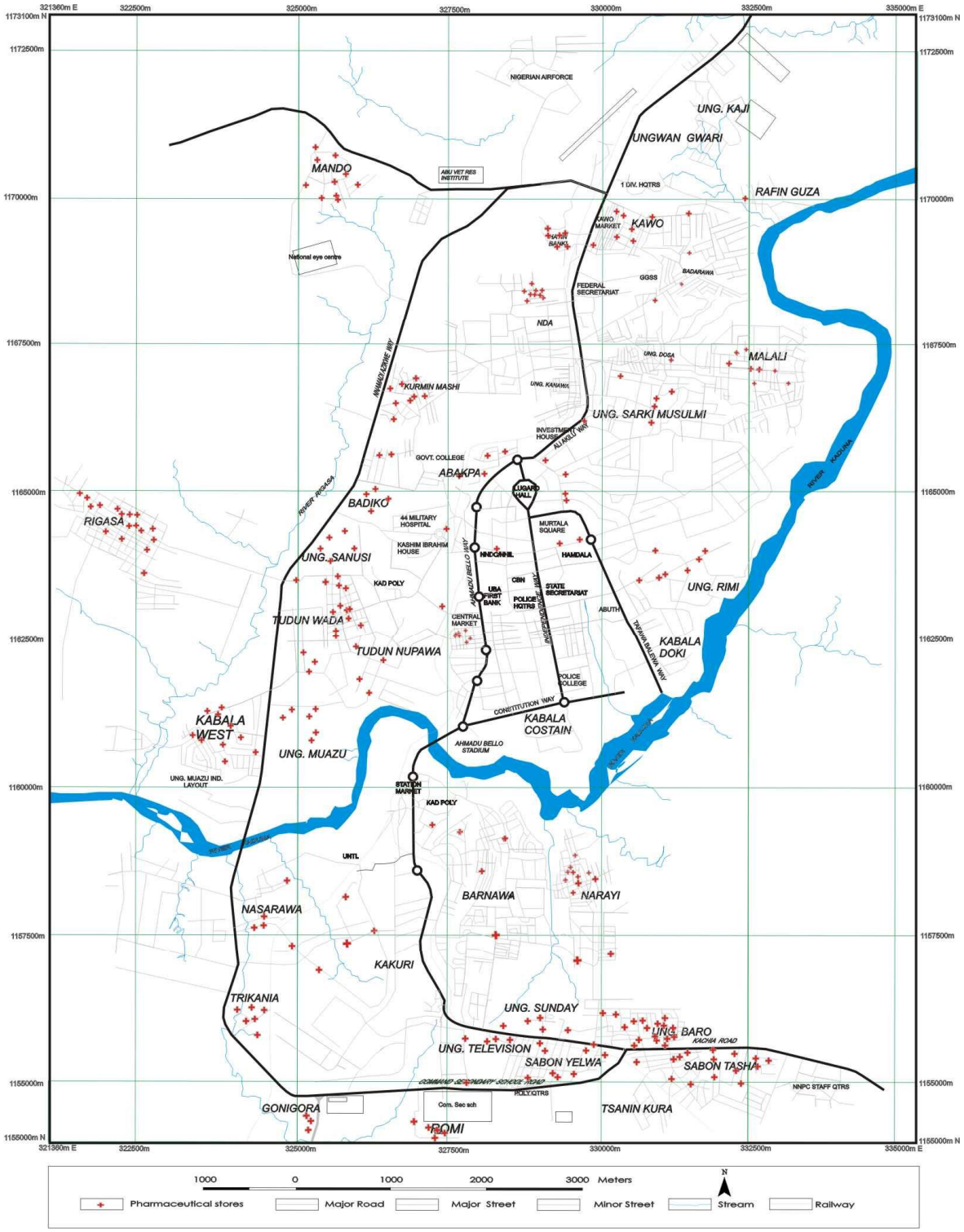


Fig 5.8 Distribution of patent medicine stores 1996-2006

5.11 POLICY EFFECTS ON THE SPATIAL PATTERN OF DRUGS RETAILING 1996-2006

5.11.1 Government Regulatory policies

The recent Federal Government of Nigeria's regulatory drug policies is the Counterfeit and Fake Drugs and Unwholesome Processed Foods (miscellaneous poisons) Act that was established by a decree in 1999. This decree provides for, among other things, the prohibition of counterfeit, adulterated, banned or fake, and sub-standard or expired drugs or unwholesome processed foods. It also provides for the establishment of Federal and State task forces charged with the responsibilities of seizing any drug or unwholesome processed food, displayed for sale in unlicensed or registered premises.

Other related enactments in drug manufacture, sale and use are the Pharmacists Council of Nigeria (Disciplinary Tribunal) Rules 2000, the Constitution of the Pharmaceutical Society Nigeria (1978) and the Code of Ethics for Pharmacists in Nigeria and the Guidelines on the Insurance of Patent and Proprietory Medicines Vendors (2003).

5.11.2 Macro-economic policies

The period, 1996-2006, was that of encouraging and promoting small and medium enterprises, and increased retailing activities. Many economic policies were put in place such as micro-finance, small-scale enterprises promotion, loans from banks to individuals, cooperatives and self-help groups. These facilities induce private and cooperate participation, ensure growth of the GDP and increase the per capita income of the citizens of Nigeria. Many people have taken up these opportunities to earn a living or extra income.

5.11.3 Land use policies

The department of development control in KASUPDA carried out its function based on the Master Plan of Kaduna (Lock, 1967) that gave guidelines on the location of activities in the metropolis. Commercial activities and the retailing of drugs in particular were zoned to designated commercial districts in Kaduna metropolis. A major land use development during this period was land use re-zoning that took place in Kaduna which brought into existence commercial activities where none existed before, for instance, the new shops along Buhari Way opposite Hamdala Hotel and along some streets in the GRA which were hitherto entirely residential.

By the nature of retailing of pharmaceutical products, registered pharmaceutical and patent medicine stores have been located where they draw in many customers as along the major streets in Kaduna like Independence Way, Buhari Way, Rabah Road, Tafawa Balewa Way, Ungwan Sarki, Barnawa and Malali and the central market area with its high concentration of registered pharmaceutical and patent medical stores.

5.12 EFFECTS OF GOVERNMENT POLICIES ON BUSINESS TURNOVERS OF REGISTERED AND PATENT MEDICINE STORES

The establishment of drugstores following the promulgation of government policies and the sale of pharmaceutical products provided employment and income to drug entrepreneurs. The study found that the business turnovers from the sale of drugs varied with the scale of the operation.

5.12.1 Business turnovers of registered drugstores

Average earnings of dealers operating the 122 registered drugstores vary a lot. The wholesalers, known for their function of selling drugs to pharmacies, patent medicine stores and hawkers, realized huge sums of money of up to 3 million and 5 million each in a week. A total of 44 percent of these drugstores indicated that they each sold drugs of between ₦150,000.00 and ₦200,000.00 in a week (Table 5.4).

Table 5.4 **Weekly business turnovers of registered drugstores in Kaduna**

CATEGORY OF DRUGSTORE	AMOUNT EARNED IN NAIRA PER WEEK	FREQUENCY	PERCENT
Wholesale	3,000,000	1	0.8
``	5,000,000	1	0.8
Pharmacy	250,000	2	1.5
``	240,000	2	1.5
``	230,000	3	2.3
``	220,000	7	5.7
``	200,000	17	13.9
``	180,000	5	4.0
``	170,000	3	2.3
``	160,000	13	10.6
``	150,000	16	13.1
``	140,000	9	7.3
``	130,000	7	5.7
``	120,000	4	3.2
``	110,000	4	3.2
``	100,000	12	9.8
``	80,000	6	4.9
``	70,000	3	2.3
``	60,000	4	3.2
``	50,000	3	2.3
Total		**122**	**100.0**

Source: Fieldwork 2006

5.12.2 Business turnovers of patent medicine stores

The study found out that patent medicine store operators' earnings from their stores excel those of hawkers but lower than turnovers made by registered drugstores. Their weekly turnovers range from ₦25,000.00 to N49,000.00. About 60 percent of the patent medicine store operators indicated business turnovers of less than ₦40,000.00 per week (Table 5.5).

Table 5.5 Weekly business turnovers of patent medicine stores in Kaduna.

AMOUNT IN NAIRA PER WEEK	FREQUENCY	PERCENT
49,000	5	1.6
48,000	18	5.8
46,000	14	4.5
45,000	19	6.1
44,000	22	7.1
43,000	10	3.2
42,000	15	4.8
41,000	6	1.9
40,000	18	5.8
39,000	6	1.9
38,000	8	2.5
37,000	15	4.8
36,000	9	2.9
35,000	18	5.8
34,000	14	4.5
33,000	4	1.2
32,000	12	3.8
31,000	13	4.2
30,000	27	8.7
29,000	13	4.2
28,000	6	1.9
27,000	12	3.8
26,000	10	3.2
25,000	14	4.5
Total	**308**	**100.0**

Source: Fieldwork 2006

On the whole, retail trade of pharmaceutical products in Kaduna between 1966 and 2006 was a great source of employment and income to all wholesalers and drugs retailers who engaged in the business at various levels. Wholesalers, wholesalers and retailers and retailers who were hitherto jobless and might not have earned any income found drug retailing a source of employment and a means of improving their socio-economic well –being.

5.13 LOCATION FACTORS IN THE SPATIAL STRUCTURE OF DRUG RETAILING IN KADUNA

This section consists of the analysis and discussion of the location factors of the spatial structure of retail trade in pharmaceutical products in Kaduna. Proprietors of drugstores in Kaduna were interviewed on determinants for locating their drugstores. The factors identified as expressed by the proprietors consist of accessibility to drugstores or nearness to market/customers, proximity to hospital, government directives and security (Table 5.7).

5.13.1 Accessibility to market

The nearer a drugstore is to market/customer, the higher the demand for its products and so the greater its gains. The accessibility of drugstores or their nearness to market/customers factor tops the list of reasons why drugstores are located where they are. It is the major factor that gave rise to the current spatial retail trade structure of pharmaceutical products in Kaduna. This factor was indicated by 97 (64.6 per cent) of the drugstores respondents in Kaduna metropolis. This was followed by proximity to hospital 41 (27.4 per cent). Other reasons for the choice of location of the drug stores are government directives 7 (4.7 per cent) and security 5 (3.3 per cent), see Table 5.6).

Table 5.6 Reasons for choice of drugstore premises in Kaduna metropolis

Reasons	Frequency	Percent
Accessibility of drugstores	97	64.5
Security	5	3.3
Proximity to Hospital	41	27.4
Government Directives	7	4.7
Total	**150**	**100.0**

Source: Field work 2006

Most drugstores therefore considered locating their premises very close to market centers and customers as paramount for economic reasons. In the 1966-1970 period 1.3 percent of the drugstores that were first established considered nearness to market/customers an important reason for their business, in the 1971-1984 period there were 3.3 percent, in the 1985-1995 period there were 16.0 percent and in the 1996-2006 sub-period there was 43.3 percent. The major commercial centre in Kaduna is the central market and its offers wholesale goods to other smaller markets in Kaduna and outside the metropolis, to villages in the state and beyond the state. The Doka/Central Kaduna was preferred as a choice location for drugstores by 20.7 percent. Doka/Central Kaduna area has a lot of commercial transactions on a daily basis with lots of goods coming in from other towns within and outside the country.

By Kulsrestha (1984) estimates this area had the highest commercial density of 5850 traders operating on a 12-hectare piece of land. The commercial density then was 488 traders per hectare. Since then the population of Kaduna has increased, the volume of retailing and so also the commercial density in the area. Pharmaceutical products too are retailed in lager quantities in this area. No wonder therefore it has the

highest percent of those who choice accessibility to market/customers. (Tables 5.7,5.8).

Table 5.7 2005 Projected population of Kaduna by Area

Area	Project 2005 Population
Barnawa	93,263
Kakuri	129,547
Sabon Tasha	167,466
Doka/Kaduna Central	468,081
Ungwan Rimi	252,754
Kawo/Kurmin Mashi	778,086
Total	1,889,197

Source: Fieldwork 2006

Table 5.8 Location factors of drugstores by periods in Kaduna

	Accessibility to market		Security		Proximity to hospital		Government directives		Total	
Years	No.	%	No.	%	No.	%	No.	%	No.	%
1966-1970	2	1.3							3	2.0
1971-1984	5	3.3							5	3.3
1985-1995	24	16.0	1	0.7	6	4.0	1	0.7	32	21.3
1996-2006	65	43.3	4	2.6	34	22.7	6	4.0	110	73.4
Total	97	64.6	5	3.3	41	27.4	7	4.7	150	100.0

Doka/Central Kaduna area is followed next by Ungwan Rimi area in choice of nearness to market/customers as reason for locating drugstores in Kaduna with 16.8 percent of drugstores. This area in the list is followed next by Barnawa area, known for its sprouting shopping complexes, 9.7 percent, Kawo/Kurmin Mashi 8.4 percent, Sabon Tasha 4.5 percent and lastly Kakuri 3.2 percent. See Table 5.9.

Table 5.9 Location factors of drugstores by area in Kaduna, 2006

Location	Accessibility to market		Security		Proximity to hospital		Government directives		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Barnawa	15	9.7	4	2.6	1	0.6	7	4.5	27	17.4
Kakuri	5	3.2			1	0.6			6	5.2
Sabon Tasha	7	4.5	1	0.6	2	1.3			10	6.4
Doka/Central Kaduna	33	20.7			7	4.5			38	25.5
Ungwan Rimi	26	16.7			17	11.0			43	27.7
Kawo/Kurmin Mashi	13	8.4			13	8.4			26	16.7
Total	97	65.3	5	3.2	41	27.0	7	4.5	150	100

Source: Field work 2006

5.13.2 Proximity to a hospital

The next factor in the list of reasons for the choice of location is proximity to a hospital. Ungwan Rimi area has the highest number of drugstores that considered proximity to hospital as an important reason in locating their drugstores with 11.0 percent respondents out of the total 27.0 percent respondents. In the period 1966-1970 only 0.7 percent of the drug store respondents gave proximity to hospital as a reason for locating their drugstores where they did, in the 1985-1995 period 4.0 percent drugstores gave the same reason. The Ahmadu Bello University Teaching Hospital was situated in this area before its relocation to Shika Zaria in 2006. It is an important factor in the location of drugstore premises in Ungwan Rimi area. In addition the residents of this area mostly belong to the high and middle classes of the society and thus are able to afford prescription drugs. See Tables 5.9.

5.13.4 Government Directives

Subsequent to the crisis of 1992 in Kaduna the respondents claimed that the government directed that they establish their drugstore premises outside certain areas

in the metropolis. This factor in influencing the choice of location of premises has a total of 4.5 percent. The 4.5 percent of the drugstores that gave government directives as reason for locating where they were found at time of the study were all found in Barnawa (Table 5.9).

5.13.4 Security

Security is the least of the factors that drugstore respondents gave as reasons for the location of drugstores. In the period of 1985 – 1995 0.7 percent, 1996 – 2006 2.0 percent drugstores claimed that they located where they did because of security (Table 5.8). Of the 3.2 percent of the respondents drugstores in this category 2.6 percent are in Barnawa area while 0.6 percent is in Sabon Tasha (Table 5.9).

5.14 NEAREST NEIGHBOUR ANALYSIS AND COMPLIANCE TO GUIDELINES

This section consists of the analysis of clustering using the nearest neighbour statistical technique for the six areas in Kaduna. The purpose of this analysis is to find out the degree of compliance to government set guidelines for the location of drugstore premises, which is given as 200 metres apart. Any nearest neighbour value of less than 200 metres between two premises indicates that the drugstores were wrongly located. The six areas that make up Kaduna metropolis and used in this analysis are Barnawa, Kakuri, Sabon Tasha, Doka/Central Kaduna, Ungwan Rimi, and Kawo/Kurmin Mashi (Table 5.10).

The nearest neighbour statistic formula is:

$$Rn = \frac{\bar{D}\ (Obs)}{0.5\sqrt{a/n}-}$$

where Rn = the nearest neighbour value.

D (Obs) = mean observed nearest neighbour distance.

a = area under study.

n = total number of points.

5.14.1 Barnawa area

The nearest neighbour value for Barnawa area is 96.6 metres which means that drugstores in this area were wrongly sited, too close to each other as the nearest neighbour value is below the stipulated 200 metres. The area with the highest nearest neighbour value even though the value is below the government set guideline of 200 metres between drugstore premises. The 18 drugstores in the area have not complied with the guidelines for locating drugstores. They are located along the main streets in the area and the shopping complex. A few drugstores though are located away from the main streets and the shopping complex.

5.14.2 Kakuri area

Kakuri area has 6 drugstores, a total of 3040 metres between the drugstores and an area of 625.1 hectares**.** The nearest neighbour value for Kakuri area is 99.3 metres and is below the nearest neighbour value of 200 metres between pharmaceutical stores as stated by government**.** This area has the second highest nearest neighbour value after Barnawa area though it has only 6 drugstores. This nearest neighbour value for the area shows there has been a violation of the government guidelines. The drugstores are located along the main streets in the area while a few are found away from the main streets.

5.14.3 Sabon Tasha area

Sabon Tasha area has 9 pharmaceutical stores, a total distance of 1860 metres between them and covers 504.3 hectares. The Sabon Tasha area has a nearest neighbour value of 55.2 metres, far below the expected distance of 200 metres apart given by government for locating drugstore premises. Drugstores in this area are located along Kachia Road and the market while away from these areas no drugstores are found.

5.14.4 Doka /Central Kaduna area

This area has 35 pharmaceutical stores, a total distance of 420 metres between them spread over an area of 431.3 hectares. The nearest neighbour value for Doka/Central Kaduna is 6.8 metres. This is the lowest nearest neighbour value and indicates a high degree of clustering. Given the government guideline of 200 metres between drugstore premises, it is certain that the drugstores have not complied with this injunction. Doka/Central Kaduna area is the central business district of Kaduna metropolis where the largest market and a very high volume of commodities and products are sold and bought. Such streets as Benin, and Warri Streets are dominated by pharmaceutical stores.

5.14.5 Ungwan Rimi area

This area has 34 drugstores, a total of 2180 metres between the drugstores and an area coverage of 411.7 hectares. The nearest neighbour value for this area is 36.8 metres. This area has one of the lowest nearest neighbour value also. And so the drugstores are very closes to one another. The location guideline of 200 metres set by government was not adhered to in this area. Ungwan Rimi has 34 drugstores, the second largest number after Doka/Central Kaduna area. Most of these drugstores are located along Buhari Way, Tafawa Balewa Way near the former Ahmadu Bello

University Teaching Hospital, Constitution Road, and the shopping complex in the area.

5.14.6 Kawo/Kurmin Mashi area

This area has 20 pharmaceutical stores, a very large area of 2250.7 hectares and a total distance of 7230 metres. The nearest neighbour value for Kawo/Kurmin Mashi area is 21.2 metres. This is the second lowest nearest neighbour value of all the areas analysed. Its nearest neighbour value falls below the guideline of 200 metres given by the government for locating drugstores premises. Its drugstores are thus concentrated in few areas and along streets as the Military Hospital, Rabah Road and streets in Malali, Ungwan Sarki and Ungwan Dosa.

Table 5.10 Nearest neighbour value (Rn) by area

Area	No. of drugstores	Total distance	Rn	Remark
Barnawa	18	4380	96.6	*
Kakuri	6	3040	99.3	*
Sabon Tasha	9	1860	55.2	*
Doka/Central Kaduna	35	420	6.8	*
Ungwan Rimi	34	2180	36.8	*
Kawo/Kurmin Mashi	20	2250.7	21.2	*

Source: Field Work, 2006

- The nearest neighbour value indicates that drugstores did not locate according to government laws of 200 metres apart. They are too closely sited.

The nearest neighbour analysis of the six areas in Kaduna revealed that the drug stores in these areas were located much closer than stipulated in the government

guidelines of 200 meters apart. The nearest neighbour value (Rn) was lowest in Doka/Central Kaduna area 6.8 while the highest was in Kakuri 99.3. The drugstores were mostly located along major streets where customers easily buy drugs or in markets areas. Thus the main explanation for patterns whereby drugstores cluster along streets and markets areas is the fact that economic force strongly determined the location of drugstores. The success of business in pharmaceutical retailing depends on proximity to customers, and this is critical to the success of the enterprise.

5.15 CONTRIBUTION OF HAWKERS TO DRUG RETAIL TRADE IN KADUNA

This section presents the activities of hawkers in the retailing of pharmaceutical products in Kaduna metropolis. The nature of hawking of drugs, duration of engagement of individual hawkers in their employments, hawkers' outlets of drug and their customers, sources of drugs and types of drugs, and finally the returns or earnings of drug hawkers.

5.15.1 The nature of hawking drugs

The sale and dispensing of drugs in Kaduna metropolis is not limited to pharmaceutical stores at permanent retail points. Itinerant retailers sell drugs along the streets and public places unchallenged by any law enforcement agents.

These itinerant dispensers of drugs have mostly had no education in pharmaceutical field and have not gone beyond primary school level, however they find employment in retailing drugs in basket–like containers. They sell their drugs in public places like motor parks, along streets, market places and during events and festivities where many people are in attendance. Thirty hawkers were interviewed and questionnaires were administered to them at various places in the metropolis.

5.15.2 Duration of employment as hawkers of drugs

Hawkers of drugs in Kaduna metropolis have been in the business from 1 year to 21 years. Out of the 30 hawkers 90 percent of them have hawked drugs for a period of between 1-10 years that is between 1996-2006 while others have been in the drug business for more than 15 years (Table 5.11).

Table 5.11 Hawkers by the period they commenced drug business

Period	No. of Respondents	Percentage
1966-1970	-	-
1971-1984	-	-
1985-1995	3	9.9
1996-2006	27	91.1
Total	30	100.0

Source: Fieldwork 2006

5.15.3 Hawkers' customers

Hawkers sell their drugs to a population that cuts across various groups in Kaduna metropolis. Chief among these are the rural dwellers who come into Kaduna metropolis to sell their products or buy some items on a daily basis. This group includes mostly the Fulani who account for 65.9 percent. See Table 5.12.

Table 5.12 Customers to whom hawkers sell drugs to in Kaduna

Customers	Frequency	Percent
Drivers/passengers	10	8.3
General urban dwellers	18	15.0
Labourers	5	4.2
Rural dwellers	79	65.9

Health centers	1	0.8
Total	**120**	**100.0**

Source: Field work, 2006

5.15.4 Drug sources for hawkers

The major sources of drugs for hawkers in Kaduna metropolis are pharmaceutical stores 70.0 percent. Pharmaceutical stores in Doka/Central Kaduna alone provide 36.7 percent of all the drugs hawkers buy. See Table 5.13

Table 5.13 Hawkers' sources of drugs in Kaduna

Source	Frequency	Percent
Drugstores	21	70.0
Distributors	7	23.3
Manufacturers	2	6.7
Total	**30**	**100.0**

Source: Field work 2006

5.15.5 Types of drugs sold by customers

Hawkers dispense several types of drugs used by their customers. Among the common drugs that they sell are pain-relievers 26.4 percent, antibiotics 11.2 percent, anti-malaria 5.1 percent. Others include vitamins, glucose, catarrh and cold relievers, cough syrup, and ointments as mentholatum, rub and Chinese balm. See Table 5.14.

Table 5.14 Types of drugs sold by hawkers

Drug Type	No. of Respondents	Percent
Pain reliever	68	48.4
Antimalaria	12	5.1
Antibiotic	29	11.2
Vitamins etc.	48	35.3
Total	157	100.0

Source: Field work 2006

5.15.6 Earnings from hawking drugs

Hawkers belong to the class of low-income drug traders because their turnovers are the least among those of the retailers. (Table 5.15).

Table 5.15 Business turnovers of hawkers on weekly basis in Kaduna

Amount in naira per week	Hawkers	Percent
No response	2	6.7
500	1	3.3
600	1	3.3
800	1	3.3
1000	2	6.7
1500	4	13.3
2000	3	10.0
2100	1	3.3
2500	3	10.0
3000	5	16.7
3500	1	3.3
4500	1	3.3
5000	1	3.3
6000	1	3.3
10000	1	3.3
24000	1	3.3
Total	**30**	**100.0**

Source: Field work 2006

Drug hawkers who need the least capital to go into drug retailing found the business a source of employment. Their turnovers are very low compared to those of wholesalers and drug retailers. Given their very low capital base and in turn very low turnovers most hawkers can best be described as eking out a living selling drugs.

5.16 MANUFACTURERS, WHOLSALERS AND RETAILERS RELATIONSHIP

This section consists of the presentation of discussions on the relationships between manufacturers, wholesalers and retailers between stakeholders in the drugs business in Kaduna metropolis.

5.16.1 Status of dealers in pharmaceutical trade

The status of dealers in pharmaceutics as far as procurement, sale and dispensing of drugs are concerned, is categorized into retailers and wholesalers. Some wholesalers however dispense drugs as well. Results from fieldwork show that 38.5 percent of the dealers solely retail drugs while only 1.6 percent deal only in wholesaling. However 59.8 percent of the drugstores indicated that they perform both functions of wholesale and retail (Table 5.16).

Table 5.16: Status of wholesalers and retailers

Status	Frequency	Percent
Wholesalers	2	1.6
Retailers	47	38.5
Both	73	59.8
Total	122	100.0

Source: Field work 2006

5.16.2 Sources of drugs

Five drugstores (4.1 percent) indicated their sources are from local manufacturers while 95.1 percent buy drugs manufactured by foreign firms in addition to locally manufactured drugs. Only 1 drugstore did not give the source of its drugs (Table 5.17).

Table 5.17 Distribution of drugstores by source of drugs in Kaduna, 2006.

Source	Drugstores	Percent

Local	5	4.1
Local and Foreign	116	95.1
No response	1	0.8
Total	**122**	**100.0**

Source: Field work 2006

5.16.3 Drug manufacturers

There are 26 firms that manufacture drugs sold in the 122 drugstores in Kaduna metropolis. Out of the 26 manufacturers, 24 percent supply most of the drugstores in Kaduna. International manufacturers include Glaxosmith – Kline which supplies drugs to 18.3 percent of retailers and 10.1 percent of the wholesalers; Beecham 9.1 percent of the retailers and 3.9 percent wholesalers. The local manufacturers of drugs include Emzor, Neimeth and Hovid. See Table 5.18.

Table 5.18: Identified manufacturers of drugs sold in Kaduna by wholesalers and retailers.

Manufacturers	Retailers		Wholesalers		Total	
	Freq	%	Freq	%	Freq	%
Beecham	54	9.1	23	3.9	77	13.0
Emzor	53	8.9	32	5.4	85	14.3
Glaxo-Smithline	109	18.3	60	10.1	169	28.4
Pfizer	14	2.4	13	2.2	27	4.5
May & Baker	25	4.2	18	3.0	43	7.2
Mopson	6	1.0	1	0.2	7	1.2
Evans	23	3.9	16	2.7	39	6.6
Hovid	11	1.8	11	1.8	22	3.6
Norvart	-	-	1	0.2	1	0.2
Aventis	2	0.3	1	0.2	3	0.5
Ranbaxy	13	2.2	3	0.5	16	2.7
Fdson	2	0.3	1	0.2	3	0.5
UpJohn	1	0.2	1	0.2	2	0.4
Reels	1	0.2	3	0.5	4	0.7
Neimeth	30	5.0	12	2.0	42	7.0
Drugfield	5	0.8	1	0.2	6	1.0
Swipha	10	1.7	4	0.7	14	2.4
Abumec	3	0.5	2	0.3	5	0.8
Geneith Global	-	-	1	0.2	1	0.2
German Chemical	4	0.7	-	-	4	0.7
Wellcome	6	1.0	1	0.2	7	1.2
Zoomota	1	0.2	1	0.2	2	0.4
Dr Meyer	2	0.3	-	-	2	0.3
Swiss	2	0.3	-	-	2	0.3
IPEA	-	-	2	0.3	2	0.3
Afrab	4	0.7	6	1.0	10	1.7

Source: Field work 2006

Thus dealers in pharmaceutical products consisted of wholesalers, wholesalers and drug dispensers, retailers, and wholesalers and retailers. While only 1.6 percent of the drugstores dealt solely in wholesaling, 38.5 percent were into retailing only, 59.8 percent of the registered drugstores performed both functions. Retailing drugs was a

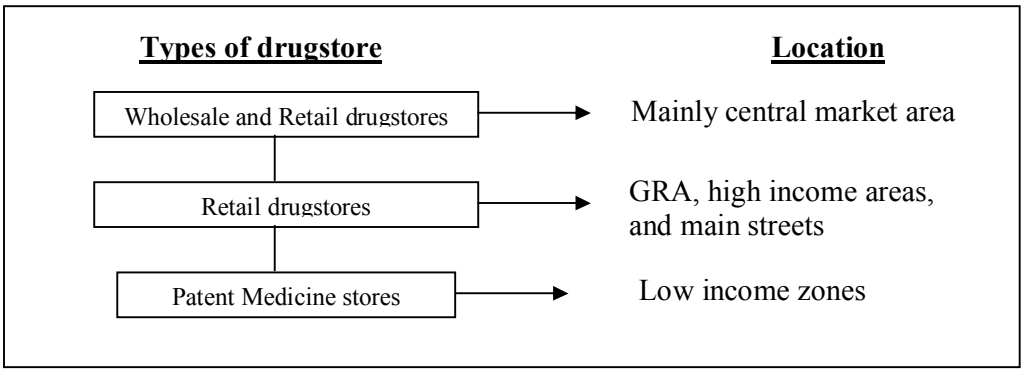
common function of most categories of drugstores. On the other hand 95.1 percent of the stores had both local and foreign sources of drugs.

5.17 THE OBSERVED SPATIAL STRUCTURE OF PHARMACEUTICAL PRODUCTS RETAIL STORES IN KADUNA METROPOLIS

The spatial structure of the retail trade in pharmaceutical products in Kaduna metropolis has over the years evolved into a three tier hierarchy At the top of the hierarchy are the registered large wholesale and retail stores that cluster mainly in the central market area where 28.9 percent of all the retailers surveyed obtained their supplies. Occupying the middle level in the hierarchy are the registered, retail only, pharmacies which dominate the GRA and high income areas of Ungwan Rimi and along major streets like Independence Way, Buhari Way, Tafawa Balewa Way and Constitution Road. The bottom of the hierarchy are the patent medicine stores which dominate the low income zones of Kakuri, Badiko, Tudun wada,, Tirkama, Sabon Tasha, Rigasa, Television and Kawo.

The observed spatial distribution of pharmaceutical stores in Kaduna metropolis conforms with the distance-decay hypothesis of the urban land rent theory which stipulates that land value tends to decrease with increasing distance from the city centre. In the keen competition among businesses for easily accessible locations such as the CBD and transport routes, high value businesses that can pay the high rent charges at such locations often pushed to areas of the city where rent is much lower. The central market area of Kaduna metropolis, the GRA and major streets where the registered drugstores are located in Kaduna metropolis command much higher rents than the low income areas of Kakuri, Badiko, Tudun Wada, Trikania, Sabon Tasha, Rigasa, Television and Kawo where the patent medicine stores are found.

Figure 5.9: Types of drugstores by location



Source: Field work 2006

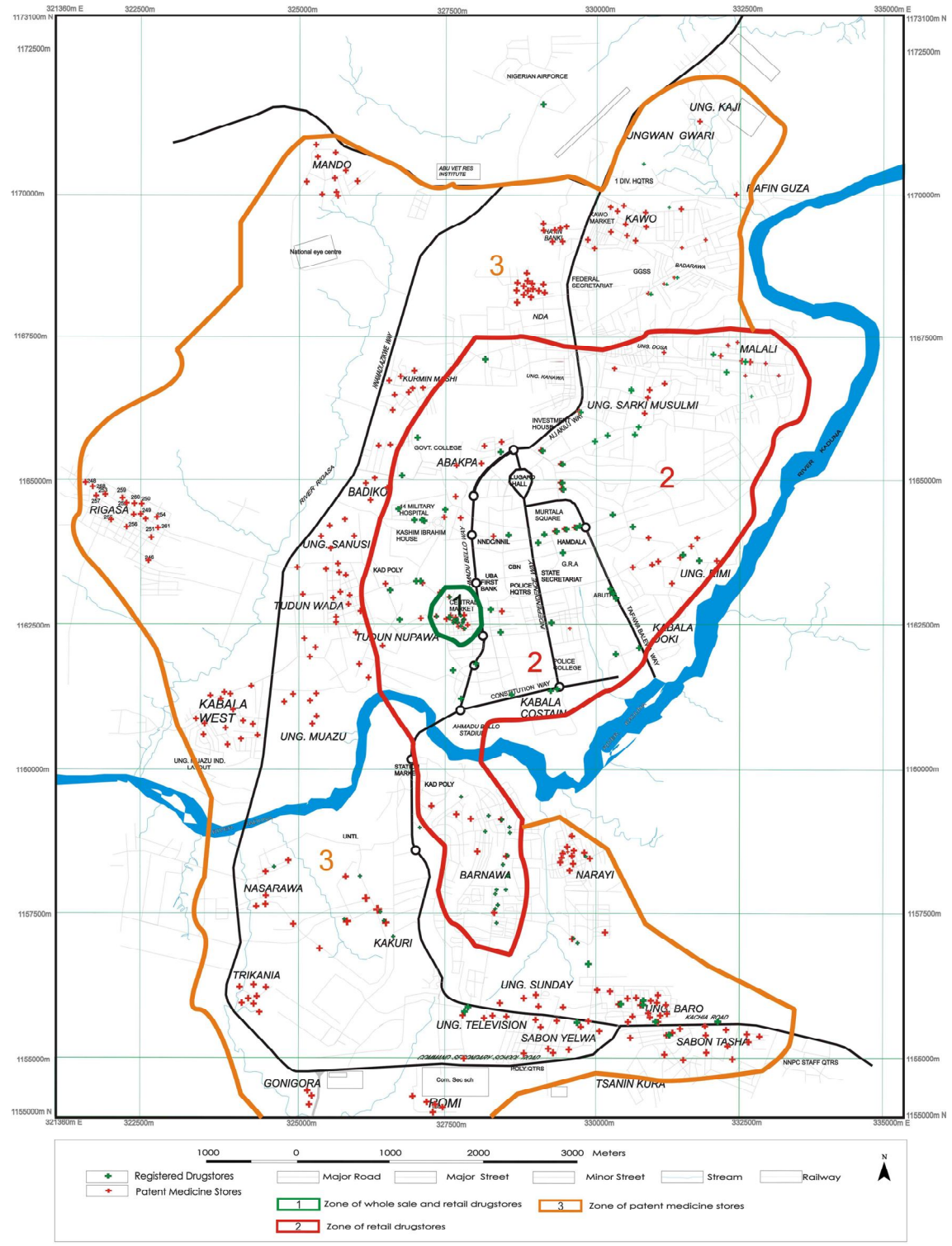


Fig.5.10: SPATIAL STRUCTURE OF DRUG STORES BY ZONES IN KADUNA 1966 - 2006

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 AN OVERVIEW OF THE STUDY

The study has used a single product approach to examine evolution of the spatial structure of retail trade in the city of Kaduna over a period of forty years, 1966-2006. Hitherto studies of retail activities in developed and developing countries focused on the general analysis of the spatial structure of retail trade of specific urban areas at particular points in time and examined the aspects of pricing and land values to explain the differences observed for example (Mabogunje, 1964; Scott, 1977 and Person, 2003).

This study analysed the underlying factors that were responsible for the development of the spatial structure of retail trade in pharmaceutical products in Kaduna metropolis. It reveal that apart from the government policies that gave access to people to go into drug retailing, some reasons that forced people into the drugs trade were the macro-economic policies such as the privatization and commercialization plus structural adjustment programme (SAP), as a result of which government laid off many workers in the public sector, removed subsidies, which also increased the level of poverty in Nigeria. Retail trade was one of the outlets by which people seek to cope with the new realities of life.

The study revealed that Kaduna State Government policy and guidelines on land development facilitated the evolution and development of the spatial structure of retail trade in pharmaceutical products in the metropolis as most of the drugstores were zoned to areas designated for commercial activities. The existing patterns of land use in Kaduna metropolis, as observed in the study, owe their origin and development to guidelines set by the British colonial administrators, and improved upon by Lock

(1967) who produced the Kaduna master plan. The guidelines produced by Lock in 1967, were implemented by the various administrators in Kaduna State through the Ministry of Land and Survey. From the 1980s the functions of supervising and implementing the Kaduna State guidelines on development control and zoning regulations in Kaduna, and specifically allocation of drug retailing areas and units, became the sole responsibility of the department of development control in KASUPDA.

The whole of Kaduna metropolis was taken for this study and all the drugstores were taken as the population for the study. A total of 122 drugstores that registered and were licensed with Kaduna State government and the PCN were administered questionnaires. The patent medicine stores, located all over Kaduna metropolis offered very useful information during interviews. Data from questionnaires was supplemented with information from KASUPDA, Ministry of Health, Ministry of Land and Survey, individuals and organisations who were personnel in the medical and pharmacy profession, and from the internet.

Most of the 122 registered and licensed drugstores that were administered questionnaires in Kaduna metropolis, testified that they located where they did due to accessibility to customers and the area with the highest concentration of these drugstores and the patent medicine stores is the central market area, other areas of high concentration are Ungwan Rimi and Barnawa.

The study also revealed that the spatial structures of drug retailing in Kaduna town have evolved into a three-tier hierarchy. Wholesale and registered large retail pharmacy stores occupied the top of the hierarchy and are found mainly in the central market area. Below that level, are registered retail stores located in the GRA and

major streets. Patent medicine stores selling only non-prescription drugs occupy the bottom of the hierarchy and low income areas of the city.

The study has unveiled the influence of policy dynamics as a major factor in the evolution of the spatial structure of retail trade over a period of forty years from 1966 – 2006. Hawkers of pharmaceutical products in the metropolis have been observed to perform a notable role in the chain of drugs trade in Kaduna metropolis. Their commercial activities are ubiquitous.

A major contribution of this study to academic knowledge is the fact it has increased understanding of the roles of policies and guidelines in the evolution of the patterns of retail trade, particularly the evolution of the spatial structure of pharmaceutical products retailing in Kaduna, an urban area of a developing country.

6.2 CONCLUSION

This study identified the policies and actions that gave rise to the spatial structure of drug retailing in Kaduna metropolis over a period of forty years, 1966 – 2006. The study revealed that the spatial structures of drug retailing in Kaduna town have evolved into a three-tier hierarchy. Wholesale and registered large retail pharmacy stores occupied the top of the hierarchy and are found mainly in the central market area. Below that level, are registered retail stores located in the GRA and major streets. Patent medicine stores selling only non-prescription drugs occupy the bottom of the hierarchy and low income areas of the city.

The in-depth retrospective analysis of the evolution of the spatial structure of retail trade in pharmaceutical products in Kaduna from 1966 – 2006 revealed that government (i) regulatory policies, (ii) macro-economic policies and (iii) land use policies greatly influenced the development of the pattern of drug retailing in the town. As Kaduna developed and its population grew in size, appropriate policies were

enacted to meet the demands of the metropolis. Drugstores progressively increased in number with astronomical growth recorded in the most recent study period, 1996 – 2006.

The study has unveiled the influence of policy dynamics as a major factor in the evolution of the spatial structure of retail trade over a period of forty years from 1966 – 2006. The recognition of policy dynamics in the evolution of spatial structure of retail trade is an important academic contribution because future policy prescriptions for the functional improvement of retail trade and its spatial development will be based on the knowledge of how past policies have worked.

6.3 RECOMMENDATIONS

The following are recommendations for policy changes, planning and development of proper and economically more benefiting drugs retailing (and retailing in general) in Kaduna metropolis, and urban areas in the developed and developing countries. Based on findings of this study the following are recommended:

a) Kaduna State government should recognize the importance of the retail sector, particularly the retailing of drugs through outlets as drugstores and hawkers in Kaduna metropolis, its significant contributions to the coffers of the state, and to its aim and objectives in the health sector. Moreover the government of this state, the Nigerian government and other countries as well ought to acknowledge the fact that retailing, and specifically the retailing of pharmaceutical products, contributes immensely to economic growth and the improvement of the standards of living and the socio-economic life of the populace.

b) The government of Kaduna state through KASUPDA should review and implement guidelines on development control and zoning regulations to march the

current space of Kaduna urban sprawl. The development control and zoning regulation department should intensify its supervisory roles of land, property and shop allocation such that all their regulations are strictly complied with. Specifically, the allocation of premises of drugstores should be re-visited by both the Kaduna State chapter of the PCN and KASUPDA to ensure compliance to regulations set by government.

6.4 AREAS FOR FURTHER STUDY

This study is a pioneer in recognizing the importance of policies in the evolution of the spatial structure of retailing particularly the evolution of the spatial structure of retail trade of pharmaceutical products in a developing country, Nigeria, and so it is advised that:

a) Similar studies on the evolution of the spatial structure of retailing of various goods should be carried out in other urban centers in Nigeria and other parts of the world. This will enable governments recognize the importance of regulatory policies, macro-economic policies and land use policies or any other factors in determining the evolution of the spatial structure of retailing in general.

b) Furthermore researches can be carried out on locational factors and the functions of development control and zoning regulations with a view of advising governments on identifying and solving problems in the allocation of land, property and shops for commercial activities.

c) Studies on the contributions of the various aspects of retailing of other goods to the national economy should be undertaken. This will enable countries

know the percentage contributions of retail sector to their national economy and to give the sector due attention.

6.5 CONTRIBUTION TO ACADEMIC KNOWLEDGE

This study has contributed to academic knowledge in the following ways:

a) The study revealed that spatial structures are constructed by social and economic factors. The three tier spatial structure hierarchy which retail as evolved in Kaduna is testimony to that.

b) The study identified and described the categories of retailers of drugs in Kaduna metropolis.

c) The study also identified four periods 1966-1971, 1971-1984, 1985-1995 and 1996-2006 during which different policies were promulgated and these determined the evolution of spatial structure of retail trade of pharmaceutical products in Kaduna metropolis. The policies so identified were the government regulatory policies, macro-economic policies and land use policies and guidelines for the allocation of commercial activities in Kaduna State.

d) The study recognized that there were no restrictions on the relationship between retail trade outlets in Kaduna metropolis and retailers were open to any foreign or local manufacturers or suppliers of drugs. The recognition of policy dynamics in the evolution of spatial structure of retail trade is an important academic contribution because future policy prescriptions for the functional improvement of retail trade and its spatial development will be based on the knowledge of how past policies have worked.

REFERENCES

Abiodun, J.O. (1967) " Urban Hierarchy in a Developing Country" Economic Geography Vol. 43, No 4, p.347 - 67

Abler, R.; Adams, J.S. and Gould, P. (1972) Spatial Organisation. The Geographer's View of the world Prentice-Hall International Inc London p. 254-261

Agarwai, P. (2004) " Walter Christaller: Hierarchical Patterns of Urbanisation 2001-2004 Regents of University of California Santa Barbara p.1-3

Berry, B.J.L. (1967) Geography of Market and Retail Distribution Eaglewood Cliff Printice Hall.p.1-20

Brotchie J., Newton P., Hall P. AND Nijkamp, P. (1985) editors The Future of Urban Form CroomHelm, London.

Bourne, L.S. (1971) ed Internal Structure of the City Readings on space and environment Oxford University Press London.

Canada's Retail Trade NAICS (North American Industry Classification System) 44-45 1997

Chau, K.W. and Pretorius, F.(2002) " Retailers' Location Preferences: The Influence of
Time, Micro-spatial and Property Characteristics in a High-Density Urban Area". Discussion paper series. The University of Hong Kong Hong Kong.

Chawa, J. (1989) A-Z Tourist Guide to Kaduna NDA Consult Kaduna

Christaller, W. (1933). Central Place Theory in Southern Germany, Jena Fischer.

Daniel, P. and Hopkinson, M. (1986). The Geography of Settlement. Oliver and Boyd, London.

Dollar, D. and Svenson, J. (2000) "What explains the success or failure of structural adjustment programmes ". *The Economic Journal* 110 October, 894-917 Royal Economic Society Blackwell Publishers, Oxford.

Forgey, F., Goebel, P. (1995)"Use of Location Factors by Tenants in Retail Centre Space Selection", *Journal of Property Research,* 12, pp. 149-156.

Fundafunda, B.(2000) " Prices of Essential Drugs in Developing Countries"
bfunda@echohealth.org.uk http://www.essentttialdrugs.org/
edrug/archive/200005/msg.php

Goodall, B. (1972) The Economics of Urban Areas Oxford: Pergamon Press p.134.147

Hagen, J.M. (2003) "Agri-Food innovation in Developing Countries: The Role of Retailers" Department of Applied Economics and Management Cornell University Ithaca New York Submitted for IAMA-2003-Cancun p. 1-13.

Hagen, J.M. (2003). "Agric-Food Innovation in Developing Countries: The Role of Retailers". A paper submitted for IAMA – 2003 Cancun Department of Applied Economics and Management Cornell University. p 1-13.

Hague, C. and Kirk, K. (2003) "Polycentricity Scoping Study" School of the Built Environment Herot-Watt University Edinburgh

Harry, S. (2004). "A short History of Sub-Urban Retail". Seth Harry and Associates, Inc. Architects and Retail Planning Consultants. p 1-7.

Heal, G. (1980) "Spatial Structure Analysis in the Retail Trade: A Study in Product Differentiation with Increasing Returns" *RAND Journal of Economics* Vol. 11 No. 2 p. 565-583.

Hoyt, H. (1958) "Classification and Significant Characteristics of Shopping " Appraisal Journal p. 214-222.

IBIS World, 2004

IFPMA (1994) "Guidelines on IFPMA Code of Pharmaceutical Marketing Practices Reviewed 1994" OPPI- Organisation Pharmaceutical Products of India p.1-2.

"International Pharmaceuticals Kenya" 2001 Products and Services

Iro, I.(2000) "Livestock Transportation and Marketing in Nigeria" Washington D C wwwgamji.com/fulani 12. htm

Kasper, W. "Spatial Economics" The Concise Encyclopedia of Economics Library, 1999-2002, Liberty fund Inc North-south Wales.

Klein, K. (2000) "Retail Trade in Transit Areas: Munich Airport" Projects Geography Retail Trade Economic Geography

Kulshrestha, S.K.(1984) "Kaduna Master Plan: Review and Proposals for 2015" Department of Urban and Regional Planning, Ahmadu Bello University, Zaria.

Ligthelm, A. (2004). "Size, Structure and Profile of the Informal Retail Sector in South Africa" Research Report No. 323. Bureau of Market Research. UNISA. p. 1-3.

Lock, M. (1967) Kaduna. A survey of the Capital Territory for the Government of Northern Nigeria. Max Lock and Partners 1967, London.

Lythelm, A. A. (2004) "Size, Structure and Profile of the Informal Retail Sector in South Africa" Research Report No. 333 Bureau of Market Research Unisa

Mabogunje, A. L. (1964) "The Evolution and Analysis of the Retail Structure of Lagos, Nigeria" Economic Geography Vol. 40, No. 4, Oct. 1964 p. 302-323.

Mabogunje, A.L. (1968a) " Urban Land Use Problems in Nigeria" in Institute of British Geographers, Special Edition 1, p203 – 218.

Marshall, J.U. (1971). The Location of Service Town. An Approach to the Analysis of Central Place Systems. University of Toronto Press, Toronto, p. 1-43.

--- NCEMA--- National Centre for Economic Management and Administration (2004) "Structural Adjustment Programme in Nigeria: Causes, Processes and Outcome" Revised Technical Proposal to Global Development Network (GBN)

Oyediran, O. (1984) ed Survey of Nigerian Affairs 1978-79 Macmillan Press Lagos

Persson, C. (2003). "Spatial Planning and Retail Trade: Prerequisites in Riga". Lulea Tekniska University Sam hallsbyggnads teknik/Vattentek. p. 1-2.

Prochilo, C. (20002 "Chain Drugstores on Main Street: Some Positive Trends" Forum News Volume V111, Num. 4 p.1-3.

Proudfoot, M. J. (1937) "City Retail Structure" *Economic Geography*, Volume 13 p.425-428.

Ratcliff, R. U. (1949) "Internal Arrangement of Land uses" Urban Land Economics New York p. 386-397.

Sada, P.O. (1984). The Nigerian City Occassional Publication No. 3 Urban Studies Series'' p. 1-34.

Scott, P. (1997). "Large Scale Retailing in Britain 1850-1914". *Refresh* 24 (Spring) 1997. Economic History Society, UK, p 5-8.

Sirmans, C. F., Guidry, K.A.(1990) "Determinants of Retail Centre Rents", *The Journal of Real Estate Research*, Vol 8, No.1, pp.107-115.

……."The Nigerian Urban and Regional Planning Law" Decree No. 88, 1992, Federal Government of Nigeria Press, Lagos.

Ukwu, I.U. (1980) "Urbanisation and its Implications for the Development of Nigeria" In Amauchaazi,E.C. (ed) Readings in Social Sciences: Issue in National Development (Enugu: 1980).

Urquhart, A.W. (1977). Planned Urban Landscapes of Northern Nigeria: A case study of Zaria. ABU Press Zaria, p. 1-87.

Vagale L. R. (1972) "An Anatomy of Traditional Markets in Nigeria: Focus on Ibadan City. " (Ibadan, The Polytechnic, 1972), p. 1-26.

Vance, J. E. (1954) "Delimiting the CBD" *Economic Geography* Volume,30 p.189-222.

WHO (1994) "Expert Committee on Specifications for Pharmaceutical Preparations "Thirty-second report Geneva WHO Technical Report Series No. 823.

APPENDIX A

QUESTIONNAIRE

Questionnaire to be administered to drugstores.

1. Location of drugstores

   Address: …….

   ……

2. Geographical Coordinates: N: ……..

   E:…… ……..

3. Year drugstore was established? ……

4. You are the

   (i) Owner ☐

   (ii) Owner/operator ☐

   (iii) Operator ☐

5. Registration as a member with Pharmaceutical Society of Nigeria:

   (i) Patent medicine store ☐

   (ii) Dispensing pharmacy ☐

6. No of branches: ……

7. Reasons for choice of location of drugstore premises:

   (i) Nearness to market/ customers ☐

   (ii) Security ☐

   (iii) Proximity to hospital ☐

   (iv) Government directives ☐

   (v) Others (specify)

……...

……

8. Is this place the first place you located your drugstore?

   ☐

(i) No

(ii) Yes ☐

9. If No, where did you locate?…….…….

When?……

10. Category of products:

(i) Prescription drugs ☐

(ii) Off the counter drugs ☐

(iii) Both types of drugs ☐

11. Which of your drugs sell fastest?……

……

…….

12. Your drug sources are

(i) Local ☐

(ii) Foreign ☐

(iii) Both foreign and local ☐

13. Names of companies that manufacture your drugs are?

……..

……..

……..

……..

14. Names of companies that supply your drugs are?

……..

……..

……..

……..

15. Number of employees:……..

16. Duration of employment Number of persons

(i) Less than 6 months …… ☐

(ii) 6 months – 1 year …… ☐

(iii) 1 – 2 years ……... ☐

(iv) 2 – 4 years …….. ☐

(v) Above 4 years ….……. ☐

17. Staff Qualifications:

S/No	Name of staff	Post/Designation	Qualification

18. You are a

(i) Wholesaler ☐

(ii) Retailer ☐

(iii) Both wholesaler and retailer ☐

19. What quantity of drugs do you sell weekly?……..

……

20. How much do you pay as rent for your store?

…… ……

Government policies:

21. What government policies or programmes/activities made you go into buying and selling of drugs?…….

……

…….. 22. Year in which policy or programme commenced……..

APPENDIX B

QUESTIONNAIRE

This questionnaire is to be filled for hawkers of drugs

1. How long have you been in the business of buying selling drugs?

……

……2. What types of drugs do you sell?

……

……

……

3. Where do you sell your drugs?

……

……

4. Who do you sell your drugs to?

……

……

……5. Where do you buy your drugs from ?

……

……

6. What quantity of drugs do you sell in a week?

……

7. How much money do you make from your sales weekly?

……

APPENDIX C

Names, Coordinate and Years of Establishment of Drugstores

S/NO	NAMES	X-COORD (m)	Y- COORD (m)	YEAR OF ESTAB.
1.	KATARI	327880	1162883	1998
2.	CHIMEC	3,7992	1161878	1986
3.	PEDAD	327877	1162854	1994
4.	COTOJA	327881	1162856	1991
5.	ISLAM	327881	1162953	1992
6.	ZAIPHARM	327881	1162828	1991
7.	ZAGBAYI	327880	1162826	1989
8.	GILERCY	327882	1162825	1987
9.	FIDEL	327882	1162826	1989
10.	KANO /WARRI JUNCTION	327887	1162738	1991
11.	SOMIT	327811	1162701	1996
12.	ELMO	327815	1162710	1984
13.	NADIS	327805	1162708	1992
14.	CONOC	327801	110275	1996
15.	ENYIKWONKA	327805	1162752	1982
16.	VICNAM	327805	1162755	1996
17.	CALICHICO	327802	1162781	1996
18.	NWAFO	327802	1162783	1983
19.	GODEK	327794	1162841	1994
20.	SAHIH	327793	1162845	1997
21.	LAFIYA JIKI	327721	1102752	1991
22.	BIOMEX	327721	1162789	1989
23.	ASLAD	327645	11628-56	1987
24.	LAKHASU	326705	1162743	1989
25.	TARIK	326620	1163352	1999
26.	GODIYA	326961	1163463	1989
27.	OSBUD	326967	1163393	1996
28.	CHINEDU	326791	1164613	2000
29.	OBASI	326578	1164810	2000
30.	DO-GOOD	326952	1164581	2001
31.	M. I. YACOOB	326964	1164580	1998
32.	RHEMEDIC	326707	1165344	1999
33.	GENS	327000	1166046	1989
34.	SAMAN	328808	1164267	2001
35.	ISHARA	329332	1164343	1989

36.	REPUBLICAN	329568	1164430	1997
37.	OSBUD-K	329750	1164499	1998
38.	Y-FAB	329921	1164453	1998
39.	FALIKO	329960	1164565	2001
40.	RASRAJ	330466	1163388	1996
41.	GILJANE	330488	1163342	1996
42.	ZABEEBAH	330484	1163332	1997
43.	DOBUTO	330497	1163303	1996
44.	LUDAM	330050	1162251	2004
45.	KARAMA	329444	1162754	1984
46.	FARIMED	329194	1164230	2001
47.	AL-AMIRU	329560	1165157	2000
48.	YAKUBU	329549	1165215	2001
49.	PHARMASCOPE	329526	1165497	2003
50.	WOSKAB	329277	1165902	1995
51.	OLLAN	328299	1163079	1982
52.	EL-VICTORY	327816	1161440	1998
53.	GASKIYA	327770	1161909	1989
54.	JONIKS	329144	1161963	1999
55.	OMAR	329607	1162465	NIL
56.	BADENSON	327092	1159029	2000
57.	ASIEL	328287	1159925	2000
58.	NEFE	328572	1159151	1992
59.	GOZIMAK	329737	11 59001	2003
60.	REDOX	328730	1158924	2001
61.	FALIKA	329693	1158495	2000
62.	DEE-TALLY	328683	1158289	2002
63.	NAVID	328694	1158091	2006
64.	PRAISE – FOUNTAIN	328657	1157879	2000
65.	OJISOL	328466	1157849	2000
66.	BENIM	328467	1157804	2001
67.	GODEK	328457	1157562	2004
68.	RAYMED	328454	1157489	2000
69.	JENICARE	328453	1157195	2000
70.	BENJITA	329877	1156922	2000

71.	GODEK	329949	1156849	2001
72.	PHONEIX	330117	1158379	2004
73.	NEW-SEKENI	339947	1156521	2006
74.	NARROW-WAY	330866	1155926	1986
75.	SAMUYI	330869	1156890	2001
76.	GODYYA	331020	1155511	2000
77.	GABA	331315	1155317	1989
78.	LILLI	332098	1155483	2001
79.	COMPLETE	330459	1155815	2000
80.	BAMAIYI	329861	1155530	1991
81.	HILMA	327735	1155969	2000
82.	SAKO-GLOBAL	327737	1155953	1999
83.	JOBHENRY	327172	1153868	2000
84.	DOZEC	327062	1153840	2002
85.	JENOM	328339	1159182	2000
86.	OLAN (BARNAWA)	327815	1159584	1984
87.	N'ALBARKA	327602	1163197	1999
88.	MANEKS	326427	1157465	1997
89.	UNIFIED	326506	1157303	2000
90.	PANACEA	326634	1157295	1967
91.	DONNOMIC	324779	1158382	2000
92.	TIMES & VANTAGE	325827	1157442	1985
93.	SUARAB	326127	1158311	2004
94.	SUFFICIENT	330512	1162068	2006
95.	LEMU	331828	1163981	2000
96.	DARO	331540	1164164	2000
97.	ISHARA	330730	1164561	1997
98.	TODAS	330462	1164751	2006
99.	ISMUS	329633	1163969	1987
100.	ISHAQ	330818	1166117	1998
101.	RHEMEDIC	330815	1166231	1999
102.	SUVIT	330318	1166137	2000
103.	BOOTS	330169	1166067	2002
104.	EL-MOUKTAR	329912	1166433	1999
105.	NANA	330715	1166880	2000
106.	AL-AMIRU	330715	1166880	2001

107.	NASANAH	332760	1166820	2000
108.	PHOLAB	332687	1167510	2004
109.	WILMEX	332093	1167559	2001
110.	RAMAT	332415	1167342	2003
111.	MARIYAM	330989	1168645	2000
112.	JAGSIL	331250	1168812	2002
113.	MARIYAM	331420	1168939	1998
114.	THAWWAL	331217	1170134	2002
115.	I DIV. HOSPITAL	330725	1170913	2002
116.	ISHARA (NAF BASE)	329116	1171847	2003
117.	NDA MRS	328145	1667341	2003
118.	NAYDAY	328530	1165756	1998
119.	44 HOSP.	327383	1164673	2002
120.	ENBOKAY	328591	1161375	2000
121.	NANA	329476	1161558	2001
122.	AJB	329541	1161569	2000

APPENDIX D

POPULATION PROJECTION FOR KADUNA METROPOLIS 1991-2005

Area (projected)	Population 1991	Population 2005
Narayi High Cost	23,674	38,205
Nasarawa	61,501	110,694
NNPC Quarters	2,858	4794
Sabon Tasha	27,251	45,626
Ungwan Romi	8,181	13,698
Ungwan Sunday	4,213	11,791
Ungwan Borou	494	827
Ungwan Gora	680	1,139
Ungwan Yelwa	25,166	42,135
Mando	14,560	24,378
Nariya	92818	155,405
Rigasa	72,483	116,972
Abakpa	13,538	22,667
Badarawa	32,737	56,792
Doka	53,911	90,263
Hayin Banki	50,468	84,499
Kabala Costain	13,566	23,565
Kabala Doki	22,694	37,997
Kawo	37107	62,128
Kotoko Barracks	5,671	9,585
Malali	22,677	39,392

NDA	437	732
Ungwan Gwari	10,781	18,051
Ungwan Sarki	8,509	14,247
Ugwan Garba	11,284	19, 576
Ungwan Dosa	19,658	32,913
Ungwan Rimi	52,717	95,008
Ungwan Shanu	18,442	30,877
Ungwan Kanawa	9,732	16,295
Ungwan Sanusi	23,971	40,135
Badiko	18,265	30,581
Barnawa	32,884	55,058
Kurmin Mashi	20,028	33,534
Kabala West/Ungwan Muazu	37,713	65,511
Kakuri/Makera	77,374	129,547
Sabon Gari	55,588	96,561
Tudun Nupawa	39,311	65,818
Tudun Wada	60,299	104,745
Ungwan Television	28,344	47,456
Total	1,076,283	1,889,197

Source: National Population Commission 2007