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The Journal of the University of Zimbabwe

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A STUDY OF STRUCTURE, USE PATTERNS AND NEEDS WITH SPECIAL REFERENCE TO RETAILING IN HIGH-DENSITY RESIDENTIAL AREAS

by

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CONTENTS

TABLES

ILLUSTRATIONS

Figures

Plates

PREFACE

This study was started in March 1981 with the general purpose of (1) updating work by M. A. H. Smout on Low-Density Residential Area (LDRA) suburban service centres, or shopping centres, and (2) extending the scope of analysis to cover High-Density Residential Area (HDRA) centres. Specifically, the study first of all analyses the hierarchical structure of all suburban service centres in Harare, and then focuses on shopping-trip patterns in HDRAs, factors underlying shopping-trip patterns, and perceived needs in HDRAs.

The analysis is conducted in the context of three economic–geographical conceptual frameworks commonly used for service centre studies in urban and regional planning: classical central place theory; the cognitive-behavioural framework; and the structural framework. Chapter 2 of the study discusses these conceptual frameworks in detail, mainly for the benefit of readers not familiar with the concepts. A chapter on Harare, the area of study, has also been included for the benefit of readers not familiar with the city. Thus Chapters 2 and 3 may be safely omitted by readers familiar with the material presented therein.

Many place-names in Zimbabwe were changed while the study was in progress. Throughout, the area of study is referred to by its new name, Harare, with 'Salisbury' (the old name) being used occasionally in reference to historical events, maps and old published sources.

Finally, I wish to acknowledge the help of the following individuals and organizations, for which I am truly grateful: Professor D. H. Davis, Mr P. van Hoffen, Mr R. J. Adams and Dr C. C. Mutambirwa (all of the Department of Geography, University of Zimbabwe, at the commencement of the study) for constructive guidance and criticism; Dr Robert B. Riddell of the Department of Land Economy in the University of Cambridge and Mr Simba L. Machingaidze of the Central Statistical Office (Zimbabwe) for their rigorous criticism of earlier drafts of the study; the student research assistants in the Department of Geography, University of Zimbabwe, who helped with the distribution of questionnaires; Mr Alfred Hunda, for his help with the preparation of diagrams and cartographic work, Miss Pedzi Mutyambizi and Mrs Rohini David for typing drafts of this study; Dorothy (my wife) and Shingai (my son) for putting up with a lot of inconvenience; and above all, OK Bazaars and the Research Board of the University of Zimbabwe for their financial sponsorship, without which the study would not have taken place.

Naison Damson Mutizwa-Mangiza
Department of Rural and Urban Planning
University of Zimbabwe

1
INTRODUCTION

1.1 RATIONALE AND AIMS OF THE STUDY

Since the attainment of Independence, urban and regional planning in Zimbabwe has been taking place in two different contexts. In the first, the role of planning is to initiate growth where none existed before. This type of planning may be termed, for analytical purposes, 'initiative planning'. It particularly applies to rural development, where the objectives, among many others, are the establishment of growth and service centres and of new agricultural settlements as part of the land redistribution programme. In the second context, the role of planning is to remedy the socially undesirable conditions inherited from the past and to direct development within already existing settlements towards the desired conditions. This second type of planning may be termed 'remedial planning', and is particularly necessary in urban areas where —as will be demonstrated in Section 1.3 and Chapter 3 — the 'African' (Black) sector of the population has until recently been deprived of full citizen status.[1]

In both contexts (initiative and remedial), planning must rely on accurate information on the economy, the regions and the people in question. For initiative planning to take place, detailed information on local natural and human resources — the major determinant of development — is needed. In the case of remedial planning, change must begin with a critical appraisal, based on accurate information, of the current state or condition of the object of change.

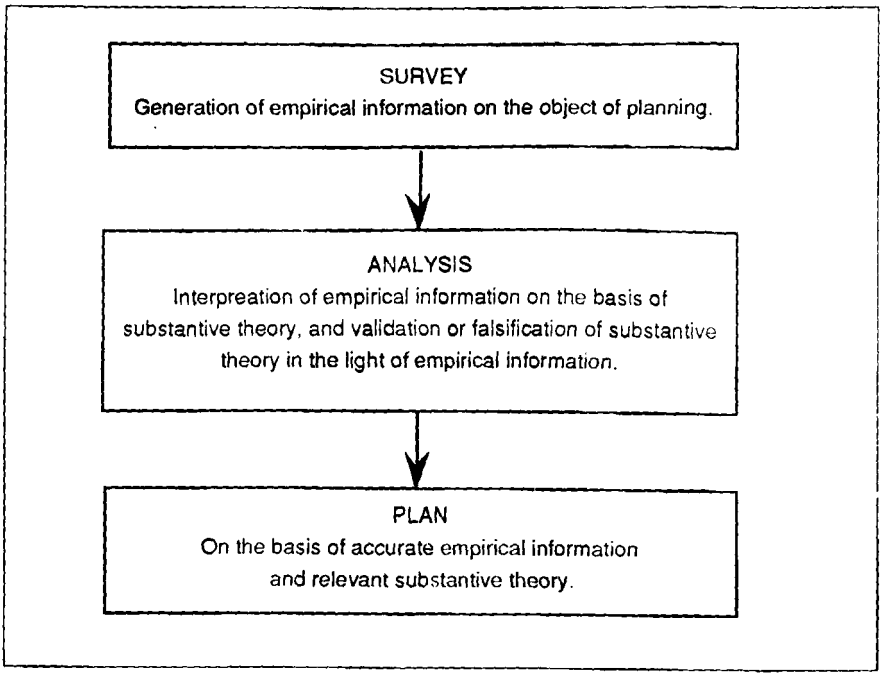
The need for accurate information (data) in planning is of obvious importance. It is emphasized in Geddes' early classic sequence of planning, 'survey——analysis——plan', as well as in the more recent systems approach to planning whose sequence Hall succinctly describes as 'goals——continuous information——projection and simulation of alternative futures——evaluation——choice——continuous monitoring'.[2] Fig. 1.1 illustrates Geddes' sequence of planning and the role played by information generation at the first two stages. The necessary information is shown to be of two types: 'empirical' and 'substantive theoretical'.[3] These two types of information are reflexive in that the former, empirical information, helps

[1] In the context of racially segregative legislation in pre-Independence Zimbabwe (then Rhodesia), races were classified into three categories: 'European'; 'Asian' and 'Coloured'; and 'African'. 'European' referred to descendants of the White colonial settlers from Europe; 'Asian' referred to people of Asian origin, mainly people from India; 'Coloured' referred to people of mixed race; and 'African' referred to indigenous Black people. In terms of socio-economic privileges, the Europeans were at the top, followed by Asians and Coloureds in the middle, and at the bottom were the Africans. For convenience, throughout this study, the term 'African' (clearly misleading in view of the fact that all inhabitants of the African continent should be referred to as Africans) is dropped in favour of the term 'Black'. However, 'Black' as used here does not include people of Asian origin or those of mixed race as it does in countries such as the USA and the UK.

[2] P. Hall, *Urban and Regional Planning* (Harmondsworth, Penguin, 1977), 12–13.

[3] Faludi draws a distinction between 'Theory *of* Planning' or 'Procedural Theory' and 'Theory *in* Planning' or 'Substantive Theory'. On the one hand, procedural theory assumes that there is a logical and recognizable pattern to which the planning process conforms. Consequently, it is concerned with explaining all forms of decision-making and implementation patterns in the planning process. The importance of procedural theory lies in its provision of a rational sequence of stages (procedure) for decision-making and of an organizational framework for plan implementation. On the other hand, substantive theory is concerned with explaining the nature of, and processes characterizing, the social and physical phenomena which constitute the object of planning activity. The importance of substantive theory is that it provides the knowledge on the basis of which some of the decisions regarding plans and their implementation may be taken. See A. Faludi, *Planning Theory* (Oxford, Pergamon, 1973), 1–20.

Figure 1.1: INFORMATION IN PLANNING: THE SURVEY——ANALYSIS——PLAN SEQUENCE



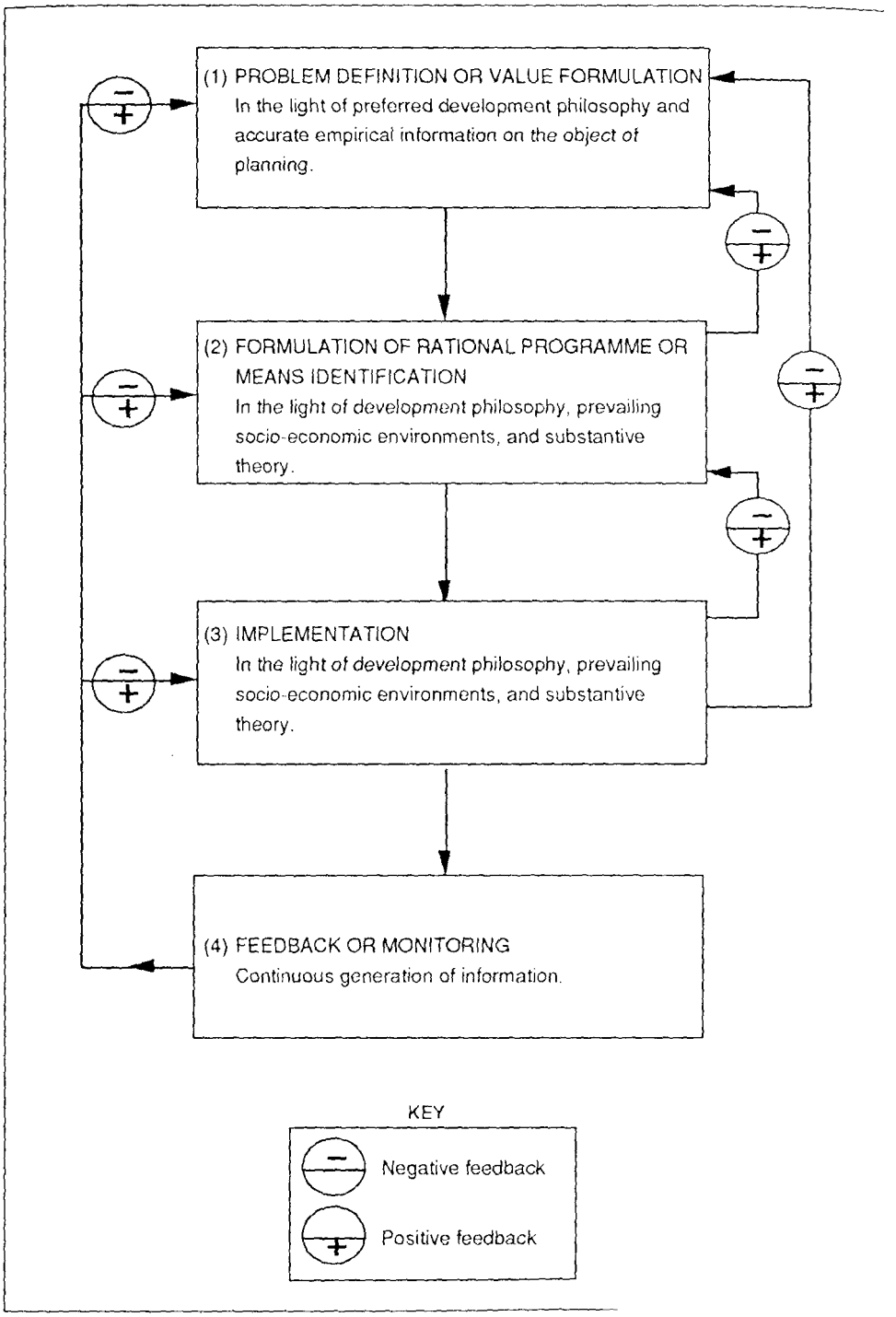
in the validation or falsification of the latter, and in turn theoretical constructs help in the categorization and interpretation of empirical information (or data). Fig. 1.2 illustrates the systems conceptualization of the planning process (procedural theory of planning),[4] again emphasizing the important role of information generation. In essence, the two procedural schemes are similar, with the exception that the systems approach lays more emphasis on the interconnection of the various stages of planning; each stage reflects on the preceding stages through 'information loops' (positive and negative feedback). The end result is a dynamic, continuous process wherein plans are continually reinforced (positive feedback) or modified (negative feedback) in the light of newly-generated information on socio-economic conditions, implementation problems and planning objectives.

Thus the importance of information, or data banks, in both the initiative and remedial planning processes cannot be questioned. Riddell, however, has warned that absence of data should not be used as a justification for delaying action through planning.[5] It is submitted that where problems are urgent, as they frequently are in developing countries, planning must make the best use of whatever information is available. It should, however, be emphasized that planning must endeavour to establish data banks with the aim of both understanding the current state of the systems which are the objects of planning and of establishing substantive theories to guide decision making.

[4] J. B. McLoughlin, *Urban and Regional Planning: A Systems Approach* (London, Faber, 1969); G. A. Chadwick, *A Systems View of Planning* (Oxford, Pergamon, 1971); and Faludi, *Planning Theory*.

[5] R. B. Riddell, *Cambridge Course on Development: Operational Procedures* (Cambridge, Univ. of Cambridge, Dept. of Land Economy, Occasional Paper 22, 1974).

Figure 1.2: INFORMATION IN PLANNING: SYSTEMS VIEW OF THE PLANNING PROCESS



In the light of the importance of information in the planning process, empirical studies in urban and regional planning may broadly be said to have the following aims:

(a) To solve real world problems in the context of given objectives. Sometimes this is done in the context of substantive theories as bases for decision making or plan formulation (applied studies). Problem solving, or applied studies, however, need not necessarily be always in the context of given theories, the reason being that not all social science phenomena can be explained by recourse to consistent theories.
(b) To provide information which will contribute towards the formulation of substantive theories whose function is to guide plan formulation (pure or theoretical studies).

In Zimbabwe, the study of suburban service centres from a planning perspective is a relatively new phenomenon. In fact, the only information available on the subject is the product of one researcher, Michael Smout, and relates only to Harare.[6] In most of his work Smout concentrated on those service centres located in the Low-Density Residential Areas (LDRAs) or the former 'European Areas' (which included areas occupied by Asians and Coloureds), so information on service centres and shopping-trip patterns in High-Density Residential Areas (HDRAs), that is the former 'African Townships', is badly needed.[7]

The purpose of this study, therefore, is to provide information on the following:

(a) Current structure of HDRA service centres; structure being defined as 'function size hierarchy and spatial distribution of all centres within the city region'.[8]
(b) Shopping behaviour of HDRA inhabitants through analysis of the spatial distribution of their shopping trips for selected goods.
(c) Determinants of the observed trip distributions and service centre needs as perceived by HDRA inhabitants.

In line with the distinction between initiative planning and remedial planning made earlier, it is envisaged that the information provided by this study will be used for planning suburban service centres in both new and existing HDRAs. It is also hoped that retail entrepreneurs in Harare will benefit from the study, particularly in relation to their decisions on the location of retail outlets.

Bearing in mind the distinction between applied and pure research drawn earlier, this study is essentially an applied one. However, because the study is conducted in the context of some substantive theoretical constructs — to be discussed in Chapter 2 — it is also necessary for it to reflect the validity of these theoretical constructs, particularly central place theory.[9]

[6] The first study of suburban service centres was in 1971: M. A. H. Smout, 'Service Centres in Greater Salisbury, Rhodesia' (University of London, unpubl. Ph.D. thesis, 1971). Smout later wrote numerous papers based on this and his other thesis, 'Commercial Growth and Consumer Behaviour in Suburban Salisbury, Rhodesia' (Univ. of Newcastle upon Tyne, unpubl. MA thesis, 1974).

[7] The origin of 'European Areas' and 'African Townships' will become clear in Chapter 3 where the racialistic political economy of pre-Independence Zimbabwe is discussed.

[8] This definition is based on classical central place theory and will be clarified in Chapter 2.

[9] This is in conformity with Bailey's observation that 'although it is customary to distinguish between pure and applied research in both the physical and social sciences, these two categories are not mutually exclusive in the sense that any study that is pure cannot have practical applications (and vice versa). Some researchers feel that the ultimate goal is a study that is helpful in solving social problems and at the same time makes a valuable contribution to the theoretical social-science literature.' K. D. Bailey, *Methods of Social Research* (Chicago, The Free Press, 1982), 23.

1.2 URBAN AND REGIONAL PLANNING IN ZIMBABWE

Zimbabwe became legally independent on 18 April 1980. This date must be considered as a crucial turning-point in national development planning philosophy. Before Independence, land legislation formed the cornerstone of the racially segregative political economy of the country, then Rhodesia. In both rural and urban areas planning was carried out on the basis of 'separate development', the term used in place of 'apartheid' by the Rhodesian settler regimes. This meant physical separation, on racial grounds, of settlements in rural areas and of residential and commercial land in urban areas.

The major legal framework within which other supportive segregation laws were enacted during the ninety years of White settler domination was the Land Apportionment Act of 1930. The Act was passed to implement the recommendations of the Morris Carter Commission appointed in 1925 to

> inquire into and report on the expediency and practicability of setting apart defined areas outside the boundaries of the Native Reserve (a) within which Natives only shall be permitted to acquire ownership of or interest in land, and (b) within which only Europeans shall be permitted to acquire ownership of or interest in land.[10]

The most important recommendation of the Commission, implemented by the Land Apportionment Act, was the establishment of the principle of 'possessory segregation' through apportionment of the country into 'European' and 'Native' areas. The Land Apportionment Act was amended in 1936 and 1937, consolidated in 1941, again amended in 1945 and 1950, and finally replaced by the Land Tenure Act of 1969. However, these various amendments and consolidations were merely incremental strictures in support of the 'possessory segregation' principle.[11]

In urban areas, various enactments were designed, from quite an early stage, to regulate both the influx and civic participation of Blacks. The first of these was the Municipal and Town Management Ordinance of 1894 which gave local authorities power to set aside land for 'native occupation and to control its habitation'. The same powers were again provided for in the 1906 Urban Locations Ordinance, which included an additional requirement that 'natives' living in 'locations' must be employed in those areas. These segregative provisions were more firmly enshrined in the 1930 Land Apportionment Act referred to above. Another Act, modelled on South African legislation, the Natives (Urban Areas) Accommodation and Registration Act, 1946, made it particularly difficult for Blacks to visit or live in urban areas with freedom of movement and the dignity of security. It provided for the operation, by urban local authorities, of pass laws which sought to implement the principle that only employed Blacks should reside in the urban areas in which they were employed.[12]

The general effect of these racial strictures was the engendering of an atmosphere of insecurity among urban Blacks. They were forced to regard their presence in urban areas as only temporary, and the 'Tribal Trust Lands' (TTLs) as their real homes. In fact, the 1969 Land Tenure Act made it clear that Blacks should expect only 'limited civic status' in their urban locations, by this time known as 'African Townships'.

[10] Southern Rhodesia, *Land Commission, 1925* (Salisbury, Govt. Printer, 1925 [CSR–3, 1926]), para. 1.

[11] See N. D. Mutizwa-Mangiza, 'A Policy Review of Community Development with Special Reference to Land within the Tribal Trust Lands in Zimbabwe' (Cambridge, University of Cambridge, unpubl. M.Phil. thesis, 1980), 109 for a list of the significant land legislation in pre-Independence Zimbabwe.

[12] For a summary of the relevant legislation see E. Gargett, *The Administration of Transition: African Urban Settlement in Rhodesia* (Gwelo, Mambo Press, 1977), 9.

Because land segregation formed the cornerstone of the racialist policies of the Rhodesian settler regimes, its abrogation became one of the major concerns of nationalist politics and, eventually, of the liberation struggle. Since physical planning in urban areas is mainly concerned with the rational allocation and use of land, it must be obvious that the coming of independence to Zimbabwe has meant a major change in the ideology and development philosophy underlying the urban planning process.

The new development philosophy is succinctly put as 'Growth with Equity' in a government policy document bearing the same title.[13] As far as urban planning is concerned, this new philosophy involves redressing the racially-based imbalances inherited from the past by equalizing opportunities in terms of access to social facilities and the infrastructure, and also by improving living conditions in HDRAs. It is politically obvious that realization of the equity objective in both urban and rural areas must involve change from the 'negative racial discrimination' of the past to a reverse process of 'positive discrimination' in favour of the socio-economically deprived majority, who happen to be Black.

One of the expectations on which the present study is based is that urban planning policy must now aim at establishing a secure environment for urban Blacks in which the HDRAs, where the majority of them live, are seen as permanent homes rather than as merely temporary ones. To this end, extent HDRAs together with their service centres (the subject of this study) must be improved through vigorous remedial planning, and any new HDRAs developed through informed initiative planning

1.3 Organization of the Study

Chapter 2 discusses three major conceptual frameworks (classical central place theory, the cognitive-behavioural approach and the structural approach) which have influenced the study of suburban service centres, and provides a rationale for their conjunctive use in this study.

Chapter 3 provides relevant background information on the area of study, Harare. It emphasizes the importance of socio-economic and political structures in the city, and outlines (in the light of the new development philosophy of 'Growth with Equity') the major areas of perceived imbalance to which this new philosophy is addressing itself.

Chapter 4 is concerned with the structure of suburban service centres in the whole city, including the contiguous municipality of Chitungwiza.[14] Classical central place theory provides the conceptual framework for the chapter. First, all the service centres are identified, and their locations plotted. Then their functions are recorded and, on the basis of this, a rank–size hierarchy of the whole city is produced. The chapter also discusses changes that have taken place in the functional sizes of LDRA service centres since Smout's last study of 1974.[15]

Chapter 5, situated (in terms of conceptual framework) at the interface between central place theory and the cognitive-behavioural approach, seeks to establish shopping-trip patterns with respect to a sample list of goods. The aim of this chapter is to provide information on which a service centre hierarchy appropriate for HDRAs in Harare may be derived.

Chapter 6, cast within the cognitive-behavioural framework, investigates the factors underlying shopping-trip behaviour among HDRA inhabitants. The chapter also seeks to

[13] Zimbabwe, *Growth with Equity: An Economic Policy Statement* (Salisbury, Ministry of Economic Planning and Development, 1981).

[14] Chitungwiza has had independent municipal status since 1981. The Chitungwiza Town Council administers three HDRAs: Seke, Zengeza and St Mary's (Chaminuka). See Fig. 3.5 for the location of Chitungwiza.

[15] Smout, 'Commercial Growth and Consumer Behaviour in Suburban Salisbury, Rhodesia'.

establish service centre needs in HDRAs as perceived by the people living in them.[16] The data for both Chapters 5 and 6 are derived from a postal questionnaire sampling survey of five selected HDRAs.

Chapter 7 summarizes the major findings of the study which have special relevance to the locational planning and physical development of suburban service centres. A possible locational and development strategy is recommended, on the basis of the evidence of the study, and avenues for further research are also indicated.

2
CONCEPTUAL FRAMEWORK

2.1 INTRODUCTION

The study of urban service centres and shopping behaviour has been conducted mainly in the context of five theoretical approaches:

(1) Classical central place theory, originating from the work of Christaller;[1]
(2) the cognitive-behavioural approach, mainly associated with the work of Garner and Downs;[2]
(3) the structural approach, exemplified by the work of Davies and Pred;[3]
(4) general interaction theory, derived from the gravity model, and heavily influenced by the work of Reilly, Huff, and Lakshmanan and Hansen;[4] and
(5) rent theory, the most outstanding being the work of Alonso.[5]

However, as pointed out by Davies, most locational studies of service centres and of shopping-trip patterns have been conducted, explicitly or implicitly, within the framework of central place theory.[6] The reason behind this is that of the five theoretical approaches listed above, only central place theory is concerned with overall strategy for the location of service centres over the whole urban landscape; the rest of the approaches are concerned with either the behaviour of consumers and entrepreneurs or the internal characteristics of service centres where the overall relative location of centres is already established. This is also the reason why central place theory is the most relevant conceptual framework for this study, which is concerned with the overall locational relationships of service centres in Harare.

While the five theoretical approaches outlined above may appear to be unrelated and conflicting, looked at from a problem-solving perspective (which is the perspective of planning) it is both possible and helpful to regard them as complementary. The idea of complementarity is particularly arguable in the case of three of the approaches: central place theory, the cognitive-behavioural approach and the structural approach. The argument for

[1] W. Christaller, *Die Zentralen Orte in Süddeutschland* (Jena, Gustav Fischer Verlag, 1933), translated by C. Baskin as *Central Places in Southern Germany* (Englewood Cliffs, Prentice-Hall, 1966).

[2] B. J. Garner, 'The analysis of qualitative data in urban geography: The example of shop quality', *Proceedings of the Institute of British Geographers' Urban Group Conference* (Salford, Salford Univ., 1968); R. M. Downs, 'The cognitive structure of an urban shopping centre', *Environment and Behaviour* (1970), II, 13–39; N. N. Patricios, *Consumer Preferences and Attitudes in Spatial Choice Behaviour and Implications for the Planning and Designing of Convenience Good Shopping Areas* (Johannesburg, Univ. of the Witwatersrand, Dept. of Town and Regional Planning, Occasional Paper 1, 1975).

[3] R. L. Davies, 'Structural models of retail distribution', *Transactions of the Institute of British Geographers* (1972), LVII, 59–82; R. L. Davies, 'Effects of consumer income differences on business provisions of small shopping centres', *Urban Studies* (1968), V, 144–64; A. Pred, 'Business thoroughfares as expressions of urban Negro culture', *Economic Geography* (1963), XXXIX, 217–33.

[4] W. Reilly, *The Law of Retail Gravitation* (New York, Knickerbocker Press, 1931); D. L. Huff, 'A probability analysis of shopping centre trade areas', *Land Economics* (1963), LIII, 81–9; T. R. Lakshmanan and W. G. Hansen, 'A retail market potential model', *Journal of the American Institute of Planners* (1965), XXXI, 134–43.

[5] W. Alonso, *Location and Land Use: Towards a General Theory of Land Rent* (Cambridge MA, Harvard Univ. Press, 1964).

[6] R. L. Davies, *Marketing Geography: With Special Reference to Retailing* (London, Methuen, 1976), 29, 31.

linking these three can be understood by reference to the two levels of planning problems, that is 'value formulation' and 'means identification',[7] and also by reference to the 'metaphysical principle of the logical separation of "facts" and "values" '.[8]

The applications and limitations of all the theoretical approaches listed earlier have been thoroughly analysed elsewhere, notably by Davies[9] and by the British National Economic Development Office.[10] Consequently, this chapter focuses on the following: firstly, discussion of central place theory, the cognitive-behavioural approach and the structural approach with the view of highlighting the manner in which they are applied in this study; and secondly, explanation of why these three theoretical approaches should, in the context of planning problems, be seen as complementary rather than conflicting.

2.2 Central Place Theory

Christaller's *Central Places in Southern Germany*, published in 1933, marked the beginning of the study of settlements within a more theoretical framework.[11] While the pre-1933 approach to the study of settlements (settlement geography in particular) had been concerned with the physical site of towns, their origins and functions, classifications on the basis of these characteristics, and the delimitation of town and port hinterlands, Christaller's approach, while incorporating some of the above traditional aspects, sought to explain the relative rather than the absolute location of settlements. His theory linked relative location and size of urban agglomerations to an observable spatial order which could be rationally explained.

As a platform basis to Christaller's reasoning, seven assumptions may be distinguished:

(1) Human settlements are distributed on an unbounded plain on which there is equal ease of transport in all directions; there is only one type of transport.
(2) Population is evenly distributed over the plain.
(3) The plain is characterized by an invariant level of consumer disposable income and consumer demand for goods. This and the first two assumptions are commonly referred to as the 'isotropic plain assumptions'.
(4) Central places or settlements are located throughout the plain for the purpose of providing goods, service and administrative functions.
(5) Consumers will visit the nearest central place that provides the required function (goods or service), and by so doing they minimize the distance to be travelled; thus consumers are assumed to behave in an economically rational manner.
(6) Suppliers of functions are also individuals of economic rationality. They attempt to maximize their profits by locating their businesses on the plain in such a way as to obtain the largest possible market. Since consumers visit the nearest centre (assumption 5),

[7] P. Davidoff and A. T. Reiner, 'A choice theory of planning', in A. Faludi (ed.), *A Reader in Planning Theory* (Oxford, Pergamon, 1973), 11–39.

[8] A. Giddens, *Studies in Social and Political Theory* (London, Hutchinson, 1979), 89.

[9] Davies, *Marketing Geography*.

[10] National Economic Development Office, *Urban Models in Shopping Studies* (London, NEDO, 1970).

[11] Beavon has, however, argued that the 'theory of tertiary activity' (an extension of Christaller's model by Berry and Garrison) pre-dates Christaller's work by several centuries. He argues that some aspects of central place theory can be traced back to the work of Machiavelli (1531), Kohl (1850), Lalanne (1863), and to the more recent works of Galpin (1915), Gradman (1916), Kolb (1923), Kolb and Poulson (1933), and Kolb and Brunner (1946). For a complete discussion of this argument, see K. S. O. Beavon, *Christaller's Central Place Theory: Reviewed, Revealed, Revised* (Johannesburg, Univ. of the Witwatersrand, Dept. of Geography and Environmental Studies, Environmental Studies Occasional Paper 15, 1975), and J. A. Dawson, 'Some early theories of settlement location and size', *Journal of the Town Planning Institute* (1969), LV, 444–8.

suppliers will locate their businesses as far away from one another as possible so as to maximize their market areas.

(7) Suppliers of functions will locate their businesses as far away from each other as possible only to the extent that no consumer on the plain is further from a function than he is prepared to travel to obtain it.

Two major principles underlie the operation of the model: the 'range of a good' and the 'threshold of a good'. Consumer demand for any given good is a function of price (Fig. 2.1). Since Christaller assumed that consumer disposable income is invariant (assumption 3), a consumer who travels to a central place has less money available to buy a good than one living in the central place because of the transport costs incurred. The result of this frictional effect of distance, realized through transport costs, is that demand decreases proportionally with distance from the central place (Fig. 2.2). The 'range' of the good is the distance at which the amount of disposable income available for purchasing the good is all consumed by transport costs (*r* in Fig. 2.2) or the distance from the supplier at which the consumer becomes unwilling, or unable, to travel to purchase the good. This is also the radius of the maximum potential size of the market area of the good in question (Fig. 2.3).

Figure 2.1: DEMAND AND PRICE RELATIONSHIP

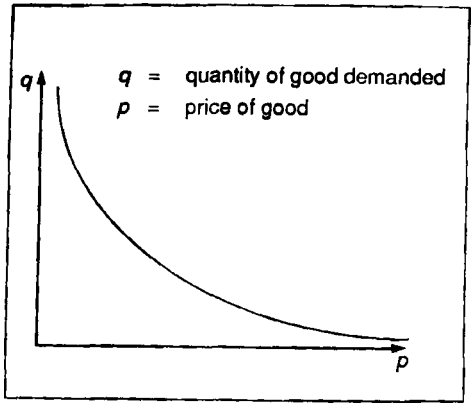
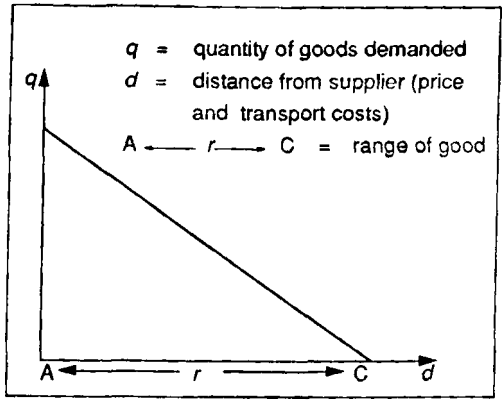


Figure 2.2: DEMAND AND DISTANCE RELATIONSHIP



The 'threshold of a good' refers to the minimum demand or size of market necessary for the profitable sale of the good. Because consumers visit the nearest centre at which a good is available (assumption 5), the threshold can be illustrated on a map as a circle representing the minimum size of market area necessary for profitable operation (D in Fig. 2.3).

As demand for most types of good is usually sufficient for more than one supplier, the maximum number of suppliers that can profitably locate their businesses on the plain to sell any given good is determined by the threshold value. Thus with a good of a threshold value of 100 units of demand per month, and a total market on the plain of 100,000 potential units, a maximum of 1,000 suppliers will be able to operate. A further locational condition is that suppliers must locate their businesses as far away from their competitors as possible to ensure that their market area gives them at least the threshold value (assumption 6). This is best achieved by suppliers evenly spacing themselves over the plain in a triangular lattice pattern so that each one is equidistant from his nearest six competitors (Fig. 2.4). If all the market areas

Figure 2.3: MINIMUM AND MAXIMUM MARKET AREAS

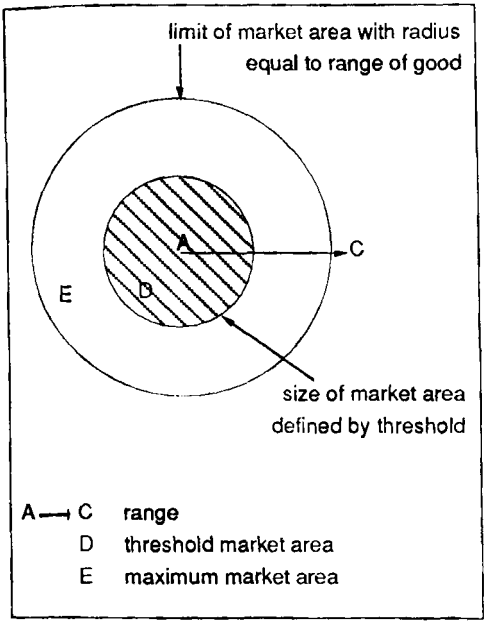
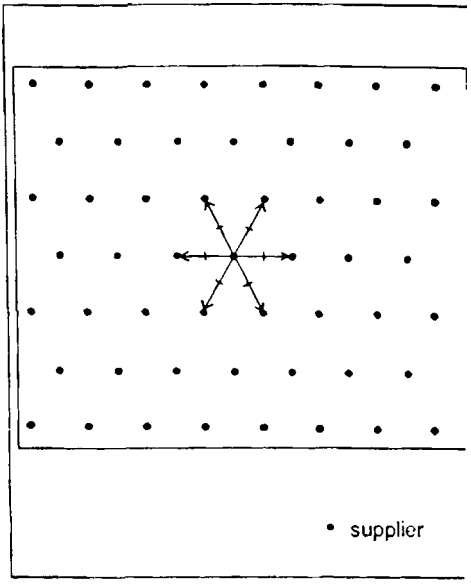


Figure 2.4: EVENLY SPACED TRIANGULAR LATTICE PATTERN OF SUPPLIERS



of evenly spaced suppliers are portrayed on a map as circles (Fig. 2.5), some customers rema unserved (shaded portions in Fig. 2.5). Consequently, the circular market areas have to overl (Fig. 2.6). Because consumers in the zones of overlap will visit the nearest centres (assumpti 5), the overlap zones must be divided through the middle into two halves, producing hexagon market areas. This particular arrangement, referred to by Christaller as the 'marketi principle', minimizes the sum of distances travelled by consumers to purchase a good, wh at the same time ensuring that there are the maximum number of suppliers selling the good question.

Figure 2.5 NON-OVERLAPPING MARKET AREAS

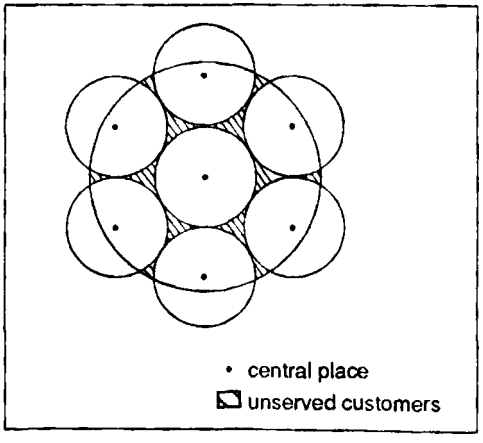
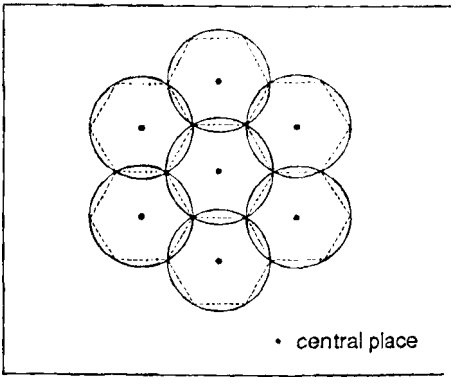


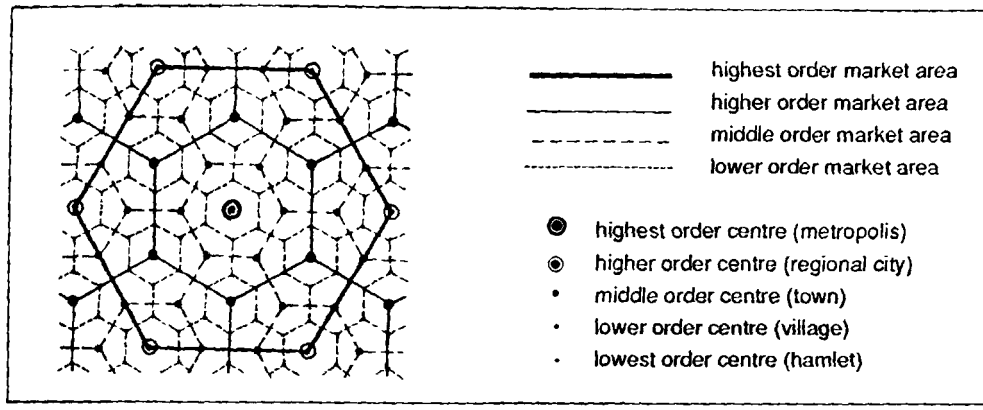
Figure 2.6 OVERLAPPING MARKET AREAS AND EMERGENCE OF HEXAGONAL MARKET AREAS



Christaller further reasoned that when all goods are considered, goods of similar thresholds will be sold in the same central places. 'Low order goods', that is those with low thresholds (also referred to as 'convenience goods' or 'non-durable goods') are sold in more central places (low order centres) than 'high order goods') which are offered in fewer 'high order centres'. Higher order centres also offer all lower order goods and services in addition to the high order ones. Fig. 2.7 is an illustration of the resulting locational arrangement of central places, the $k = 3$ marketing principle'. In this arrangement, central places are related hierarchically, with different order centres being distinguished by

(1) the type and number of functions provided;
(2) the market-area size; and
(3) the total population, largely determined by employment within centres.

Figure 2.7: MARKETING PRINCIPLE: ORDER OF CENTRES AND THEIR ASSOCIATED MARKET AREAS ($k = 3$)



The above summary of the operational principles of Christaller's model refers to the marketing principle, which is the one of most relevance to this study. However, it should be noted that Christaller also worked out two other locational patterns, the '$k = 4$ traffic principle' (the most efficient pattern for traffic movement) and the '$k = 7$ administrative principle' (the most efficient pattern for the administration of central places).

Several modifications of and additions to the original central place model by Christaller have been made, mainly for the purpose of bringing them closer to reality.[12] Notable among these modifications are those firstly by Lösch, secondly by Isard and thirdly by Berry and Garrison.[13] For the purpose of this study, it suffices only to note that one of Lösch's major observations was that the rank-size distribution of central places tends to take the form of a continuum rather than the stepped hierarchy suggested by Christaller (Fig. 2.8). Further, both Lösch and Isard similarly observed that for any given good the market areas, in reality, take the shape of irregular polygons and not the neat hexagons suggested by Christaller (Fig. 2.9).

[12] H. Carter, *The Study of Urban Geography* (London, Edward Arnold, 1976), ch. 7.

[13] A. Lösch, *The Economics of Location* (New Haven, Yale Univ. Press, 1954); W. Isard, *Location and Space Economy* (Cambridge MA, MIT Press, 1956); B. J. L. Berry and W. L. Garrison, 'Functional bases of the central place hierarchy', *Economic Geography* (1958), XXXIV, 145–54.

Figure 2.8: CONTINUOUS AND STEPPED CITY-SIZE HIERARCHIES

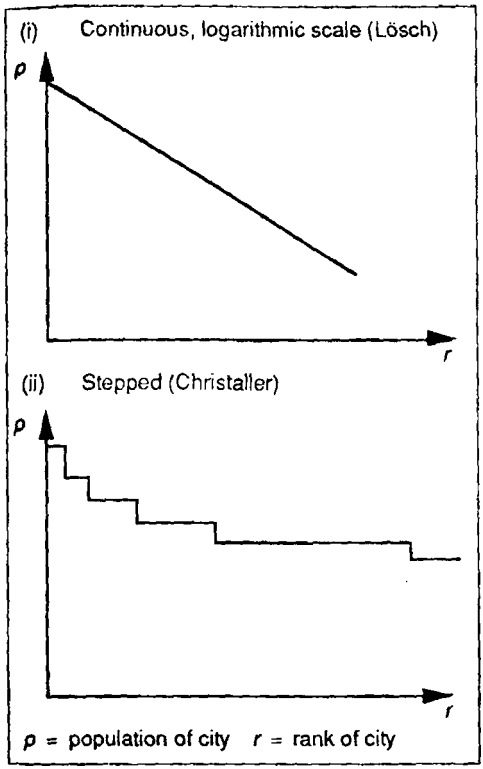
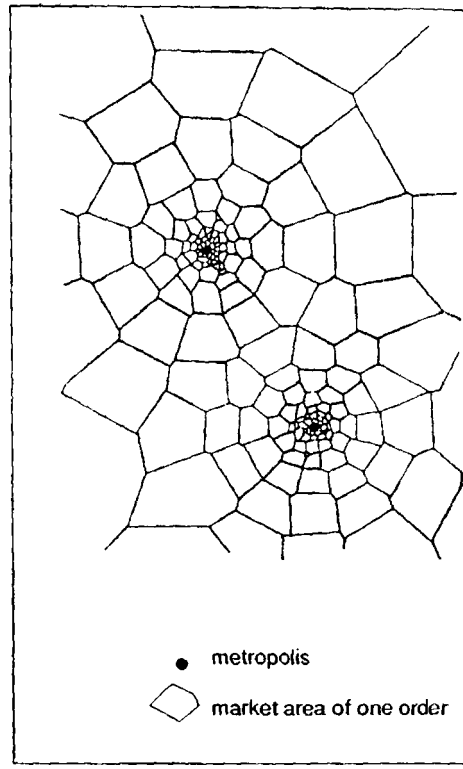


Figure 2.9 ISARD'S MODIFICATIC CHRISTALLER'S MODE



Far more relevant to this study are Berry and Garrison's modifications.[14] Followin extensive case study applications within the USA, they found that the structural regularitie of the hierarchy proposed by Christaller occur in reality despite the absence of those isotropi conditions originally postulated in the model. The hierarchy which they observed takes th form of a five-tier structure: (1) the hamlet, (2) the village, (3) the town, (4) the city, and (5 the metropolis or regional capital. However, Berry and Garrison did not find clear evidenc for the existence of distinct nested patterns of trade areas, rather, the market areas of individu centres tended to overlap in a less systematic fashion.

More significantly from the point of view of the present study, Berry and Garrison als demonstrated that hierarchies of centres may be observed inside individual urban areas particularly metropolitan areas. These urban hierarchies comprise, essentially, a set o compact or nucleated shopping centres typified by the following five-tier structure:

[14] Berry and Garrison, 'Functional bases of the central place hierarchy'. See also: B. J. L. Berry and W. L Garrison, 'Recent developments of central place theory', *Papers and Proceedings of the Regional Science Associatio.* (1958), IV, 107–20; B. J. L. Berry and W. L. Garrison, 'A note on central place theory and the range of good', *Economi Geography* (1958), XXXIV, 304–11; and B. J. L. Berry, *Geography of Market Centres and Retail Distributio.* (Englewood Cliffs, Prentice-Hall, 1967).

(1) isolated corner stores;
(2) neighbourhood shopping centres;
(3) community or district shopping centres;
(4) regional shopping centres; and
(5) the central business district (CBD).

Having extended the hierarchy principle to explain the internal characteristics of urban areas, Berry and Garrison went on to suggest a theory of 'tertiary activity' with some aspects of the central place model as part of it. The theory of tertiary activity is based on two concepts:

(1) the idea of 'threshold', defined earlier as the minimum level of demand necessary to support the profitable operation of a business activity; and
(2) the 'range' of a good, that is the maximum distance customers will be prepared to travel to the supplier, or the spatial extent of the good's market area.

The interrelationship between these two aspects exhibits enough regularity to lead to a hierarchical differentiation of centres, though not to a formal arrangement of hexagonal market areas. The spacing of centres in this case differs from the pattern envisaged by Christaller because of a number of factors characteristic of urban areas: greater mobility of urban residents, unequal ease of transport and uneven population densities within cities. All these factors lead to a situation where certain centres may establish spatial monopolies, that is, earning disproportionate profits while others become deficient in profitability. Thus in extending Christaller's central place model into the intra-urban context, Berry and Garrison also suggested that its interpretation should be less deterministic. Emphasis must be on the structure of centres rather than the symmetry or pattern of trade areas. It is this more flexible framework which has been applied in recent empirical work on urban service centres.[15]

The major criticisms of Christaller's central place theory have revolved around the following:

(1) the non-dynamic nature of the theory;
(2) its internal logical inconsistencies;
(3) its unrealistic distributional assumptions; and
(4) the effect of historical changes in the functions of central places since the original formulation of the theory, and also changes in the organization of retail outlets.[16]

A major weakness of classical central place theory in so far as application to urban planning is concerned is that it is rigid and deterministic, essentially setting out to describe a static set of locational relationships. Christaller discussed some dynamic factors such as population change and technological progress, but did not, however, clearly state how a central place system would evolve with these and other changing circumstances.

The logical inconsistencies in the classical model arise out of the two assumptions in respect of population distribution and ease of transport. Christaller assumes an even distribution of population over the plain, but the resulting landscape is clearly characterized by an uneven

[15] Davies, *Marketing Geography*, 27.

[16] Carter, *The Study of Urban Geography*, 118–41; and B. Garner, 'Models of urban geography and settlement location', in R. J. Chorley and P. Haggett (eds.), *Socio-Economic Models in Geography* (London, Methuen, 1975), 303–55.

distribution of population. Market or trade areas of similar size which started with equal numbers of people within them at the beginning of the analysis contain different-sized populations at the end. It is obvious that the resulting uneven distribution of population must modify the location of central places' functions. Again, although transport is assumed to be equally easy in all directions, Christaller's $k = 4$ network has the effect of modifying transport costs and ease of movement over the plain.

An important dimension of the criticism of classical central place theory is to do with the abstract nature of its assumptions. The wide gap which separates them from reality undermines their effective value. Without the isotropic plain, for example, the neat and regular pattern of hexagonal market areas will not appear, as suggested in Lösch's and Isard's modifications. In the real world, physical barriers lead to linear transport routes and non-hexagonal boundaries of central place market areas. Again, patterns of land ownership may offset transport routes and affect the accessibility of central places. The often quoted example of tenurial effects on the location of transport routes is the 'township and range system' in the mid-west of the USA which led to the emergence of a grid system of roads.[17]

The model assumes that central places exist for the marketing of goods and provision of services. It excludes some of the vital functions of towns which generate employment, the most important of which is the manufacturing industry. Above all, the location of manufacturing industry is unlikely to accord with Christaller's assumption that those central places with industrial firms requiring large markets also contain establishments of all other industrial concerns requiring smaller markets. Christaller's theory also implies that functions provided by central places exist to serve households only. However, since the 1930s a whole set of services has evolved to serve industry rather than households, for example, research firms and consultancies. As the distribution of such services is based on the distribution of industry, which is not even, their market is usually concentrated in a few large central places rather than continuously distributed over space. In this case, the predominant interaction between consumers and suppliers is inter-city rather than between city and hinterland.

The set of assumptions in respect of the behaviour of suppliers and consumers has also been criticized as unrealistic and simplistic. The organization of retail outlets has changed a great deal, especially with the introduction of multiple stores.[18] A multiple store may be able to support the running of a few of its outlets at a loss for a short period hoping that eventually a threshold market will be realized. Because larger organizations can afford this kind of speculation and risk, the location of their businesses may not conform to Christaller's spatial hierarchy. In addition, suppliers attempt to lure customers by offering special prices, attractive variety and quality of goods, and other services such as credit and cash discount. The assumption that consumers will always minimize shopping-trip distances does not hold in some instances: for example, consumers with a high level of mobility do not always visit their nearest store. This is particularly the case in urban areas. The convenience of shopping under one roof is also a factor assuming greater influence with the introduction of hypermarkets: the multiple-purpose shopping which they offer results in the low order centres being by-passed for low order goods. It can therefore be seen that some suppliers may establish spatial monopolies, leading not to a nested hierarchy of market areas, but to an overlapping pattern, and that competition involves many other non-spatial aspects.

[17] P. Haggett, A. D. Cliff and A. Frey, *Locational Analysis in Human Geography* (London, Edward Arnold, 1977), 99.

[18] Davies, *Marketing Geography*, 51–2.

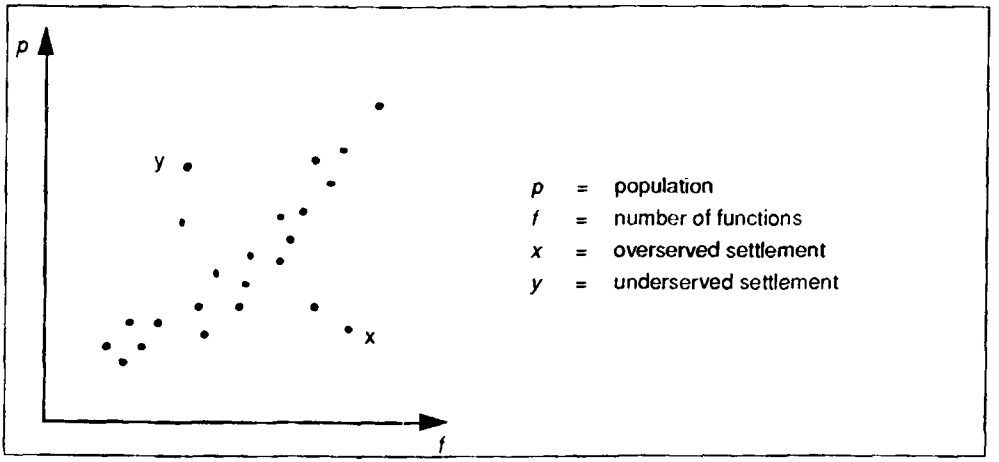
The behaviour of both suppliers and consumers is also determined by the information they possess. It is particularly true that retailers are slow to react to changes in population distribution, and this results in underserved areas. This applies in the case of new commuter settlements which may exist for a long time without proper retail facilities. Thus the economically rational type of man assumed in classical central place theory, *homo economicus*, is hard to come by in the real world. It is this failure of classical theory to take adequate account of human behaviour which has encouraged the development and use of the more flexible cognitive-behavioural framework of analysis which will be discussed later.

Assessing the limitations and applications of classical central place theory, Davies regrets the negative type of criticism which 'rejects outright the appropriateness of any high degree of abstraction for dealing with the real world'.[19] Davies argues that such criticism seems to have been unnecessarily severe, particularly regarding the assumptions made about underlying isotropic conditions and the rational economic behaviour of consumers. Because the model is normative and deductive rather than empirical and inductive, it has to make these simplifying assumptions. The important feature is that they are stated as assumptions only, without pretending that they are identifiable in the real world.

As opposed to all the limitations discussed above, the broader ideas of the model have proved very useful as an organizational framework within which to analyse the systematic regularities in settlements and shopping centres. The concept of hierarchy, in particular, has been widely applied. In fact, many studies have utilized the concept with little conscious reference to the theory or model from which it originates.[20]

The main purpose to which the hierarchy concept has been used, and will be used in the present study, is the provision of a a general framework for the classification of centres on the basis of functional importance. This enables a more systematic comparison of individual service centres within the classification or hierarchy. It also becomes possible to identify underserved and overserved areas in the hierarchy, a notion comparable to residual analysis in regression models. Fig. 2.10 illustrates this: it shows a hierarchy of centres in which centre *x* is overserved for a number of reasons, one of which may be that it is a resort town; and centre

Figure 2.10 OVERSERVED AND UNDERSERVED AREAS



[19] Ibid., 206.

[20] Ibid., 29.

y is underserved also for a number of reasons, one of which may be the lack of spatial c locational planning policy. Thus the hierarchy concept may be used, firstly to describe th actual state of a system of service centres or settlements, and secondly, to prescribe an optimur state which planning policy must aim to achieve. In the UK, the concept of hierarchy is in fac the main organizational principle in the planning of retail provisions as well as educationa medical and other welfare service facilities.[21] In addition to the hierarchy concept, th 'threshold' and 'range' concepts have also been used widely in analysing patterns of consume behaviour, particularly shopping trips for the purchase of goods of different orders.

2.3 THE COGNITIVE-BEHAVIOURAL APPROACH

Classical central place theory makes some important assumptions in respect of consumer a well as entrepreneurial behaviour. Consumers are assumed to minimize their shopping-tri distances, that is, they will visit the nearest shop for any type of good.

The major question addressed in connection with the consumer behaviour part of classica central place theory is whether there is sufficient evidence from the macro-shopping-tri patterns of the population to establish a pattern of systematic use at the various levels of hierarchy of centres. Most traditional work concerned with this question has aimed a describing the overall numbers, distance and directions of a alternative kinds of shopping trip the alternative trips being generally distinguished as (a) convenience shopping, (b) comparise shopping, and (c) speciality shopping, or simply trips for 'convenience goods' versus 'durabl goods'. Although this testing of the assumption of consumer economic rationality is essentiall part of classical theory, it may in fact be regarded as the starting point of, or link with, the mor flexible cognitive-behavioural conceptual framework.

Many studies along the above-mentioned lines have identified some difficulties in th application of classical central place theory. Firstly, in the case of food shopping there ar instances where consumers do not always visit the nearest centre in the manner postulated b central place theory. Secondly, and linked to the point above, consumers do not always vis that order of centres for which a good or service is deemed to be most typically available. Th variability in shopping for the same order of goods and services, which tends to be mor conspicuous within urban areas, has led many researchers to be critical of central place theor as a basis for explaining the broader aspects of intra-urban consumer behaviour, thu emphasizing the need for an overall cognitive-behavioural conceptual framework which take adequate account of the whole consumer decision-making process.[22]

Other important factors influencing shopping trips, in addition to the locational influence include:

(1) Comparative buying, that is, the opportunity to select from a range of like kinds of good in shop surroundings of varying congeniality.
(2) Preferred quality of goods and service.
(3) Convenience of shopping under one roof.
(4) Pleasant shopping environment free from both customer overcrowding and traff congestion.

[21] Ibid. See also K. Szumeluk, *Central Place Theory: Its Role in Planning with Particular Reference to Retaili* (London, Centre for Environmental Studies, Working Paper 9, 1967).

[22] B. J. Garner, 'Towards a better understanding of shopping patterns', in Nottingham Univ., Dept. of Geograp (ed.), *Geographical Essays in Honour of K. C. Edwards* (Nottingham, Nottingham Univ., 1970). See also R. Golledge, 'Conceptualising the market decision process', *Journal of Regional Science* (1967), VII, 239–58.

(5) Availability of price incentives such as sales, credit and cash discount facilities.
(6) The recreational aspects of shopping trips, that is, the opportunity to combine shopping with recreation and other forms of relaxation or entertainment.

As Davies comments, it may be more meaningful to interpret the factors underlying shopping behaviour in terms of 'satisficer criteria', a notion which is reconcilable with classical central place theory as consumers will always be seen to visit the nearest centre at which a required level of satisfaction may be achieved.[23] Thus this shift of focus, from testing the consumer economic rationality assumption of classical theory to explaining the variability of consumer shopping behaviour, also involves a shift of emphasis from the spatial or locational to the more aspatial determinants of shopping behaviour.

The cognitive-behavioural approach lays emphasis on perception or individual space preference patterns as determined by all the spatial and aspatial, objective and subjective factors outlined above.[24] The research strategy to be adopted in any study cast within the cognitive-behavioural framework is likely to be determined by factors peculiar to the environment of the study area, and on the basis of this, different researchers have formulated different research strategies.[25]

In utilizing the cognitive-behavioural approach, the present study seeks, firstly, to investigate consumer shopping-trip patterns along the consumer behaviour lines of classical theory, and, secondly, to explain the variations in the observed pattern of shopping behaviour on thebasis of aspatial and subjective criteria.

A problem associated with the behavioural approach is the diversity of research strategies and the sometimes idiosyncratic nature of individual studies. This makes comparison of the results of different studies difficult; findings become tentative rather than conclusive and generalization is impossible. This, however, should not be seen as a serious shortcoming, particularly as the behavioural approach aims not at deducing universally applicable laws of consumer behaviour, but at explaining the variations which characterize it.

2.4 THE STRUCTURAL APPROACH

The structural approach is based on the contradistinction of the 'apparent' from the 'real', the 'manifest' from the 'latent'.[26] The service centre hierarchy characteristics, patterns of consumer behaviour, and all the problems identified by means of the classical and behavioural approaches are considered to be only symptoms or manifestations of more fundamental socio-economic characteristics or problems; that is, socio-structural characteristics and problems which collectively determine income and hence buying power. Thus, within this framework, both the rank-size characteristics of service centres and the behaviour of consumers and entrepreneurs are viewed against the background of the socio-economic class for the residential areas in which centres are located.

Two case studies cast within the structural framework may be considered here to illustrate some significant aspects. Pred, in a study of culture and retail characteristics in Chicago, USA, found that Black areas had a distinctly different retail character, with a much higher proportion

[23] Davies, *Marketing Geography*, 206.

[24] Garner, 'The analysis of qualitative data in urban geography'.

[25] Davies, *Marketing Geography*, 223–8.

[26] See D. Gregory, *Ideology, Science and Human Geography* (London, Hutchinson, 1978), 81–122; and also Mutizwa-Mangiza, 'A Policy Review of Community Development', 10–11.

of bars, pool-parlours, cafés and general stores than was found in predominantly White areas.[2] Since in American society racial distinctions coincide to an extent with socio-economic clas differences, the retail characteristics identified by Pred are manifestations of both a distinc culture and the urban poverty of predominantly Black areas.

In another case study of the effects of income differences on the retail structure of tw housing estates in Leeds, England, Davies discovered that there tended to be more reta establishments in the service centres of high-income areas.[28] These centres also tended to b more specialized than the centres of low-income areas, the latter providing a greater range o functions and therefore fulfilling a more important overall functional role for the communitie which they served. The reason for this was that people with lower incomes had both mo limited purchasing power and lower levels of mobility than people with higher incomes, ar were therefore more dependent on the local facilities available to them for a greater proportio of their shopping and service requirements.

Elsewhere, Davies has suggested a structural model of retail distribution, and Fig. 2.11 a reproduction of that model.[29] The considerations discussed above are drawn together, and t model attempts to summarize the general processes through which the classical hierarchy centres may be distorted. The result is that three different hierarchical structures emerge o account of the concentration of three different income groups in different parts of the ci Davies' model also demonstrates that the functional variations between the centres are mo clear-cut in the case of the smaller or lower orders, because the larger or higher order centr become shared by different income groups. However, even within the larger shopping centr consumers from different classes tend to patronize different shops.

Although Davies' model is useful in that it depicts some important aspects of ret structure as determined by socio-economic class differences, it is highly specific to the Brit urban situation and some aspects of it do not reflect locational relationships prevailing in no Western cities. In particular, the relative location of high-density, low-income residential are close to the CBD is in contrast to many cities in underdeveloped countries where such are including 'shanty towns' or squatter settlements, are frequently found on the periphery.[30] T is particularly true of Harare where HDRAs were deliberately located far away from the C as part of pre-Independence segregationist policy.

These, then, are some of the important aspects of the structural approach which have be highlighted through case studies and empirical modelling. So far as the present study concerned, the structural approach contributes towards a better understanding of the distribut and characteristics of service centres in Harare since its residential areas are characterized both clear-cut socio-structural and spatial distinctions. As in the case of the Chicago of Pre study, there are, on the one hand, the low-density, higher-income and — until recently predominantly White residential areas; and, on the other hand, there are the high-density, lo income and predominantly Black residential areas. It is the differences between these wh the structural approach helps to explore and explain. In this context, service centres are s simply to reflect their respective socio-economic environments.

Changing the characteristics of the HDRA shopping centres by upgrading them to the lo

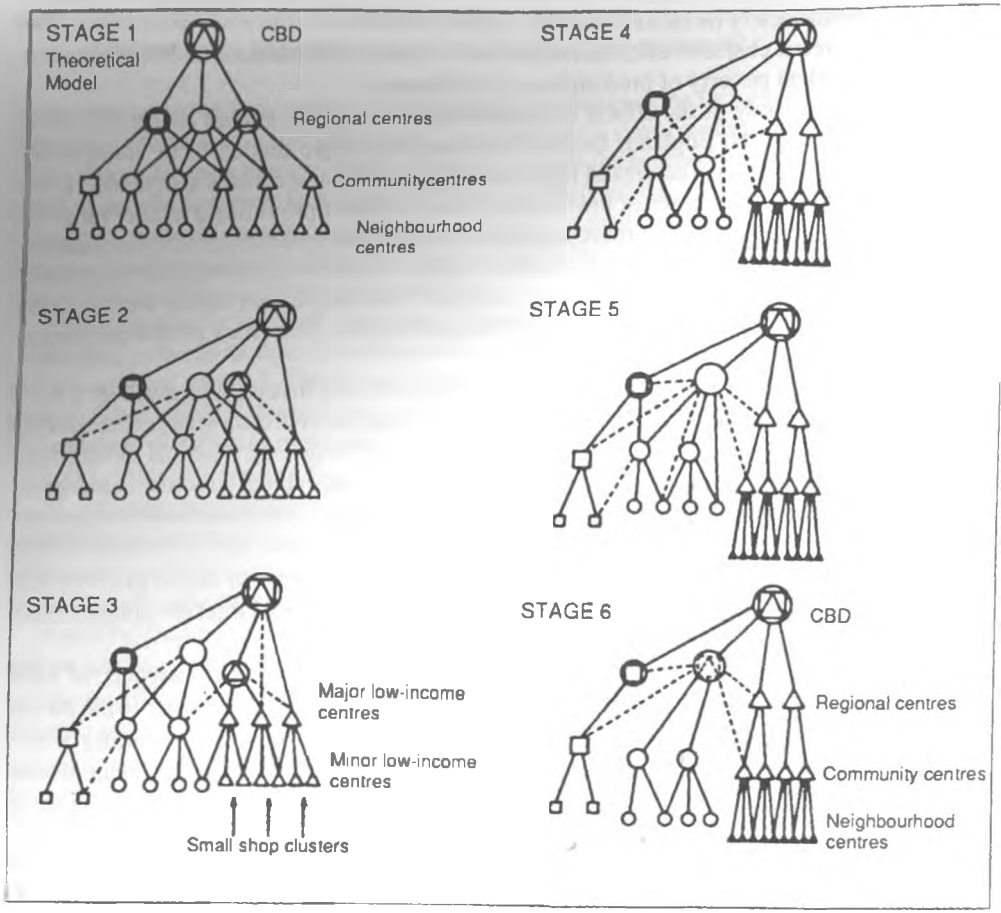
[27] Pred, 'Business thoroughfares as expressions of urban Negro culture'.

[28] Davies, 'Effects of consumer income differences on business provisions.'

[29] The figure is reproduced with the permission of the author from Davies, 'Structural models of distribution', 70–1.

[30] E. Jones, *Towns and Cities* (London, Oxford Univ. Press, 1969), 50, 136.

Figure 2.11: DAVIES' STRUCTURAL MODEL OF RETAIL DISTRIBUTION



of their LDRA counterparts would be to treat only the symptoms of a disease, solving only a small part of a larger and more fundamental problem. That latter and more fundamental problem is one of general urban poverty, of urban social malaise, of the large gap between the rich and the poor which typifies the dual structure of underdeveloped urban economies.

2.5 THE CONJUNCTIVE USE OF THE THREE APPROACHES

According to Davidoff and Reiner, in the planning context 'values' are essentially statements of preference, that is 'moral or social goals over which there is a wide agreement'.[31] Values take the form of '*x* ought to *y*'. On the other hand, 'facts' are assertions of the truth of relationships, and take the form of either '$x = y$' or 'if *x* then *y*'.[32] To the extent that values provide the context within which the significance of facts may be comprehended and to the extent that the

[31] Davidoff and Reiner, 'A choice theory of planning', 19.

[32] This distinction between 'facts' and 'values' rests on the paradigm of logical positivism, and in the social sciences it can be traced back to the influential work of Max Weber who derived it from Kant. Although the fact–value dichotomy has been criticized, mainly by authors influenced by the philosophy of language of Wittgenstein and Austin, such as Anscombe and Searle, and by critics of logical positivism in general, it suffices here to state only that the argument for the conjuctive use of central place theory, the cognitive-behavioural and structural approaches is based on this premiss of the separation of facts from values. A discussion of the limitations of the premiss [illegible]

NOTES TO FIGURE 2.11

Stage 1: The General Theoretical Model

This represents the aggregate system of shopping epitomized in central place theory. No importance is attached to the frequencies of centres at each hierarchical level, although there will usually be more centres serving lower-income consumer groups than middle or higher income groups. The different consumer groups share the facilities of higher order centres as indicated by the superimposed symbols.

Stage 2: Effects of Varying Locational Relationships

Allowance is made for the fact that shopping centres are more densely concentrated in the inner parts of the city compared to the outskirts. However, the regional centre catering mainly to low income consumers are overshadowed by the central area, such that they are often by-passed on shopping excursions. Regional centres serving mainly the middle-income consumers are more central to the urban market and hence attract extra trade.

Stage 3: Emergence of Variant Hierarchies

As the viability of low-income regional centres diminishes, the smaller centres in low-income areas are able to increase their standing in the hierarchical sub-system by taking on more specialized roles. The enhanced importance of the lower levels of this sub-system then allows for numerous isolated store clusters, which are very dense in the inner, older parts of the city, to be supported.

Stage 4: Distinction of the Low-Income Hierarchy

An almost separate hierarchy of centres emerges for the low-income areas since customers here are less mobile than those in other parts of the city and visit either locally-based centres or the CBD. Considerable cross movements for shopping in other parts of the city, however, tends to increase the strength of the middle-income regional centres.

Stage 5: Competition with the Central Area

In the absence of planning intervention, it is possible for a middle-income regional centre to create severe competition with the central area and undermine its functional role (as in the USA). Some consumers in middle-income areas may also begin to by-pass their smaller shopping centres and erode the lower levels of their own hierarchical sub-system.

Stage 6: The Empirical Model

The emergence of the three distinct but related sub-systems of shopping centres is complete. The high-income areas have shows the greatest stability in form although, because there are fewer centres, the full structural levels of the hierarchy are not always found. The middle-income areas exhibit the largest type of regional centres, and the low-income areas exhibit the greatest strength in smaller orders of centres.

establishment and perception of values may be influenced by facts, the two (facts and values) are reflexively interrelated, but in terms of planning, goals or ends are fundamentally statements of value.

To add to the Davidoff and Reiner proposition, while planning values and goals may be considered to be an integral part of the prevailing political–ideological context, the same may not be said of facts. Values provide the overall context for planning, which facts (and any consequent theories) provide the more limited framework for making decisions on implementation alternatives or strategies.[33] Thus the problems posed by planning may be envisaged, for analytical purposes, as existing at two, but not necessarily exclusive, levels:

(1) the 'value formulation' level, predicated upon the prevailing political ideology and development philosophy;[34] and
(2) the 'means identification' level.[35]

the scope of this study and belongs more to the realm of philosophical discourse: see Giddens, *Studies in Social and Political Theory*, 89–95.

[33] See above, Chapter 1, for the two types of theory, 'procedural' and 'substantive'.

[34] The term 'development philosophy' is used here to denote the overall goals of socio-economic and political development as well as the generally preferred political means of realizing these goals. Thus any development philosophy must contain (a) a statement of the type of society it is aimed, eventually, to achieve, and (b) a statement on the socio-economic and political mechanisms of achieving or moving towards that preferred type of society.

[35] These two levels are based on the sequence of planning proposed by Davidoff and Reiner, 'A choice theory of planning'.

Value formulation involves the definition of ultimate goals which are the ends of planning activity. Because goals are value statements which cannot be objectively verified, the lower-level planner who is immediately concerned with the implementation of policy decisions cannot by himself accept or reject goals for the public. Value formulation belongs to the realm of the 'policy planner' or 'strategic planner' as opposed to the 'implementer planner' or 'local planner'.[36]

The problem of means identification involves deciding 'how to proceed, by non-arbitrary steps, from a general objective to a specific programme'.[37] Given that there may be many paths for reaching a defined goal, means identification necessarily entails comparative evaluation and the choice of the best alternative out of a 'universe of alternate means'.[38] The universe of alternate means may include those means derived from substantive theory: for example, in an evaluative exercise involving location of human settlements, central place theory may be one of the means constituting the universe of alternate means. Clearly, comparative evaluation of means calls for the use of facts and theories, with values and goals providing an overall external reference system; this procedure is what Kaplan has referred to as 'confrontation of values with facts'.[39]

The planning sequence suggested by Davidoff and Reiner, which conforms with the systems view of planning (see Chapter 1), has a third level: 'implementation' or 'effectuation'.[40] Because the way a planned project is implemented may lead to unwanted results, the implementation stage (which involves monitoring and feedback) is clearly of importance to planners. Negative feedback necessitates the revision of both values and means, so that, in essence, the implementation stage does not raise any additional questions which are fundamentally different from the ones raised at the first two stages; it merely replicates them in the light of empirical performance. Thus there are only two types of fundamentally different problems in the planning process: those which are value-related and those which are fact-related.

To illustrate the conception of types or levels of planning-problems outlined above, unequal land distribution and resettlement — a significant problem of planning in underdeveloped nations — may be taken as an example. In line with the distinctions made above the problem should be considered at two levels:

(1) As a problem embedded in the socio-economic and political structure of the nation, manifesting itself in unequal and unjust distribution of land within a predominantly capitalist society.
(2) As a problem of resettlement implementation strategy posing questions such as: What forms of locational or spatial organization shall be adopted for the new settlements in order to optimize land use, transportation and communication systems?

[36] Faludi, *Planning Theory*, suggests an organizational structure for planning consisting of the 'strategic planning agency' at the top and lesser planning agencies at the bottom. The strategic planning agency in this context is concerned with the definition of goals and policy and ensuring co-ordination, while the lesser planning agencies are more limited in the sense that they are area-specific (geographical area) or subject-specific (for example, transport planning).

[37] Davidoff and Reiner, 'A choice theory of planning', 30.

[38] *Ibid.*, 31.

[39] A. Kaplan, 'On the Strategy of Social Planning' (Puerto Rico, Report submitted to the Social Planning Group of the Planning Board of Puerto Rico, Sept. 1958, mimeo.).

[40] Davidoff and Reiner, 'A choice theory of planning', 33.

Clearly, a problem conceived in the manner outlined above cannot, in reality, be tackled by adopting one approach only. The structural approach will be useful at the first level of defining the fundamental or latent problems. Using this approach, the important questions of socio-economic and political structure and consequent or potential social conflict can be considered, and answers or goals pertaining to desired social states (development philosophy) worked out. The second level of the problem must be tackled through the means-identification, fact-related approach; this could be, for example, through normative-deductive or empirical-inductive models. In this case, the answer to the unequal land distribution problem might lie in the adoption of socialist values (socialist development philosophy) at the first level of the problem; at the second level the planning authorities may decide to use central place theory (together with its behavioural modifications and additions) or von Thunen's agricultural land use model[41] as strategies for the relative location and internal spatial organization of human settlements. Adoption of the deterministic central place or von Thunen's theoretical approaches at the second level need not imply a rejection of the structural approach. On the contrary, both approaches are necessary for the successful solution of the whole problem of unequal land distribution and settlement.

The service centre problem may be viewed in exactly the same manner as the unequal and distribution issue. At the first level, inequality in service centre provision is merely one of the symptoms of a structurally deformed political economy, whose solution cannot be attempted in isolation from its socio-structural context. At the second level, it is a means-identification problem of locational planning and physical development. The appropriate solutions at the former level are value-related and those at the latter are fact-related.

The proposition being made here is that the three conceptual approaches to the study of service centres (classical central place theory, the cognitive-behavioural and structural approaches) are mutually supportive, and that it is more useful to regard them as complementary rather than conflicting.

2.6 Conclusions

Classical central place theory is employed in this study as a theoretical basis for the planning of service centres. As a normative and deductive theory, it defines an ideal world, that is, what is to be expected in a socio-economically 'ideal' situation regarding, firstly, the spatial distribution of service centres, and secondly, consumer and entrepreneur behaviour. Although the theory starts with some socio-economic assumptions which may be untenable in the real world, its utility lies in the fact that it provides a yardstick against which the performance of the real world may be measured.

The cognitive-behavioural approach is concerned with both empirically observable patterns and motives which underlie consumer shopping behaviour. By relaxing the assumptions of rational economic behaviour on the part of consumers and entrepreneurs alike, and by taking into account a wider range of factors in addition to those of a spatial kind, it becomes possible to investigate processes operating in the real world, and to explain the disparity between the ideal situation of classical theory and the situation as observed in the real world.

With the structural approach, relaxation of assumptions relating to a plain of invariant economic opportunities is made. Both consumer and entrepreneur behaviour, and the problems of planning, are analysed within the wider context of socio-economic structure. The emphasis

[41] P. Hall (ed.), *Von Thunen's Isolated State* (Oxford, Pergamon, 1966).

here is on the fact that these problems should not be treated in isolation, but as part of the wider and more fundamental problem of the gap between the rich and the poor.

While the classical, cognitive-behavioural and structural frameworks may appear to be conflicting, it is more useful, in the context of this study of suburban service centres in Harare, to see them as complementary; the reason being that in order to close the gap between the ideal situation as outlined in classical theory and the observed real world situation, both behavioural and structural corrective measures must be included in the reformulation or modification of planning policy (remedial planning).

3
AREA OF STUDY

3.1 INTRODUCTION

The purpose of this chapter is to provide relevant information on Harare using data obtained from both secondary sources (published literature and unpublished sources) and relevant city authorities. The present structure and spatial organization of the retail sector in Harare is a result of socio-economic and political–historical factors peculiar to the city. In addition, the shopping patterns of Harare's suburban residents are determined by socio-economic factors such as purchasing power, transport facilities and spatial mobility, and relative location.

The chapter is divided as follows: Section 3.2 is concerned with Harare as a whole, that is, a brief description of its historical origin, present patterns of land use and growth problems. Sections 3.3 focuses on the LDRAs. Though these areas are not the central concern of this study, they are important for comparative purposes. Section 3.4 focuses on the HDRAs, with which the greater part of the study is concerned. Aspects discussed in both Sections 3.3 and 3.4 include: origin, location and development density of residential areas; population; employment and income characteristics (purchasing power); and mobility characteristics.

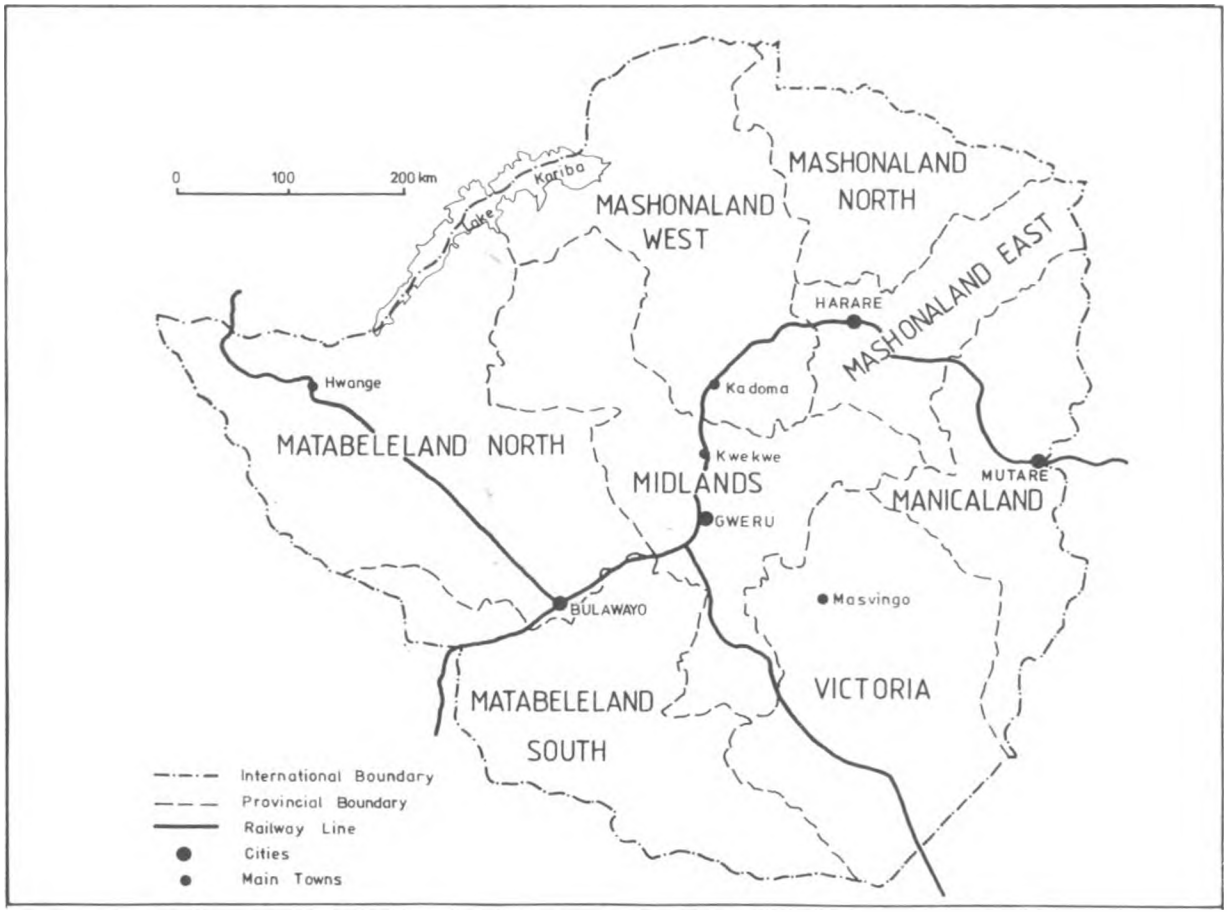
The background information discussed in this chapter should be seen in the context of the structural approach outlined in Chapter 2. The rank–size characteristics and shopping behaviour patterns are to a large extent outcomes of the history, social structure and other socio-economic characteristics which collectively constitute the theme of the chapter, and any service centre planning solutions must conform with the new development philosophy of 'Growth with Equity'.

3.2 GREATER HARARE

Harare was founded as Salisbury in September 1890 by the Pioneer Column which had trekked north from South Africa into what is now Zimbabwe. The Pioneer Column, accompanied by the British South Africa Company police force had been equipped by Cecil John Rhodes and instructed to establish a new colony on the authority of a 'Royal Charter' granted in 1889 to the BSA Company by the British Crown. The Charter authorized settlement and administration of an unspecified area of land to the north of British Bechuanaland and to the north and west of South Africa — but without reference to any indigenous local occupants. The original Harare consisted of a small fort and a few administrative offices set up by the Company's officials, and, a little distance away at the foot of the Harare kopje, a group of huts belonging to a few of the Pioneer group who saw better prospects in the newly-founded town than in the 'gold fields' originally imagined to surround the area.

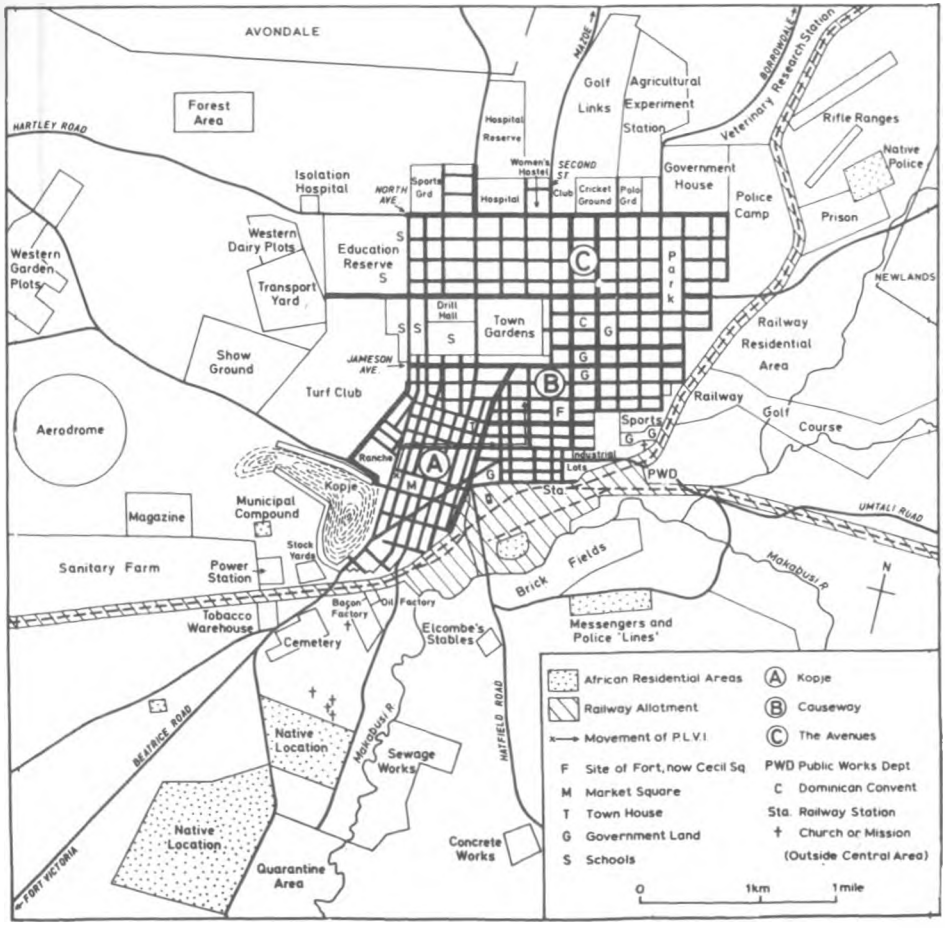
Salisbury was proclaimed the capital of Mashonaland, and later the capital of Rhodesia when that colony was proclaimed after the 1896 Rebellion. After the defeat of the Ndebele by the Pioneers in the 1893 war and the subsequent occupation of Matabeleland, Bulawayo, which had been the capital of Lobengula's kingdom, assumed a rival position to Salisbury in terms of size and importance. On account of its better location in relation to South Africa, Bulawayo grew so rapidly that by 1895 the White settler population had already risen to 3,000 — a size which Salisbury would not attain for about fifteen years. In spite of this, the capital's long-term eminence was never seriously in doubt. Fig. 3.1 illustrates the relative location of Harare and other places mentioned in the study.

Figure 3.1: ZIMBABWE: PROVINCES AND MAJOR TOWNS



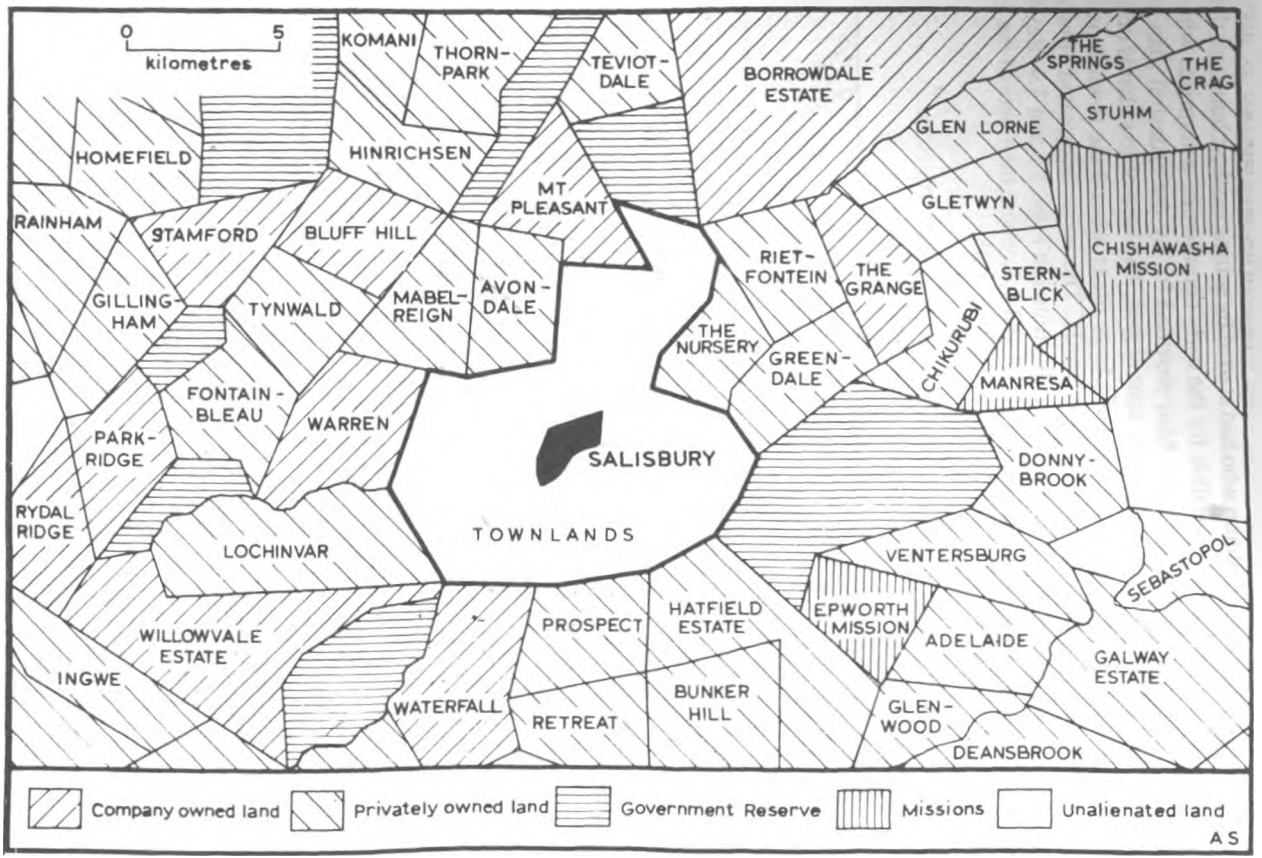
To prepare for Salisbury's expected growth, an extensive cadastral plan was drawn up between 1890 and 1894, and much of the city's present land-use pattern originates from this era. Administrative officials of the BSA Company erected the first administrative buildings near the fort — the site of present-day Africa Unity Square in the area labelled 'B' in Fig. 3.2. Some members of the Pioneer Column who had started by setting up their huts near the kopje (area 'A' in Fig. 3.2) were also responsible for the early commercial enterprises which they sited along the eastern edge of the kopje. Also provided for by the cadastral plan was the 'commonage' or 'townlands' surrounding the central grid. The idea of townlands originated from the South African tradition of setting aside large areas around the townships for the provision of pasture for horses, oxen and dairy cattle. The areas designated 'townlands' amounted to some 8,150 hectares and are clearly illustrated in Figs. 3.3 and 3.4. Beyond the townlands was open land, also illustrated in Figs. 3.3 and 3.4, where members of the Pioneer

Figure 3.2: EARLY HARARE (SALISBURY): TOWNLANDS UP TO 1930



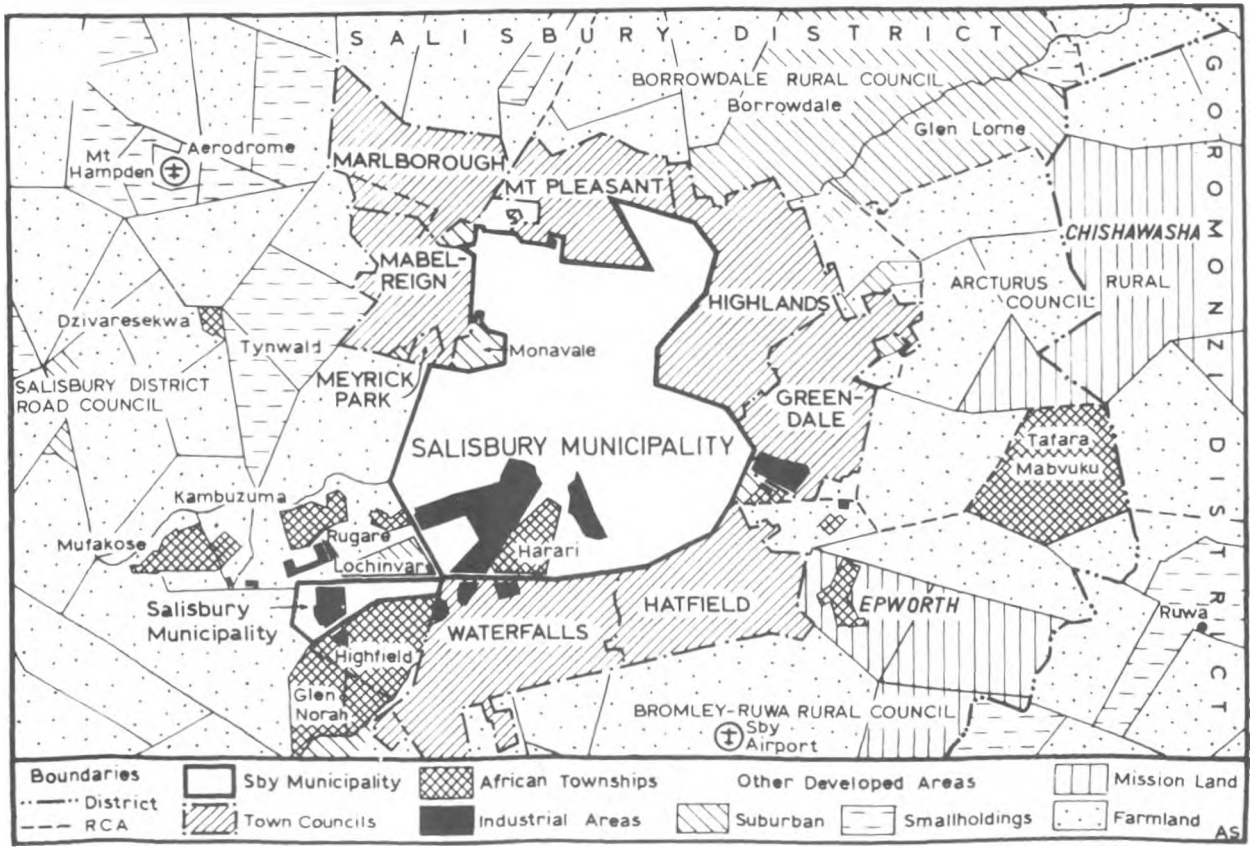
Source: Christopher, 'Early settlement and the cadastral framework', 15.

Figure 3.3: HARARE AND SURROUNDING AREA (1900)



Source: Christopher, 'Early settlement and the cadastral framework', 16.

Figure 3.4: HARARE AND SURROUNDING AREA (1971)



column staked out farms of 1,500 morgen (approximately 1,250 hectares) and 15 mining claims to which each was entitled.[1] These farms were later to develop as the suburbs for White settlers.

The city, like most others in underdeveloped countries, has been growing rapidly, particularly since the Second World War. By December 1974, its population had reached 545,000; this included 45 per cent of the total national White population and 6.9 per cent of the total national Black population.[2] The latest estimate of the total population of Harare is 656,011.[3]

Compared with most West European and North American cities, the spatial physical growth of Harare is striking. Development outside the 100 km^2 of the original municipal land or 'townlands' preceded the filling in of the original cadastral layout within the municipal area — the overall result being a somewhat piecemeal, patchwork pattern of development at very low densities. The peripheral development on farmland outside the townlands gradually led to the creation of eight independent suburban residential areas. Fig. 3.5 is a general land-use map of Harare illustrating the various types of land use and in particular the location of the suburban residential areas in relation to the CBD and industrial areas.

The most peculiar feature of Harare is the racial division and the consequent spatial segregation by race in most aspects of urban life. Although with the attainment of independence institutionalized racial discrimination became constitutionally obsolete, its continuing effect on the spatial form of the city is phenomenally evident to the extent that it is hardly worth while to make any demographic and socio-economic generalizations about the city as a whole. The predominantly White LDRAs (formerly 'European Areas') reflect the privileged socio-political position of the past and the much higher incomes which the Whites were used to, while the HDRAs (formerly 'African Townships') reflect years of political repression, poverty and general social malaise.

The racial division and spatial disunity of the city have been reinforced for years by its fragmented administrative structure. The major European residential areas were administered by their own separate Town Councils, while some African Townships (Mbare and Highfield) were the responsibility of the City Municipality, and the rest came under either central government administration or other independent Town Management Boards. It was not until July 1971 that 'Greater Salisbury' was created with an area of 550 km^2, of which 350 km^2 had already been developed.[4] By that time some 49.5 per cent of the total non-Black population of the city were residing in the town council areas outside the City Municipality boundary.[5] Even then, some residential areas remained — and still are — outside the Greater Harare administrative areas.

Notwithstanding its rapid growth, development (particularly of residential accommodation) in Harare still lags behind its needs. An official municipal estimate in 1977 conservatively put the number of additional housing units required for Blacks who were 'legally entitled' through their employment to live in Harare at 16,000.[6] The June 1981 official estimate of this figure

[1] A. J. Christopher, 'Early settlement and the cadastral framework', in G. Kay and M. Smout (eds), *Salisbury: A Geographical Survey of the Capital of Rhodesia* (London, Hodder and Stoughton, 1977), 16.

[2] Kay and Smout, *Salisbury: A Geographical Survey*, v.

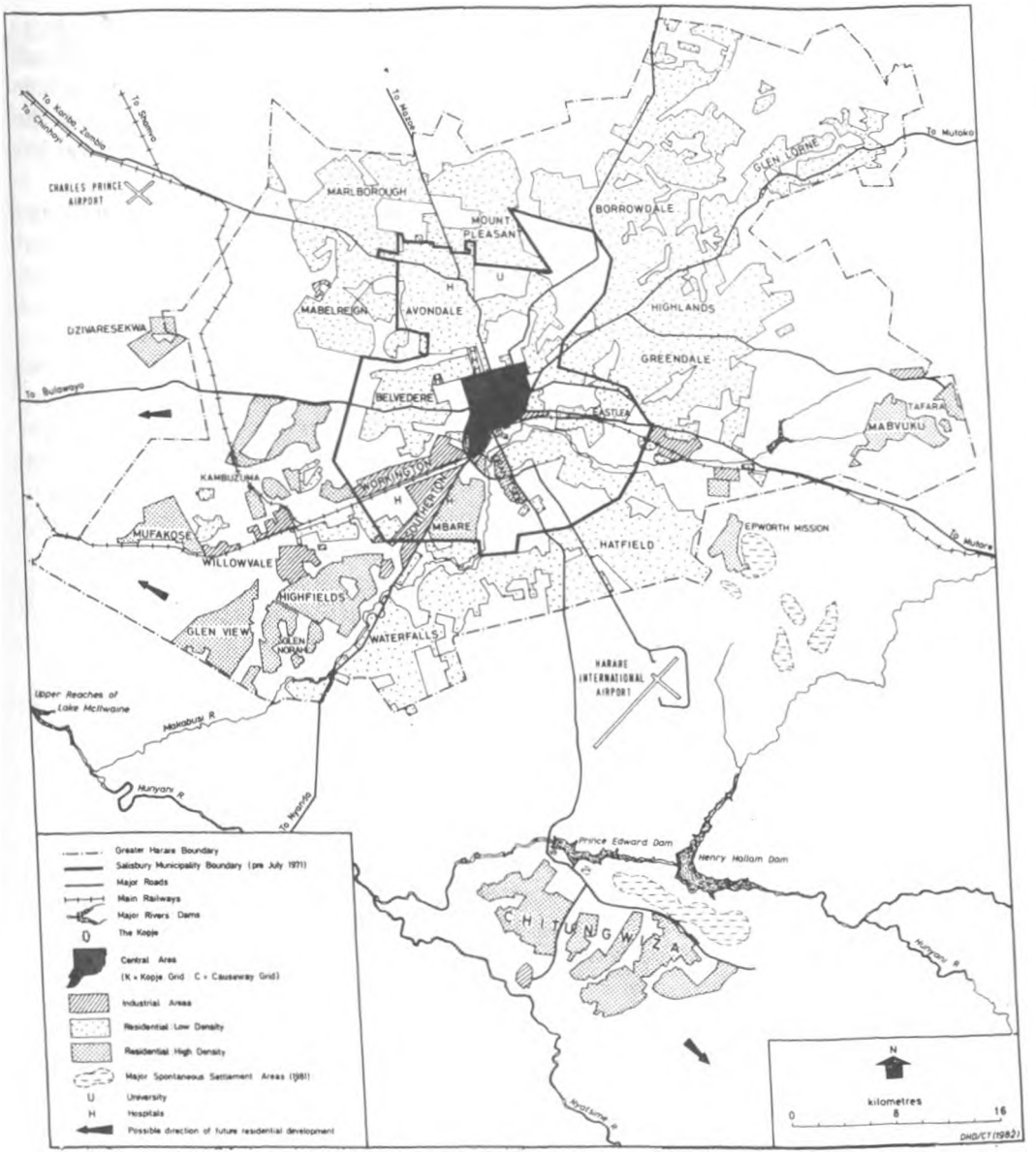
[3] Zimbabwe, *1982 Population Census: Preliminary Count* (Harare, Central Statistical Office, 1982).

[4] Kay and Smout, *Salisbury: A Geographical Survey*, v.

[5] G. Kay and M. Cole, 'The townsfolk', in Kay and Smout, *Salisbury: A Geographical Survey*, 42.

[6] At the time, the 'Africans (Urban Areas) Accommodation and Registration Act' (1963), together with the 'Vagrancy Act' (1960), denied unemployed Blacks the right to live in urban areas.

Figure 3.5 GREATER HARARE (1982)



was just under 20,000 — although it has been argued that the real figure could be even higher.[7] Whatever the current 'need' figure may be, there is an urgent case for a reappraisal of the development planning process and policy, and, as Kay and Smout put it, the responsible authorities 'must consider whether the patterns set in the past, recent though it may be, are appropriate for the present and future'.[8]

[7] J. West, 'Greater density will aid town planners', *The Herald* (11 June 1981), 6.

[8] Kay and Smout, *Salisbury: A Geographical Survey*, v.

3.3 THE LOW-DENSITY RESIDENTIAL AREAS

Fig. 3.5 shows the location of the LDRAs and their current spatial extent, and Fig. 3.3 shows the farmlands on which they were developed. By 1920, the first subdivisions of the farmlands into smallholdings had started at Avondale Farm, and in order to control the process the whole of Avondale was incorporated into the townlands and administered as a suburb of the Municipality. However, the subdivision and development process on other farms was left outside the control of the Municipality until the creation of Greater Salisbury in 1971.

Over the years the northern suburbs have emerged as the most affluent, the main reason, in segregationist terms, being that their location is the furthest from the industrial areas and low-income HDRAs in the south and south-west of the CBD. In comparison with West European and North American cities of similar population size, the LDRAs are characterized by remarkably low development densities. The majority of residents own their houses — which are almost always bungalows, detached and developed at a general density of one house per acre. Altogether, residential areas of all kinds cover 80 per cent of all developed land in the city, but the LDRAs account for more than two thirds of this.[9] The most important reason for the low density of development was the government regulation that in any European Area where sewage disposal was by a septic tank, no plot should be less than one acre (4,000 m^2). Fig. 3.6 is a 100 hectare part of Mount Pleasant, one of the more affluent northern suburbs, which illustrates the typical pattern of development in the LDRAs.

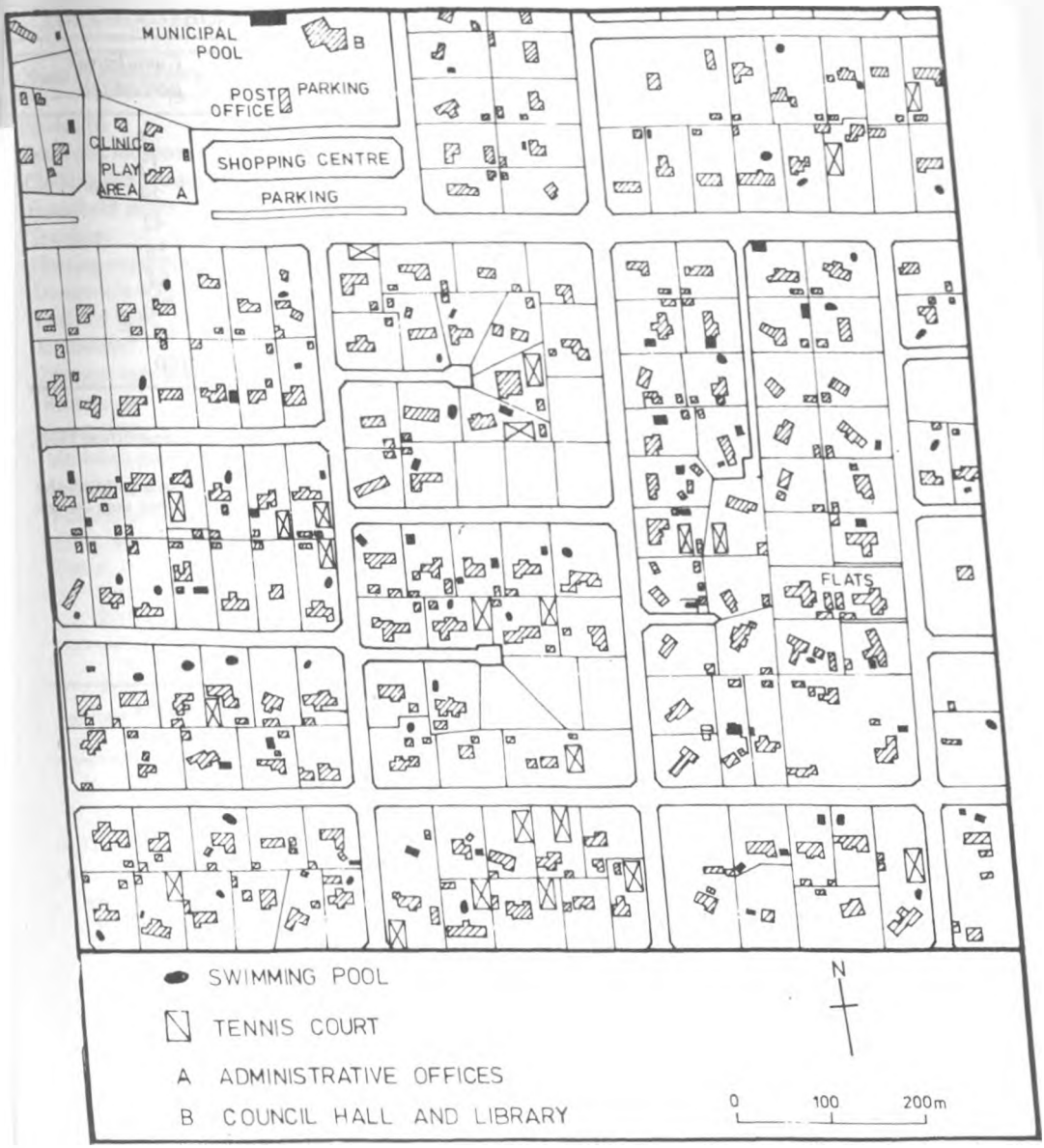
The area shown in the diagram contains 157 detached houses and 12 flats in two blocks. No property is less than one acre in extent, and several properties cover larger areas. Evidence for the high level of affluence in this area is provided by the presence of 85 swimming pools and 23 tennis courts, all on private properties.

The LDRAs were, until recently, exclusively White, and house-owners constituted less than 25 per cent of the total number of households in the city. Apart from the house-owners, these low-density suburbs are also the residential location of a considerable proportion of the low-income Black population, most of whom are domestic workers. The earnings of domestic workers are considerably lower than those of any other sector in the urban economy, averaging Z$21.00 per month in 1969, Z$27.00 in 1973, Z$30.00 in 1981 and Z$50.00 in 1982. This, together with the inadequacy of public transport between the LDRAs and the HDRAs, is the main reason for the general practice of accommodating Black domestic workers in 'boys' kayas' at the back of the employers' houses. According to the 1969 census, 28 per cent of the total Black population in Harare lived within the European Areas where they constituted some 42 per cent of the total population of those areas.[10] In 1969, 54 per cent of all non-Black males and 32 per cent of all non-Black females were in full-time employment; the proportion of all non-Black employed women compared with that of Black women (10.7 per cent) is significantly higher.[11]

Table 3.1 shows the most recent estimates available on LDRA household income distribution. This table should be examined in comparison with Table 3.2 which shows household income distribution in HDRAs. Although the LDRA figures are three years out of date (1977/8) compared to the HDRA figures (June 1982), a comparison still reveals the wide income gap between LDRA and HDRA households: while only 8 per cent of LDRA

[9] M. A. H. Smout, 'The townscape', in Kay and Smout, *Salisbury: A Geographical Survey*, 34.
[10] Kay and Cole, 'The townsfolk', 45.
[11] Ibid., 52.

Figure 3.6 PART OF MOUNT PLEASANT LDRA (100 ha)



Source: Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 16.

households have incomes below Z$400.00 per month, in HDRAs between 91 and 93 per cent of the households have incomes below Z$400.00 per month. Table 3.3 (which should be examined in comparison with Table 3.4) shows the average LDRA household's monthly budget or spending pattern. When compared with the figures in Table 3.4 the most noticeable difference is the percentage of household income spent on foodstuffs, that is, only 13.7 per cent

Table 3.1

LDRAs: HOUSEHOLD INCOME (1977/8)*

Monthly income (Z$)	*Percentage of households*	*Cumulative percentage*
less than 400	8	8
400–499	9	17
500–599	12	29
600–699	13	42
700–799	14	56
800–899	8	64
900–999	10	74
1000–1399	19	93
more than 1399	7	100

Z$1.00 = US$1.3023 (June 1982).

Source: Zimbabwe, *Higher Income Expenditure Survey 1977/78* (Salisbury, Central Statistical Office, 1981), 36.

* Present-day income levels are definitely higher than those presented in this table, in view of adjustments for inflation. This means that the gap between LDRA and HDRA household incomes is actually higher than the one suggested by Tables 3.1 and 3.2, as the figures for HDRA households (Table 3.2) are more recent.

Table 3.2

HDRAs: HOUSEHOLD INCOME (1982)

Monthly income (Z$)	*Percentage of households*	*Cumulative percentage*
less than 10	3	3
11–30	2	5
31–50	4	9
51–70	6	15
71–90	3	18
91–110	14	32
111–130	16	48
131–150	11	59
151–200	15	74
201–250	9	83
251–300	5	88
301–350	3	91
351–400	2	93
401–450	1	94
451–500	1	95
501–550	1	96
551–600	1	97
more than 600	3	100

Z$1.00 = US$1.3023 (June 1982).

Source: M. C. Hoek-Smit, *Socio-Economic Survey: Harare High Density Areas* (Harare, Min. of Housing, Housing Development Services Branch, 1982).

Table 3.3

LDRA HOUSEHOLDS: AVERAGE PATTERN OF MONTHLY EXPENDITURE (1977/8)

Object of expenditure	*Percentage of monthly income*
Foodstuffs	13.7
Drink and tobacco	3.6
Clothing and footwear	4.9
Household stores	7.3
Transport	8.3
Housing expenses	13.5
Domestic's wages	5.0
Fuel and light	1.9
Education*	2.2
Personal care and health	5.0
Recreation	2.8
Income tax	14.0
Insurance not specified elsewhere	0.4
Life insurance	2.5
Pension contributions	4.2
Sales tax	3.4
Other	7.3
TOTAL	100

Source: Zimbabwe, *Higher Income Expenditure Survey, 1977/78*, 37.

* It should be noted that primary education is now free for all Zimbabweans and school fees for secondary education have also been drastically reduced in all government schools

Table 3.4

HDRA HOUSEHOLDS: AVERAGE PATTERN OF MONTHLY EXPENDITURE (1976/7)

Object of expenditure	*Percentage of monthly income*
Foodstuffs	50.3
Drink and tobacco	4.6
Clothing and footwear	8.7
Rent, water, fuel and light	17.6
Household stores	6.8
Personal care and health*	1.2
Transport	5.8
Miscellaneous	5.0
TOTAL	100

Source: Zimbabwe, *Lower Income Expenditure Survey, 1976/77* (Salisbury, Central Statistical Office, 1980), 27.

* It should be noted that clinic/hospital attendance fees have now been entirely removed for those earning below Z$150.00 per month.

in LDRA households compared with 50.3 per cent in HDRA households. Clearly, these marked differences in household income and spending patterns indicate the importance of socio-economic structure in Harare as a determinant of service centre provisions. While retail entrepreneurs locating their businesses in LDRA service centres have a much wider variety of demands to cater for, those locating them in HDRA service centres have to concentrate on the provision of basic foodstuffs.

Another significant characteristic of the low density suburbs is the high level of private mobility. As early as 1948 there was one car for every three persons among the White population of the country as a whole. A more recent survey of the affluent north-eastern suburbs showed that there were 1.99 cars per White household or one car per 1.8 persons.[12] As a result, there is a very low level of public transport provision in the LDRAs, and there are very few inter-suburban cross-link routes.

3.4 THE HIGH-DENSITY RESIDENTIAL AREAS

The original Salisbury cadastral plan did not provide land for occupation by Black workers, the reason being that essentially the city was planned and developed as a White settlement. All provision for the Blacks was made on an *ad hoc* basis as the need arose (see Section 1.2). Thus, to start with, Black workers were housed by their employers near their places of work. However, as the Black population increased, the need for a larger and proper residential area or township grew. Consequently, Mbare (then called Harari) was established along South African and British colonial lines, that is, separately from the White settler areas. (Fig. 3.5 shows the relative location of Mbare and all the other Black high-density areas.) The second HDRA to be established was Highfield. It was built in the 1930s on land acquired by the central government to the south-west of Harare. The rest of the Black townships were developed along the same lines as Mbare and Highfield by both central government and the Municipality, except St Mary's and the more recent high density suburbs like Glen View and Warren Park which were developed on a self-help basis. In general, most of the HDRAs are located to the south and west of the city centre, in the direction of the prevailing northeasterly winds and near the industrial sites where most Blacks work. Unlike in West European and North American cities where low-income, high-density residential areas are located close to the CBD, in Harare they have been deliberately sited a relatively long distance away from the CBD and in some cases even outside the city boundary: Table 3.5 gives the distances of the HDRAs from the city centre.

The development density in the HDRAs is, on average, ten times higher than in the LDRAs, and is generally of the order of 30 dwellings per hectare. Table 3.6 shows the 1969 comparative development density data for Mount Pleasant and Highfield. On the basis of this data, Highfield's development density is eleven times greater than that of Mount Pleasant. Fig. 3.7 illustrates the land-use pattern of part of Highfield, 100 hectares in extent, which should be examined in comparison with Fig. 3.5. This area carries 1,566 houses, most of which are semi-detached, and a population of over 10,000 people. This pattern is typical of most HDRAs; row after row of small rectangular houses without much architectural variation. Although the residents of these areas were not originally meant to be permanent urban residents, the HDRAs have emerged over the years as self-contained communities with relevant services, that is facilities for education, health, retailing and recreation.

[12] P. A. Hardwick, 'The transportation system', in Kay and Smout, *Salisbury: A Geographical Survey*, 96.

Table 3.5

DISTANCES OF HDRAs FROM THE CITY CENTRE

HDRA	*Distance (km)*
Mbare	5
Highfield	9
Rugare	8
Kambuzuma	9
Mufakose	14
Glen Norah	13
Dzivaresekwa	13
Mabvuku	14
Tafara	17
St Mary's	18
Zengeza	20
Seke	25
Glen View	17

Table 3.6

DEVELOPMENT DENSITY DATA: HIGHFIELD AND MOUNT PLEASANT (1969)

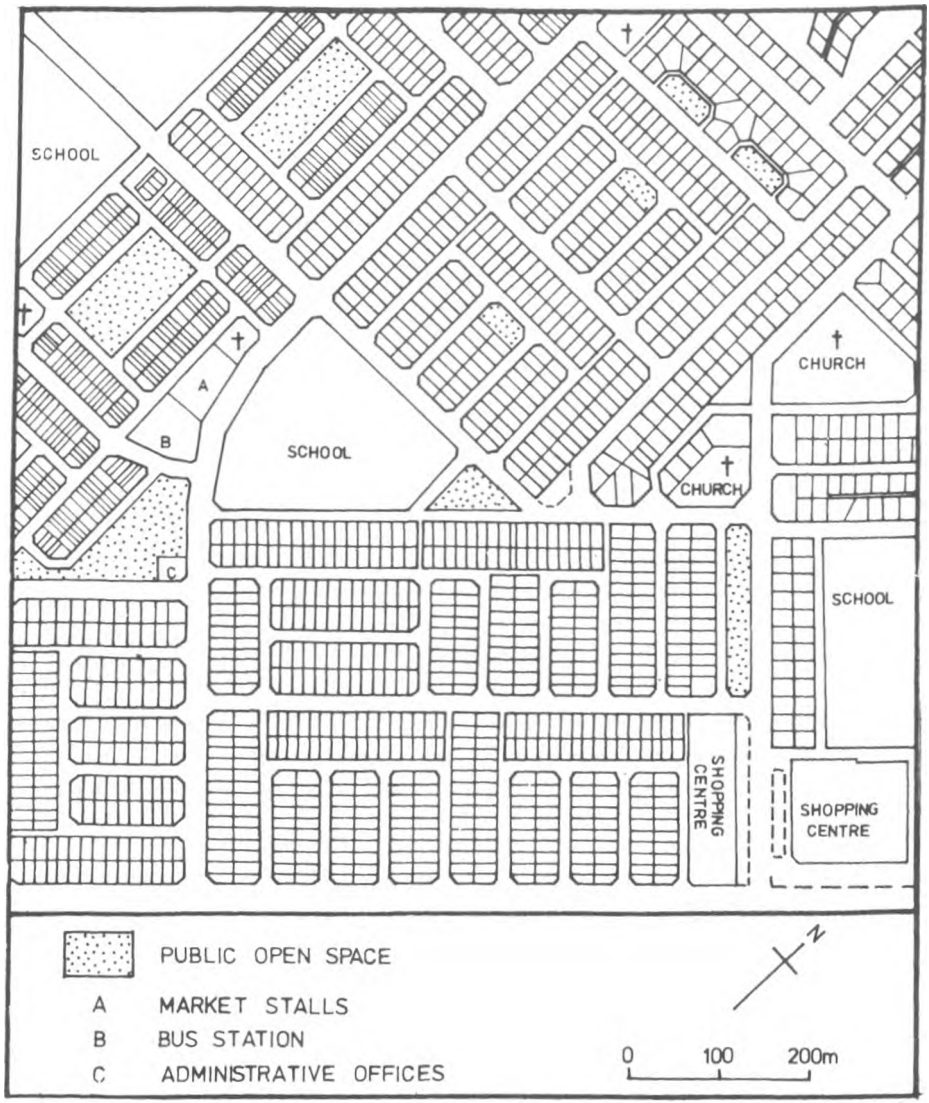
	Area (ha)	*No. of dwellings*	*Dwellings per ha*
Mount Pleasant	2,046	1,701	0.83
Highfield	777	7,144	9.19

Source: Smout, 'The townscape', 34.

The HDRAs are the homes of more than 70 per cent of the total population of Harare. The residents are all Blacks, mostly of the low-income bracket. According to the 1969 census, 65.5 per cent of all Black males and only 10.7 per cent of all Black females resident in Harare were gainfully employed; altogether 45 per cent of the total Black population in Harare was employed.[13] Tables 3.2 and 3.4 show figures on HDRA household income distribution and average monthly spending patterns, respectively. The large gap between HDRA and LDRA household incomes and the markedly different spending patterns have already been noted (Section 3.3). The observed disparities suggest that any major improvements in HDRA service centres can only be built upon the more fundamental and necessary improvements in income distribution. In this regard, the higher minimum wages introduced in 1980 (periodically raised since then) may well lead, eventually, to a narrowing of the gap between HDRA and LDRA household incomes. Further, the increasing number of professional and skilled Black workers implies that eventually the division between the rich and the poor will not strictly coincide with

[13] Kay and Cole, 'The townsfolk', 50.

Figure 3.7 PART OF HIGHFIELD HDRA (100 ha)



Source: Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 16.

the White–Black racial division, although in the foreseeable future the poorest sector of the population will undoubtedly remain Black.

By 1982, the Zimbabwean economy had experienced a consumer spending boom. Much of this boom can be attributed to factors relating to the changed circumstances of the Black population in general, and to the low-income sector of the Black population in particular; these factors include the following:

(1) The introduction of higher minimum wages from July 1980.
(2) The abolition of school fees for primary schools.

(3) The removal of charges for health services to lower-paid employees and to the unemployed.
(4) The removal of sales tax from some basic requirements and the reduced level of sales tax payable on all other products.
(5) The increasing number of Blacks moving into more highly-paid positions in commerce, industry and government.
(6) Payments made to former guerrillas and to the greatly enlarged standing army.
(7) The appreciable increase in the overall level of employment soon after independence.[14]

Table 3.7 and Fig. 3.8 summarize the trends characterizing the consumer spending boom.[15] These trends in consumer spending imply increased pressure on the organization of the etailing sector in Harare, particularly in the HDRAs, making the formulation of a long-term

Table 3.7

TRENDS IN RETAIL TRADE (TO JANUARY 1981)

Main indicators		*Percentage change*				
	Jan. 1981 (1965 =100)	*From Dec. 1980*	*From Oct. 1980*	*From Jan. 1980*	*Feb. '80–Jan. '81 over Feb. '79–Jan. '80*	*Nov. '80–Jan. '81 over Aug. '80–Oct. '80*
All groups	506.3	–26.3	+3.2	+48.4	+37.7	+20.2
Food, drink and tobacco	480.0	–22.8	+4.1	+19.5	+12.6	+18.4
Clothing, footware and drapery	530.2	–94.9	–1.7	+85.5	+67.1	+39.3
Household goods	557.6	–37.4	+10.2	+72.0	+54.8	+22.7
Motor trade	652.1	–1.3	+7.7	+59.0	+48.9	+9.3
Department stores	358.8	–40.6	+0.1	+57.8	+44.6	+23.9

service centre planning policy all the more imperative. By investigating the present state of the retail system in Harare this study aims at helping to formulate such a policy, since any policy formulation or modification should be based on accurate information on the system's present state.

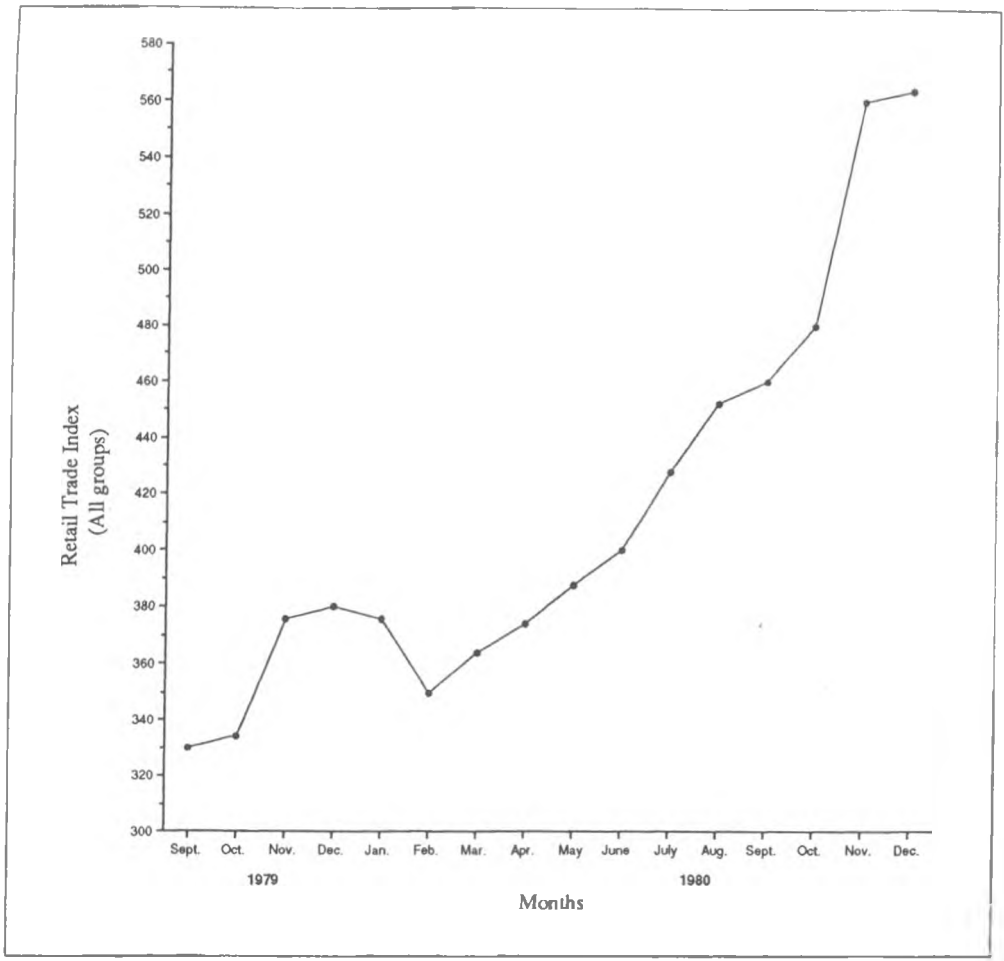
Another characteristic of the HDRAs which influences the shopping behaviour of the residents is the low level of mobility. Only about 23 per cent of the Black households in Harare owned private motorized transport in 1977. In spite of subsidized transport services, over 7 per cent of the income of Black people in the HDRAs is spent on transport between home and place

[14] RAL Merchant Bank Ltd., *Executive Guide to the Economy* (Salisbury, The Bank, 1981), 6.
[15] Ibid.

pledged to redress, in all spheres of life, the imbalance between the White and the Black sectors of the city's population. This signified the beginning of a more equitable policy of distribution of resources in favour of the impoverished and long-neglected HDRAs.[17] Given this institutional change, and the concommitant policy changes, the present study is contextually relevant. By examining only one aspect of urban activity, that is the current state of suburban service centres within Greater Harare in general and service centres in HDRAs in particular, this study hopes to contribute towards the newly inaugurated process of planned reorientation of urban growth.

[17] While this is true, there is also a danger that the Whites in LDRAs may simply be replaced by a similarly privileged Black high-income class, without any significant structural changes apart from those changes in racial policy.

Figure 3.8 RETAIL TRADE IN ZIMBABWE: THREE MONTHS' MOVING AVERAGES (1965=100)



of work.[16] The low level of mobility among HDRA inhabitants is likely to influence overall shopping-trip patterns and must be taken into account in deciding the locational distribution of service centres.

3.5 Conclusions

The most striking feature of Harare is the large gap between the life-styles of the rich and the poor which to a large extent coincides with the White–Black dual socio-economic and spatial structure. Although the political system which created racial discrimination has been overturned, it should be emphasized that its spatial imprint in Harare persists. The first post-Independence Greater Harare City Council, with a Black majority and headed by a Black mayor, soon

[16] Hardwick, 'The transportation system', 99. However, the 1976/7 Central Statistical Office estimate of 5.8 per cent is slightly lower than the one suggested by Hardwick (see Table 3.4).

4

RANK–SIZE CHARACTERISTICS OF THE SERVICE CENTRES

4.1 INTRODUCTION

Chapter 2 examined the theoretical framework of this study, while Chapter 3 provided background information on the geographical area of concern, thereby preparing the ground for a detailed examination of service centres in Harare. The objectives of the present chapter are as follows:

(1) To identify and locate all suburban service centres in Harare.
(2) To record and analyse the functions provided in each centre.
(3) To determine the relative functional importance of centres through construction of a rank–size distribution or hierarchy.
(4) To assess the changes that have taken place particularly since 1974, the last time some of the service centres were studied in detail.[1]
(5) To comment on the implications for urban planning of the rank–size characteristics identified.

To achieve these objectives, this chapter draws on some of the precepts of classical central place theory, particularly the concept of rank–size hierarchy. The next section (4.2) outlines in detail the method used for deriving the rank–size hierarchy or distribution of service centres in Harare, before a discussion of the results is made. In discussing the results more attention is paid to the HDRAs as they constitute the focus of the study.

4.2 DETERMINATION OF RANK–SIZE DISTRIBUTION

As outlined in the introduction above, one of the central objectives of the present chapter is to assess the changes in size and relative functional importance of service centres in Harare since Smout's study in 1974. Because of this, it was decided to use the same method of measuring the functional importance of service centres as that used by Smout in his initial study of 1971.[2] This enables comparison, based on the same criteria, of the state of centres studied by Smout in 1974 with their state in 1981. The method, which may be called 'weighted allocation of points', used by Smout comprises two stages: (1) compilation of an inventory of functions existing in all suburban service centres, and (2) grouping of types of function and allocation of group points.

The compilation of an inventory of functions involves the identification of all suburban service centres in the city and the recording of all existing types and quantities of functions offered.[3] Having been recorded, the functions are then ranked according to the frequency of their occurrence, from the lowest to the highest frequency. The inventory of functions identified by Smout is shown in Table 4.1. The functions are then exhaustively classified using

[1] Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury.*
[2] Smout, *Service Centres in Greater Salisbury*, 143–8.
[3] Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 19–20

Table 4.1

MEASURING SIZE OF SERVICE CENTRES: INDIVIDUAL FUNCTION POINTS

Function	*Points*
Food shops:	
Baker	4
Butcher	1
General food	1
Supermarket — large	4
Supermarket — medium	3
Supermarket — small	2
Others	4
Other shops:	
General dealer — large	4
General dealer — small	2
Bottle store	3
Chemist	3
Clothing	2
Electrical	4
Florist	4
Gifts and stationery	4
Garden requisites	3
Hardware	3
Household soft goods	4
Shoes	4
Others	4
Financial offices:	
Bank branch	4
Bank agency	3
Building society branch	5
Building society agency	3
Insurance company branch	5
Insurance company agency	4
Other offices:	
General business	4
Surgery	3
Estate agents	3
Others	5
Services:	
Service station (automotive)	1
Vehicle hire and sales	4
Dry cleaners	2
Hairdresser	2
Restaurant	4
Licensed premises	5
Shoe repair agency	4
Sports pools	1
Others	4
Social and administrative:	
Clinic	5
Library	5
Police station	5
Post Office branch	4
Post Office agency	3
Town Council hall/office	4
Others	5

Clark's group concept which, simply put, is based on the idea that 'every member of a group should be closer to some other member of the group than some other point'.[4] This classification procedure is similar to Sokal and Sneath's 'numerical taxonomy' method which ensures that once objects are assigned to classes the variation between the class and individuals of other classes is maximized.[5]

Each of the different groups or classes is allocated points so that the lowest frequency group will have the highest points and the highest frequency group will have the lowest points. The logic of this ties in with central place theory, outlined in Chapter 2, where it is assumed that functions of the lowest order will occur first in the establishment of a centre, and, as further growth takes place, the first function of a higher order will begin to occur, together with duplications of most of the lower order functions. The end result is that in any settlement small centres characterized by low order functions, which are made use of more frequently, abound. These are complemented by fewer but more complex and larger centres which, in addition to possessing most of the low order functions, are distinguished by their possession of higher order functions used much less frequently. The actual frequency groups derived by Smout and used in the present study are shown in Table 4.2. The detailed composition of each of these groups is shown in Appendix 1. Table 4.1 also shows the points allocated to each function according to frequency groups.

Table 4.2

FUNCTIONAL FREQUENCY GROUPS AND THEIR POINTS

Group	*Frequency*	*Points*
1	1–2	5
2	3–12	4
3	14–20	3
4	26–36	2
5	60–71	1

Group 1 functions are higher order ones requiring central locations. On the retail side these include mainly specialized shops. Some functions such as 'greengrocer', which may appear at first sight to be of a lower order, are included in this high order group by virtue of their being specialist. Otherwise, vegetables are usually sold in 'general dealers', 'supermarkets' and 'general food shops'. Group 2, 3 and 4 functions are progressively of a lower order, occurring mainly in service centres of intermediate size. At the bottom are the Group 5 functions which are usually the first to appear in a new centre. According to Smout, automobile service stations often pioneer development.[6] However, this certainly does not apply to the contemporary HDRAs on account of the low socio-economic status of the areas and the consequent low level of ownership of motor vehicles (Chapter 3).

With regard to the present study, all suburban service centres were first identified and then

[4] Smout, *Service Centres in Greater Salisbury*, 144.

[5] R. R. Sokal and P. H. A. Sneath, *Principles of Numerical Taxonomy* (San Francisco, W. H. Freeman, 1963). See also R. Abler, J. S. Adams and P. Gould, *Spatial Organisation: The Geographer's View of the World* (London, Prentice-Hall, 1971), 158–63.

[6] Smout, *Service Centres in Greater Salisbury*, 144.

visited for the purpose of recording existing functions. The recording form shown in Appendix 1 was used. For each centre a 'total function score' was calculated by adding the points of all the functions identified in the centre.

It is important to note here that the 'weighted allocation of points' method described above is not the only way of measuring the relative functional importance of centres. Functional importance may be measured by simply counting the quantity of functions per centre, or by measuring the combined floorspace of the premises in the centre. The latter method has been employed extensively, particularly in studies concerned with forecasting and allocation techniques for service centre planning.[7] However, the advantage of the 'weighted allocation of points' method employed in the present study is that it enables a distinction to be drawn, firstly between different types of function, and secondly between functions of the same type with different capacities for attracting custom. This kind of distinction and weighting enables both quantity and functional order of services to be more accurately reflected in the total service centre score than would be the case with the two alternative methods mentioned above. The method also ties in neatly with central place theory.

Like most classifications on the basis of rank, the assignment of function points tends to be both arbitrary and subjective, the result being that there might be as many classification schemes as there are researchers. However, this should not be seen as a serious drawback since the main objective of the points allocation method is to achieve systematic comparability, which means that total function scores in isolation have no intrinsic value. The important point to note, however, is that for the sake of both spatial and temporal comparability the same classification method must be used for all the centres in question.

4.3 Results: Changes in Low-Density Residential Areas

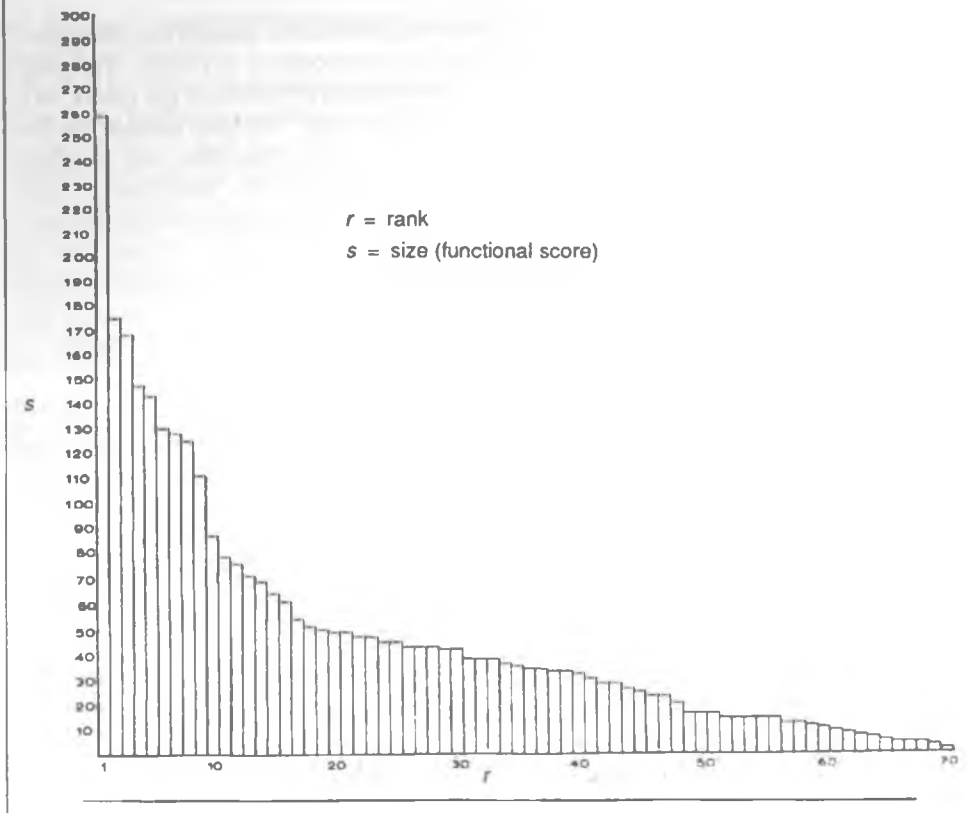
Fig. 4.1 shows the size and rank of the suburban service centres located in the LDRAs. Together, there were 70 such centres at the time of the survey; in the 1974 study 68 centres were identified.[8] Of the additional two service centres identified in this study, Craster Road appears to have been overlooked by Smout, while Westwood, although located in a low-density area, fell outside the then European Areas with which the 1974 study was concerned. The 70 centres identified also include three located in the industrial areas: Southerton Industrial, Workington and Craster Road. Thus, in terms of numbers, there have not been any changes since 1974. The structure of the rank–size distribution has remained the same as in 1974, showing a small-centre-dominated continuum rather than a stepped hierarchy. The only changes — as will be demonstrated later — have been in the size and relative functional importance of centres.

Now coming to changes in size and functional importance, Fig. 4.2 shows a general pattern of decline in the size of centres between 1974 and 1981. The larger centres have tended to decline more than the smaller. On the other hand, much of the growth between 1974 and 1981 is accounted for by the smaller and medium-sized centres. Table 4.3 gives another impression of the changes that have taken place. Altogether 36 centres have declined while 26 centres have grown and six have remained the same. The total net change has involved a reduction of 175 (18 per cent) on the 1974 total score. These results appear to confirm Smout's contention that

[7] See the following: E. L. Cripps, *Retail Turnover and Floorspace* (Bedford, Bedfordshire County Planning Department, 1967); W. G. McClelland, *Costs and Competition in Retailing* (London, Macmillan, 1966); and particularly D. R. Diamond and E. B. Gibb, 'Development of new shopping centres: Area estimation', *Scottish Journal of Polutical Economy* (1962), IX, 130–46.

[8] Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 67–8.

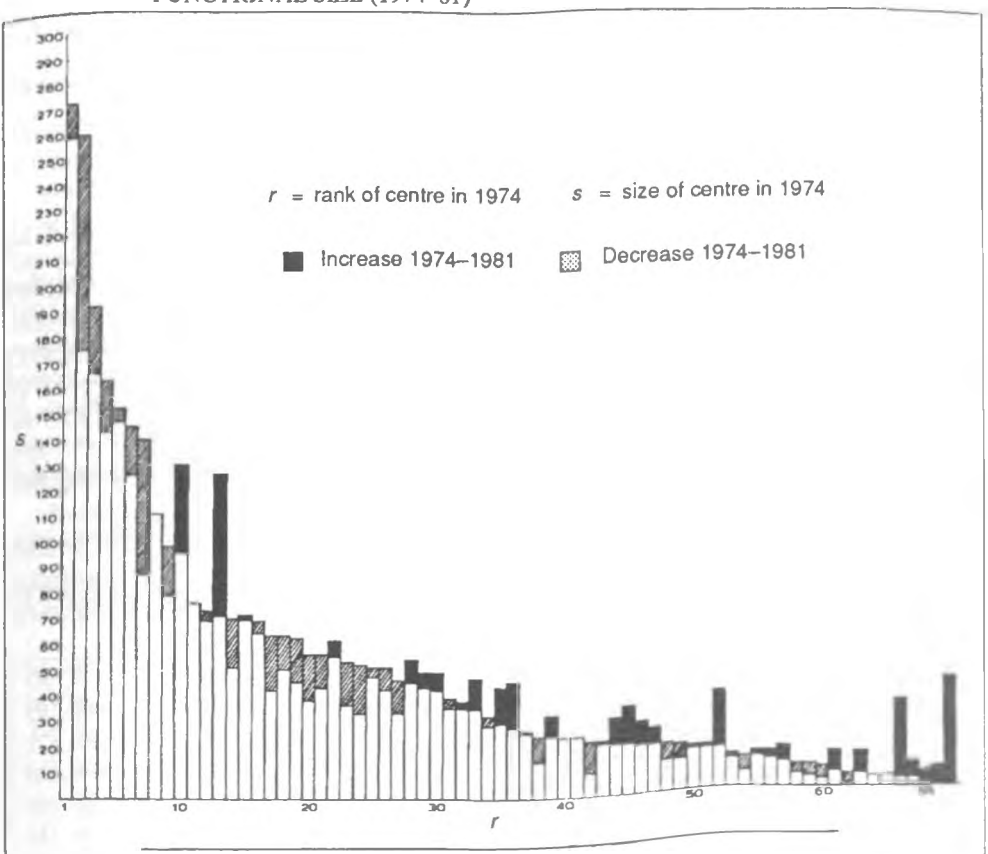
Figure 4.1 LDRA AND INDUSTRIAL AREA SERVICE CENTRES: RANK–SIZE DISTRIBUTION



KEY TO FIG 4.1

Rank	*Name of centre*
1	Avondale
2	Newlands
3	Mabelreign
4	Kamfinsa
5	Borrowdale
6	Parktown
7	Chisipite
8	Fife Avenue
9	Strathaven
10	Mount Pleasant
11	Avonlea/Greencroft
12	Queensdale
13	Samora Machel Avenue
14	Queensway
15	Second Street
16	Beverley
17	Crowhill Road
18	Braeside
19	Hatfield
20 (a)	Msasa Road
20 (b)	Marimba
22 (a)	Groombridge
22 (b)	Lochinvar
24 (a)	Houghton Park
24 (b)	Ballantyne Park
26 (a)	Kensington
26 (b)	Craster Road
26 (c)	Greendale
29 (a)	Rhodesville
29 (b)	Marlborough Civic Centre
31 (a)	Glen Roy
31 (b)	Southerton Industrial
34	Belvedere
35	Workington
36 (a)	Hillside
36 (b)	Bluff Hill
38 (a)	Avondale West
38 (b)	Eastlea
40	Caledon
41	Tait Crescent
42 (a)	Lytton Road
42 (b)	Athlone
44	Meyrick Park
45	Marlborough
46 (a)	Pendennis Road
46 (b)	Ardbennie
48	St Patrick's Road
49 (a)	Logan Park
49 (b)	Lewisam
49 (c)	Chadcombe
52 (a)	Ashbrittle
52 (b)	Cheviot
52 (c)	Park Meadowlands
52 (d)	Southerton
52 (e)	Lyndale
57 (a)	Mandara
57 (b)	Clyde
59	Greystone Park
60	Glen Lorne
61	Northwood
62	Westwood
63	Midlands
64	Ashdown Park
65	Quorn Avenue
66 (a)	Helensvale
66 (b)	Cleveland
66 (c)	Montgomery Drive
69	Cedrella
70	Rolfe Valley

Figure 4.2 HDRA AND INDUSTRIAL AREA SERVICE CENTRES: CHANGES IN FUNCTIONAL SIZE (1974–81)



KEY TO FIG. 4.2

Rank	Name of centre
1	Avondale
2	Newlands
3	Mabelreign
4	Borrowdale
5	Kamfinsa
6	Chisipite
7	Mount Pleasant
8	Strathaven
9	Avonlea/Greencroft
10	Parktown
11	Queensdale
12	Queensway
13	Fife Avenue
14	Braeside
15 (a)	Second Street
15 (b)	Jameson Avenue
17 (a)	Rhodesville
17 (b)	Hatfield
19	Ballantyne Park
20 (a)	Glen Roy
20 (b)	Greendale
22	Beverley
23	Belvedere
24	Eastlea
25 (a)	Marlborough Civic Centre
25 (b)	Groombridge
27	Avondale West
28	Crowhill Road
29	Marimba
30	Msasa Road
31	Workington
32 (a)	Lochinvar
32 (b)	Southerton Industrial
34	Athlone
35	Kensington
36	Houghton Park
37	Meyrick Park
38 (a)	Ashbrittle
38 (b)	Caledon
40 (a)	Ardbennie
40 (b)	Pendennis Road
42 (a)	Northwood
42 (b)	St Patrick's Road
44 (a)	Hillside
44 (b)	Tait Crescent
46 (a)	Marlborough
46 (b)	Clyde
46 (c)	Lytton Road
49	Mandara
50 (a)	Lewisam
50 (b)	Chadcombe
52	Arcadia
53	Greystone Park
54 (a)	Cheviot
54 (b)	Ashdown Park
56	Lyndale
57	Logan Park
58 (a)	Quorn Avenue
58 (b)	Montgomery Drive
60	Cedrella
61	Southerton
62 (a)	Rolfe Valley
62 (b)	Park Meadowlands
64 (a)	Helensvale
64 (b)	Cleveland
66 (a)	Bluff Hill
66 (b)	Glen Lorne
68	Midlands
69	Westwood*
70	Craster Road*

* (omitted in 1974)

Table 4.3

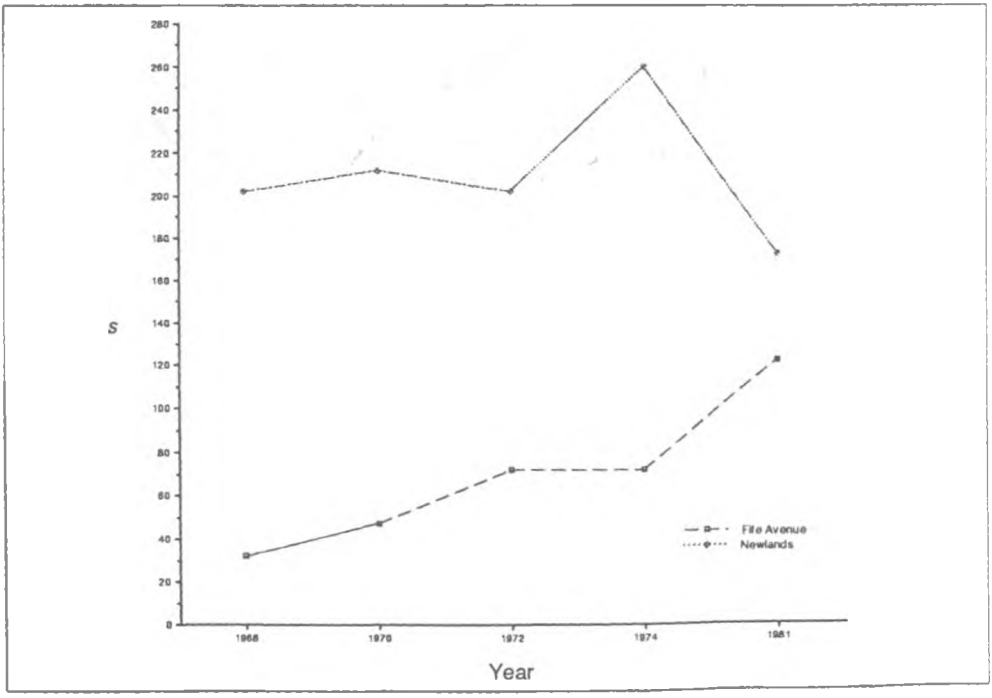
CHANGES IN LDRA SERVICE CENTRES (1974–1981)

Type of change	*No. of centres*	*Score*
Decline	36	–481
Growth	26	+306
No change	6	–
NET CHANGE	62	–175

in the past service centre development has proceeded in a piecemeal fashion with the result that there has been overprovision in the former European areas.[9] The trends between 1974 and 1981 can be seen as a rectification of this situation. The smaller centres have competed and continue to compete against each other and in the process the weaker ones (particularly those located close to larger centres) have been squeezed out. Rolfe Valley centre for example, with only an automobile service station remaining, has almost totally disappeared. At the same time, however, the stronger of the smaller centres have grown, accounting for the little growth that has taken place in the whole hierarchy.

Fig. 4.3 illustrates the changes that have taken place in the two most extreme cases.

Figure 4.3 HDRAS: TWO EXTREME CASES OF GREATEST GROWTH AND DECLINE IN FUNCTIONAL SIZE



[9] Smout, 'The suburban shopping centres', 72. Smout came to this conclusion after observing a large number of vacant premises in service centres located in the European Areas.

Newlands has shown the greatest decline in functional importance and size between 1974 and 1981, losing 85 points in the process, while Fife Avenue has increased its functional size by 54 points.

4.4 Results: The High-Density Residential Area Centres

Altogether, 38 service centres were identified in the HDRAs; Appendix 2 shows the location of the centres in the context of individual residential areas.

Fig. 4.4 illustrates the rank–size distribution of service centres located within the HDRAs. As in the case of Fig. 4.1 the rank–size distribution forms a continuum rather than a stepped hierarchy. However, it appears that the HDRAs do not have as many small centres as do the LDRAs. This difference is illustrated by the fact that centres with a score of 20 or less (small centres) constitute 21 per cent of all centres in HDRAs, while the comparable figure for the LDRAs is 31 per cent. In general, service centre facilities in the HDRAs are far out-numbered by those in the LDRAs: of the total of 108 suburban service centres identified in this study, 70 are located in the LDRAs while 38 are located in the HDRAs. The corresponding functional scores are 3,311 and 2,451, respectively. This large gap in service centre provision is undoubtedly a result of the income differences between LDRAs and HDRAs (see Chapter 3).

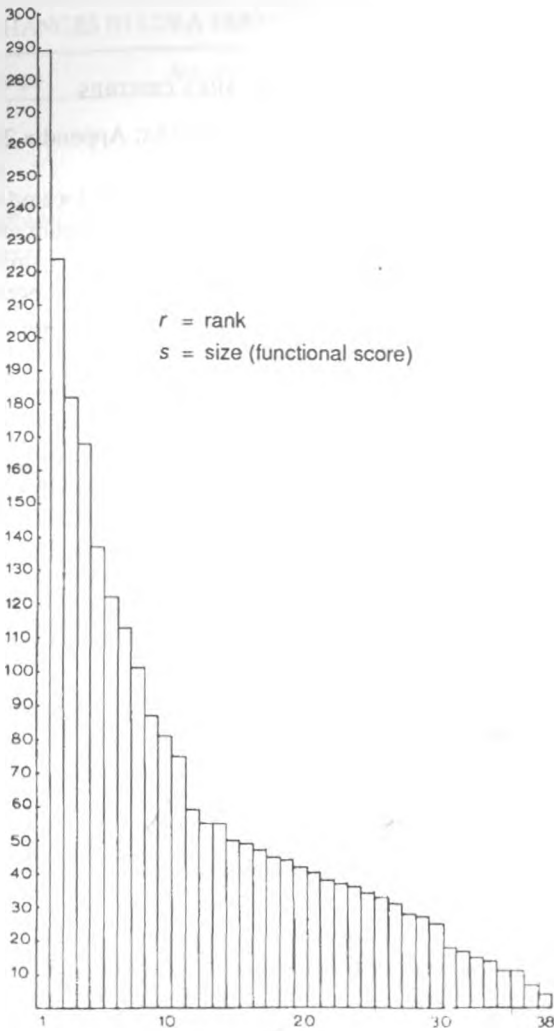
The rank–size distribution is useful for determining the relative functional size of service centres, but it says little about the composition of individual centres. To get more detail on the composition of service centres, the list of functions identified in all centres was divided into seven groups of function types as follows:

(a) General dealers and general food shops.
(b) Supermarkets and department stores.
(c) Specialist retail shops.
(d) Financial establishments.
(e) General offices.
(f) Personal services.
(g) Social services and administrative establishments.

The detailed composition of each of these groups is shown in Table 4.4. This breakdown o functions into several groups enables a distinction to be drawn between 'generalist' and 'specialist' service centres. In line with central place theory, small 'generalist' low orde service centres are dominated by functions of low thresholds which cater for the day-to-da needs of the customers. In the case of suburban centres in Harare, particularly those locate in HDRAs, general dealers and small food shops or 'tuck-shops' are generally the lowest i terms of threshold value. Supermarkets and department stores, particularly large ones, ar generally found in large centres which cater for much larger populations. Specialist retail shop such as jewellers and electrical shops together with general offices and personal services ar located mainly in large specialist centres. Social and administrative establishments, particularl in HDRAs, appear to attract investment into the centres in which they are located, with th result that these centres generally grow into high order ones.

Appendix 3 shows all suburban service centres in rank order; the functional compositio of each of the 108 centres; the total functional score for each centre, *s*; the proportions of functio types (a) to (g) in each centre; and the most dominant function type in each centre. Table 4. shows, for both HDRAs and LDRAs, the number of centres in which each of the seven functio

Figure 4.4 HDRA SERVICE CENTRES: RANK–SIZE DISTRIBUTION



KEY TO FIG. 4.4

Rank	*Name of centre*
1	Machipisa
2	Makoni
3	Chikwanha
4	Magaba
5	Matapi
6	Western Triangle
7	Old Highfield
8	Kambuzuma 5 and 6
9	Kambuzuma 2
10	Musika
11	Community Centre
12	Huruyadzo
13 (a)	Chidziva
13 (b)	Makomva
15	Zengeza 2
16	Kambuzuma 3
17	Samuriwo
18	Tsimba
19	Chaminuka Street
20	Rugare
21	Chitubu
22	Muriranyenze Street
23	Dongo Road
24	Tafara
25	Spaceman
26	Joburg Lines
27	Chishamiso
28	Lusaka
29	Marowa
30	Glen Norah B
31	Mrewa
32	New Mabvuku
33	Zanamwe
34	Mwazha
35 (a)	Bassopo
35 (b)	Nehanda Street
37	New Location
38	Tsiga and Chikore

Table 4.4

FUNCTIONAL COMPOSITION OF CENTRES: FUNCTION TYPES

(a)	General dealers and food shops:
	General dealer — large
	General dealer — small
	General food
	Butcher
(b)	Supermarkets and department stores:
	Supermarket — large
	Supermarket — medium
	Supermarket — small
(c)	Specialist retail shops:
	Bottle store
	Chemist
	Clothing
	Electrical
	Florist
	Gifts and stationery
	Garden requisites
	Hardware
	Household soft goods
	Shoes
(d)	Financial establishments:
	Bank branch
	Bank agency
	Building society branch
	Building society agency
	Insurance company branch
	Insurance company agency
	Estate agents
(e)	General offices:
	General business
	Surgery
(f)	Personal services:
	Service stations (automotive)
	Vehicle hire and sales
	Dry cleaners
	Hairdresser
	Restaurant
	Licensed premises
	Shoe repair agency
	Sports Pools
(g)	Social service and administrative estblishments:
	Clinic
	Library
	Police Station
	Post Office branch
	Post Office agency
	Town Council hall/office

Table 4.5

HDRA VERSUS LDRA SERVICE CENTRES: DOMINANT FUNCTION TYPES

Function type	*HDRA* *n* (%)	*LDRA* *n* (%)
a	13 (32.5)	6 (8.1)
b	0 (0)	4 (5.4)
c	11 (27.5)	51 (68.9)
d	0 (0)	1 (1.4)
e	0 (0)	0 (0)
f	8 (21.1)	13 (17.6)
g	7 (18.4)	0 (0)

n (%) = number and percentage of centres in which that function is dominant.

types was counted as the most dominant, that is the number of times each of (a) to (g) is italicized in Appendix 3. Taking function type (a) as an example, in 13 (32.5 per cent) of the HDRA service centres it was counted as the most dominant and in 6 (8.1 per cent) of the LDRA centres it was counted as the most dominant. Thus the results in Table 4.5 measure the overall comparative importance, in terms of quantity, of each of the seven function types. Another way of measuring the overall importance of each of the seven function types in HDRA and LDRA service centres is by adding up all the total functional score for all HDRA or LDRA centres, T, ($\Sigma s = T$), and then calculating the percentages of T accounted for by each of function types (a) to (g). The results of this procedure are shown in Table 4.6 and graphically in Fig. 4.5.

The results in Appendix 3, Tables 4.5 and 4.6, and Fig. 4.5 show that the majority (68.9 per cent) of LDRA service centres are dominated by function type (c), 'specialist retail shops'. On the other hand function type (a), 'General dealers and food shops', is the most dominant in HDRA service centres (32.5 per cent of the centres). These results suggest that LDRA service centres are specialist, providing individual high order retail functions in separate establishments or shops, while HDRA centres are more generalist, combining several functions under single

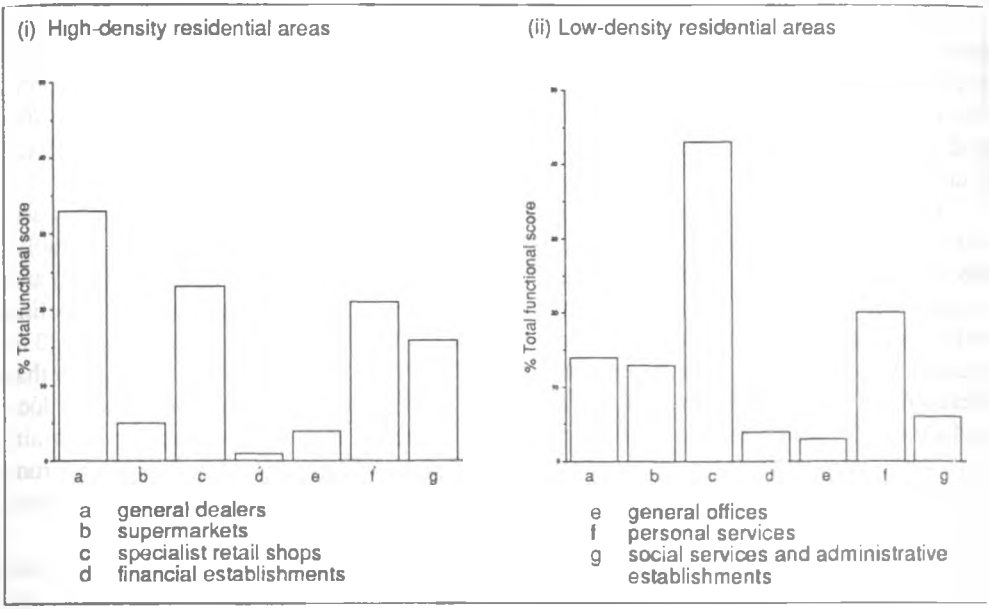
Table 4.6

HDRA VERSUS LDRA SERVICE CENTRES: AVERAGE FUNCTIONAL COMPOSITION

Function type	*HDRA* *%T*	*LDRA* *%T*
a	31.5	13.1
b	4.4	12.8
c	22.5	42.5
d	0.1	4.0
e	3.9	2.5
f	21.4	19.8
g	16.6	5.2

%T = total scores for each function type as a percentage of the total functional score.

Figure 4.5: AVERAGE FUNCTIONAL COMPOSITION OF HDRA AND LDRA SERVICE CENTRES



premises or shops. This conforms with Davies' conclusion regarding the effect of socio economic structure (income differences) on business provisions in service centres, that high income area centres tend to be more specialized than centres of low-income areas.[10] The reason for this pattern, undoubtedly, is that low-income residential areas cannot provide the requisite thresholds for specialized retail shops because of their low purchasing power, so that the only means by which entrepreneurs can realize profit is by combining several retail functions with different thresholds under single general-dealer premises.

A significant characteristic also emerging from the results is the absence of financial establishments in HDRAs. Although there are a few Post Office Savings Bank branches in HDRAs, the majority of residents rely on the CBD for banking, real estate and other financial transactions. On the other hand, LDRA service centres, particularly the larger ones, are well serviced in terms of financial establishments, as shown in Appendix 3. The major commercial banks (Barclays and Standard) and major building societies (Central Africa Building Society and Beverley) have branches and agencies spread all over the LDRAs. This pattern is only to be expected, given the much higher incomes of LDRA households. However, in view of the improving incomes of HDRA households (on account of the higher minimum wages) financial establishments in HDRA service centres are going to be increasingly necessary. If the thresholds of financial functions are considered to be too high at present and in the near future then it might be worthwhile to consider mobile agencies as an alternative solution.

In both the 1971 and 1974 studies, Smout does not provide details on service centres identified in Highfield, neither does he indicate the constituent functions of those centres making it impossible to assess changes in a way similar to that used for the LDRAs. However adequate detail is provided in the case of Mbare to enable such an assessment to be made.

[10] Davies, 'Structural models of retail distribution'.

Table 4.7 shows in detail the changes that have taken place in Mbare centres since 1969.[11] The data for 1969 and 1974 are taken from the 1974 study, with slight modifications. In the list of types of retail and service establishments, Smout lists 'General retail' and 'Grocers' separately. Since it is not always easy to distinguish between grocers, general dealers and small supermarkets (or 'superettes'), it was considered better to include all these within one category, that is 'General retail and food shops'; thus the 'General retail and food shop' figures for 1969 and 1974 in the table are arrived at by adding Smout's figures for 'Grocers' and 'General retail'.[12]

In general, service centres in Mbare have shown little change over the last seven years. However, a number of functions have, in terms of their quantities, changed considerably. Those that have increased include bottle stores (2 to 8 units), beer gardens (1 to 6 units) and hairdressers (7 to 12 units). Types of retail and service functions that have tended to decline in numbers include clothing (20 to 15 units), furniture stores (4 to 0 units) and chemists (3 to 1 units). It is important to note that while it appears from this analysis of the formal sector that there are no furniture retailers in Mbare, a vigorous group of 'informal' furniture retailers does in fact exist. These informal retailers manufacture their stock and sell it in the open air, particularly around Matapi service centre (see Appendix 2 for the location of Matapi). From general discussions with some of the informal furniture dealers, it appears that the informal furniture retailers have gradually squeezed out their formal counterparts.

Fig. 4.6 graphically illustrates the changes that have taken place in seven of the Mbare service centres since 1969.[13] The relative size of service centres, as measured by rank, has remained largely the same. The only changes were in 1974 when Matapi (48 units) overtook Magaba (41 units) to occupy the first rank. However, by 1981 Magaba (61 units) had regained its first rank position. In terms of the total number of units, between 1974 and 1981 Mbare Community Centre and Musika have grown; Matapi and Joburg Lines have declined; while Marowa and Bassopo have remained the same. Thus all growth in Mbare (see last column of Table 4.7) is accounted for by Magaba (+ 20 units), Musika (+ 12 units) and Mbare Community Centre (+ 7 units) in that order.

In a well-planned and fully developed system of settlements, larger settlements (residential areas in the case of this study) should contain more central place or service centre functions, thereby conforming with the hierarchy principle of classical central place theory. Table 4.8 compares the 'total area functional score', Y, calculated for the HDRAs with the 'total population' X_1, and 'total number of housing units', X_2, for those areas. Thus total population and total number of housing units are used here as measures of the size of residential areas. Statistically, total area functional score should be a function of the size of the area, that is $Y = f(X_1)$ and/or $Y = f(X_2)$. Ideally, it should be possible to compute correlation coefficients between Y and X_1 and Y and X_2. To test this, scattergrams of the data in Table 4.8 were plotted. Fig. 4.7 is the scattergram of Y against X_1 and Fig. 4.8 is the scattergram of Y against X_2. Clearly, both scattergrams illustrate the absence of a significant relationship between functional score Y and size of residential areas X_1 and X_2. For both scattergrams, the computation of correlation coefficients or regression equations is inappropriate, largely because of the two extreme

[11] The data for Smout's 1971 study, *Service Centres in Greater Salisbury*, were obtained from a survey carried out in 1969, hence the data are entered as 1969 in the Table rather than 1971.

[12] Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 58.

[13] Table 4.7 includes data on two service centres not included in past studies, 'New Location' and 'Tsiga and Chikore's centres. Thus altogether there are nine service centres in Mbare and not only the seven shown in Fig. 4.6.

Table 4.7

SERVICE CENTRES IN MBARE: CHANGES BETWEEN 1969 AND 1981

Type of retail service establishment	*Matapi*			*Magaba*			*Mbare Community Cent.*			*Musika*			*Marowa*			*Joburg Lines*			*Bassopo*			*New Location*			*Tsiga and Chikore*			*All Centres*		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
General retail and food shops	17	16	13	9	7	11	11	11	10	5	5	6	11	10	10	5	6	2	2	2	3	–	–	2	–	–	2	60	57	59
Clothing	2	1	1	13	18	14	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	15	20	15
Butchery	0	2	1	3	4	6	2	2	3	2	2	3	2	2	2	1	1	0	1	1	0	–	–	0	–	–	0	15	20	15
Dry-cleaning depot	8	8	5	4	1	2	1	2	4	1	0	2	0	1	0	3	2	2	0	0	0	–	–	0	–	–	0	17	14	15
Eating house	2	3	3	3	4	5	2	0	0	3	2	2	0	0	0	1	1	0	0	0	0	–	–	0	–	–	0	11	10	10
Hairdressers	2	4	5	2	0	3	0	1	2	1	1	2	0	0	0	0	1	0	0	0	0	–	–	0	–	–	0	5	7	12
Shoe sale and repairs	0	0	0	1	1	4	1	2	0	0	0	0	1	1	1	2	0	1	0	0	0	–	–	0	–	–	0	5	4	6
Furniture store	0	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	1	4	0
Chemist	1	0	0	1	1	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	–	–	0	–	–	0	4	3	1
Bottle store	0	0	1	1	1	2	0	0	1	1	1	3	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	2	2	8
Bank	0	0	0	0	0	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	2	3	0
Sports pool/tote	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	1	2	1
Electrical goods	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	0	2	0
Service station	0	2	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	–	–	0	–	–	0	0	2	4
Surgeries and clinics	1	4	3	4	1	3	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	–	–	0	5	7	8
Beer garden	1	0	2	1	0	1	1	0	1	1	1	1	0	0	0	0	0	2	0	0	0	–	–	0	–	–	0	4	1	6
Others	2	3	9	0	0	9	1	0	6	1	0	6	0	0	0	0	0	0	0	0	0	–	–	0	–	–	0	4	3	30
TOTAL UNITS	36	48	44	44	41	61	22	23	30	15	14	26	14	14	14	13	12	8	3	3	3	–	–	3	–	–	2	147	155	190
RANK	2	1	2	1	2	1	3	3	3	4	4=	4	5	4=	5	6	6	6	7	7	7	–	–	7	–	–	9	–	–	–

A = 1969 B = 1974 C = 1981

Figure 4.6: MBARE SERVICE CENTRES: CHANGE IN TOTAL NUMBER OF ESTABLISHMENTS/UNITS (1969–1981)

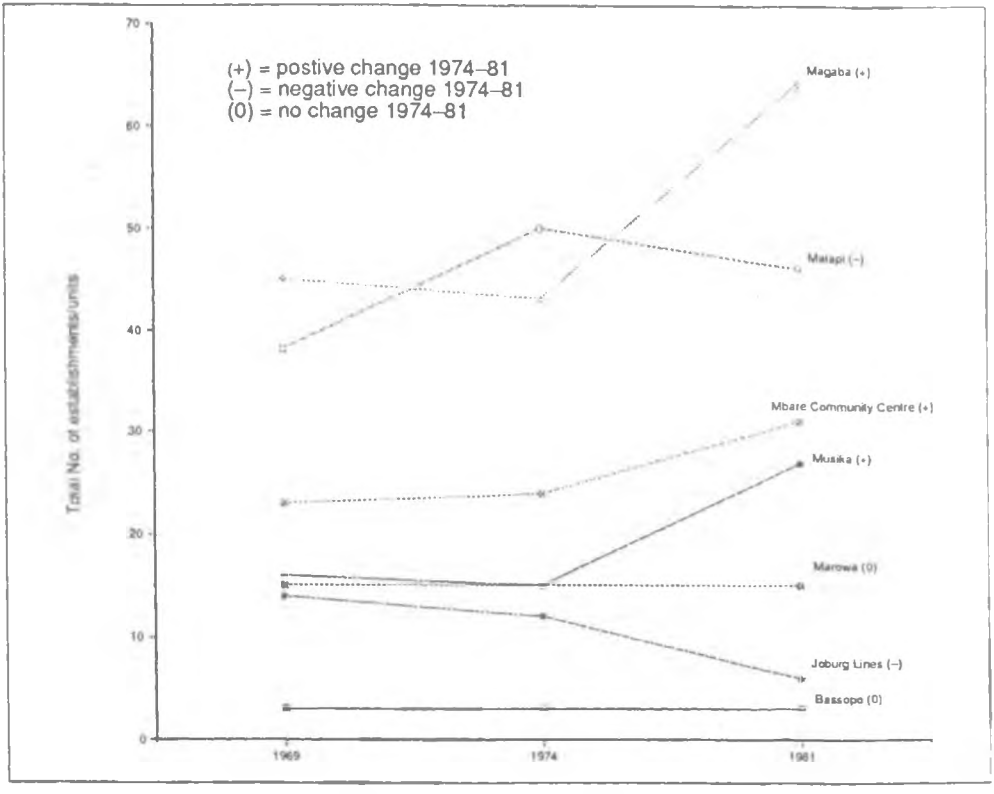


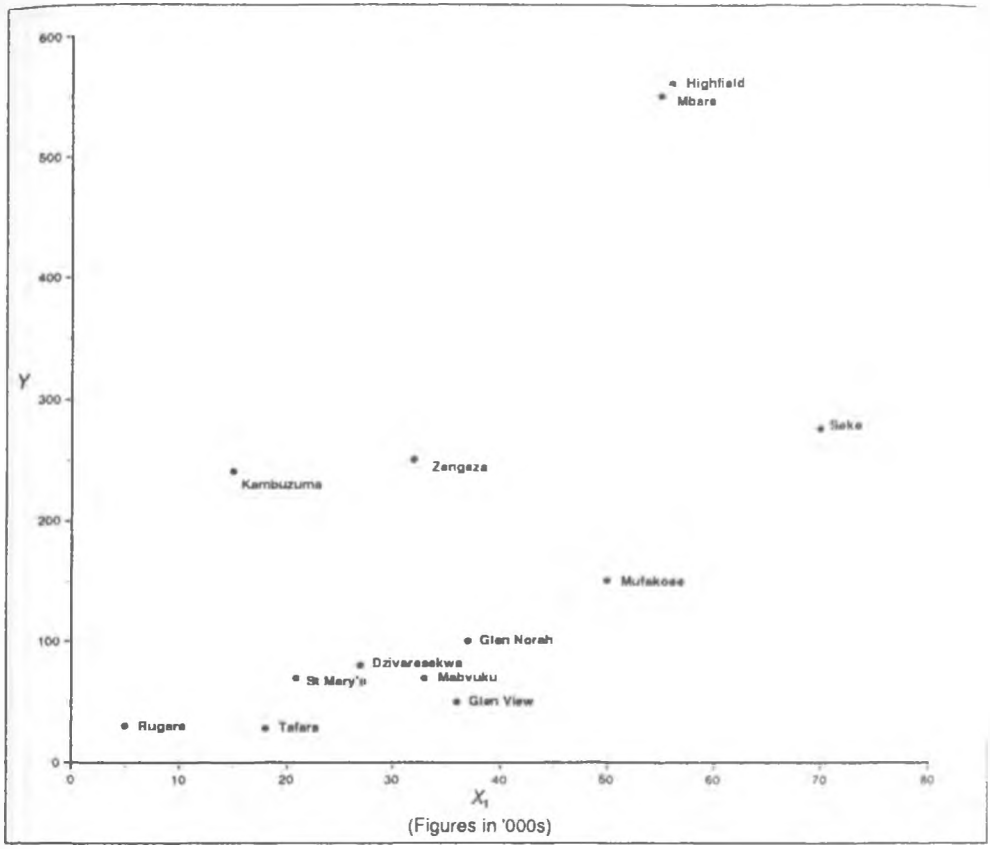
Table 4.8

TOTAL FUNCTIONAL SCORES, POPULATION AND HOUSING UNITS IN HDRAs (June 1981)

HDRA	*Score* (*Y*)	*Population* (X_1)	*Housing units* (X_2)
Highfield	552	57,229	8,457
Mbare	543	55,431	13,535
Seke	279	70,190	12,764
Zengeza	246	32,345	8,151
Kambuzuma	237	15,687	2,44
Mufakose	140	50,350	7,495
Glen Norah	99	37,933	6,500
Dzivaresekwa	76	26,202	4,348
St Mary's	74	20,569	2,899
Mabvuku	72	33,169	5,795
Glen View	55	36,652	8,652
Rugare	42	6,155	1,182
Tafara	36	18,181	3,314

Sources: City of Harare, Dept. of Housing and Community Services, pers. comm; Chitungwiza Urba Council, pers. comm.

Figure 4.7: HDRAs: SCATTERGRAM OF TOTAL FUNCTIONAL SCORE (Y) AGAINST TOTAL POPULATION (X_1)

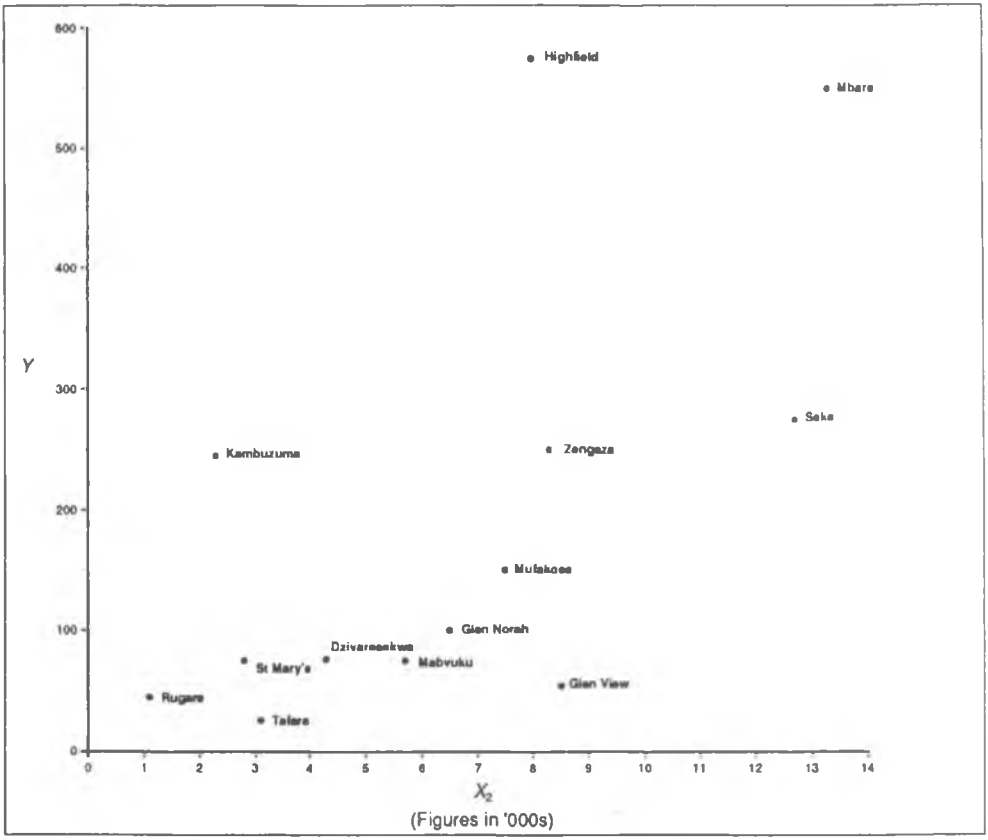


Highfield and Mbare cases.[14] In spite of this, both scattergrams demonstrate that, by far, Mbare and Highfield are the best serviced; this is likely to be a result of the fact that Mbare and Highfield are the oldest HDRAs in the city (see Chapter 3). Both scattergrams also demonstrate that Glen View is comparatively poorly serviced; this is likely to be a result of its recent development.

The general conclusion to be drawn from the data, then, is that there appears to be no evident relationship between service centre functions and the size of HDRAs. Assuming homogenous socio-economic conditions (the isotropic plain assumption of classical theory), this absence of a 'service centre functions–residential area size' relationship is likely to be a result of (a) poor locational planning or (b) delayed response from retail and service entrepreneurs. Both could be rectified by developing, as fast as possible, all land set aside for service centres in individual HDRAs (Appendix 2) and by utilization of the hierarchy principle in the locational planning of service centres.

[14] H. M. Blalock, *Social Statistics* (Tokyo, McGraw-Hill Kogakusha, 1972), 301–2, discusses the problem of extreme cases and limited range of variability of variables in correlation and regression analysis.

Figure 4.8 HDRAs: SCATTERGRAM OF TOTAL FUNCTIONAL SCORE (Y) AGAINST TOTAL HOUSEHOLDS (X_2)



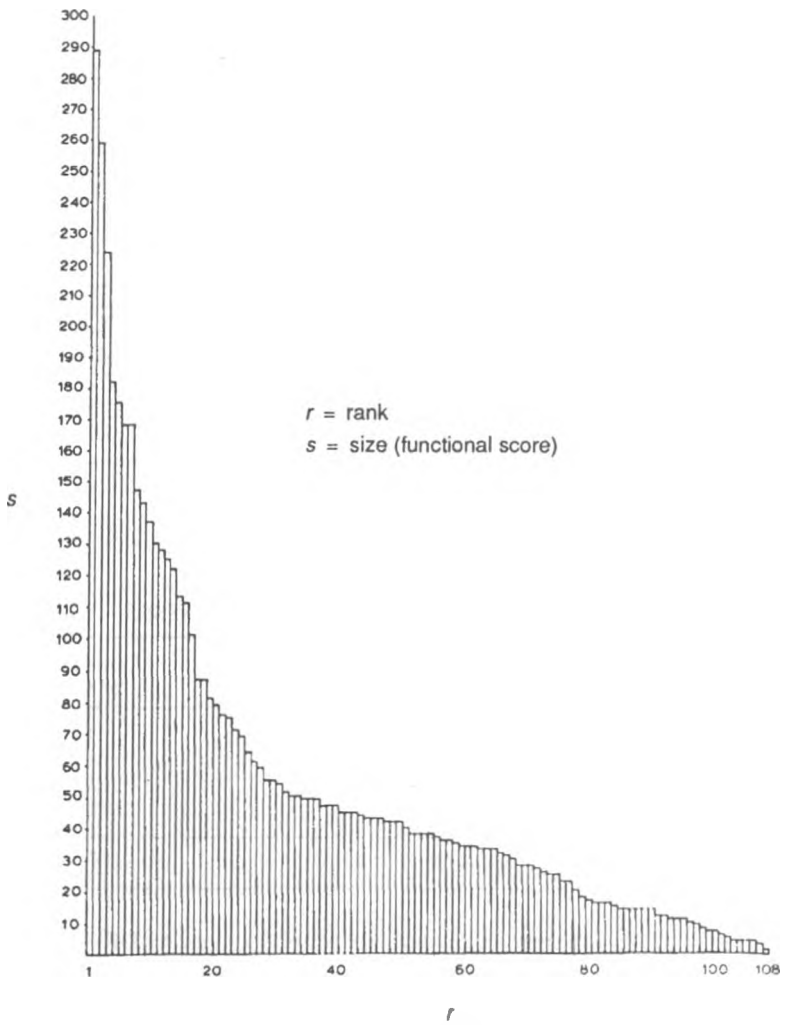
4.5 INTEGRATED RANK–SIZE DISTRIBUTION OF SERVICE CENTRES

Having discussed the rank–size characteristics of service centres in LDRAs and HDRAs separately, the combined rank–size distribution of centres for the study region may now be examined.

Within the whole of Harare, including Chitungwiza, a total of 108 service centres have been identified. Appendix 3 lists all the centres in their rank order. It also shows the functional composition of each of the centres, that is the percentages of the total centre score accounted for by each of the seven functional types described earlier. Fig. 4.9 shows the integrated distribution of all the centres. The curve formed by the distribution resembles those of the LDRAs and HDRAs (Figs 4.1 and 4.4) separately discussed in Sections 4.3 and 4.4. The continuum curve confirms one general conclusion of earlier central place studies: that within the intra-urban context the stepped hierarchy of centres envisaged by Christaller is in most cases difficult to authenticate, and more often than not the distribution of centres forms a continuum rather than a stepped hierarchy with distinct groups of centres (see Chapter 2).

In his 1971 and 1974 studies, Smout divided the European Area centres into five classes

Figure 4.9: SUBURBAN SERVICE CENTRES IN HARARE: INTEGRATED HIERARCHY



See Appendix 3 for names of centres.

following Clark's concept of groups.[15] However, in this study percentile divisions have bee used as the basis for classification. The first reason for using a percentile classification is tha the rank-size distribution of centres, as indicated above, is more of a continuum rather than stepped hierarchy where discrete groups or classes are evident. This means that any classificatio of centres using the concept of groups, as carried out by Smout, does not yield evidentl significant classes. The second reason for using percentile classification in place of a group concept classification is that it enables comparison between the largest centre and the rest o the centres, bringing out the importance of centres, relative to each other, more clearly.

[15] Smout, *Service Centres in Greater Salisbury*, 152; Smout, *Commercial Growth and Consumer Behaviour i Suburban Salisbury*, 21.

The percentiles used are the 25th, 50th and 75th of the range of scores (289). This percentile or quartile classification gives the four classes listed in Table 4.9. The distribution of service centres according to these classes is shown in Table 4.10 and graphically in Fig. 4.10. Thus, more than three-quarters (78.7 per cent) of the centres are in the bottom class, that is, they are actually just a quarter or less of the size of the largest centre. In general, Table 4.10 illustrates the numerical dominance of small centres over large ones, a situation which generally conforms with the distribution of central places envisaged in classical theory.

Table 4.9

PERCENTILE/QUARTILE CLASSES OF CENTRES

Class	*Quartile*	*Score range*
4	1	0 – 72.25
3	2	72.26– 144.5
2	3	144.60– 216.17
1	4	216.76– 289

Table 4.10

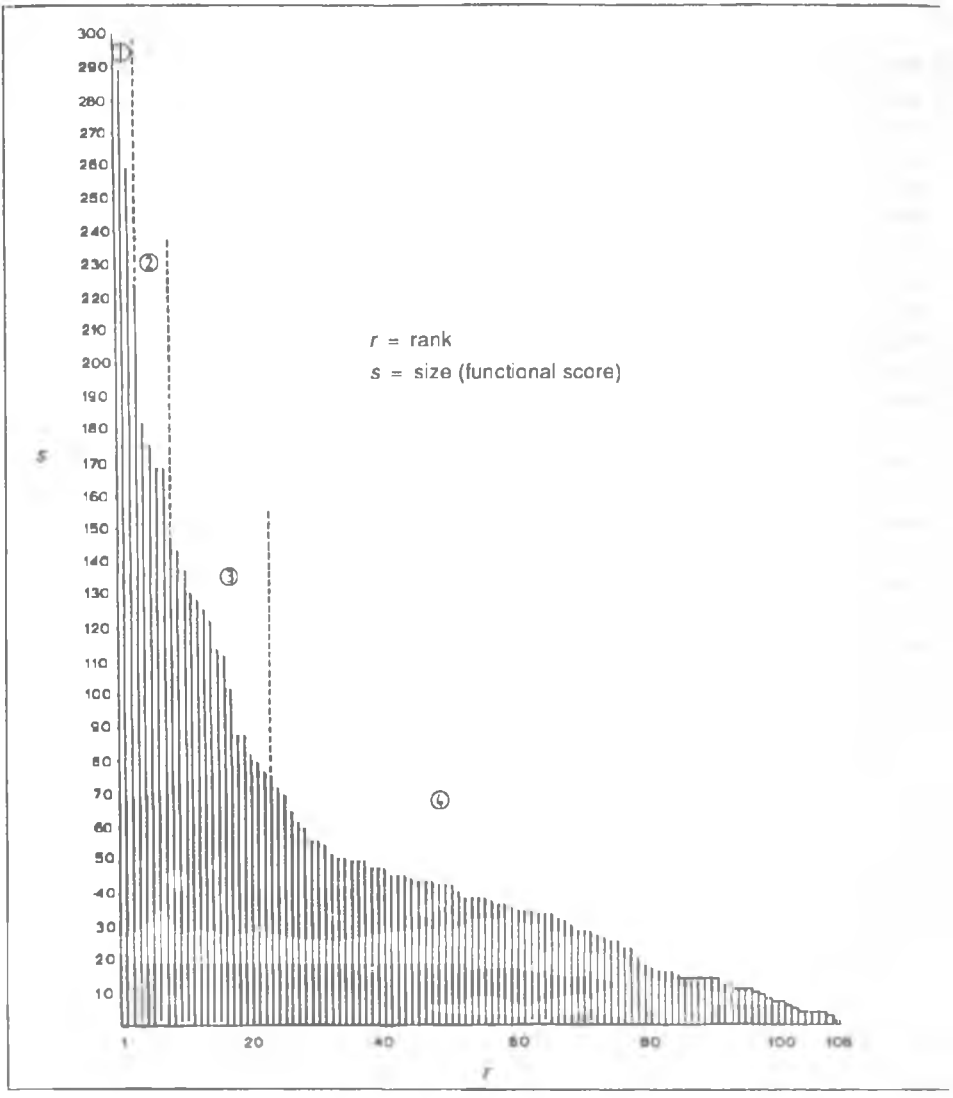
DISTRIBUTION OF CENTRES BY PERCENTILE CLASSES

Class	*No. of centres*	*Percentage of total*
1	3	2.28
2	5	4.63
3	15	13.89
4	85	78.70
TOTAL	108	100

Fig. 4.11 and Fig. 4.12 show the percentile classes of service centres in LDRAs and HDRAs separately. The distribution of centres by class is shown in Table 4.11 and Table 4.12 for the LDRAs and HDRAs respectively. In the case of LDRAs, 82.86 per cent of the 70 service centres are less than one quarter of the size of the largest centre in the whole of Harare, and the corresponding figure for the HDRAs is 71.06 per cent. These figures tend to emphasize one conclusion drawn earlier, that the LDRAs are characterized by a relatively larger proportion of small centres, some of which may be superfluous.

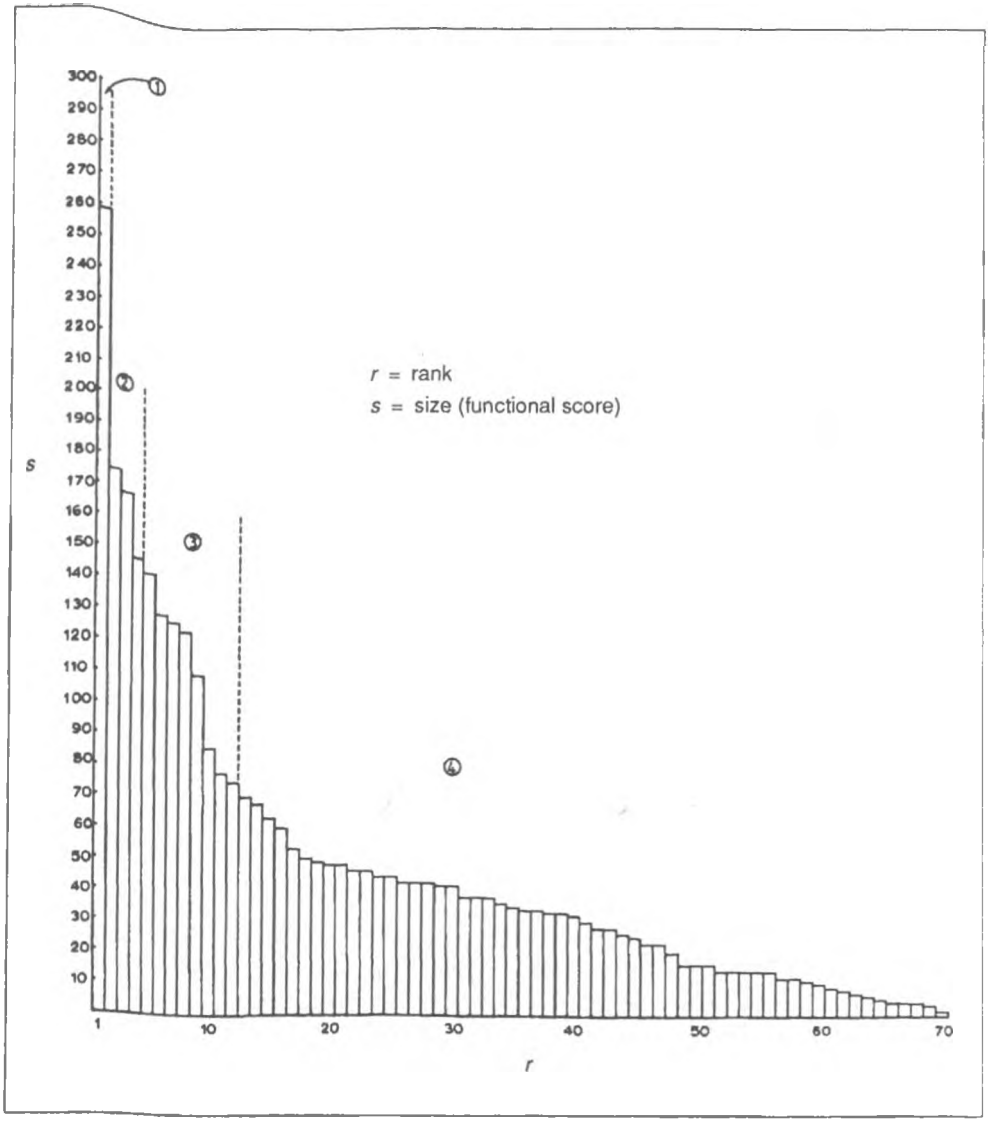
Another useful index for measuring the extent of apparent overprovision is the number or percentage of vacant premises in each service centre. The assumption here is that where business is profitable, most service centre premises are occupied, and where business is only marginally economic a higher proportion of premises tend to be vacant. Table 4.13 shows the data on vacant premises for the whole of Harare. Out of the total of 108 centres, 39, or 36.11 per cent, had at least one unit of vacant premises; and out of the total of 1,665 premises identified, 104, or 6.25 per cent, of them were vacant. These figures do not include new vacant premises, that is buildings recently completed but not yet occupied. On the whole the figures signify a high degree of inefficient use of space or overprovision. However, much of this

Figure 4.10: HARARE SUBURBAN SERVICE CENTRES: PERCENTILE (QUARTILE) CLASSES



inefficiency or overprovision is accounted for by service centres located in the LDRAs becomes evident on comparing Table 4.14 and Table 4.15 which show data on vacant prem separately for the LDRAs and HDRAs respectively. In the case of LDRAs, 45.71 per cer the centres had at least one unit of vacant premises while the comparable figure for the HDR was only 18.42 per cent. Of the total number of premises identified in the LDRAs 8.15 per c of them were vacant, while only 3.83 per cent were vacant in the HDRAs. Ano characteristic emerging from the data is that in the case of HDRAs, inefficient use of sp occurs only in the few very large centres at the upper end of the hierarchy, while there is even a single unit of vacant premises in Class 4 centres which in fact constitute 71.05 per c

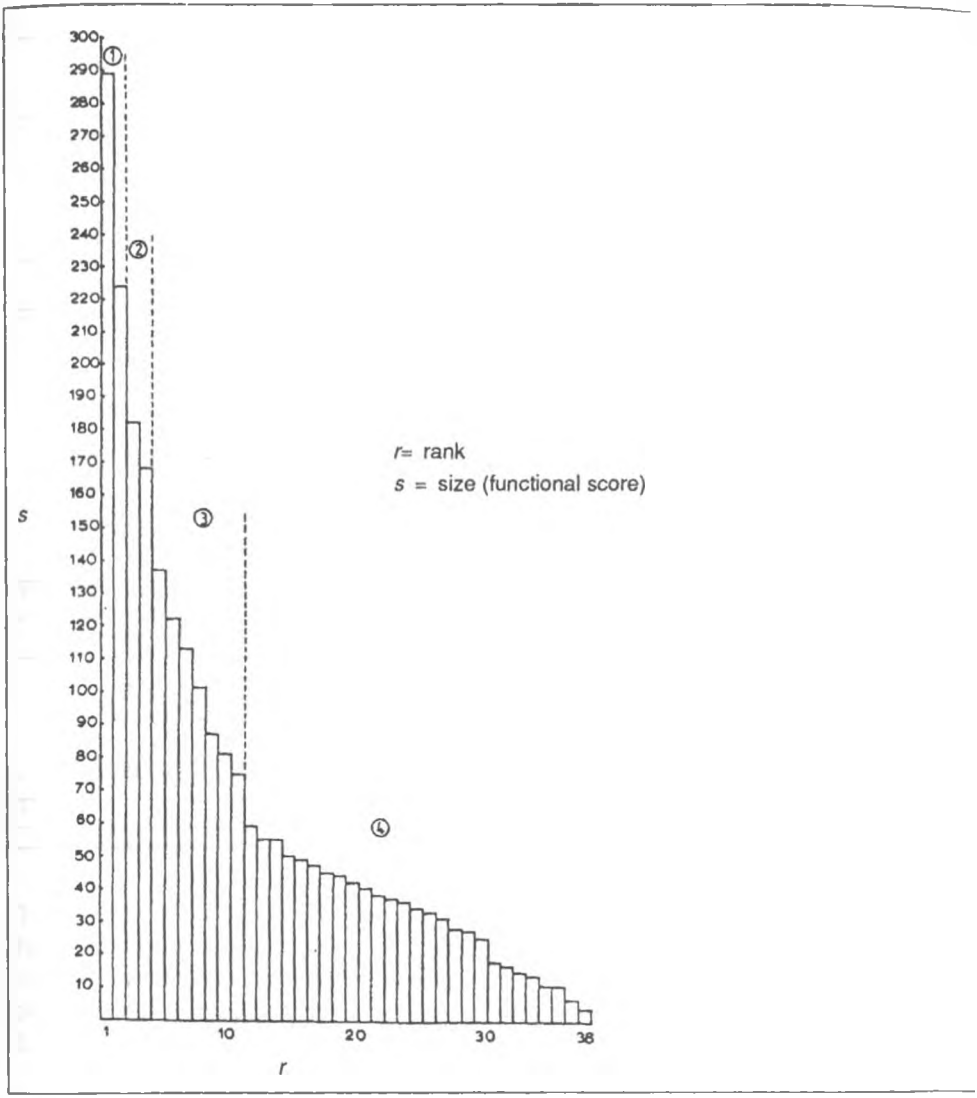
Figure 4.11: LDRA SERVICE CENTRES: PERCENTILE (QUARTILE) CLASSES



of all the centres there. The opposite is true in the case of centres located in the LDRAs. Here, Class 4 (the smallest centres) account for most of the inefficient use of space, as indicated by the fact that 46.55 per cent of them had at least one unit of vacant premises compared with none in HDRA centres.

From this data, it may be concluded, therefore, that the LDRAs are characterized by an overprovision of small, space-inefficient and economically marginal centres, while the same cannot be said of HDRAs. The reason for the over provision of small centres in LDRAs seems to have been the type of land tenure operating in the European areas before the creation of Greater Salisbury in 1971. As stated earlier (Chapter 3), the European Areas were developed

Figure 4.12: HDRA SERVICE CENTRES: PERCENTILE (QUARTILE) CLASSES



on private farms, and, in the absence of centralized planning, developers tended to develop ne service centres wherever new residential estates or extensions were built. There was no co ordination of development, and investors, particularly those investing in the smaller centre seem to have underestimated the effect of the very high mobility which characterizes LDR inhabitants: that most families prefer to buy in bulk in the CBD and at the very large servic centres like Avondale.[16] On the other hand, the planning of HDRAs was more controlle (Chapter 3); unlike in the LDRAs, service centres in the HDRAs were built on state land, factor which helped to avoid haphazard development.

[16] As evidenced by the work on shopping-trip patterns in LDRAs in 1971 by Smout, *Service Centres in Great Salisbury*.

Table 4.11

DISTRIBUTION OF CENTRES BY PERCENTILE CLASSES: LDRAs

Class	*No. of centres*	*Percentage of total*
1	1	1.43
2	3	4.28
3	8	11.43
4	58	82.86
TOTAL	70	100

Table 4.12

DISTRIBUTION OF CENTRES BY PERCENTILE CLASSES: HDRAs

Class centres	*No. of of total*	*Percentage*
1	2	5.26
2	2	5.26
3	7	18.42
4	27	71.06
TOTAL	38	100

Table 4.13

INTEGRATED HIERARCHY: DATA ON VACANT PREMISES

Percentile class	*Total no. of centres*	*No. of centres with at least one unit of vacant premies*	*Percentage of centres with at least one unit of vacant premises*	*Total no. of premises*	*Total no. of vacant premises*	*Percentage of premises vacant*
1	3	3	100	249	6	2.41
2	5	5	100	210	13	6.19
3	15	4	26.67	438	21	4.79
4	85	27	31.76	768	64	8.33
TOTAL	108	39	36.11	1,665	104	6.25

Table 4.14

LDRAs: DATA ON VACANT PREMISES

Percentile class	*Total no. of centres*	*No. of centres with at least one unit of vacant premies*	*Percentage of centres with at least one unit of vacant premises*	*Total no. of premises*	*Total no. of vacant premises*	*Percentage of premises vacant*
1	1	1	100	67	2	2.99
2	3	3	100	97	8	8.25
3	8	1	12.50	237	2	0.84
4	58	27	46.55	532	64	12.03
TOTAL	70	32	45.71	933	76	8.15

Table 4.15

HDRAs: DATA ON VACANT PREMISES

Percentile class	*Total no. of centres*	*No. of centres with at least one unit of vacant premies*	*Percentage of centres with at least one unit of vacant premises*	*Total no. of premises*	*Total no. of vacant premises*	*Percentage of premises vacant*
1	2	2	100	182	4	2.20
2	2	2	100	113	5	4.42
3	7	3	42.86	201	19	9.45
4	27	0	0	236	0	0
TOTAL	38	7	18.42	732	28	3.83

4.6 Conclusions

The overall aim of this chapter has been to identify and analyse the functional rank-size characteristics of service centres in Harare along the lines of central place theory. It has been demonstrated that the integrated rank–size distribution of suburban service centres in Harare forms a continuum rather than a stepped hierarchy, confirming earlier interpretations of classical central place theory in the context of intra-urban areas.

The following are the salient observations emerging from the analysis of centres in LDRAs and HDRAs separately:

Low-Density Residential Areas

(1) Since 1974, the general pattern has been one of declining functional size; while in terms of the number of centres, there has been little change.
(2) There appears to be a high degree of inefficient use of space particularly in the smaller centres, as evidenced by the number of vacant premises.
(3) Linked to the inefficient use of space, it also appears that a process of strong competition between the small centres is taking place and in the process some small centres have been squeezed out while others have accounted for the little growth that has taken place in LDRAs.

High-Density Residential Areas

(1) In Mbare — the only area where it has been possible to assess change since 1974 — service centres have shown little change, in spite of the increase in population in the last few years.

(2) There is a significant absence of financial offices. This means that residents of the HDRAs have no ready access to banks, building societies and estate agents. In view of changing economic circumstances, planning authorities and businessmen alike may have much to gain by starting to disperse these functions into the HDRAs.

(3) Although HDRAs carry over 70 per cent of the city's total population, the service centre facilities in these areas are by far outnumbered by those in LDRAs. This disparity is, however, explained by the dual socio-economic stucture described in Chapter 3.

(4) Above all, a significant anomaly in the pattern of service centre distribution is that there appears to be no systematic relationship between the size of residential areas and the volume of service centre provision. This points out the need for the formulation of clear and 'conjunctive service centre-residential area development policies'. In this task, the utilization of the concept of hierarchy may be useful, as has been found to be the case in British planning practice.[17]

Having considered the functional structure and characteristics of the suburban service centres, we turn in the next chapter to an examination of the use patterns to which those centres are put.

[17] Davies, *Marketing Geography*, 29. The role of central place theory in general and of the hierarchy concept in particular is also discussed in detail by Szumeluk, *Central Place Theory: Its Role in Planning with Particular Reference to Retailing*.

5
HIGH-DENSITY RESIDENTIAL AREAS: SHOPPING-TRIP PATTERNS

5.1 INTRODUCTION

While previous chapters have dealt with suburban Harare as a whole, the present and subsequent chapters now focus on the areas of special concern, the HDRAs. Out of the thirteen fully occupied HDRAs, five were chosen for study, for reasons which will be explained later (see Section 5.3).

The objectives of this chapter are:

(1) To determine the distribution of shopping trips, firstly between HDRAs and the CBD, and secondly within individual HDRAs, for a list of nine different types of goods. It is hoped that the determination of the distribution of trips between HDRAs and the CBD will shed some light on the magnitude of potential additional markets in HDRAs for the goods in question. If, for example, it was discovered that only 30 per cent of Highfield residents buy their meat within Highfield and 70 per cent in the CBD, the 70 per cent figure might be considered a 'development potential index' for Highfield since it represents that proportion of the total market which has yet to be captured by service centres within Highfield. Further, if, in retail planning terms, meat was considered to be a 'low order good' (see Chapter 2), the 70 per cent figure would imply undesirable dependence on the CBD and therefore argue for further quantitative or qualitative improvements of butchers' shops in Highfield.

(2) To determine shopping-trip frequencies for a sample list of goods and services deemed to represent all possible objects on which expenditure may be incurred. The ultimate aim of this exercise is to provide information on which a hierarchy of service centres may be determined.

(3) To investigate the changes in shopping-trip patterns, if any, that have taken place in Mbare and Highfield since 1971, the last time they were analysed.

Apart from providing information on HDRA shopping-trip patterns of immediate relevance to planning, the objectives outlined above may also be considered as testing the assumption of 'rational consumer behaviour', and to that extent, a clear link with classical central place theory exists. However, as argued earlier (Chapter 2), the testing of rational consumer behaviour must be considered, in terms of conceptual framework, as lying at the interface between or overlapping both classical theory and the cognitive-behavioral approach. The difference between this chapter and Chapter 6 is that while the present chapter is concerned with 'objective' or 'observed' phenomena (shopping behaviour patterns), Chapter 6 is mainly concerned with 'subjective' behavioural factors underlying the observed shopping-trip patterns.

5.2 THE QUESTIONNAIRE

Appendix 4 shows the questionnaire used to collect data for this chapter, as well as for

Chapter 6. It is divided into three parts, A, B, C, and of these part A is of direct relevance to the present chapter.

As discussed in Chapter 2, classical central place theory makes a distinction between, on the one hand, lowest order goods, and, on the other, highest order goods. In between these extremes lies a range of intermediate goods. Lowest order goods are those likely to occur first in any newly established service centre, and highest order goods occur last, and only in those centres that have grown large. Also, the frequency of purchase of lowest order goods is much higher than that of highest order goods. For the purpose of determining shopping-trip patterns, nine types of goods were used, and they are ranked below in their assumed hierarchical order:

Type 1	goods/trips	(milk, bread, sugar and cigarettes, i.e. small casual purchases)
Type 2	goods/trips	(vegetables)
Type 3	goods/trips	(meat)
Type 4	goods/trips	(groceries)
Type 5	goods/trips	(small household goods such as stationery and light bulbs)
Type 6	goods/trips	(small clothing items such as socks, stockings and underclothes)
Type 7	goods/trips	(shoes)
Type 8	goods/trips	(major items of clothing such as men's trousers and women's dresses)
Type 9	goods/trips	(new and second-hand furniture units).

From the point of view of retailing alone, this list (with the exception of Type 9) is fairly representative of the range of goods an ordinary HDRA family normally buys over a period of one year.[1]

As shown in Appendix 4, respondents in the HDRAs studied were asked to indicate where they usually buy each of the nine types of goods by ticking one of the listed alternatives, the alternatives being: all individual service centres in the HDRA in question; the CBD; and 'elsewhere'. If 'elsewhere' was ticked, the respondents were asked to write down the name of the place. This enabled shopping patterns, with respect to the whole array of goods, to be determined. For each type of goods, respondents were also asked to indicate the frequency of purchase, the reasoning being — as outlined earlier — to derive a hierarchy of goods or 'order groups' which may be used for planning service centres.

5.3 Sampling Design and Sampling Frame

The five HDRAs chosen for study were Mbare, Highfield, Mufakose, Dzivaresekwa and Glen Norah (see Fig. 3.5). Certain features of the HDRAs chosen are of significance. Mbare and Highfield were included in some of the earlier studies mentioned before; their inclusion in the present study should throw some light on any changes in shopping-trip patterns. Also, in terms of distance from the CBD — a factor which might be of importance — care was taken to include HDRAs located both near and far away , the two extremes being Mbare (5 kilometres from the CBD) and Mufakose (14 kilometres from the CBD). Mbare and Highfield also happen to be the two oldest HDRAs and, as demonstrated earlier, they are the best serviced in terms of

[1] The list of goods used is a slightly modified version of one used in LDRAs by Smout, *Service Centres in Greater Salisbury*, 76, and *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 40. The original list used by Smout does not include 'vegetables' and 'new and secondhand furniture units'. These were, however, considered to be important in view of the preponderance of vegetable markets and furniture retailers (both formal and informal) in HDRA service centres.

service centre provision; their inclusion to an extent ensures that more valid behavioural generalizations (on trip patterns) can be drawn from empirical analysis, which would not be possible in the case of poorly serviced areas.

The household was chosen as the sampling unit, and the street map of the individual HDRA as the sampling frame. To ensure adequate spatial representation in the sampling population — which is necessary for this type of study — two steps were taken for the sampling procedure. Firstly, for each HDRA, streets were chosen randomly. Secondly, for the streets chosen at the first step, households were also chosen randomly for the distribution of questionnaires. At both stages, random sampling was achieved by using a random sampling numbers table.[2] The sampling design was initially tried on Glen Norah, with a view to observing whether or not it would be possible to obtain a spatially well-distributed sample population.

What remained was the determination of a statistically acceptable size for the sample population. For the purpose of surveying both the quantity and frequency of trip origins and destinations (an objective comparable to one of those set for this chapter), the US Bureau of Public Roads recommends the sample sizes shown in Table 5.1. However, as Lane *et al.* have

Table 5.1

HOME INTERVIEW SAMPLE SIZES

Population of area (N)	*Sample size (n)*
Under 50,000	1 in 5 households
50,000 – 150,000	1 in 8 households
150,000 – 300,000	1 in 10 households
300,000 – 500,000	1 in 15 households
500,000 – 1,000,000	1 in 20 households
Over 1,000,000	1 in 25 households

commented, these sample sizes are unnecessarily large and costly for most studies.[3] For the present study, therefore, a reasonable and conservative rule-of-thumb formula given by Lazerwitz was used to determine sample size.[4]

The procedure starts with a modified version of the equation for estimating the standard error of a proportion, SE(p):

$$SE(p) = \sqrt{\left[\frac{pq}{n}\right]} \text{ (set } p \text{ and } q \text{ at 0.5 or 50 per cent)}$$

Next, the confidence interval around the proportion 0.5 at a given confidence level, say 95 per cent, has to be decided. For this study a confidence interval of ±0.1 (or ± 10 per cent) at

[2] Taken from R. Hammond and P. McCullagh, *Quantitative Techniques in Geography: An Introduction* (Oxford, Clarendon Press, 1975), 286.

[3] R. Lane, T. J. Powell and P. P. Smith, *Analytical Transport Planning* (London, Duckworth, 1971), 36.

[4] B. Lazerwitz, 'Sampling theory and procedures', in H. M. Blalock and A. B. Blalock (eds.), *Methodology in Social Research* (New York, McGraw-Hill, 1968), 285–6.

the 95 per cent confidence level was decided on. The only unknown in the above equation, n, can now be determined by:

$$n = \frac{(2)^2 pq}{[2SE(p)]^2}$$

which is the same as,

$$n = \frac{1}{k^2}$$

where k = desired interval at 95 per cent confidence level (0.1 in this instance). Using this last version of the equation, the sample size of each HDRA was determined as follows:

$$n = \frac{1}{(0.1)^2} = 100 \text{ households per HDRA.}$$

Thus 100 households from each HDRA was the absolute minimum required for this study, and for all five selected HDRAs a sample size of 500 was required. However, for the sake of comparison with previous work,[5] it was decided to aim for a sample size of 3 per cent of each HDRA target population, N: this 3 per cent for each HDRA would yield much higher sample sizes in some HDRAs than the absolute minimum of 100 determined above. Also, using evidence on postal questionnaires from Smout's studies in Harare, it was estimated that at least 25 per cent of the questionnaires sent out would be returned. A business reply service was first arranged with the Posts and Telecommunications Corporation. The questionnaires were then delivered by hand and explained to respondents who then returned them via the business reply service. The hand delivery and postal return process took place between 22 August and 15 November 1981. Table 5.2 shows the numbers and percentages of expected and returned

Table 5.2

SAMPLING DATA FOR THE FIVE HDRAs:
EXPECTED AND RETURNED QUESTIONNAIRES

Area	*N*	*Q*	*En*	*n*	*%n*
Mbare	13,535	1,625	406	240	1.77
Highfield	8,457	1,016	254	260	3.07
Mufakose	7,495	1,000	225	349	4.66
Dzivaresekwa	4,348	1,000	130	271	6.23
Glen Norah	6,500	1,000	195	285	4.38
TOTAL	40,335	5,641	1,210	1,405	3,48

N = total number of households in area (target population).
Q = number of questionnaires delivered, assuming a 25 per cent response.
En = expected number of returns to satisfy n = 3 per cent.
n = number of questionnaires actually returned (working sample size).
$\%n$ = n as a percentage of N.

[5] Smout, *Service Centres in Greater Salisbury*, 36. His sample sizes range from 2 per cent to 8.4 per cent of the total population of individual residential areas.

questionnaires for each of the five HDRAs. As can be seen from the figures in the table, the response can be described as very good, being in excess of the absolute minimum of 100 per HDRA. However, even taking into account the fact that care was taken to ensure spatially representative sampling, there was no guarantee that the returned questionnaires would be spatially representative.

5.4 Results: Comparison of trips to the CBD and to centres within HDRAs

Figs. 5.1 to 5.5 show the percentages of trips to the CBD and service centres within the individual HDRAs (including trips 'elsewhere'). In general, they tend to confirm the pattern to be expected in the light of central place theory, that is, that the proportion of trips to the CBD (or to larger centres), increases with the order of the goods sought.

Fig. 5.6 graphically compares the percentages of trips to the CBD among the five HDRAs, also illustrating how the percentages of trips to the CBD rise with increasing order of goods. (See also Table 5.3 which contains the data on which Fig. 5.6 is based.) For Type 1 trips (small items like bread, sugar and cigarettes), visits to the CBD do not exceed 2 per cent, while in the case of Type 7, 8 and 9 trips (shoes, major clothing items and furniture respectively), visits to the CBD exceed 70 per cent in all HDRAs.

While it had been assumed that furniture is of a higher order than major clothing items, more people actually visit the CBD for major clothing items than for furniture, and this applies to all the five HDRAs in question (Fig. 5.6). The reason underlying this pattern could be the existence of a vigorous informal sector in furniture manufacturing and retail, particularly in Highfield and Mbare — the HDRAs which also happen to show the lowest percentages of trips to the CBD for furniture.

From Fig. 5.6 and Table 5.3 it is also clear that for certain orders of goods, the percentages of trips to the CBD differ substantially between HDRAs. For each type of trip the range of the percentages of trips to the CBD could be used as an index of agreement among the five HDRAs; Fig. 5.7 illustrates this. On the whole, the results show a high level of agreement in the case of lower order trips and higher order trips, but a low level of agreement in the case of middle order trips. This disagreement regarding middle order trips is to be expected if it is remembered that the total number of service centre functions differs substantially in individual HDRAs (Chapter 4). Thus the middle order trip patterns merely reflect the presence or absence of those middle order functions in individual HDRAs. Fig. 5.8 shows the average percentage of trips to the CBD for the five HDRAs combined (arithmetic mean), as well as the 'extremes' of the percentage of trips to the CBD for the nine trip types — that is, the HDRAs with lowest and highest percentages of trips to the CBD for each type of trip. Highfield on the one hand and Dzivaresekwa and Glen Norah on the other are the lower and upper extremes, respectively, for most of the trip types. Table 5.4 shows the percentage of trips to the CBD in respect of each HDRA for all nine types of trip combined.

Thus, relatively, Highfield appears to be the most self-contained as reflected by the low figure of 39.87 per cent, and Dzivaresekwa to be the most dependent on the CBD as reflected by the high figure of 60.71 per cent. Table 5.4 also shows the quantity of service centre facilities in each of the five HDRAs, as reflected by the functional score for the whole area, *Y*.[6] Highfield has the highest score, and Dzivaresekwa the lowest, figures which correspond with their levels of dependence on the CBD. Mbare's level of dependence on the CBD appears to be relatively

[6] See above, Section 4.4.

Figure 5.1: DISTRIBUTION OF SHOPPING TRIPS: MBARE VERSUS CBD

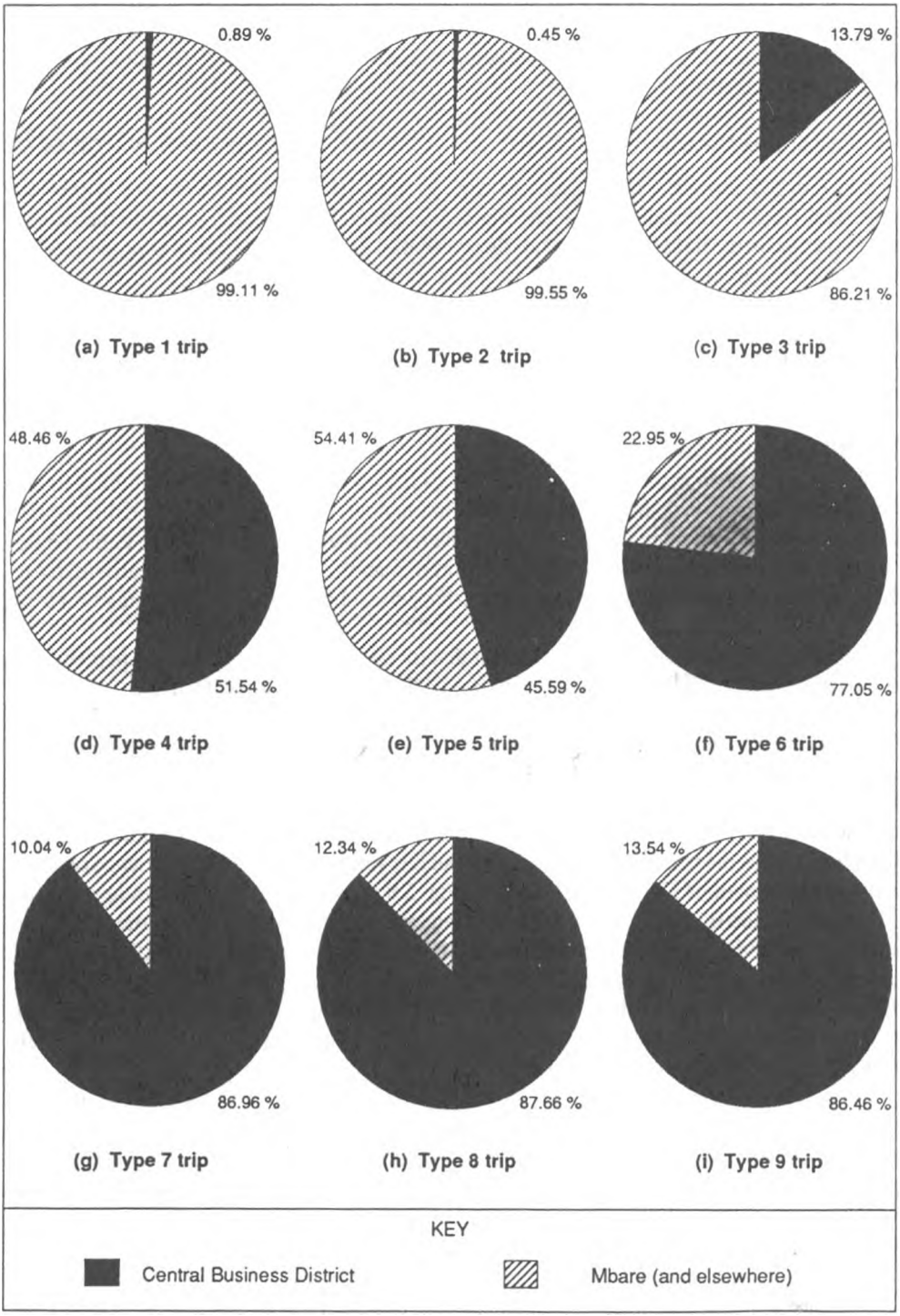


Figure 5.2: DISTRIBUTION OF SHOPPING TRIPS: HIGHFIELD VERSUS CBD

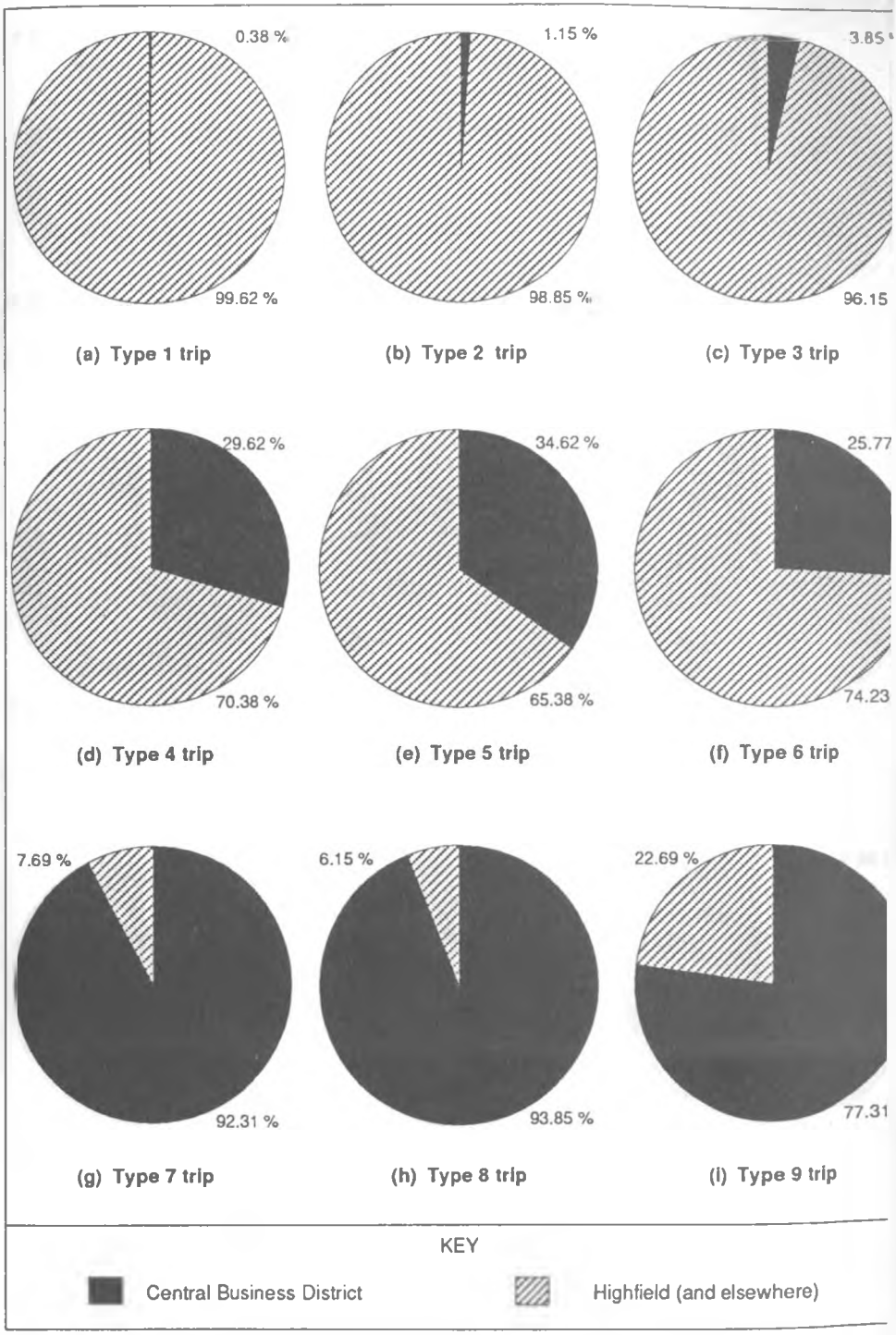


Figure 5.3: DISTRIBUTION OF SHOPPING TRIPS: MUFAKOSE VERSUS CBD

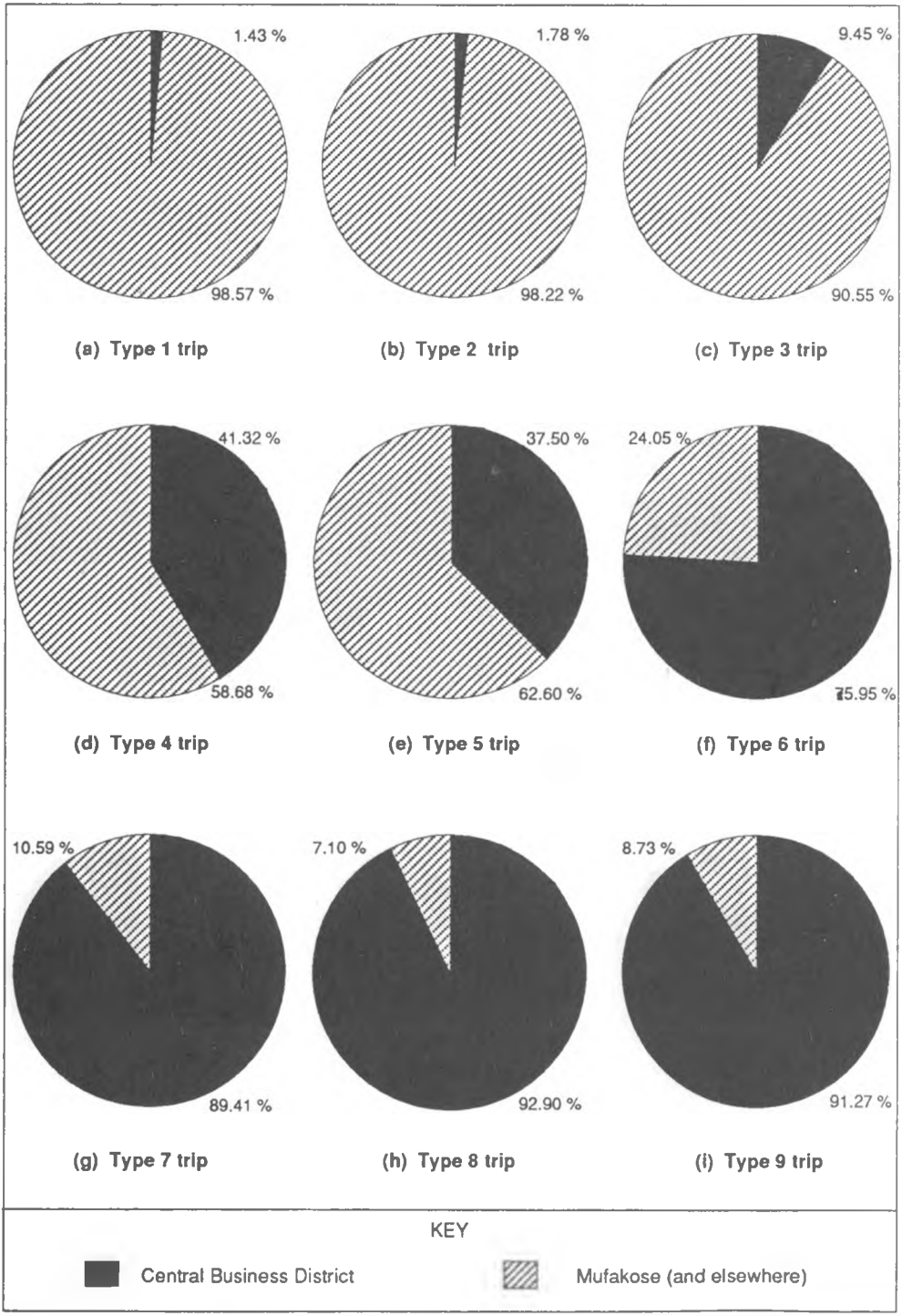


Figure 5.4: DISTRIBUTION OF SHOPPING TRIPS: DZIVARESEKWA VERSUS CBD

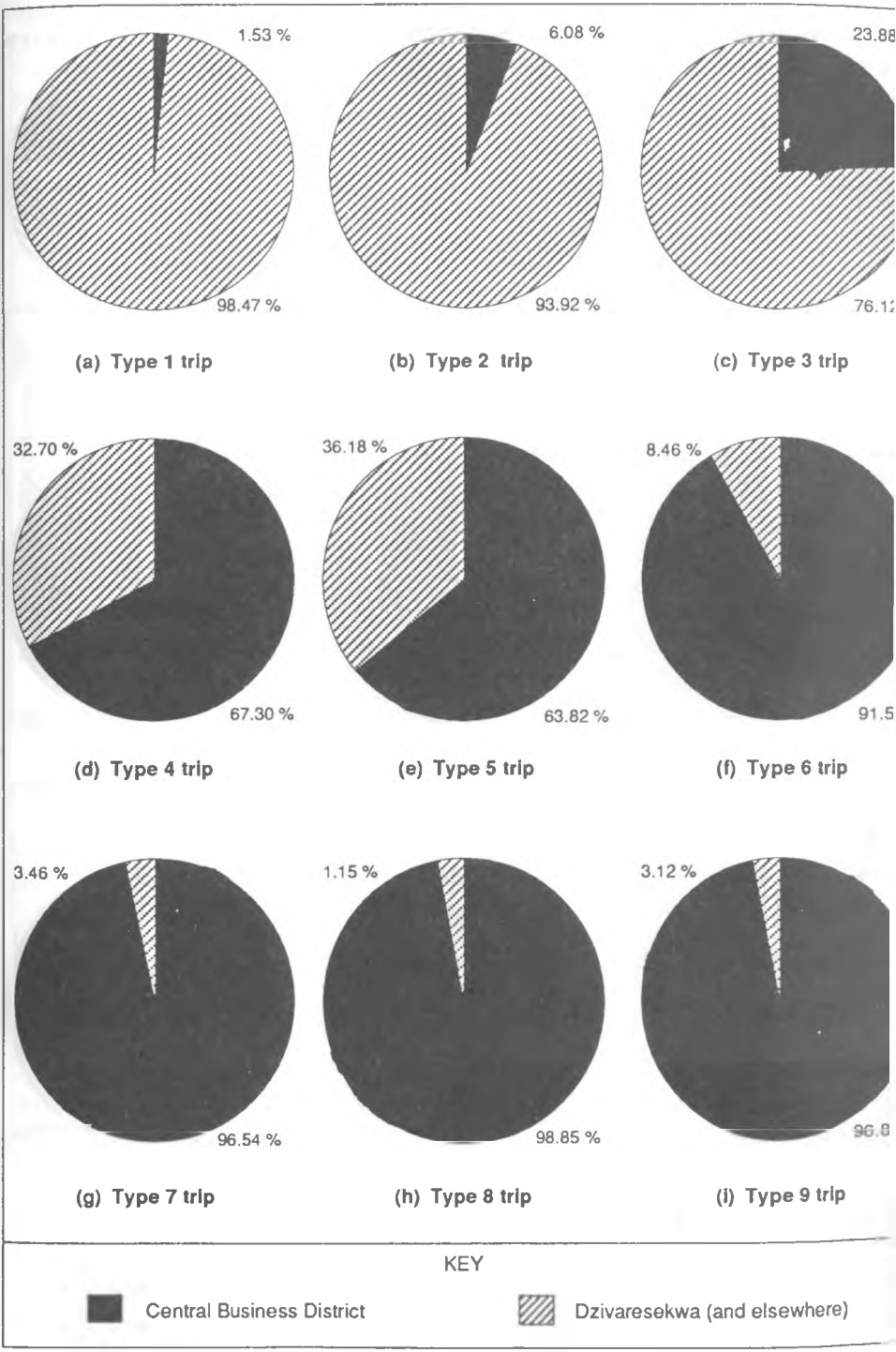


Figure 5.5: DISTRIBUTION OF SHOPPING TRIPS: GLEN NORAH VERSUS CBD

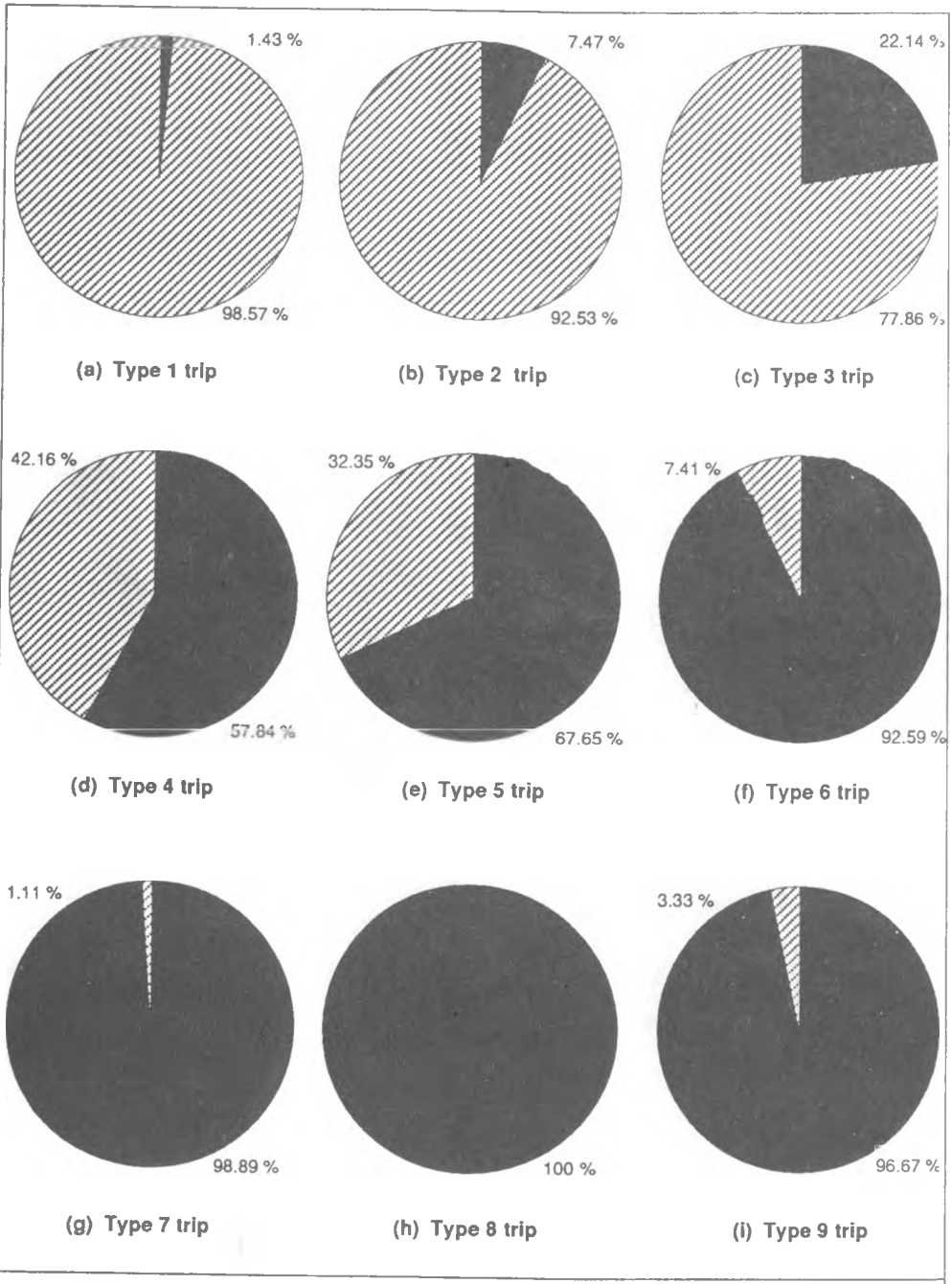
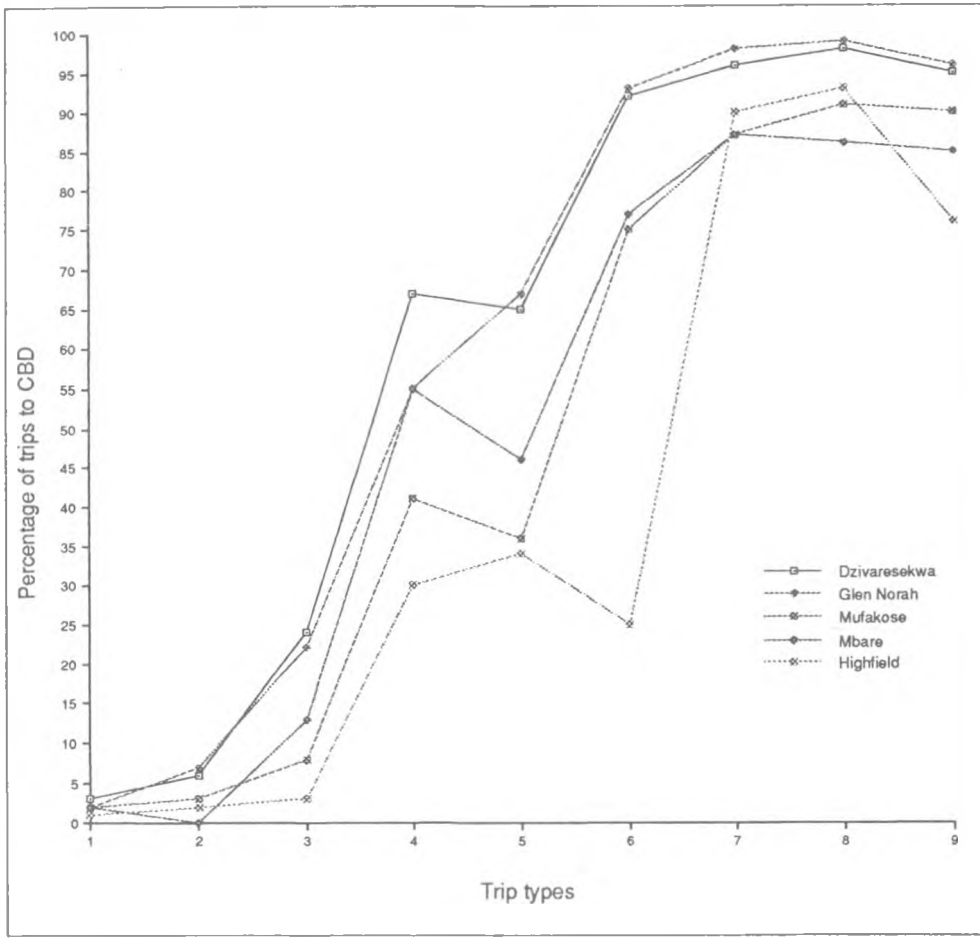


Figure 5.6: PERCENTAGES OF TRIPS TO CBD



higher than the expected level, given its high total functional score. This, however, must be a function of its very close location to the CBD (see Chapter 3).

5.5 RESULTS: SHOPPING-TRIP PATTERNS WITHIN INDIVIDUAL HDRAS

Appendix 5 shows the results of the survey pertaining to the present chapter, that is the distribution of trips both between the CBD and the HDRAs and within the individual HDRAs. The service centre attracting the highest proportion of customers is italicized in Appendix 5. In general, the figures may be regarded as reflecting the relative functional importance of centres within individual HDRAs, assuming that the respondents are spatially evenly distributed. However, in some instances, smaller centres tend to exert a greater pull than larger centres, mainly because of either the presence of specialized services and goods or strategic location.

Although the largest centre in Mbare in terms of the functional importance score is Magaba, Musika, which is in fact the third largest centre, attracts the greatest number of customers in the case of low and medium order goods (6 to 9), reflecting its higher order character. Shops

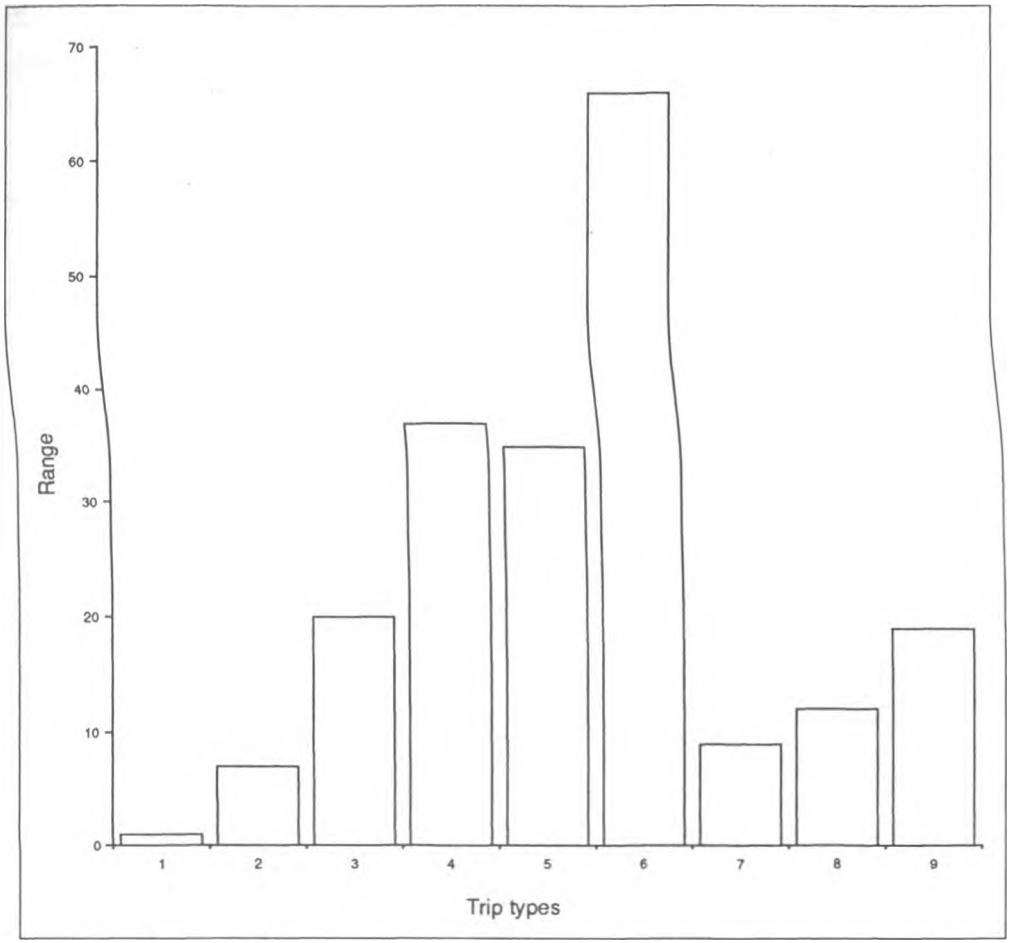
Table 5.3

PERCENTAGE OF TRIPS TO THE CBD FOR THE FIVE HDRAs

	Trip types								
Area	1	2	3	4	5	6	7	8	9
Mbare	0.89	0.45	13.79	51.54	45.59	77.05	89.96	87.66	88.46
Highfield	0.38	1.15	3.85	29.62	34.62	25.77	92.31	93.85	77.31
Mufakose	1.43	1.78	9.45	41.32	37.50	75.95	89.41	92.90	91.27
Dzivaresekwa	1.53	6.08	23.88	67.30	63.82	91.54	96.54	98.85	96.88
Glen Norah	1.43	7.47	22.14	57.84	67.65	92.59	98.89	100.00	96.67
$\bar{x}$	1.13	3.39	14.62	49.52	49.84	72.58	93.42	94.65	89.72
r_g	1.15	7.02	20.03	37.68	33.03	66.82	9.48	12.34	19.57

$\bar{x}$ = arithmetic means of the percentage of trips to the CBD for the five HDRAs combined with respect to that column or trip type.
r_g = range: difference between highest and lowest figure in the column; a measure of level of agreement between the five HDRAs, i.e. the greater the range, the lower the agreement.

Figure 5.7: LEVEL OF AGREEMENT AMONG HDRAS ON TRIPS TO THE CENTRAL BUSINESS DISTRICT



and the large vegetable and fruit market at Musika greatly benefit from their strategic location next to the largest bus station in the city. Musika is really the 'gateway' into Harare for Zimbabwe's rural Blacks and for periodic travellers between the city and its rural hinterland.

In Mufakose, Chidziva is the largest centre and, expectedly, exerts the greatest pull, except in the case of Type 2, 3, and 9 trips (vegetables, meat and furniture, respectively) where Samuriwo attracts the largest proportion of customers.

In Glen Norah the service centres are small, only generating up to Type 6 trips. Although the largest centre is Chitubu, Spaceman exerts the largest pull on customers. The reason for this is likely to be the more central location of Spaceman which lies in the geographical centre of a larger built-up area (see Appendix 2).

In Highfield and Dzivaresekwa the largest centres are Machipisa and Tsimba, respectively, and their dominance is absolute with respect to all the goods and trips in question.

In the case of Glen Norah, the only area for which a complete coverage of maps showing

Figure 5.8: AVERAGES AND EXTREMES OF TRIPS TO THE CBD

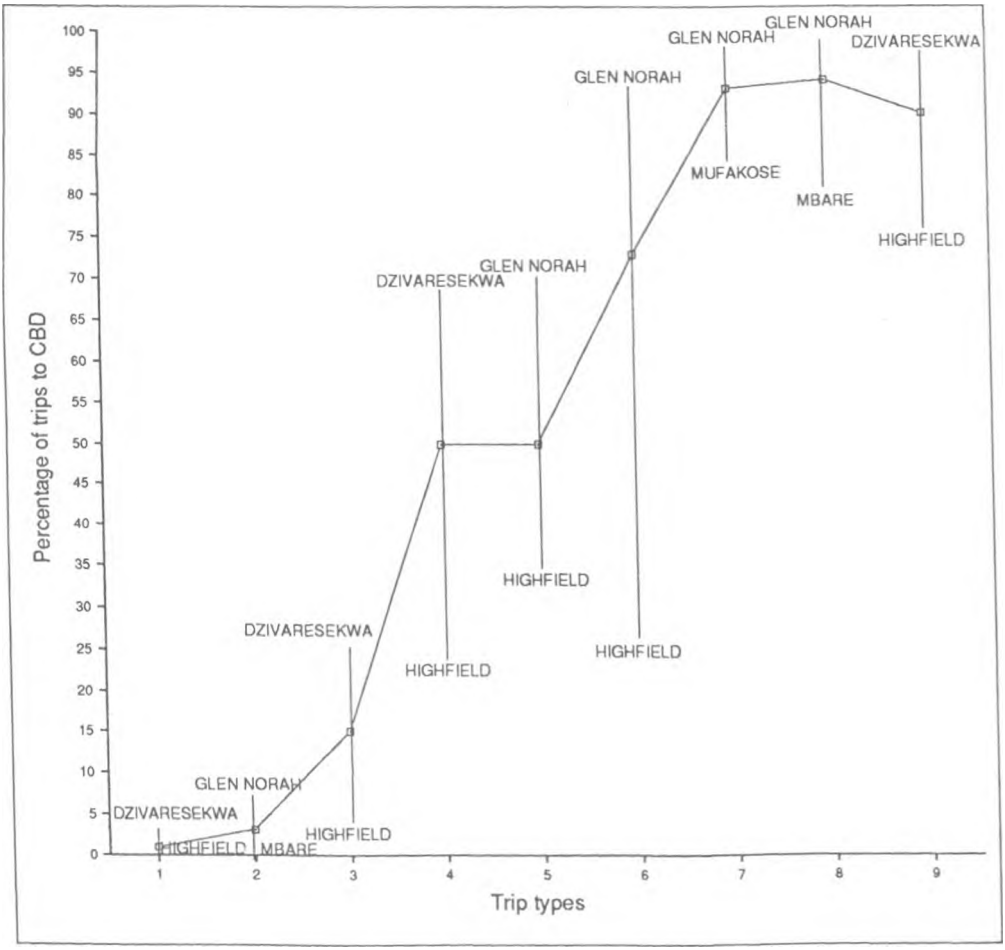


Table 5.4

OVERALL TRIPS TO THE CBD: COMPARISON BETWEEN HDRAs

Area	*Percentage of trips to CBD*	*Score (Y)*
Highfield	39.87	552
Mufakose	49.00	140
Mbare	50.38	543
Glen Norah	60.52	99
Dzivaresekwa	60.71	76

the exact location of houses or blocks of houses was available, a market or catchment-area map was prepared using Type 1 trip data. The Glen Norah market area map, Fig. 5.9, illustrates two points:

(1) The fairly even distribution of respondents referred to earlier (see Section 5.3).
(2) The importance of the distance factor in determining low-order shopping trip patterns.

The conclusion to be drawn from the latter point is that consumers behave in a rational manner, minimizing trip lengths, particularly in the case of low order goods. The relative influence of distance on trip patterns will be considered more fully in the next chapter.

Figure 5.9: GLEN NORAH: INTERNAL MARKET AREAS/CATCHMENTS

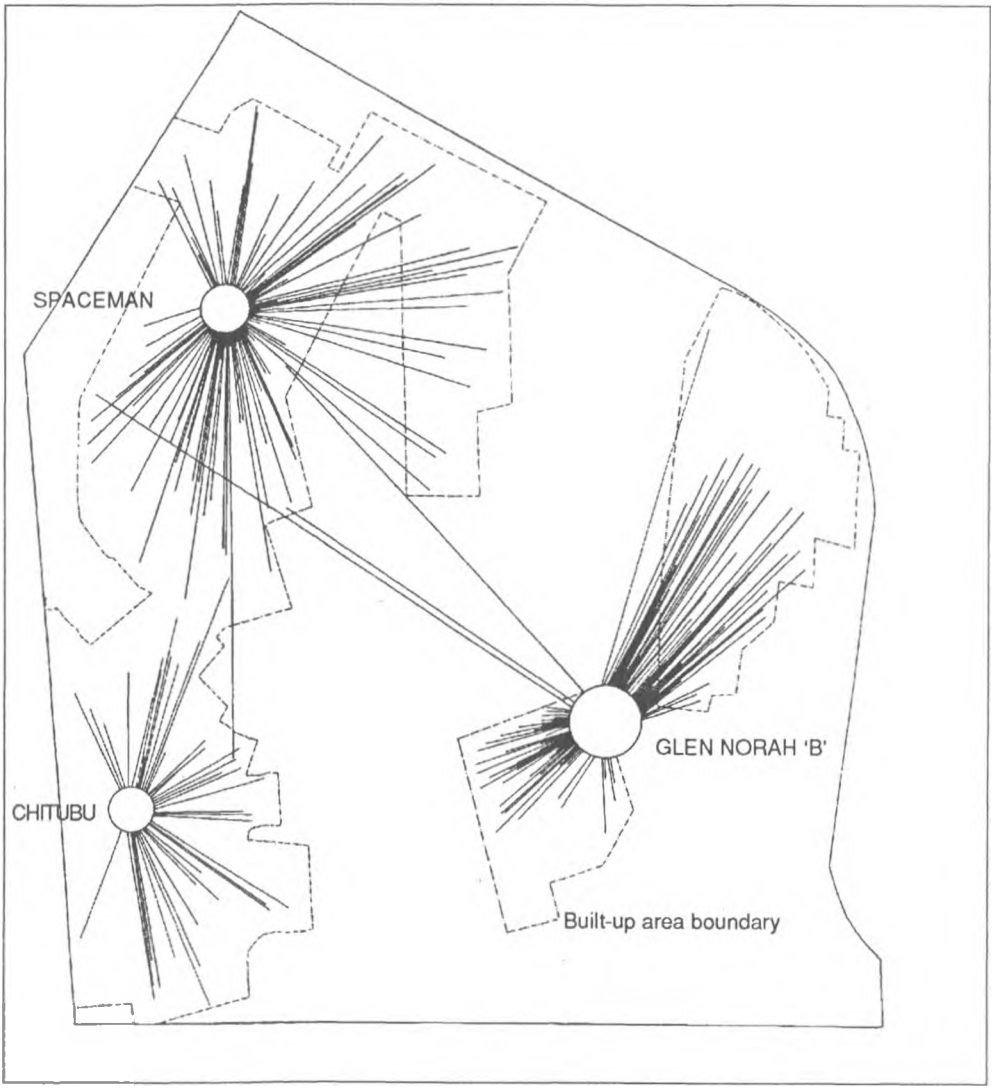


Table 5.5 shows the number and percentage of trips to centres other than those within the individual HDRAs or the CBD, that is 'trips elsewhere' in Appendix. The italicized percentages (in Appendix 6) are those which exceed ten. It is evident that Glen Norah and Dzivaresekwa have the highest percentages with respect to the first five trip types. Of the 240 'elsewhere' trips for Glen Norah, 124 (51.67 per cent) of these are directed to Machipisa service centre in Highfield; and of the 178 'elsewhere' trips for Dzivaresekwa the destination of 80 (44.94 per cent) of these is Mabelreign service centre. Both Mabelreign and Machipisa appear to provide significant intervening opportunities, as they are large centres lying directly between the HDRAs concerned and the CBD. Most of the 'elsewhere' trips given under Type 1 and Type 2 trips for all the five HDRAs actually have their destinations within the individual HDRAs, but are directed to the informal sector rather than to the formal shops in service centres. This is indicated in Table 5.5 by the columns headed *h* and *%h*, the former showing the total number of trips directed towards the informal sector, and the latter showing the totals expressed as percentages of *n*.

Table 5.5

TRIPS 'ELSEWHERE'

Area	*N*	*n*	*%n*	*h*	*%h*
Glen Norah	2,565	240	9.36	102	42.50
Dzivaresekwa	2,439	178	7.30	88	49.44
Mufakose	3,141	138	4.39	112	81.16
Highfield	2,340	77	3.29	72	93.51
Mbare	2,160	47	2.17	29	61.70

N = total number of trips analysed.
n = total 'elsewhere' trips.
% n = *n* as a percentage of N.
h = total number of trips directed to informal sector (hawkers and vendors).
%h = *h* as a percentage of *n*.

Important observations:

(a) 51.67 per cent of *n* (124 trips) for Glen Norah are directed to Machipisa Service Centre in Highfield.

(b) 44.94 per cent of *n* (80 trips) for Dzivaresekwa are directed to Mabelreign Service Centre (located in an LDRA).

These results illustrate the importance of the informal retail sector. In virtually all HDRAs, mobile hawkers and vendors in roughly constructed wooden or metal shacks and old caravans (tuck-shops) are present in large numbers. Most of these are strategically located at street corners, near bus stops and formal markets. Their numbers are such that they present stiff competition to the formal sector, particularly in the case of the lowest order goods. Greengrocers' shops, for example, have no chance of survival in the HDRAs because of the preponderance of very competitive informal vegetable sellers. Plate 1 illustrates typical vendors and hawkers in Harare's HDRAs. Plate 2 shows Musika service centre where the largest bus station is located. It also illustrates the hawkers and vendors usually found around HDRA service centres. For contrast, Plate 3 shows typical LDRA service centres.

Figs. 5.10 and 5.11 graphically illustrate the changes in shopping-trip patterns that have occurred in Mbare and Highfield since 1971 (see also Table 5.6 on which the graphs are based).[7] The only figures it was possible to compare are those for the seven types of trips given

[7] Smout, *Salisbury: A Geographical Survey*, 82–5.

Plate 1: VENDORS AND HAWKERS IN HARARE'S HDRAs

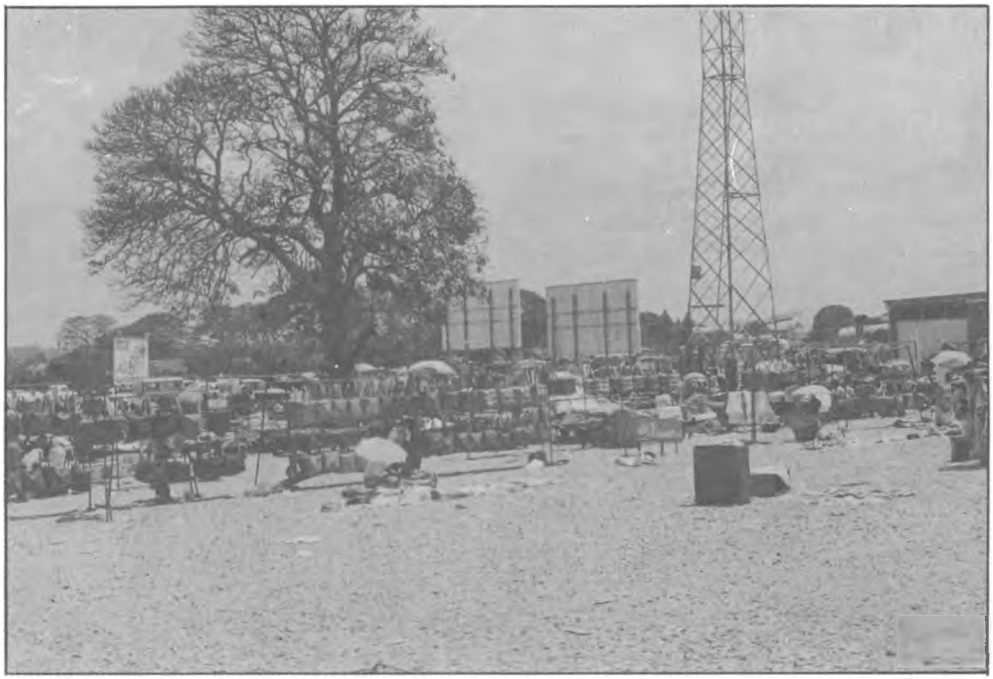


Figure 5.11: HIGHFIELD: LOCAL SHOPPING TRIPS (1971 AND 1981)

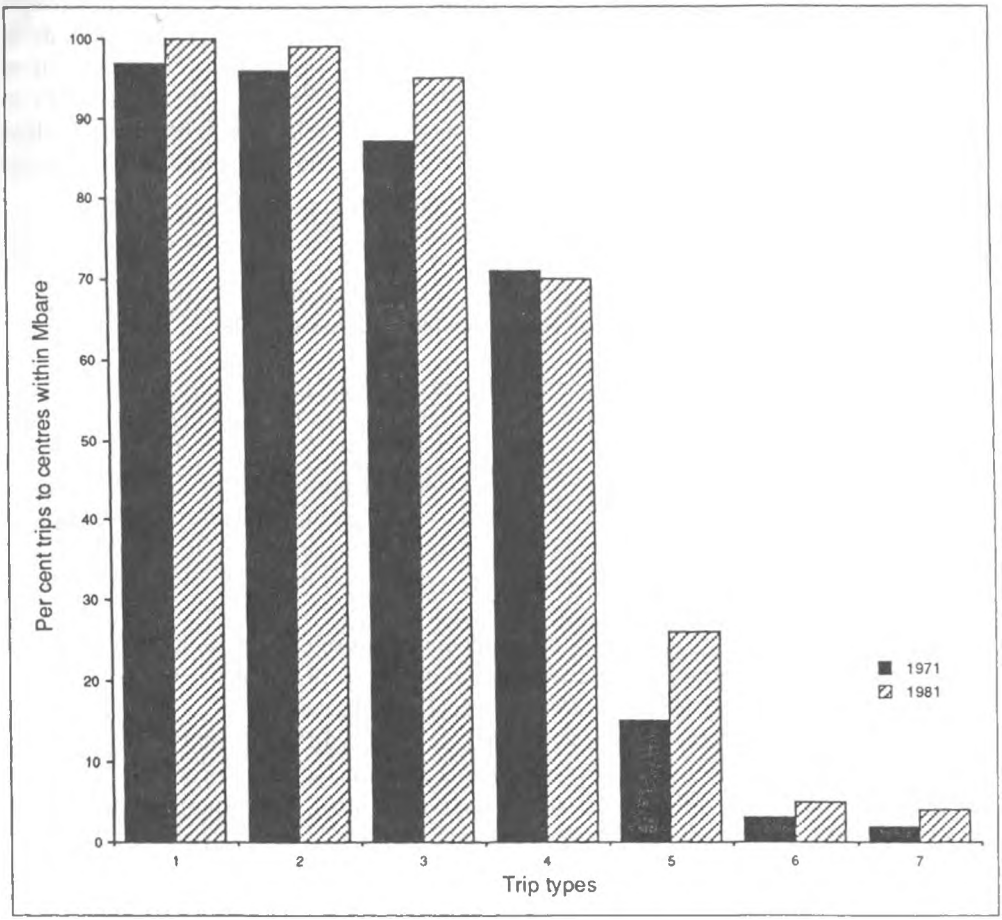


Table 5.6

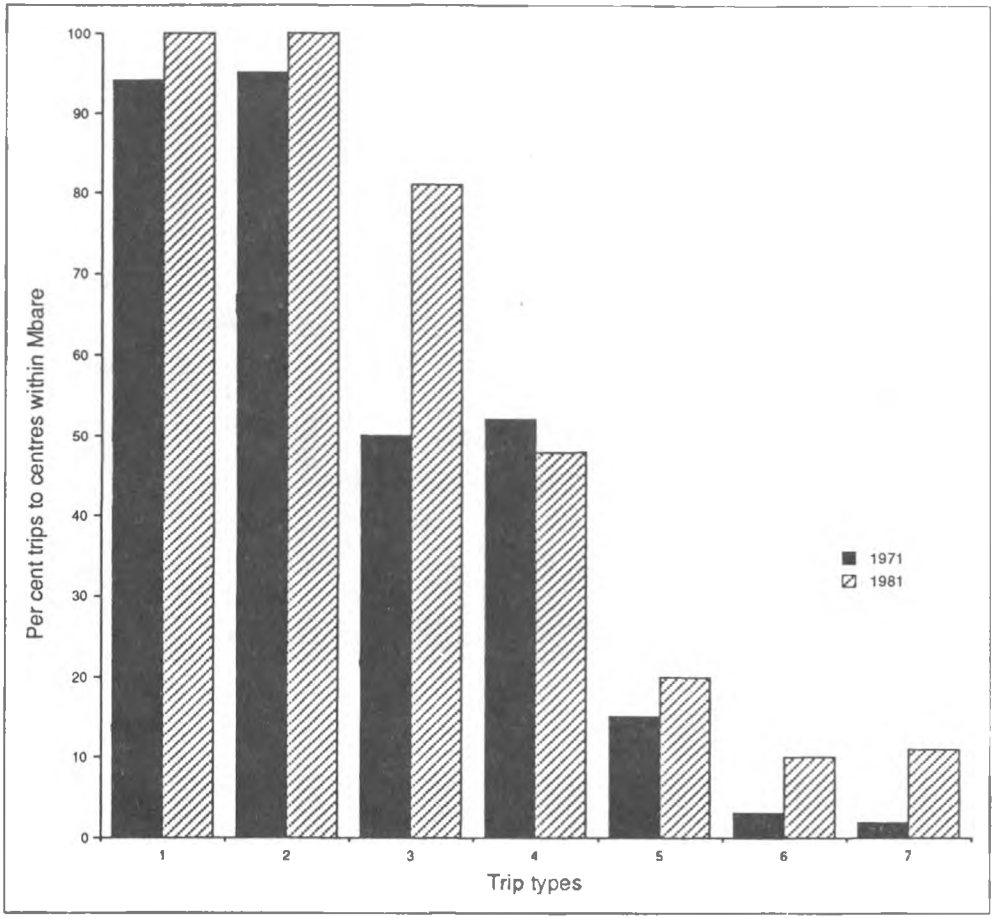
CHANGES IN SHOPPING-TRIP PATTERNS WITHIN MBARE AND HIGHFIELD (1971–1981)[a]

	Mbare		*Highfield*	
Trip type[b]	*1971*	*1981*	*1971*	*1981*
1	93.0	99.11	97	99.62
2	95.0	99.10	95	98.85
3	49.0	81.21	86	93.84
4	52.0	46.95	71	69.23
5	15.0	20.50	15	27.31
6	3.5	10.54	4	6.53
7	2.5	11.29	2	5.00

[a] Figures for 1971 obtained from Smout, 'Service Centres in Greater Salisbury, Rhodesia'.

[b] Trip types: (1) small casual purchases; (2) vegetables; (3) meat; (4) groceries; (5) small clothing items (socks, stockings, underwear, etc.); (6) shoes; (7) large clothing items (men's trousers, women's dresses, etc.).

Figure 5.10: MBARE: LOCAL SHOPPING TRIPS (1971 AND 1981)



under Table 5.6. In Mbare, for most types of goods, the proportion of trips directed to centres within the area have slightly increased, indicating the slow rate of growth in functional importance of local centres. The only striking change in Mbare has been the increase in the percentage of Type 3 trips (meat) to local shops, from 49 to 81.21 per cent. The only decline has been in the case of Type 4 trips (groceries) from 52 to 46.95 per cent, indicating a slightly improved attraction to the CBD for groceries.

Changes similar to those in Mbare have also taken place in Highfield: a slight increase in local trips, and a slight decrease in Type 4 trips. The highest increase in the case of Highfield has been Type 5 trips (small clothing items), indicating the growing importance, comparatively, of this type of provision in the area.

5.6 SHOPPING-TRIP FREQUENCIES AND HIERARCHICAL ORDER OF CENTRES

As outlined earlier, one of the ways in which the concept of hierarchy has been used is the prescription of an optimum state which planning policy must aim to achieve (Chapter 2). The most common methods which have been used in planning to determine an optimum hierarchical

structure of service centres for any urban area are the 'ratio' and 'regression equation' forecasting methods. The ratio method is based on the assumption that the current relationships between population size and sales' levels can be extrapolated into the future. Once the current population to sales ratio is established and population growth is estimated, expected future sales can easily be extrapolated.[8] The regression method is also based on the same assumption as the one underlying the ratio method: it aims to describe the relationship between variables such as sales, floorspace and numbers of shops on the one hand and population size on the other. The relationship takes the form of a simple linear regression:

$$Y = a + bX$$

where Y = the dependent variable (sales or floorspace or number of shops)
and X = the independent variable (population or households)

For any urban area the values of constants a and b are determined empirically.[9] As pointed out earlier, the underlying assumption is that current relationships between the dependent and independent variables will remain the same for future time periods. Because of this assumption the ratio and regression equation methods are clearly inappropriate for predicting future demand in a population where income characteristics and shopping habits are changing rapidly as is the case with the HDRA population of Harare (Chapter 3); as incomes increase, consumption rises, creating new population to sales ratios over relatively short time periods. A further limitation of the ratio and regression equation methods is that while the hierarchical structure of service centre provision for the residential areas of the whole city may be easily determined (that is optimum floorspace or sales units for the different sizes of suburb), the actual hierarchical order of centres within individual suburbs cannot.

Because of the limitations of these traditional methods, a different method, based on the estimation of shopping-trip frequencies for consumer goods and services for any given HDRA, was used to determine the optimum hierarchy of service centres. The assumption underlying this method is that the present shopping-trip frequency for any good or service in a residential area where service centre provision is adequately made can be used to indicate its hierarchical order. This idea derives from central place theory where it is postulated that lower order or convenience goods are more frequently demanded than higher order or durable goods. The method consists of:

(1) compiling a list of goods and services deemed to represent all the objects on which expenditure is incurred by an average household;
(2) asking residents to indicate the trip frequency with respect to each type of good or service; and
(3) ranking the goods and services on the basis of trip frequency and determining hierarchical groups or classes on the same basis.

Respondents to the questionnaire shown in Appendix 4 were asked to write down also the trip frequency for each of the nine types of trip. Table 5.7 shows the mean trip frequencies for the

[8] A good example of this type of work is that on Cumbernauld New Town in the UK by Diamond and Gibb, 'Development of new shopping centres: Area estimation'.

[9] For a full explanation and examples of this type of work see the following: M. Hirst, 'Building and operating a forecasting model: The regression analysis approach', *British Journal of Marketing* (1970), IV, 121–5; and L. H. Wilson, *Skelmersdale New Town Planning Proposals* (Skelmersdale, Skelmersdale Development Corporation, 1964).

five HDRAs. The bottom line of the table shows the mean trip frequency for the five HDRAs combined ($\bar{x}$ or arithmetic mean). From these results, it is clear that the list of the nine types of goods/trips consists of three distinct classes or orders as follows:

(1) Low order goods/trips: 230 to 358 trips per year
(2) Middle order goods/trips: 23 to 26 trips per year
(3) High order goods/trips: 1 to 4 trips per year

The detailed composition of each of the orders is shown at the bottom of Table 5.7. These results confirm Smout's ordering of the types of goods/trips although this was done in the context of LDRAs.[10] The only exception is that in this case 'shoes' appear to be of a higher order than 'major clothing items', as shown by the reworked hierarchical order at the bottom of Table 5.7.

While the use of the nine types of goods/trips above was considered satisfactory for the purpose of determining shopping-trip destination patterns and for enabling comparison between present research findings and past work, this list was considered to be too short to offer valid guidance on the formulation of a hierarchical structure of service centres to be used in any new HDRA developments in the manner outlined earlier. The list also tends to combine into single groups certain goods which might in fact have different frequencies: for example, those goods included in 'groceries', 'small household goods' and 'small clothing items'. Consequently, a longer list of 47 goods and services was drawn up. This longer list was deemed to represent all the possible goods and services on which expenditure might be incurred by an average HDRA family. Appendix 6 shows the questionnaire used to determine the shopping-trip frequencies. Respondents were asked to indicate, for each type of good or service, the number of times they make a trip for those goods or services by ticking the most accurate of the given alternatives, the alternatives being:

(a) more than once per day
(b) once per day
(c) once per week
(d) once per fortnight
(e) once per month
(f) once per six months
(g) once per year
(h) when necessary/occasionally
(i) other

The above alternatives were determined by reference to the types of trip-frequency answers most commonly given by respondents to the first questionnaire shown in Appendix 4. Thus the question on shopping-trip frequency for each of the nine types of goods/trips in the first questionnaire acted as a pilot survey.

Highfield HDRA was chosen for the distribution of the second trip-frequency questionnaire (Appendix 6). As outlined earlier, this method of determining an optimum hierarchy of service centres can only be reliable when the data is obtained from a residential area where the distribution of service centre facilities is good; where it is not, any observed trip patterns cannot

[10] Smout, *Commercial Growth and Consumer Behaviour in Suburban Salisbury*, 40.

Table 5.7

MEAN TRIP FREQUENCIES PER YEAR

Area	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Mufakose	398.32	272.48	262.08	32.40	24.48	3.21	1.93	2.89	1.14
Highfield	325.20	215.28	219.44	26.16	19.32	3.44	2.04	3.25	0.98
Mbare	364.40	238.00	246.10	24.32	22.48	3.68	1.97	2.93	1.11
Dzivaresekwa	322.40	321.40	199.68	20.96	26.28	4.26	1.73	3.35	1.19
Glen Norah	380.64	250.12	221.00	26.64	21.24	3.49	1.95	2.67	1.12
x (mean)	358.19	259.46	229.66	26.10	22.76	3.62	1.92	3.02	1.11

Low order goods/trips:
(1) small casual prchases (milk, bread, sugar, etc.)
(2) vegetables
(3) meat

Middle order goods/trips:
(4) groceries
(5) small household goods (stationery, light bulbs, etc.)

High order goods/trips:
(6) small clothing items (socks, stockings, underwear, etc.)
(7) large clothing items (mens's trousers, women's dresses, etc.)
(8) shoes
(9) new and second-hand furniture

be regarded as normal as residents have little choice of centres to visit. In terms of this condition, Highfield was considered to be best: it is one of the two oldest HDRAs in the city; all sites reserved for service centres have been built on; and it has a good spatial distribution of service centre facilities (both formal and informal). As observed earlier, hawkers and vendors (informal retailers) do attract a significant proportion of trips. It was therefore considered important to include them in the questionnaire. The four service centres in Highfields — Machipisa, Western Triangle, Old Highfield and Lusaka — were visited on a Saturday afternoon, and at each centre thirty customers were interviewed. The responses were written down on the questionnaire by the interviewer rather than by the respondent. Saturday afternoon was chosen because this is the only time when the widest variety of shoppers can be found at the centres. Any other time tends to bias the sample in favour of unemployed people. Altogether 120 respondents were interviewed. Care was also taken to ensure that none of these 120 respondents were from the same households and that all of them were adult heads of their households capable of providing the required information.

Table 5.8 shows the results of the survey. For each of the goods or services, the numbers in the different columns indicate the total number of respondents giving that alternative, so that for each of the goods or services the alternative with the largest number of respondents (italicized in the table) is taken to be the trip frequency for that good or service. Table 5.9 shows the 47 goods and services grouped into three hierarchical orders as follows:

(1) Low order goods/services: 365 to 730 trips per year
(2) Middle order goods/services: 12 to 52 trips per year
(3) High order goods/services: less than 2 trips per year.

Clearly, the three hierarchical groups are self-evident and they argue for a natural grouping of service centres into a three-tier hierarchy:

(1) Low order centres, providing the most frequently demanded goods and services.
(2) Middle order centres, providing middle order goods and services.
(3) High order centres, providing high order goods and services.

Chapter 7 will examine the practicality of this suggestion for a three-tier hierarchy, in the light of results emerging from Chapter 6, with the ultimate objective of recommending a spatial–hierarchical strategy.

It is important, however, to point out that the classification of goods and services in Table 5.9, particularly those marked with an asterisk, should not be considered as rigidly fixed. One of the reasons for this is that for some of the goods and services a low level of response was obtained, indicating the low number of residents who purchase or make use of them. The result is that even though such goods and services might have high trip frequencies, the small proportion of residents making those trips renders their provision at low or middle order centres uneconomic. This certainly applies to beer garden, library, cinema and indoor game facilities. The implication is that these goods and services have to be located at higher order centres. In this case beer gardens might have to be located at middle order centres, and libraries, cinemas and indoor game facilities at high order centres.

The trip frequencies for meat and vegetables deserve special comment. The majority of respondents indicated that they make two trips per day. This suggests that most HDRA households buy their meat and vegetables on a meal-to-meal basis. The HDRA shopping-trip

Table 5.8

SHOPPING-TRIP FREQUENCIES: RESULTS

Goods/service	*Frequency (number of respondents)* a	b	c	d	e	f	g	h	i	*n*
1) Bread	2	*118*	0	0	0	0	0	0	0	120
2) Milk	1	*117*	2	0	0	0	0	0	0	120
3) Tea/coffee	0	0	32	4	*84*	0	0	0	0	120
4) Sugar	0	0	52	14	*54*	0	0	0	0	120
5) Fruit	0	23	4	3	6	0	0	*66*	14	116
6) Mealie-meal	0	0	42	15	*63*	0	0	0	0	120
7) Meat	*89*	18	4	4	5	0	0	0	0	120
8) Margarine/jam	0	0	31	17	*72*	0	0	0	0	120
9) Vegetables	*66*	29	3	1	0	0	0	0	0	99
10) Salt	0	0	2	11	*107*	0	0	0	0	120
11) Cooking oil/fat	0	15	30	24	*51*	0	0	0	0	120
12) Firewood	0	*45*	5	2	2	0	0	38	0	92
13) Candles	0	1	*60*	2	6	0	0	0	0	69
14) Matches	0	1	29	22	*38*	0	0	0	0	90
15) Paraffin	0	0	*51*	8	4	0	0	0	0	63
16) Cigarettes	2	*47*	1	0	1	0	0	0	0	51
17) Spices	0	0	54	7	*56*	0	0	0	0	117
18) Soft drinks	0	5	*70*	1	2	0	0	38	4	117
19) Soap	0	0	*56*	15	49	0	0	0	0	120
20) Toilet paper	0	0	*51*	16	44	0	0	0	0	111
21) Light bulbs	0	0	0	1	*47*	0	0	0	0	*48*
22) Stationery	0	0	44	*72*	4	0	0	?	0	120
23) Stockings (women's)	0	0	12	16	*19*	1	1	0	0	49
24) Socks	0	0	0	0	3	*59*	51	5	0	118
25) Underwear	0	0	0	0	3	*108*	9	0	0	120
26) Shoes	0	0	0	0	0	14	*102*	4	0	120
27) Major clothing items	0	0	0	0	2	*88*	28	2	0	120
28) Blankets/linen	0	0	0	0	0	6	*102*	10	2	120
29) Pots/plates/cups/ cutlery	0	0	0	0	0	0	*78*	42	0	120
30) Furniture units and appliances	0	0	0	0	0	0	3	*117*	0	120
31) Gramophone records	0	0	0	12	15	10	17	*59*	0	119
32) Dry cleaners	0	0	30	20	*54*	1	0	4	0	109
33) Clothes mending/ tailors	0	0	0	0	2	4	14	*83*	1	104
34) Shoe repairs	0	0	0	0	0	19	41	*59*	0	119
35) Radio/TV repairs	0	0	0	0	0	0	0	*99*	3	102
36) Watch repairs	0	0	0	0	0	0	1	*109*	1	111
37) Hairdressers	0	0	9	16	*54*	8	4	6	2	99
38) Clinic/surgery/ chemist	0	0	0	0	2	28	*51*	22	17	120
39) Photographic studio	0	0	0	0	0	4	*49*	48	19	120
40) Post Office	0	0	8	10	*91*	9	1	1	0	120
41) Metal vessel repairs	0	0	0	0	0	2	*60*	54	3	119
42) Library	0	2	*32*	5	7	0	0	0	0	46
43) Community hall/ clubs	0	0	*43*	11	13	0	0	0	1	68
44) Cinema	0	0	*58*	18	29	3	0	0	0	108
45) Indoor games	0	3	*18*	1	0	0	0	2	0	24
46) Swimming pool	0	0	10	4	5	1	0	*14*	0	34
47) Beer garden/ bottle store	0	*69*	7	6	4	0	0	2	0	88

Table 5.9

HIERARCHICAL ORDER OF GOODS AND SERVICES

1) *Low order goods/services (365 to 730 trips per year)*

Bread	Firewood
Milk	Cigarettes
Meat	Beer garden/bottle store*
Vegetables	

2) *Middle order goods/services (12 to 52 trips per year)*

Tea/coffee	Toilet paper
Sugar	Light bulbs
Mealie-meal	Stationery
Margarine/jam	Stockings (women's)
Salt	Dry cleaners
Cooking oil/fat	Hairdressers/barber's shop
Candles	Post Office
Matches	Library*
Paraffin	Community hall/clubs
Spices	Cinema*
Soft drinks	Indoor games*
Soap	

3) *High order goods/services (less than 2 trips per year)*

Fruit	Shoe repairs
Socks	Radio/TV repairs
Underwear	Watch repairs
Shoes	Clinic/surgery/chemist
Major clothing items	Photographic studio
Blankets/linen	Metal vessel repairs
Pots/plates/cups/cutlery	Swimming pool
Gramophone records	Furniture units and appliances
Clothes mending/tailor's	

* Goods and services for which a low level of response was obtained, indicating a low number of residents purchasing or making use of them.

frequencies for meat of 730 per year (or 60 per month) compares with the average of 97.1 trips per year (or 8.1 per month) for LDRAs given in the 1974 study.[11] This disparity is undoubtedly a result of the comparatively low ownership of refrigerators among HDRA households, as will be demonstrated later (Chapter 6).

5.7 Conclusions

This chapter has analysed the results of the survey of trip patterns in relation to shopping preferences, with central place theory providing the conceptual background. The most important conclusions emerging from the analysis are as follows:

(1) The shopping-trip patterns observed in the survey tend, in general, to confirm the kind of 'rational consumer behaviour' postulated in central theory; that is, for lower-order goods consumers tend to visit the nearest centres available, whereas for higher-order goods they are prepared to travel longer distances.
(2) Highfield is the most self-sufficient HDRA, followed (in order of increasing dependence

on the CBD) by Mufakose, Mbare, Glen Norah and, at the bottom, Dzivaresekwa. These varying levels of dependence on the CBD become more understandable when HDRA service centre needs, as perceived by the inhabitants themselves, are analysed in Chapter 6.

(3) In the case of Glen Norah and Dzivaresekwa residents, it has been demonstrated that Machipisa and Mabelreign, respectively, provide significant 'intervening opportunities'; again confirming the 'rational behaviour' of consumers in the context of central place theory. It has also been discovered that the informal retailers (hawkers and vendors) provide an important service which many HDRA inhabitants use.

(4) With regard to the list of 47 goods and services, three orders have been identified on the basis of frequency:

   (a) Low order goods: 365 to 730 trips per year
   (b) Middle order goods: 12 to 52 trips per year
   (c) High order goods: less than 2 per year.

   On the basis of these trip frequencies and orders of goods an three-tier hierarchy of service centres has been suggested. This suggestion will be examined further in Chapter 7 where more detailed recommendations will be made in the light of the perceived needs identified in Chapter 6.

(5) In terms of the level of dependence on the CBD, little change has taken place in Mbare since 1971. The only significant change has been the increased proportion of internal trips for meat (from 49 to 81.21 per cent). In Highfield, there has also been little change, the most noticeable being the increased proportion of internal trips for small clothing items (from 15 to 27.31 per cent).

This chapter has been concerned mainly with establishing shopping-trip patterns of HDRA inhabitants. The next chapter goes beyond mere empirical observation of patterns by analysing a wide range of factors presumed to underlie these patterns. In terms of conceptual frameworks, this chapter has been concerned with the consumer behaviour aspects of central place theory, while the next chapter is cast within the cognitive-behavioural framework.

6

HIGH-DENSITY RESIDENTIAL AREAS: DETERMINANTS OF SHOPPING BEHAVIOUR AND LOCAL PERCEIVED NEEDS

6.1 Introduction

The objectives of this chapter are:

(1) At a general level, to investigate the perceptions held by HDRA residents with regard to their local service centres and shops, the underlying rationale being that the way people perceive these centres and shops influences their shopping preferences (Chapter 2).
(2) Linked to the above, to determine the relative importance of a list of factors usually deemed to influence shopping preference patterns: distance, price of goods, quality of shops, quality of goods and availability of credit facilities.[1]
(3) To identify perceived service centre needs in each of the five HDRAs. This will lead to the determination of priorities or relative intensity with respect to these needs.

It is important at this stage to note that urban planning is about both the physical and socio-economic environment, and that any policy designed to change the urban environment must take into account the views of the people on whose behalf planning is carried out. Thus, any planning system must recognize, both in theory and in practice, the importance of public participation in the planning process.[2] In this context, the behavioural framework adopted for the present chapter provides a vehicle for articulating the perceptions and demands of the public. What is actually provided in the end in any service centre is, however, the result of compromise between different factors: the demands of the public; the regulations of the local planning authority; and the economic constraints such as threshold and range of goods faced by private entrepreneurs (see Chapter 2).

6.2 Data collection

In order to establish general guidelines with respect to the shopping-trip factors around which the questionnaire would be structured, a pilot survey involving 100 respondents was carried out in Mufakose from 1 to 12 August 1981. This was a face-to-face set of unstructured interviews in which randomly selected shoppers at the three shopping centres were asked two simple questions: 'What made you decide to come to this shopping centre today instead of some other centre?', and 'What factors do you usually consider in deciding where to go for shopping?' On analysing the results, it was discovered that most of the factors given were variants of the following:

(1) Distance between home and the service centres, i.e. nearness of shops.
(2) Price of goods.

[1] See M. G. Bradford and W. A. Kent, *Human Geography: Theories and Their Applications* (London, Oxford Univ. Press, 1977), 25.

[2] The importance of public or citizen participation is dealt with at great length by M. Fagence, *Citizen Participation in Planning* (Oxford, Pergamon, 1977).

(3) Quality of service in the shops, which includes the following: cleanliness of both shops and shopkeepers; politeness and honesty of shopkeepers; and time spent waiting before being served.
(4) Range of choice in the same shopping centre, i.e. 'many shops to choose from' or comparative shopping.
(5) Quality of goods.
(6) Availability of credit facilities.

One tentative indicator obtained by carrying out an unstructured face-to-face survey is that it was possible to gain an insight into the relative importance of the above-mentioned factors, and the question of price of goods was discovered to be the most emphasized. It was therefore decided to give more detailed treatment to this question of prices (see Section 6.5).

Appendix 4 (parts B and C) shows the final questionnaire used for collecting the data for this chapter. There are three types of question in part B:

(a) Those that seek to establish the respondents' perception of their local shops: Questions 2, 3, 5, 6, and 8. These questions are about the shops themselves, that is their range of goods (2 and 3), shopkeepers' attitude (5), level of cleanliness (6) and opening hours (8).
(b) Those that deal with some general factors deemed to influence shopping behaviour (such as distance, opening time and prices): Questions 1, 7, 9, 10, 11, 12 and 13.
(c) One question (4) aimed at establishing perceived but as yet unmet needs in the local service centres.

Part C sought to establish the relative importance of the six factors identified in the pilot survey. For each of the nine trip types dealt with in Chapter 5, the respondents were asked to rank the six factors in their order of importance.

The sampling procedure and response levels have already been outlined in the previous chapter (see Section 5.3).

6.3 Perception of Local Shop Characteristics

The data presented in this section relates to the high-density area residents' perception of:

(1) the range of goods available locally;
(2) the attitude of local shopkeepers (in terms of politeness and honesty);
(3) the level of cleanliness in local shops; and
(4) the opening hours of the shops.

The above are matters which could be rectified by the HDRA shop-owners themselves. The question of opening hours and level of cleanliness are usually determined by regulations laid down by the local planning authority. In short, the objective of gathering the data presented here was simply to investigate, through consultation with local residents, which characteristics of HDRA service centres could be improved and also the extent to which people in HDRAs attach importance to these factors.

The results in most of the tables that follow were subjected to the chi-square (χ^2) test, whose formula is as follows:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

where O = observed result
E = expected result

and in this case df (degrees of freedom) = $(r - 1)(c - 1)$
where r = number of rows in the table
c = number of columns in the table.

A full account of the chi-square test as it relates to contingency tables is given in Blalock.[3] The aim of the test is very simple: to establish the significance level or degree of confidence with which it may be asserted that the sampling results contained in the table are not a result of chance. Thus E in the above formula is a hypothetical distribution which would be obtained if the sampling results were in fact a matter of chance. All the results subjected to this test, Tables 6.1 to 6.13, were found to be significant at the very high level of 99.999 per cent.

Table 6.1 shows the perception patterns regarding the range of shops in HDRAs (Question 2). In the case of Highfield, more than half of the respondents (60.77 per cent) are satisfied by the range of shops in the area. This compares with 16.61 per cent for Dzivaresekwa, the HDRA with the lowest percentage satisfied with the range of shops. It is not surprising that Highfield has the highest percentage satisfied as it has the largest suburban service centre in the whole city. Mbare and Mufakose respondents are moderately satisfied (48.33 per cent, and 43.80 per cent, respectively). Dzivaresekwa and Glen Norah are the least satisfied (16.61 per cent and 17.89 per cent, respectively). With the exception of Highfield, the general pattern in HDRAs appears to be one of dissatisfaction with the range of shops.

Table 6.2 shows the perception patterns in relation to the range of goods in HDRA shops (Question 3); the response pattern closely resembles that in Table 6.1. Highfield respondents appear to be the most satisfied (50.77 per cent); in the middle are Mbare (44.81 per cent) and Mufakose (38.73 per cent); at the bottom are Dzivaresekwa and Glen Norah again (20.30 per cent and 19.06 per cent, respectively).

Table 6.1

RANGE OF SHOPS IN HDRAs

Q. Do you think there is a good range of shops in this township?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	48.33	50.83	0.83	240
Highfield	60.77	38.85	0	260
Mufakose	43.80	53.03	3.17	349
Dzivaresekwa	16.61	82.29	1.10	271
Glen Norah	17.89	80.00	2.11	285
Mean	37.48	61.00	1.44	

df = 4; $\chi^2 = 74.65$; critical value at α-risk of 0.001 = 18.465.

[3] Blalock, *Social Statistics*, 275–87.

Table 6.2

RANGE OF GOODS IN HDRAs

Q. Do you think there is a good range of goods sold in this township?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	44.81	54.35	0.83	240
Highfield	50.77	48.46	0.77	260
Mufakose	38.73	58.38	2.89	349
Dzivaresekwa	20.30	78.60	1.10	271
Glen Norah	19.06	78.78	2.16	285
Mean	34.73	63.72	1.55	

df = 4; $\chi^2 = 74.65$; critical value at a-risk of 0.001 = 18.465.

Thus, with the exception of Highfield, most HDRA residents, as represented by respondents in this survey, appear to be generally dissatisfied by both the range of shops and goods available in their local areas. What types of shop and goods they perceive to be missing will become clear in Section 6.7 when perceived needs are considered.

The responses to Question 5 in the questionnaire (politeness and honesty of shopkeepers) are summarized in Table 6.3. In general — when the results for all HDRAs are combined — it appears that people have no strong opinions regarding politeness and honesty of shopkeepers, as evidenced by the fact that the majority response of 75.76 per cent was answer (b): 'Some are polite and honest and others are not'. Only a few (8.68 per cent) strongly protest against

Table 6.3

POLITENESS AND HONESTY OF SHOPKEEPERS

Q. Do you think shopkeepers in this townsh are polite and honest;

	Response (percentages)				*Sample size*
HDRA	*Generally very polite and honest*	*Some are polite and honest some are not*	*Generally very impolite and dishonest*	*No response*	*n*
Mbare	13.33	73.75	10.00	2.92	240
Highfield	11.15	74.62	10.00	4.23	260
Mufakose	14.83	70.06	8.14	6.98	349
Dzivaresekwa	7.38	83.03	7.01	2.58	271
Glen Norah	11.87	77.34	8.27	2.88	285
Mean	11.71	75.76	8.68	3.92	

df = 8; $\chi^2 = 439.27$; critical value at α-risk of 0.001 = 21.125.

the impoliteness and dishonesty of shopkeepers. Similarly, a small percentage is satisfied by the situation (11.71 per cent). It also appears that the least satisfied are the Dzivaresekwa residents with a 7.38 per cent response to answer (a), the satisfaction percentages for answer (a) otherwise being more or less the same for the rest of the HDRAs (around the average of 11.71 per cent). These figures, in general, do note indicate a bad state of affairs. However, they also clearly suggest that there is room for improvement and that some shoppers do take note of the conduct of shopkeepers.

Table 6.4 shows the perception pattern regarding the cleanliness of HDRA shops (Question 6 in the questionnaire). Again, the majority do not have strong opinions regarding the cleanliness of shops. A small percentage (14.88 per cent) are very satisfied by the level of cleanliness, and, similarly, a small percentage (7.93 per cent) view the shops as generally very dirty. When the responses from the five different HDRAs are compared, no significant differences can be found. Once again, the overall results in Table 6.4 suggest that there is marginal room for improvement with regard to the cleanliness of shops.

Table 6.4

CLEANLINESS OF SHOPS

Q. Do you see shops in this township as clean or dirty?

	Response (percentages)					*Sample size*
HDRA	*Generally very clean*	*Reasonably clean*	*Sometimes dirty*	*Generally very dirty*	*No response*	*n*
Mbare	12.91	33.33	35.83	14.17	3.75	240
Highfield	16.15	35.77	37.69	8.08	2.31	260
Mufakose	19.42	37.97	31.59	5.22	5.80	349
Dzivaresekwa	10.33	31.37	46.13	8.49	3.69	271
Glen Norah	15.59	36.69	39.14	3.67	4.89	285
Mean	14.88	35.03	38.08	7.93	4.09	

df = 12; $\chi^2 = 143.23$; critical value at α-risk of 0.001 = 32.909.

Table 6.5 shows the response to Question 8 in the questionnaire regarding opening hours. The majority consider that there should be longer opening hours (77.08 per cent). The patterns of response are similar in all the five HDRAs in question. Table 6.6 summarizes the response to the second part of Question 8 which asked the respondents to suggest when more time should be added to the opening hours of their local shops.[4] The results in the table indicate that the majority of HDRA people would welcome an extension of opening hours into the evening. This applies to all HDRAs, even when they are considered separately. When the implications of Tables 6.5 and 6.6 are considered together, they present a strong case for the increment of opening time, particularly later in the evenings. This would be particularly useful to those who

[4] Strictly, only those respondents who answered 'yes' to the first part of Question 8 should have answered the second part. As it turned out, however, more than this number responded. In spite of this, the results are still valid, particularly when it is considered that only 75 respondents answered when they should not have (a total of 1,161 instead of 1,086).

Table 6.5

NEED FOR LONGER OPENING HOURS

Q. Do you think it is necessary for the shops in this township to have longer opening hours?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	73.75	24.17	2.08	240
Highfield	79.23	20.38	0.38	260
Mufakose	80.52	14.90	4.58	349
Dzivaresekwa	79.34	17.34	3.32	271
Glen Norah	72.56	23.46	3.97	285
Mean	77.08	20.05	2.87	

df = 4; $\chi^2 = 165.25$; critical value at α-risk of 0.001 = 18.465.

Table 6.6

TIMES PREFERRED FOR INCREASE IN OPENING HOURS

Q. . . . when do you think more time should be added to the opening hours?

	Response (percentages)			*Sample size*
HDRA	*Earlier in the mornings*	*Later in the evenings*	*Longer at weekends*	*n*
Mbare	11.76	59.41	28.82	170
Highfield	25.76	44.10	30.13	229
Mufakose	15.52	59.57	24.91	277
Dzivaresekwa	23.06	50.62	26.34	243
Glen Norah	20.66	43.39	35.95	242
Mean	19.35	51.42	29.23	

df = 8; $\chi^2 = 95.42$; critical value at α-risk of 0.0001 = 211.125.

work in the CBD and the industrial areas, who, in fact, constitute the majority of the workers, as there are no other significant alternative areas of employment. Most of these workers finish at 5.00 p.m. Given the peak-hour congestion at bus-stop shelters — buses being the main form of public transport — and also the long distances between the CBD and most HDRAs (see Chapter 3), most workers do not get home until around 6.00 p.m. or later. Thus a few extra hours of access to shops into the evening would be welcome.

6.4 Some General Factors Influencing Shopping Behaviour

The data presented in this section relates to obvious factors and characteristics of shopping habits which it would be useful to have a knowledge of. The characteristics and factors

investigated here are by no means exhaustive; rather, they should be seen as the starting point for developing a new understanding.

The aim of Question 1 was to determine which member of the respondent's household does most of the shopping for food. Table 6.7 shows the patterns of response to this question. Most of the shopping for food (89.46 per cent) is shared between the father and the mother where both are found. Considered separately, however, mothers do most of the food shopping in the majority of households — more than 60 per cent in all HDRAs. Most Black women in HDRAs are not formally employed (see Chapter 3), so the results summarized in Table 6.7 are not really surprising. But in future, with increasing levels of education among Black women and the current emphasis on women's role in national development, more Black women form HDRAs may be expected to be formally employed, and shopping habits are bound to change. At present, women remaining at home can do their routine shopping any time of the day. This contrasts with situations where more women are in formal employment; routine shopping is moved to the weekends and to times outside working hours. At that stage, an extension of opening hours will be useful to shoppers and an incentive to entrepreneurs.

Table 6.7

FOOD SHOPPING WITHIN THE FAMILY

Q. Who does most of the shopping for food?

	Response (percentages)				*Sample size*
HDRA	*Father*	*Mother*	*Other*	*No response*	*n*
Mbare	20.00	65.42	11.67	2.92	240
Highfield	17.31	76.15	6.54	0	260
Mufakose	23.34	63.11	9.22	4.32	349
Dzivaresekwa	21.78	70.11	4.32	3.69	271
Glen Norah	24.12	66.08	4.89	4.89	285
Mean	21.31	68.17	7.33	3.16	

$df = 8$; $\chi^2 = 313.28$; critical value at α-risk of 0.001 = 26.125.

Question 7 sought to establish the pattern of perception with regard to the distance between HDRA households and their nearest service centres, and Table 6.8 summarizes the results. In four of the five HDRAs sampled, the majority of households (more than 60 per cent) are satisfied by the distance between home and the nearest service centre, indicating that the spatial distribution or location of service centres is perceived to be satisfactory. The distance perception pattern for Dzivaresekwa is different from the other four HDRAs, with the majority (54.98 per cent) perceiving distance between home and the nearest service centre to be too great. A glance at the 'service centre location map' of Dzivaresekwa (Appendix 2(d)) explains this pattern of perception. There are only two service centres, and the whole new section to the north-east remains unserviced. The need for additional service centres will emerge again when the perceived needs of Dzivaresekwa are considered in Section 6.7. However, the situation should improve when development starts on the site reserved for a new 'town centre' for the whole HDRA. Clearly then, speedy development of this site would be welcomed by the local

Table 6.8

PERCEPTION OF DISTANCE TO NEAREST SERVICE CENTRE

Q. Do you think the distance from your house to your nearest shopping centre is too long?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	17.50	80.33	1.67	240
Highfield	32.69	65.38	1.92	260
Mufakose	27.54	68.48	4.06	349
Dzivaresekwa	54.98	40.96	4.06	271
Glen Norah	30.22	65.11	4.67	285
Mean	32.59	64.05	3.28	

df = 4; χ^2 = 81.69; critical value at α-risk of 0.001 = 18.465.

residents. In the other four HDRAs, even though the majority indicated satisfaction with the distance between home and the nearest service centre, a substantial number (averaging around 32.59 per cent) perceive the distance to be too great. This, to an extent, explains the extensive use made of the informal sector retailers — vendors and mobile hawkers. These are usually conveniently located at street corners not more than a few minutes' walk from most households (see Section 5.4).

Table 6.9 shows the response to Question 11 in the questionnaire which sought to establish the perception pattern with regard to expenditure on transport to the CBD from the HDRAs for the purpose of shopping. When the HDRAs are taken as a whole, 63.71 per cent of the sample respondents perceive their expenditure on transport to the CBD for shopping purposes to be too high, while 33.33 per cent are not worried by the level of expenditure. From the point of

Table 6.9

PERCEPTION OF EXPENDITURE ON TRANSPORT TO CBD

Q. Do you think that you spend too much money on transport to the city centre for shopping?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare 20.00	55.83	42.08	2.08	240
Highfield	64.23	34.23	1.54	260
Mufakose	59.71	35.34	4.35	349
Dzivaresekwa	69.37	26.94	3.69	271
Glen Norah	69.42	28.05	2.52	285
Mean	63.71	33.33	2.84	

df = 4; χ^2 = 52.48; critical value at α-risk of 0.001 = 18.465.

view of consumers in the HDRAs, the figures in Table 6.9 argue for decentralization of some functions from the CBD to the HDRAs. When individual HDRAs are compared, Dzivaresekwa and Glen Norah appear to be the most afflicted by the level of expenditure on transport to the CBD (69.37 and 69.42 per cent, respectively), and the least concerned residents are those in Mbare (55.83 per cent), with Highfield and Mufakose lying in the middle (64.23 and 59.71 per cent, respectively).

Question 12 of the questionnaire aimed to determine the proportion of HDRAs households owning refrigerators. This simple statistic throws some light on the ability of HDRA households to shop in bulk. Table 6.10 shows the results. In general, few HDRA households own refrigerators, only 17.15 per cent of the sample population. This is, no doubt, a result of their comparatively low socio-economic level (see Chapter 3). The low level of ownership of refrigerators could also be considered to be, in part, a result of the level of provision of electricity in these areas, as substantial proportions of HDRAs remain without electricity. In terms of refrigerator ownership, Highfield appears to be the most affluent (25.38 per cent), while Dzivaresekwa appears to be the least affluent (7.38 per cent). These figures are not really surprising: Highfield is one of the more affluent HDRAs, as evidenced by the presence of some low-density owner-occupied houses in the Old Highfield section. The quality of some of these houses is comparable to those in LDRAs. On the other hand, Dzivaresekwa accommodates a high proportion of domestic workers, the lowest-paid of all workers in the city (see Chapter 3), and few of the small houses have electricity.[5] In general, low-level ownership of refrigerators means that shopping frequency for perishables like meat, vegetables and milk necessarily has to be high. This in turn means that goods which in the LDRAs might be middle or high order will be of a lower order in HDRAs.

Table 6.11 shows the data on ownership of cars in HDRAs (Question 13 in the questionnaire). The pattern of response regarding ownership of cars is almost identical to that regarding the ownership of refrigerators in Table 6.10. Just as possession of a refrigerator is an index of affluence, so is the possession of a car. Thus the comments made earlier on Table 6.10.

Table 6.10

OWNERSHIP OF REFRIGERATORS

Q. Do you have a fridge in your house?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	12.91	85.00	2.08	240
Highfield	25.38	73.08	1.54	260
Mufakose	17.44	78.20	4.36	349
Dzivaresekwa	7.38	89.30	3.32	271
Glen Norah	22.66	73.74	3.59	285
Mean	17.15	79.86	2.98	

df = 4; χ^2 = 205.32; critical value at α-risk of 0.001 = 18.465.

[5] A programme to electrify all HDRA houses has, however, been started recently.

Table 6.11

OWNERSHIP OF CARS

Q. Do you have a car in your family?

	Response (percentages)			*Sample size*
HDRA	*Yes*	*No*	*No response*	*n*
Mbare	12.91	84.58	2.50	240
Highfield	24.23	75.00	0.77	260
Mufakose	14.49	81.74	3.77	349
Dzivaresekwa	16.67	80.44	2.58	271
Glen Norah	23.30	73.47	3.23	285
Mean	18.38	79.05	2.57	

df = 4; χ^2 = 188.21; critical value at α-risk of 0.001 = 18.465.

regarding the socio-economic status of Highfield and Dzivaresekwa also apply here. In general, the majority of HDRA households depend on public transport (79.05 per cent), while private mobility is low (18.38 per cent car ownership). Since there are few cross-link public transport services between suburban residential areas lying on different radial routes from the CBD, most of the HDRA inhabitants who do not have cars usually visit the CBD for high order purchases instead of visiting the geographically nearer higher order service centres in other residential areas.

6.5 Price variation in the city: Perception versus reality

Question 9 in the questionnaire sought to investigate the perception of price differences between the CBD and HDRAs, and Table 6.12 summarizes the results. The majority (43.30

Table 6.12

PERCEPTION OF PRICE DIFFERENCES BETWEEN CBD AND HDRA

Q. Are prices of goods lower in the city centre than in this townships?

	Response (percentages)					*Sample size*
HDRA	*Very much lower*	*A little lower*	*Not lower*	*Higher in the city centre*	*No response*	*n*
Mbare	25.00	40.83	23.33	7.50	3.33	240
Highfield	22.31	43.08	23.85	8.46	2.31	260
Mufakose	19.13	45.80	20.87	8.12	6.08	349
Dzivaresekwa	32.84	43.91	14.76	3.69	4.80	271
Glen Norah	27.50	42.86	22.14	2.86	4.64	285
Mean	25.36	43.30	20.99	6.13	4.23	

df = 12; χ^2 = 139.58; critical value at α-risk of 0.001 = 32.909.

per cent) of the respondents perceived prices to be generally 'a little lower' in the CBD than in the HDRAs and 25.36 per cent perceived CBD prices to be 'very much lower'. Thus the total percentage of those who consider CBD prices to be lower, irrespective of the extent, is 68.66 per cent. It would appear, then, that HDRA service centres are poorly perceived in terms of prices and that, if all other factors are held constant, HDRA shoppers are more likely to visit the CBD than local service centres.

A further question (Question 10) was designed to establish the respondents' perception of price variations between shops within the five individual HDRAs. The results in Table 6.13 further illustrate the sensitivity of shoppers to the matter of price. Altogether 92.67 per cent of the sampled respondents perceive prices to differ between HDRA shops (irrespective of the extent of difference). This kind of perception should obviously influence shopping-trip patterns within HDRAs, if only partially. Whether, in reality, prices vary to the extent that people imagine they do becomes clear when considering the results in Table 6.14.

To arrive at the results in Table 6.14, a sampling survey of price variations in the whole of Harare was carried out as follows.[6] From each HDRA two service centres were selected, the smallest and the largest in terms of functional size — *a* and *b*, respectively, in Table 6.14 (see Chapter 4 for the functional sizes of service centres). Then from each selected service centre, two retail establishments were selected, again the smallest and the largest, and the total prices of the following sample basket recorded for each establishment (see Appendix 7 for the recording form used):

(1) One dozen eggs (cheapest in the establishment)
(2) 'Surf' detergent (large packet)
(3) Bar of 'Perfection' soap
(4) 'Choice' soap (small tablet)
(5) Packet of 'Tanganda' tea (125 grams)

Table 6.13

PERCEPTION OF PRICE VARIATIONS WITHIN HDRA SHOPS

Q. Are prices different between shops in this township?

	Response (percentages)				*Sample size*
HDRA	*Very different*	*A little different*	*Not different*	*No response*	*n*
Mbare	35.83	58.33	3.75	2.08	240
Highfield	39.62	54.23	4.23	1.92	260
Mufakose	33.04	59.42	2.90	4.64	349
Dzivaresekwa	31.37	60.52	4.43	3.69	271
Glen Norah	34.38	56.59	6.25	2.78	285
Mean	34.85	57.82	4.31	3.02	

df = 8; χ^2 = 220.67; critical value at α-risk of 0.001 = 26.125.

[6] The survey was conducted between 22 August and 3 September 1981.

Table 6.14

REAL PRICE VARIATION IN HDRAs AND THE CBD

A. HDRA shops

Area	Price of sample basket (cents)			Rank
	Smallest centre	*Largest centre*	*Range*	*(greatest price range)*
Mbare	946.0	779.5	166.5	1
Highfield	882.5	846.5	36.0	6
Mufakose	812.5	784.5	28.0	7
Dzivaresekwa	939.0	885.5	53.5	3
Glen Norah	869.0	875.0	6.0	10
Glen View	—	851.0	—	—
Mabvuku	882.0	908.0	26.0	8
Tafara	—	911.0	—	—
Kambuzuma	770.0	822.0	52.0	4
St Mary's	788.0	777.0	11.0	9
Seke	827.0	778.5	48.5	5
Zengeza	886.5	813.0	73.5	2
Rugare	—	902.0	—	—

Summary statistics:
Sample size = 23
Overall range (926 – 770) = 176
Overall arithmetic mean = 849.39
Overall standard deviation = 55.03

B. CDB shops

Shop	Price of sample basket (cents)
OK Bazaars (Baker Avenue)	783
TM Supermarkets (First Street/Manica Road)	787
Jarzin Supermarket (Sinoia Street)	795
Macey's Supermarkets (Speke Avenue)	844
Woolworth & Co. (Pioneer Street)	899

Summary statistics:
Range = 116
Arithmetic mean = 821.6
Standard deviation = 49.72

(6) 'Stork' margarine (250 grams)
(7) White sugar (2 kilograms)
(8) 'Red Seal Pearlenta' mealie meal (5 kilograms)
(9) 'Panol' cooking oil (2.5 litres)
(10) Bottle of 'Mazoe' orange crush (750 millilitres)

The arithmetic mean of the basket prices of the selected two establishments per centre was considered to the representative price of the basket for that centre. In selecting the contents of

the sample basket, it was desired to include the types of groceries regularly bought by a typical HDRA family. For the CBD, five popular supermarkets were selected and their sample basket prices recorded; the results are shown in part (B) of Table 6.14.

The results in Table 6.14 justify the perception pattern of the sampled respondents (Tables 6.12 and 6.13). In reality, prices do vary a great deal within HDRAs. The overall range (highest minus lowest basket price) with respect to all the 23 sampled service centres is 176 cents, and the respective overall standard deviation is 55.03 cents around the overall mean price of 849.39 cents. For HDRA households, a difference of 176 cents is quite large. In fact, it represented 5.87 per cent of the monthly income of the lowest-paid workers in the city, domestic workers, whose government-stipulated wage at the time of the survey was Z$30 per month. It also appears from the results that prices tend to be higher in smaller service centres than in larger ones. This is likely to be the result of greater price competition between shops in the larger centres. Table 6.14 also shows the rank order of price ranges (a measure of individual HDRA internal variation in prices) from the highest (1) to the lowest (10). Glen View, Tafara and Rugare do not appear in the rank order as they each contain only one service centre. By far the largest price range is that for Mbare (166.5), and the smallest price range is for Glen Norah (6).

Part (B) of Table 6.14 shows the prices of the sample basket in five popular supermarkets in the city centre. Of these five, two are located near the core of the CBD, two are located in the Kopje area, and one is located between the CBD core and Kopje area. The mean basket price is 821.6 cents, as compared to 849.39 cents for the HDRAs combined, indicating a difference of 27.79 cents. These figures tend to confirm the perception pattern summarized in Table 6.12 earlier: that the majority of HDRA people perceive CBD prices to be 'a little lower' than HDRA prices. It is important to note, however, that for households which buy in bulk this small difference of 27.79 cents between CBD and HDRA sample basket price matters, as the savings made by visiting the CBD are likely to exceed the cost of transport for each bulk-shopping trip. Although CBD prices are generally lower than HDRA service centre prices, they are by no means uniformly so, as indicated by the range of 116 cents.

6.6 Comparative Importance of Selected Factors

Appendix 4, part C, shows the questionnaire used for gathering the data for this section. For each trip type, respondents were asked to rank the following six factors in their order of importance:

(a) Nearness of shops (distance)
(b) Price of goods
(c) Quality of service
(d) Many shops to choose from (comparative shopping)
(e) Quality of goods
(f) Availability of credit

Each rank was assigned points: six points for the most important factor, five for the second, and so on.

To assess the relative importance of factors for each HDRA for the nine types of trips, the total points for individual factors were calculated by adding the points assigned to the factor by all respondents. Appendix 8 shows the results of this exercise. To determine the relative importance of factors with respect to all the five HDRAs combined, the five sets of factor scores

for each trip type given in Appendix 8 were added together. In all the tables and diagrams summarizing the results, individual factor scores are shown as percentages of the total scores of all the six factors for each trip type. To take Type 1 trip and Factor (a), which is 'distance', as an example, the percentage score for factor (a) is calculated by adding the scores for all the six factors and then determining what percentage (a) is of that total.

Table 6.15 shows the overall pattern regarding the relative importance of factors; the results were derived from a consideration of the data for all the five HDRAs as a single sample. Fig. 6.1 expresses the same results in graphic form, but, more importantly, Fig. 6.1 also illustrates how the relative importance of each factor varies with the type of trip. Fig. 6.2 shows the individual graphs in Fig. 6.1 superimposed in order to show the varying relate importance of factors simultaneously.

Table 6.15

IMPORTANCE OF FACTORS: AVERAGE PATTERN

	Factors (percentages)					
Trip type	*(a) Nearness of shops*	*(b) Price of goods*	*(c) Quality of service*	*(d) Comparative shopping*	*(e) Quality of goods*	*(f) Availability of credit*
1	21.02 (2)	21,30 (1)	17.58 (4)	13.76 (5)	17.76 (3)	8.60 (6)
2	20.16 (2)	21.34 (1)	16.42 (4)	13.74 (5)	19.72 (3)	8.44 (6)
3	16.86 (4)	21.44 (2)	17.28 (3)	15.02 (5)	21.90 (1)	7.68 (6)
4	14.98 (5)	24.52 (1)	17.52 (3)	15.36 (3)	18.72 (2)	8.88 (6)
5	17.86 (3)	23.46 (1)	15.86 (5)	16.16 (4)	18.20 (2)	8.88 (6)
6	14.02 (5)	21.12 (2)	17.26 (4)	16.78 (4)	22.16 (1)	8.64 (6)
7	12.06 (5)	23.12 (1)	15.74 (4)	15.98 (3)	22.06 (2)	10.94 (6)
8	10.74 (6)	23.22 (1)	15.20 (4)	15.86 (3)	22.20 (2)	12.78 (5)
9	10.72 (6)	22.06 (1)	14.58 (5)	15.04 (4)	20.48 (2)	16.98 (3)

Note: Numbers in parentheses are the ranks of factors within each type of trips.

From the results, 'price of goods' comes out as the most important factor as it is ranked first for seven of the nine types of trips. This is in keeping with the observation on the intensity of attitudes regarding prices (mentioned earlier) as well as the survey results on perception of price variations and real price variations in the city.

Fig. 6.1 illustrates clearly that 'distance' as a factor is more important for lower order trips, and diminishes in importance with rising order of trips. Thus, from being the second most important factor for Type 1 and 2 trips, it ends up being the least important factor for Type 8 and 9 trips. This pattern conforms with the basic postulate of central place theory that for the less frequent, higher order trips, people are prepared to travel longer distances, and that for the more frequent, lower order trips, they tend to visit the nearest centre available. However, remembering that the whole classical theory of central places as outlined by Christaller is fundamentally predicated on the distance factor, it may be concluded here that distance is an important factor, but not necessarily and not always the most important. At present, for Harare's HDRA residents, 'price' rather than 'distance' is perceived to be the most important factor — even for low order goods. It may be that this is only a temporary situation, and that,

Figure 6.1: IMPORTANCE OF INDIVIDUAL FACTORS FOR THE NINE TRIP TYPES

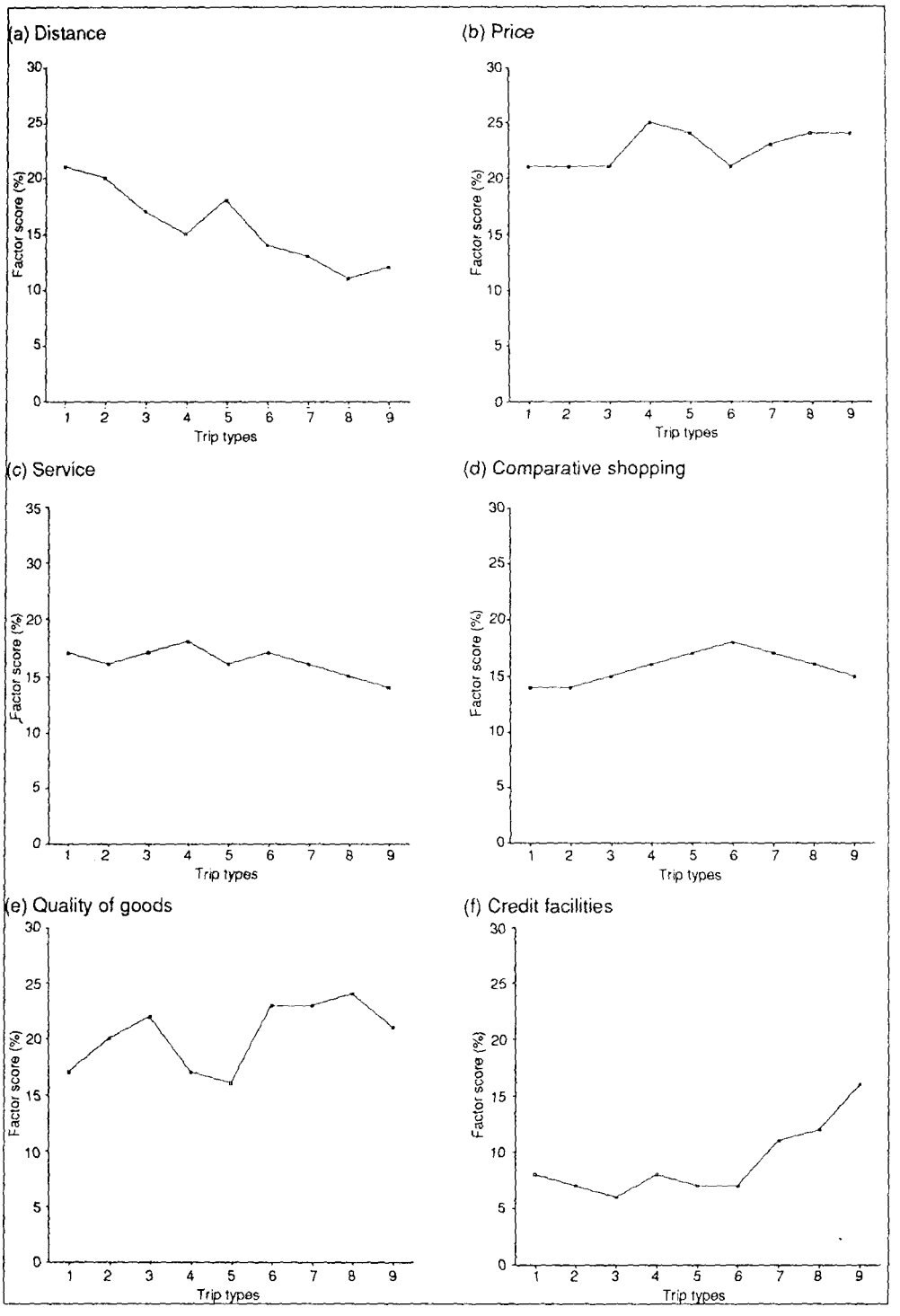
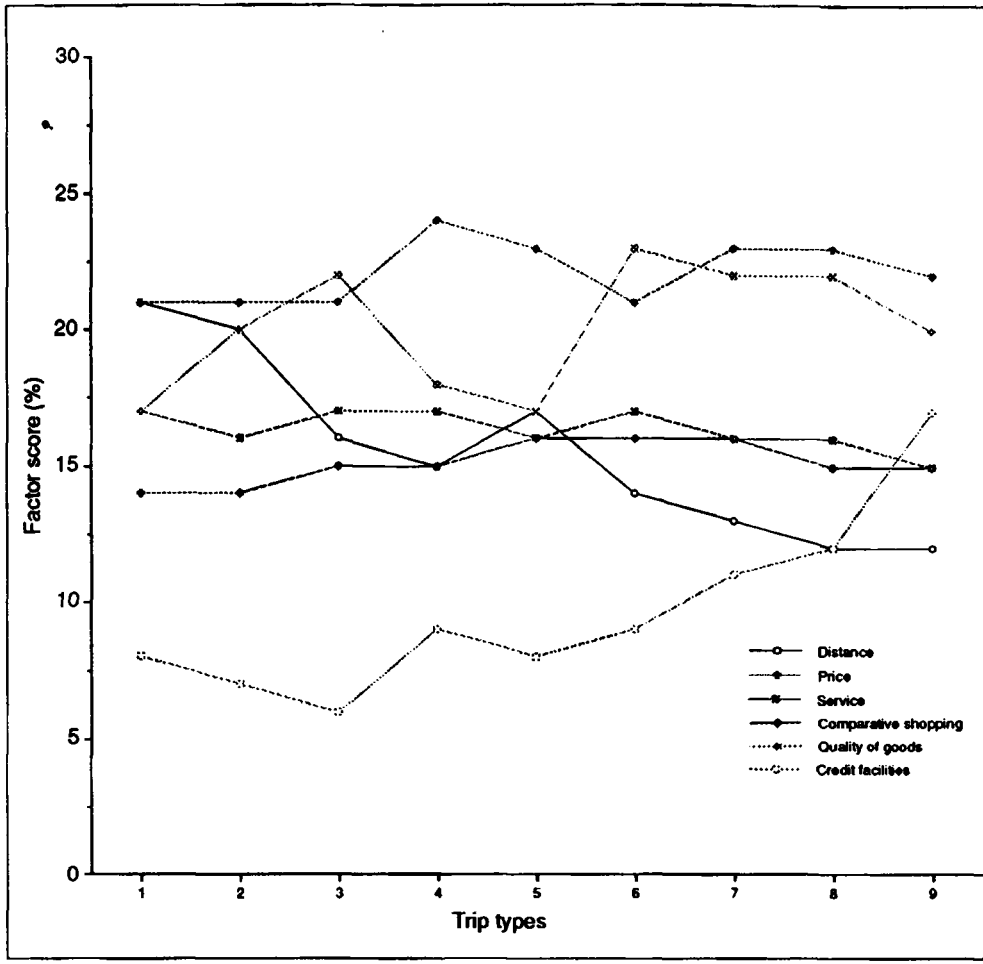


Figure 6.2: RELATIVE IMPORTANCE OF FACTORS FOR THE NINE TRIP TYPES



as the current government regulations on prices become more effective, 'price of goods' will cease to be the overriding determinant of shopping-trip patterns.

In terms of relative importance, 'quality of service' occupies a middle position and decreases slightly with the rising order of trips. 'Comparative shopping' increases slightly with rising order of trips: starting as second from the bottom it ends up as third from the bottom. 'Quality of goods' starts off as the third most important factor for Type 1 trips, rises to be the most important factor for Type 3 trips (meat), falls for Types 4 and 5 and rises again for the remaining higher-order trips, Types 6 to 9. It appears, then, that for meat 'quality of goods' is a very important factor. 'Availability of credit facilities' is by far the least important factor for the first six types of trips, rising for the remaining trips, Types 7 to 9, and ending up as the third most important factor for the Type 9 trip (furniture). This pattern is clearly a function of price of goods: the higher order goods are more expensive than the lower order ones, so that credit becomes increasingly necessary with rising order of goods.

It was also considered important to investigate the extent of agreement with regard to

factor-ranking among the five HDRAs' sample populations. This in fact is equivalent to a test for significance of the factor-ranking patterns. In order to investigate the level of agreement, it was decided to apply the following two tests:

(a) Calculate the correlation coefficients between each HDRA's percentage factor scores with those of every other HDRA.
(b) Calculate the correlation coefficients between the 'overall pattern' (Table 6.16) and individual patterns for the five HDRAs.[7]

High correlation coefficients in both (a) and (b) tests would indicate regularity in the ranking of factors throughout the HDRAs, also indicating that the overall pattern in Table 6.15 is not a result of chance. Table 6.16(a) to 6.16(i) show matrices of the correlations between each HDRA and all the others' results for each of the nine trip types. The following key on degrees of association can be used to interpret the results:[8]

High	= 0.7 to 1.0
Substantial	= 0.4 to 0.7
Low	= 0.2 to 0.4
Negligible	= 0.2 and below

Thus, all the correlations in these tables are 'high' (over 0.7) with the exception of one correlation between Mufakose and Dzivaresekwa in Table 6.16(f) the Type 6 trip which is 'substantial' (0.69). If all the correlations — excluding all the 1.0 correlations representing each HDRAs's correlation with itself — are added and then multiplied by ten, an agreement index, *Ag*, can be obtained:

$$Ag = \frac{\sum_{i=1}^{n} r_i}{10} \times 100 = \sum_{i=1}^{n} r_i \times 10$$

Ag simply states the actual percentage level of agreement with regard to the matrix as a whole, as opposed to the possible total agreement, that is 100 per cent. Consider Table 6.17(a) for example:

$$\sum r_i = 9.479$$

$$Ag = \sum_{i=1}^{n} r_i \times 10 = 94.79$$

The *Ag* scale of agreement ranges from 0 per cent (a situation of total absence of agreement) to 100 per cent (a situation of perfect agreement). The respective *Ag* indices for each of the nine

[7] The correlation coefficient referred to here is the Karl Pearson product–moment correlation coefficient (r) determined by formula:

$$r = \frac{\sum xy}{\sqrt{[\sum x^2][\sum y^2]}}$$

where x and y are the variables whose association is being measured.

[8] B. P. Toyne and P. T. Newby, *Techniques in Human Geography* (London, Macmillan, 1974), 52.

Table 6.16

FACTOR SCORE CORRELATION BETWEEN HDRAS

(a) Type 1 trip

	1	2	3	4	5
1	1				
2	0.991	1			
3	0.909	0.914	1		
4	0.972	0.993	0.927	1	
5	0.992	0.977	0.855	0.949	1

Ag = 94.79%

(b) Type 2 trip

	1	2	3	4	5
1	1				
2	0.850	1			
3	0.976	0.907	1		
4	0.977	0.883	0.978	1	
5	0.921	0.948	0.959	0.950	1

Ag = 93.49%

(c) Type 3 trip

	1	2	3	4	5
1	1				
2	0.877	1			
3	0.883	0.973	1		
4	0.867	0.909	0.977	1	
5	0.903	0.969	0.980	0.958	1

Ag = 92.96%

(d) Type 4 trip

	1	2	3	4	5
1	1				
2	0.820	1			
3	0.841	0.993	1		
4	0.803	0.991	0.981	1	
5	0.839	0.983	0.960	0.983	1

Ag = 91.94%

(e) Type 5 trip

	1	2	3	4	5
1	1				
2	0.975	1			
3	0.964	0.975	1		
4	0.929	0.922	0.969	1	
5	0.915	0.886	0.905	0.845	1

Ag = 92.85%

(f) Type 6 trip

	1	2	3	4	5
1	1				
2	0.852	1			
3	0.882	0.979	1		
4	0.896	0.723	0.690	1	
5	0.944	0.958	0.962	0.843	1

Ag = 87.29%

(g) Type 7 trip

1	2	3	4	5
1				
0.920	1			
0.967	0.889	1		
0.878	0.945	0.933	1	
0.972	0.952	0.988	0.897	1

Ag = 93.41%

(h) Type 8 trip

	1	2	3	4	5
1	1				
2	0.940	1			
3	0.901	0.975	1		
4	0.889	0.986	0.992	1	
5	0.948	0.984	0.988	0.977	1

Ag = 95.8%

(i) Type 9 trip

	1	2	3	4	5
1	1				
2	0.991	1			
3	0.977	0.977	1		
4	0.914	0.902	0.914	1	
5	0.951	0.931	0.912	0.954	1

Ag = 94.23%

1) Mbare 2) Highfield 3) Mufakose 4) Dzivaresekwa 5) Glen Norah

correlation matrices in Table 6.16(a) to 6.16(i) are written below the tables. The lowest *Ag* is 87.29 per cent for Type 6 trips and the highest is 95.8 per cent for Type 8 trips, indicating a very high level of agreement between all the individual HDRA results.

Table 6.17 shows the correlation coefficients between the 'overall pattern' (Table 6.15) and the five individual HDRA patterns with respect to the nine trip types. The highest correlation coefficient is 0.996, between the overall pattern and Highfield and Glen Norah for Type 1 trips

Table 6.17

CORRELATION OF THE PATTERN OF THE OVERALL FACTOR SCORE WITH THOSE OF INDIVIDUAL HDRAs

Trip type	*Mbare*	*Highfield*	*Mufakose*	*Dzivaresekwa*	*Glen Norah*
1	0.995	0.996	0.932	0.988	0.978
2	0.972	0.939	0.991	0.985	0.981
3	0.930	0.974	0.991	0.921	0.991
4	0.899	0.987	0.987	0.981	0.983
5	0.986	0.983	0.992	0.959	0.936
6	0.957	0.966	0.960	0.855	0.991
7	0.972	0.976	0.991	0.954	0.985
8	0.961	0.993	0.983	0.980	0.996
9	0.992	0.986	0.981	0.953	0.969

and Type 8 trips, respectively; the lowest is 0.855, between the overall pattern and Dzivaresekwa for Type 6 trips. Thus, all the correlations in the table are high, indicating a high level of regularity with respect to the ranking of the six factors.

6.7 PERCEIVED NEEDS IN HDRAS

Question 4, part B, in the questionnaire (Appendix 4) simply asked the respondents to give a list of other types of shops and services they consider necessary in their respective HDRAs. The following procedures were adopted to summarize the data obtained:

(1) A list of all the functions (types of shops and services) demanded was first compiled by recording all the different functions demanded on the 1,405 returned questionnaires. It was discovered that altogether the functions demanded amounted to 32 — excluding, in the present context, the obviously irrelevant demands such as 'more housing', 'more buses' and so on.
(2) For each HDRA, the number of times each function was demanded (n) was recorded, producing a 'service centre needs frequency list'.
(3) Finally, for each HDRA, a graph was drawn to show those functions whose demand frequency exceeded 10 per cent. The 10 per cent level is an arbitrary line devised to distinguish between those few functions demanded by large numbers of respondents, and those more numerous functions variously demanded by insignificant numbers of respondents.

Table 6.18 the 'service centre needs frequency list' for the five HDRAs, and Figs. 6.3 to 6.7 are the respective graphs showing functions with demand frequency exceeding 10 per cent. While the functions demanded by individual HDRAs overlap to a limited extent with those demanded in others, the demands of each HDRA are mainly determined by the types of function already existing there. This means that not many generalizations can be made with regard to the demands, as each demand list must, to an extent, be considered separately as the collective wish of the residents of that particular area.

In Mbare the list of significant functions (over 10 per cent demand frequency) is

Table 6.18

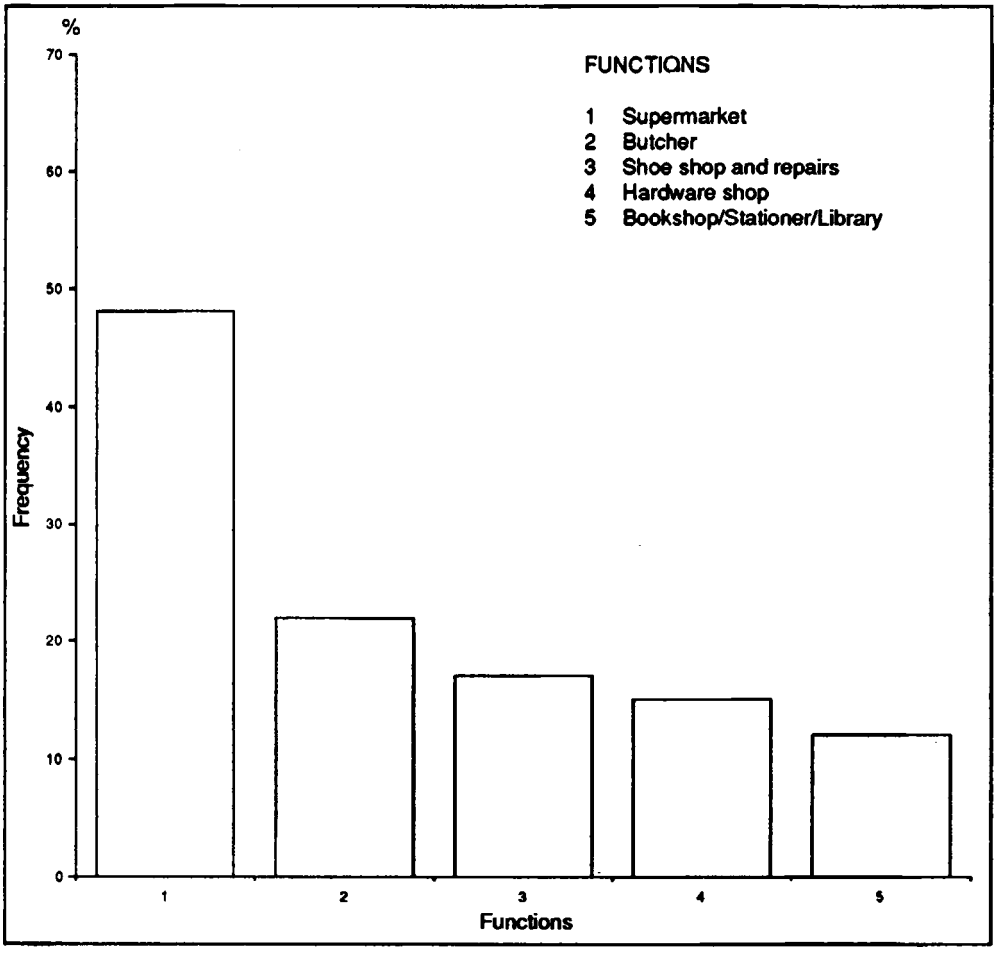
SERVICE CENTRE NEEDS FREQUENCY LIST

Function type	*Perentage of respondents listing the function as a need*				
	Mbare (n = 240)	*Highfield* (n - 260)	*Mufakose* (n = 349)	*Dzivaresekwa* (n = 271)	*Glen Norah* (n = 285)
(1) Supermarket	47.50	63.08	31.59	68.64	45.59
(2) Hardware shop	14.58	27.31	9.28	2.58	24.63
(3) Hairdresser	3.33	4.23	12.75	4.05	23.90
(4) Book/stationery shop/library	11.67	22.31	9.28	16.97	19.49
(5) Shoe shop and repairs	16.67	19.62	13.91	5.54	15.81
(6) Furniture/carpentry shop	2.92	16.92	14.49	5.17	19.62
(7) Butcher	21.67	8.08	11.59	15.13	16.18
(8) Clothing/tailor's shop	7.50	13.85	7.54	2.21	15.07
(9) Community hall	0	1.15	0	7.01	6.62
(10) Restaurant/hotel	8.33	1.54	15.07	14.39	10.29
(11) Chemist	7.92	12.31	7.25	1.11	5.88
(12) Recreational facilities	3.33	11.92	14.49	9.92	13.24
(13) Photographic studio	4.58	0.38	3.77	0	7.35
(14) Record bar	5.00	3.08	5.22	1.48	6.62
(15) Beauty/health parlour	0.42	4.23	0	0	2.57
(16) Night-club	5.83	1.54	8.12	4.43	2.21
(17) Clinic/surgery	1.67	4.23	2.90	0.37	3.68
(18) Second-hand/gift shop	0	3.08	0	0	1.84
(19) Bottle store/beer garden	3.33	2.31	2.03	3.32	3.68
(20) Watch/radio/TV repairs	6.67	1.92	3.77	0.74	2.57
(21) Public telephone	4.17	7.69	0.87	8.87	2.21
(22) Grinding mill	0	0	0	0.37	0.74
(23) Laundry services	2.08	0.38	0.58	1.48	2.21
(24) Cycle repair shop	0	0	0	0	0.37
(25) Banking services	8.75	2.31	4.06	0	3.68
(26) Public toilets	0	1.15	0	2.21	1.47
(27) Post Office	1.67	0.38	1.16	19.19	1.10
(28) Vegetable market/greengrocer	3.75	11.15	7.25	3.32	6.99
(29) Additional service centre	0	0.77	0	2.95	0
(30) Taxi rank	0	0	0	0.37	0
(31) Automotive service station	8.75	7.31	9.57	22.88	2.94
(32) Regular cleaning of service centre	3.75	5.00	1.45	0	0

comparatively small. It is dominated by supermarket (47.5 per cent), followed by butcher, shoe shop and repairs, hardware shop, and book/stationery shop/library, in that order of importance (see Fig. 6.3). The reason why the significant demands list for Mbare is comparatively small could be its nearness to the CBD, and also the large number of service centres it has (nine).

Highfield has the second largest significant demands list (see Fig. 6.4). As in the case of Mbare the list is dominated by supermarket (63.08 per cent), to be followed by eight more

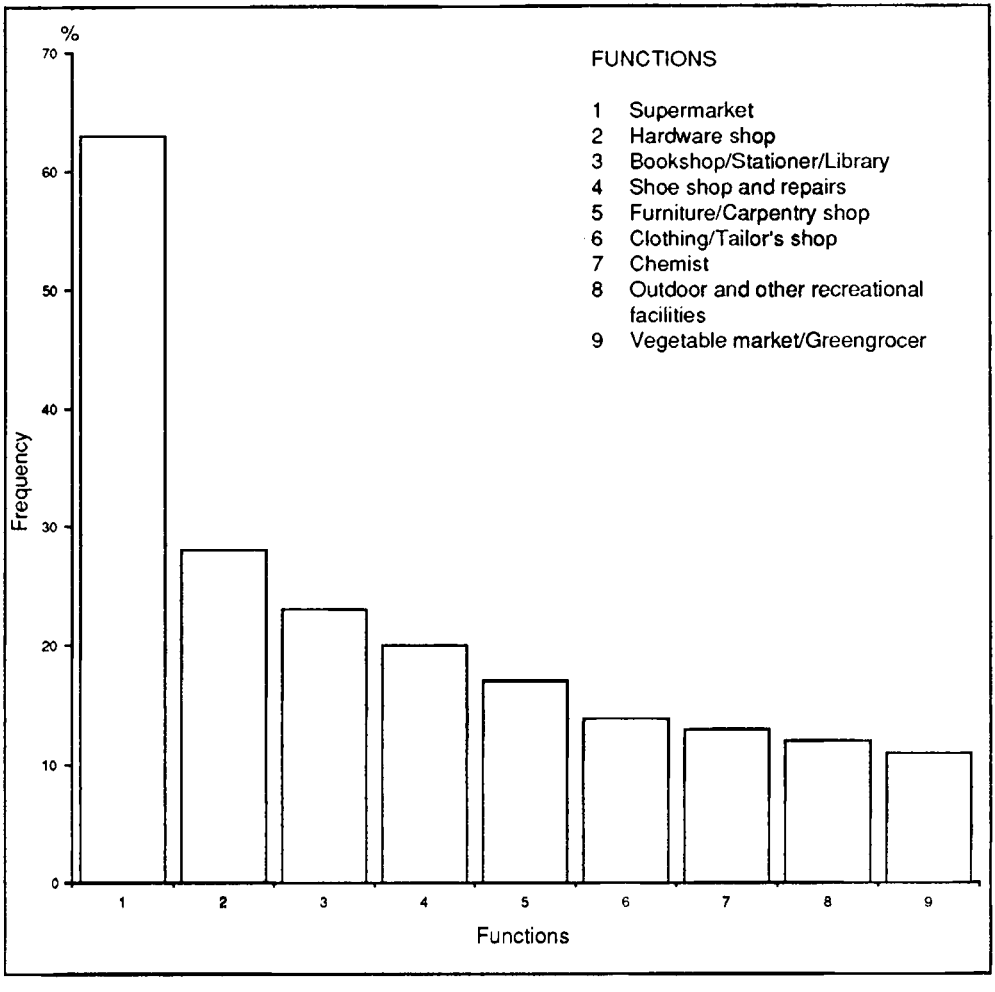
Figure 6.3: MBARE: SERVICE CENTRE NEEDS



demands all below 28 per cent demand frequency: hardware shop, book/stationery shop/ library, shoe shop and repairs, furniture/carpentry shop, clothing/tailor's shop, chemist, recreational facilities, and vegetable market/greengrocer. From this list it appears that Highfield residents would like their HDRA to be virtually self-sufficient. Whether the demanded functions would be economically viable if located there remains an open question which can only be answered by detailed function-specific market research.

Mufakose's significant demands list is again dominated by the desire for supermarkets (31.6 per cent). This is followed by six other significant demands, all below 16 per cent demand frequency: restaurant/hotel, furniture/carpentry shop, recreational facilities, shoe shop and repairs, hairdresser, and butcher (see Fig. 6.5). A notable difference from the preceding demand lists for Mbare and Highfield is the appearance here of restaurant/hotel as the second most important perceived need. Highfield already has the Mushandirapamwe Hotel, and Mbare is close enough to the CBD not to worry about a hotel. Although Mufakose residents could be expected to make use of the Garden Party Hotel in nearby Kambuzuma, they appear not to be satisfied with this for some undisclosed, subjective reason.

Figure 6.4: HIGHFIELD: SERVICE CENTRE NEEDS



The significant demands lists for the remaining two HDRAs, Dzivaresekwa and Glen Norah, contain almost the same demands as in the case of the first three discussed above, with the exception of the desire for a Post Office and an automotive service station in Dzivaresekwa. The Dzivaresekwa and Glen Norah demand lists are also dominated by the desire for supermarkets, 68.64 per cent and 45.59 per cent, respectively. It is also important to note that the Glen Norah significant demands list is the longest, consisting of ten demands. This may be a reflection of the absence of a large number of functions, which could in turn be a result of its comparatively recent development.

The most significant feature emerging out of all the perceived needs results is the high demand frequency for supermarkets. Table 6.19 regroups the supermarket demand frequencies for each of the five HDRAs. It also shows the overall supermarket demand frequency for the five HDRAs combined. Thus, in all, 51.28 per cent of the respondents expressed a desire for a supermarket in their areas. In the light of these results, there can be no doubt that

Figure 6.5: MUFAKOSE: SERVICE CENTRE NEEDS

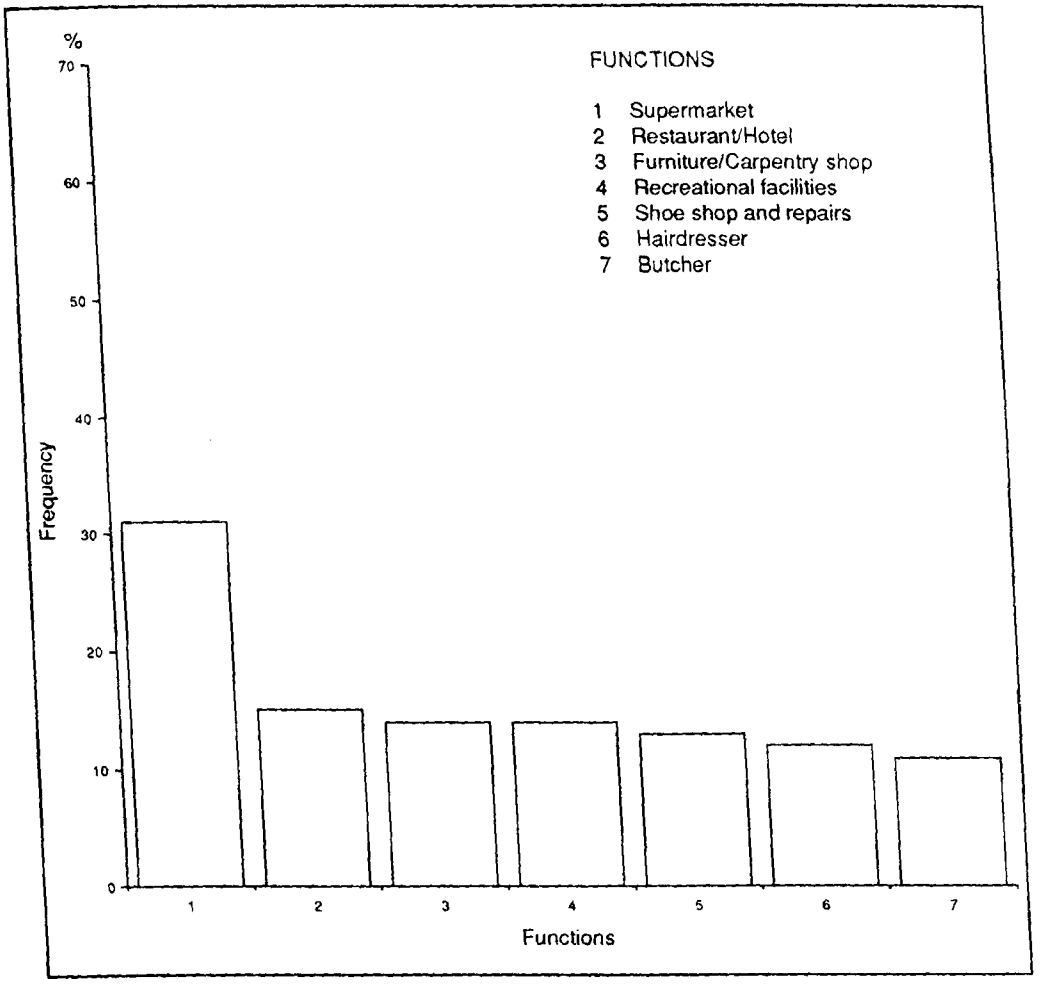
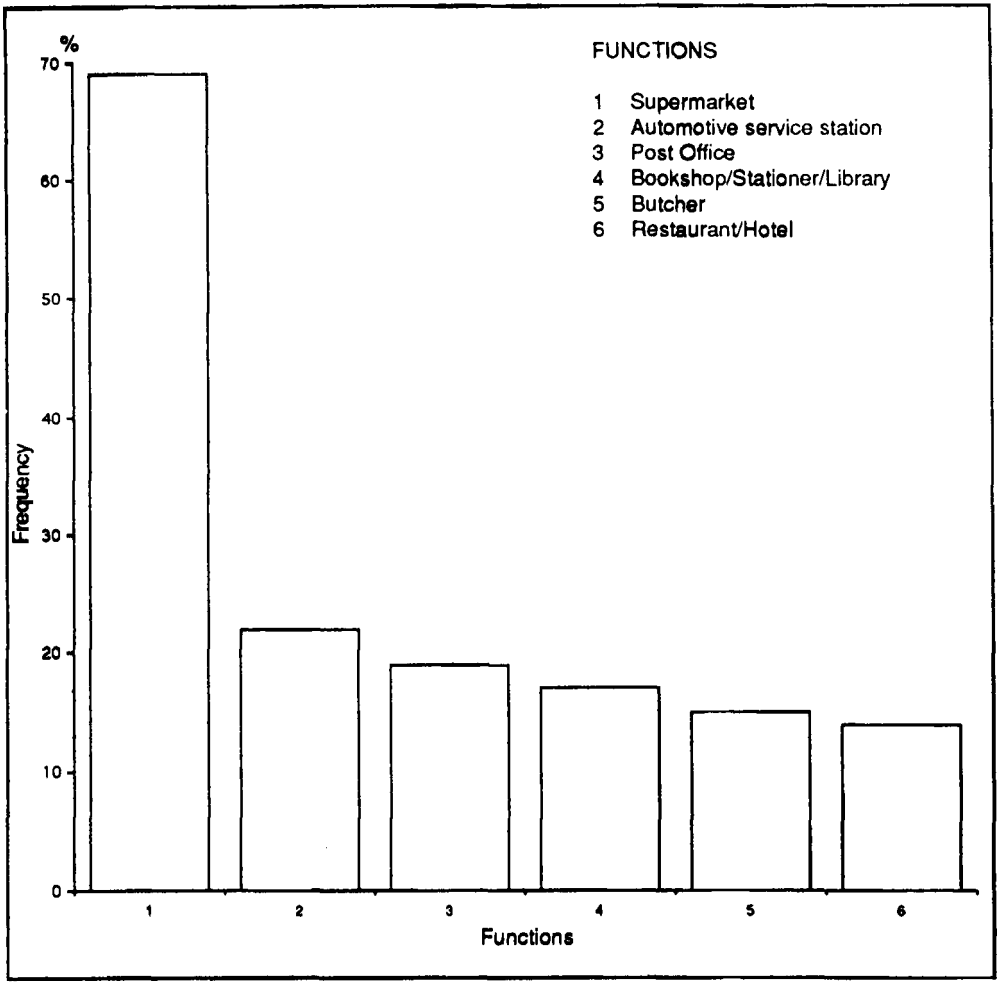


Table 6.19

FREQUENCIES OF DEMAND FOR SUPERMARKETS

HDRA	*Demand frequency (Percentage)*
Dzivaresekwa	68.64
Highfield	63.08
Mbare	47.50
Glen Norah	45.59
Mufakose	31.59
Mean	51.28

Figure 6.6: DZIVARESEKWA: SERVICE CENTRE NEEDS



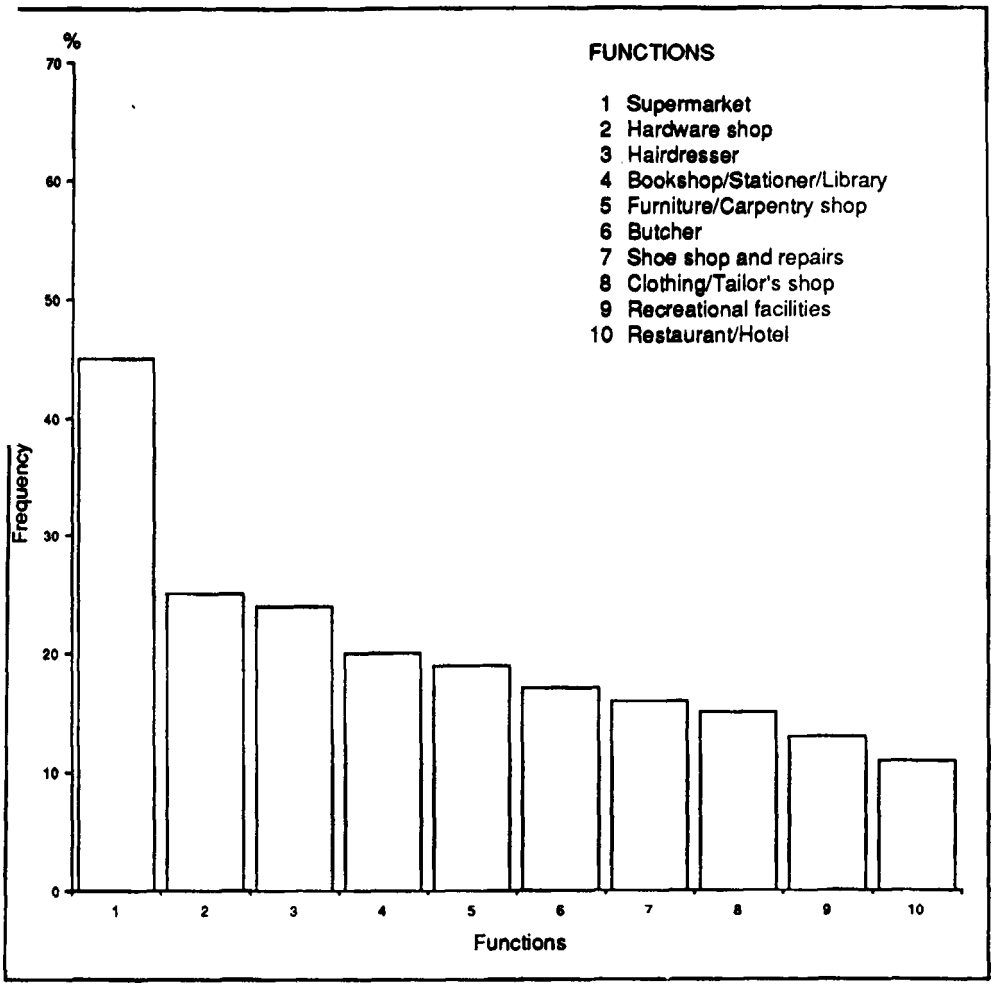
'supermarket' is by far the single most important perceived need in HDRAs. This finding ties in with the issue of prices dealt with earlier, as consumers generally perceive supermarket prices to be lower — a perception pattern corroborated by empirical evidence (see Section 6.5).

6.8 Conclusions

This chapter has dealt with factors and perception patterns underlying shopping preferences, as well as service centres need as seen by the HDRA residents. The conceptual framework in which the analysis has been cast is based on the cognitive-behavioural approach outlined in Chapter 2. The following are the major conclusions emerging from the analysis:

(1) There is general dissatisfaction with both the range of goods and shops in HDRAs (63.72 and 61 per cent, respectively).
(2) There are no uniformly strong opinions regarding the conduct of shopkeepers (politeness and honesty to customers) and cleanliness of shops (8.68 and 7.93 per cent total

Figure 6.7: GLEN NORAH: SERVICE CENTRE NEEDS



dissatisfaction, respectively,) although it has been suggested that there is clearly room for improvement in these aspects of shop quality.

(3) The majority (77.08 per cent) of residents express the need for longer opening hours, particularly into the evenings (51.42 per cent of respondents).

(4) Most recurrent family shopping (mainly for food) is done by mothers (68.17 per cent). The majority of these women are not in paid employment, so most of this shopping can be done at any time of the day.

(5) Although the majority of people (64.05 per cent), except in Dzivaresekwa, are satisfied by the distance between their home and the nearest service centre, a substantial proportion are not (32.59 per cent), hence the extensive use of conveniently located hawkers and vendors.

(6) The majority (63.71 per cent) of residents perceive their expenditure on transport to the CBD for the purpose of shopping to be too great, presenting a case for a higher degree of decentralization of some functions from the CBD.

(7) The level of ownership of refrigerators is very low (17.15 per cent), indicating that shopping for perishables has, currently, to be of a high frequency.

(8) The level of car ownership — which, like the ownership of refrigerators, is an index of affluence — is also low (18.38 per cent), implying a low level of mobility. This suggests that HDRA inhabitants are more likely to do most of their shopping within their respective areas, provided there is a wide enough range of goods and that the prices are comparatively good.

(9) The majority of HDRA inhabitants are sensitive to prices, which they perceive to vary between both the CBD and the HDRAs (68.66 per cent), and between shops within the HDRAs themselves (92.67 per cent). This perception pattern is supported by empirical evidence which clearly shows substantial price variations. Although prices cannot be expected to be uniform, it is the extent of current variation which is the source of concern to shoppers.

(10) In terms of the relative importance of the factors which determine shopping-trip patterns, price of goods is the most important. This contrasts with the notion of classical central place theory that distance is the overriding factor. It has been suggested, however, that this predominance of the price factor may be temporary rather than permanent, particularly for low order, high trip-frequency goods and services.

(11) By far the most important desire in HDRA service centres is for supermarkets, where it is envisaged that prices will be lower. This demand for supermarkets also reflects the desire on the part of HDRAs to reduce dependence on the CBD. However, it has been suggested also that the degree of self-sufficiency in HDRAs will be determined by the economic viability of decentralizing functions from the CBD.

Most of the conclusions outlined above do not in any way claim to be exhaustive explanations of shopping behaviour. They do, however, furnish an insight into the shopping decision-making processes (particularly in their spatial context) of HDRA inhabitants in Harare. They also provide a guideline to planners, developers and retail entrepreneurs by suggesting areas of need as perceived and expressed by the inhabitants of Harare's HDRAs.

7
CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter summarizes the major findings of the study and also makes some recommendations on locational planning and physical development of suburban service centres on the basis of evidence emerging from the analysis. The chapter is organized as follows. Firstly, conclusions arising out of the review of conceptual approaches to the study of suburban service centres (in Chapter 2) are summarized. Secondly, substantive findings on the rank–size distribution and growth of Harare's service centres are presented and their implications for planning pointed out. Thirdly, conclusions from the analysis of shopping-trip patterns are outlined and a service centre hierarchy proposed for planning purposes. Fourthly, and finally, the salient observations on shopping behaviour and consumer perceived needs in HDRAs are summarized and a number of related suggestions made. All of these conclusions have already been outlined in detail in the concluding sections of Chapters 2, 4, 5 and 6, so the following subsections concentrate, therefore, only on the findings which are deemed to have significant urban planning implications.

7.2 CONCEPTUAL FRAMEWORK FOR THE STUDY OF SERVICE CENTRES: SOME SUGGESTIONS

Three conceptual frameworks were examined in Chapter 2: central place theory, the cognitive-behavioural approach and the structural approach. In presenting a case for the conjunctive use of the three frameworks, the following emphases and observations were made (Section 2.5):

(1) In the past, the study of service centres in urban areas has been carried out mainly in the context of the three conceptual frameworks outlined above. These frameworks have usually been considered as conflicting and mutually exclusive. However, it was argued that it is more useful, particularly with regard to planning problems, to see them as complementary.

(2) It was suggested that the confusion surrounding the epistemological validity of the three conceptual frameworks mentioned above arises mainly out of the failure to distinguish between the different levels of planning problems: the 'value formulation' level and the 'means identification' level. The value formulation level is best tackled through the structural approach; it is at this level that questions of socio-economic and political structure and consequent social conflict should be dealt with, and answers pertaining to desired social states or development philosophy worked out. The means identification level, it was suggested, should be tackled through more scientific, fact-based approaches. In the case of suburban service centres, such approaches include the quasi-deterministic central place theory and the more flexible cognitive-behavioural framework. It was argued above all, that the above two levels of planning problems should really be seen as two sides of the same coin in the context of a methodology whose main objective is to solve real-world problems.

7.3 STRUCTURE AND GROWTH OF SUBURBAN SERVICE CENTRES

At a general level the three rank–size distributions (for the LDRAs, HDRAs and the integrated

distribution for the whole city) all confirmed earlier interpretations of central place theory within the intra-urban context, that rank–size distributions tend to follow the form of a continuum rather than a stepped hierarchy.

In LDRAs no changes have occurred in terms of the numbers of service centres since 1974, and the general trend has been one of decline in their functional size. It was also discovered, on the evidence of data on vacant premises, that service centre buildings (premises) are currently underutilized. Thus, in terms of the physical development of service centres in LDRAs, very little growth can be expected in the next few years. City planning authorities are unlikely to grant permission for new retail premises, particularly when this involves change of land uses stipulated in current plans.[1] However, it is recommended that city planning authorities should adopt a flexible attitude to assessing applications for new commercial premises. To ensure that only genuinely required functions are permitted as extensions to existing service centres in LDRAs, the following approach for assessing applications is suggested:[2]

(1) *Taking account of extant local functions:* this would involve recording the total number of functions existing at the service centre to which the application relates, taking note of whether or not the proposed function would be a duplication which unnecessarily intensifies competition.
(2) *Taking account of extant regional functions:* this would involve delineation of the region in which the service centre lies and deciding, in that regional context, whether or not the proposed functional need is already adequately met. Attention must also be paid to the existence of vacant premises; if these exist, the proper decision might be to locate the proposed function in vacant premises rather than to approve the erection of a new purpose-built structure.
(3) *Taking account of regional socio-economic characteristics and shopper-perceived needs:* this would involve investigation of demographic changes in the region,[3] as well as changes in income levels (purchasing power) and the number of households. Sample interviewing of shoppers on perceived needs would also have to be carried out. The evidence so derived would indicate the existence of special needs, or none, and of rising or falling demand.

With respect to HDRAs, it was noted that their service centre facilities are far outnumbered by those in LDRAs, and the absence of banking facilities was particularly noted. It was also observed that current service centre facilities in individual HDRAs are not systematically related to their populations or sizes. This situation in mainly a result of the unco-ordinate[d] development of residential areas, with service centre facilities lagging far behind occupatio of new houses. The Harare City Council has often been criticized for placing priority on th development of beer halls at the expense of service centre facilities, schools and clinics.[4]

[1] As evidenced by the refusal of an application to re-zone Plot 14 at the Greencroft/Avonlea service centr (Centre 21 in Fig. 4.2) to permit its use for retail outlets and an automobile service station: see Adams and Jackso Partnership (Architects and Planners), 'Plot Fourteen: Regional Town and Country Planning Act, 1976. City c Salisbury Local Subject Plan No. 11, Lot 1–5, Plot 14, Greencroft Estate of Division A and B Mabelreign: Report c Study' (Harare, Report to the City Council, 1982).

[2] This general approach was used in the study referred to in fn. 1 above, to which I was a contributor.

[3] See ibid. where it emphasizes the need to respond to changing demand patterns resulting from the pos Independence movement of Blacks into formerly White LDRAs.

[4] *The Herald* (12 July 1982), 5 (Observations on Warren Park).

Unco-ordinated development is, in general, part of the problem of uncertainty in urban development — a problem which has recently enjoyed a revival of attention among planning practitioners and academics.[5] The problem of uncertainty can be seen, in part, to be a consequence of the traditional view that 'planners plan and developers develop'. As Lichfield and Darin-Drabkin have commented, the result of this traditional attitude is that 'much more attention has been given, in theory and in practice, to plan making as opposed to plan implementation'.[6] An urban planning authority is, in theory, supposed to have the following roles:

(a) a policy-making role;
(b) a control–regulative role (through land-use plans and building regulations);
(c) a managerial role (managing urban change through co-ordination of the different components of the urban system and seeing to the day-to-day maintenance of utilities on behalf of the public); and
(d) a promotional role (promoting development through mechanisms designed to facilitate timely implementation of plans).

In general, urban planners have tended to concentrate on (a) and (b), through physical development regulations and land zoning, to the detriment of (c) and (d). The first two functions constitute what may be termed 'negative–reactive' planning while the last two constitute what may be termed 'positive–proactive planning'.[7] Urban planning authorities can achieve positive–proactive planning by the following means:

(1) by ensuring that land is made available with the appropriate tenure for development in the right place at the right time and at the right price;
(2) by taking over the development function itself, either on their own or as land owners in association with private property developers and financiers in order to have control of building development not only as landlords but also as partners.[8]

Thus, uncertainty is reduced as a result of more direct involvement in implementation (building), rather than through mere plan formulation.

With regard to the implementation of new HDRA service centre plans, it is recommended that in future proper measures must be taken to ensure that basic service centre facilities (particularly low order shops) become available at roughly the same time as the houses are occupied. Within such an approach the traditional scope of 'infrastructure' must be extended to include not only such utilities as water, sewerage, electricity and roads, but also service

[5] N. Lichfield and H. Darin-Drabkin, *Land Policy in Planning* (London, Allen and Unwin, 1980); D. Cadman and L. Austin-Crowe, *Property Development* (London, Spon, 1978); and E. H. Green, *Building, Planning and Development* (London, Macmillan, 1981).

[6] Lichfield and Darin-Drabkin, *Land Policy in Planning*, 22. Although this problem of the lag between plan formulation and plan implementation appears to have started receiving the attention of physical urban planners only recently, it has long been recognized in the field of economic development planning, particularly by A. Waterston, *Development Planning: Lessons of Experience* (Baltimore, Johns Hopkins Univ. Press, 1974), ch. 9. See also K. B. Griffin and J. L. Enos, *Planning Development* (London, Addison-Wesley, 1970), ch. 12.

[7] Lichfield and Darin-Drabkin, *Land Policy in Planning*, 87–8, explain the origin and meaning of 'positive' and 'negative' planning.

[8] Ibid., 88; Cadman and Austin-Crowe, *Property Development*, 282, discuss the various types of development partnership possible between private property developers and planning authorities.

centres, schools and clinics. This approach also demands a clear exposition or definition of the roles and responsibilities, individual or shared, of the major implementation agencies: the city planning authorities; commercial (retail) entrepreneurs; and central government.[9]

It is recommended that, as far as possible, the city planning authorities should be more directly involved in service centre property development in the manner of 'landlord control' or 'partnership' outlined earlier. Such participation is already taking place in the provision of one component of service centres, that is beer and liquor facilities. It should be noted, however, that a widening of the responsibilities of local government — planning authorities — must be coupled with a widening of its base of financial resources.

7.4 HDRA SHOPPING-TRIP PATTERNS AND SUGGESTED SERVICE CENTRE HIERARCHY

With respect to HDRA consumer shopping-trip patterns, it was demonstrated (in Chapter 5) that the observed pattern is generally in conformity with the rational consumer behaviour postulated by central place theory, that is, for low order goods consumers tend to visit the nearest centre available and for higher order goods they are prepared to travel greater distances.

It was discovered that the list of 47 types of goods and services used for determining an optimum hierarchical structure for HDRA service centres consists of three distinct orders, the orders being determined by the frequency of purchase or use (Section 5.6):

(1) *Low order:* consisting of goods and services of the highest trip frequencies — 365 to 730 per year or at least one trip per day.
(2) *Middle order:* consisting of goods and services with a trip frequency of 12 to 52 per year or one trip per month to one trip per week.
(3) *High order:* consisting of goods and services with a trip frequency of less than two per year.

On the basis of the above orders, it is suggested here that a three-tier hierarchy of service centres would be appropriate for any newly developed HDRAs. The hierarchy would consist of the following levels:

(1) *Corner Shop/Centre:* to provide low order goods and services.
(2) *Neighbourhood Shopping Parade/Centre:* to provide all the low order goods and the middle order goods and services.
(3) *Regional Shopping Precinct/Centre:* to provide all the types of goods and services offered by corner shops and neighbourhood shopping parades and the high order goods and services, as outlined in Chapter 5.

The number of centres of each order and the number of shops or functions offered at each centre would depend on

(a) the spatial extent of the residential area in question;
(b) the housing and population density of the area; and
(c) the income levels (spending power) in the area.

[9] The Warren Park case referred to earlier demonstrates the absence of a clear definition of responsibilities, particularly with regard to schools and shopping facilities.

The three-tier hierarchy outlined above is based on the flexible notion of hierarchical structure suggested by Berry and Garrison, as opposed to the more deterministic postulates of Christaller's central place theory (Chapter 2). The physical design and development of service centres must also be guided by the idea of flexibility, as service centres developed for the current socio-economic environment may well be inappropriate for the future. Thus, it is always necessary to anticipate growth, both in consumer spending power and in the spatial extent of markets (residential areas). A good way of incorporating this anticipation is to develop service centres in stages or phases, leaving land around built-up service centres to allow for future expansion. There is nothing to be lost by adopting such an approach; if the envisaged commercial growth does not take place, the reserved land can always be rezoned for other uses such as residential buildings and outdoor recreation.

Another significant observation made with regard to shopping-trip patterns is the high level of dependence of HDRAs on the CBD (Chapter 5). Although it appears that consumers would prefer some decentralization of functions from the CBD to the HDRAs,[10] they cannot demand nearness of all functions when sufficient purchasing power does not exist to support the supply outlets. Entrepreneurs can only locate higher order functions in HDRA service centres if custom justifies it. In the case of Dzivaresekwa and Glen Norah (the newer HDRAs with correspondingly higher levels of dependence on the CBD) the level of self-sufficiency is bound to rise as more service centres are developed on the currently vacant sites. However, should general decentralization of functions become desirable for all HDRAs, its implementation would be made easy by the three-tier hierarchy of service centres suggested above, with its idea of physical development in phases.

7.5 Determinants of Shopping Behaviour and Perceived Needs in HDRAs

It was established in the study that certain HDRA shop quality characteristics could be improved either by the shop owners or by the planning authority. These include:

(1) extension of the range of goods and range of shop types — which could be extended depending on the local perceived needs and the viability of so doing;
(2) improvement in the politeness and honesty of shopkeepers as well as the cleanliness of shops; and
(3) extension of the opening hours — the majority of residents wanting opening time to be extended later into the evenings.

The evidence on refrigerator and car ownership (Chapter 6) suggests that bulk shopping is not possible for the majority of HDRA inhabitants. The implication, in terms of locational planning, is that shops providing non-durable goods have to be accessible on foot as the frequency of purchase is high. Again, this provides a rationale for establishing the corner shops suggested in the three-tier hierarchy outlined earlier. What is happening at present is that hawkers and vendors are providing the goods envisaged for corner shops. In principle, this study has no objection to the existence of hawkers and vendors, and it is suggested here that they could take the place of corner shops. Thus the vending and hawking corner sites would have to be regarded as the first order of the suggested three-tier hierarchy, enjoying the full

[10] See also ch. 6 above, the evidence on perception of transport costs to the CBD as well as the demand frequency lists.

benefits of the protection of the law and the help of planning authorities. It must be emphasized, however, that this study has left the informal retail sector largely untouched (although its importance has been demonstrated in Chapter 5) and that the informal sector must become a priority area for future research.

It was also established that, contrary to the classical notion of distance as the overriding determinant of shopping-trip patterns, price of goods is perceived to be the most important factor by the HDRA inhabitants. The sensitivity of shoppers to price variations was also noted, reinforcing the empirical evidence of substantial price variations within the city (Chapter 6).

The most significant discovery made with respect to perceived needs in HDRAs is the desire for supermarkets (Section 6.7). It is therefore recommended that applications for the establishment of supermarkets in extant or newly developed HDRA service centres be given priority wherever possible. In the case of new HDRAs, it is recommended that two types of supermarket be incorporated into the suggested three-tier hierarchy:

(1) Small supermarkets or 'superettes'. These may be established at the second level of the hierarchy (the neighbourhood shopping parade) to provide the appropriate goods for this level (low and middle order goods).

(2) Large supermarkets or department stores. These must be located at the regional shopping precinct, providing all types of goods — from low order, through middle order, to high order goods.

The layout, floorspace, parking space and service access for these supermarkets would have to be determined after consideration of such interrelated factors as characteristics of households served (particularly consumer spending power), the calculated turnover rate and profitability.

Although this study has not been concerned with service centre design as such, Appendix 9 draws together all the suggestions and recommendations made with regard to the three-tier hierarchy of HDRA service centres, and illustrates in more detail the possible designs and content of each level of the hierarchy.[11]

[11] The layout possibilities and the terms 'shopping parade' and 'shopping precinct' are based on Green, *Building, Planning and Development*, 87–100, and H. W. Clair (ed.), *Urban Planning Guide* (New York, American Society of Civil Engineers, Manuals and Reports on Engineering Practice 49, 1969), 111–46.

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