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A GEOGRAPHICAL STUDY OF INTRA-URBAN SHOPPING BEHAVIOUR IN
GREATER SWANSEA

NICHOLAS J. PENNY, B.A.

THESIS SUBMITTED TO THE UNIVERSITY OF WALES
FOR THE DEGREE OF PHILOSOPHIAE DOCTOR

MAY 1984

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SUMMARY

This thesis is a study of intra-urban consumer spatial behaviour in Greater Swansea. A review was undertaken of previous geographical and marketing approaches to the subject, highlighting certain deficiencies and identifying an approach whereby advances in the overall understanding of consumer spatial behaviour could occur. The spatial behaviour of selected consumer groups was investigated via a sample design which permitted the precise determinants of behaviour to be identified. An areal sampling framework was developed from census material and the local retail hierarchy, to select areas of known social composition with access to a similar shopping environment. This enabled the research to control for the fundamental influence of social and spatial differentiation. Initially, the general characteristics of shopper behaviour were analysed before identifying a nomenclature of convenience shopping goods. Three product types were identified for further consideration: grocery, meat and bread. The characteristics of grocery purchases were described prior to the patterns of overt spatial behaviour. Centre choice for grocery purchases was disaggregated for the influence of social and spatial differentiation and simultaneously, for the effect of a number of consumer sub-groups. These were defined in terms of personal mobility, demographic variables, household characteristics and time availability. Centre choice for supplementary grocery, major meat and major bread purchases was subsequently disaggregated by the major influences identified. The integration of a cognitive approach encompassed two methods. The major characteristics of trip motivation and the relationship with overt spatial behaviour were identified. Consumer attitudes to shop types, city centre shopping, and economic, geographical and social attributes were analysed and the relationship between attitude and behaviour demonstrated. The discussion returned to an empirical analysis of durable goods behaviour and the relationship with convenience behaviour. Finally, the contribution of the overall approach was evaluated and the implications for future study developed.

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ACKNOWLEDGEMENTS

One of the most potentially difficult, yet undoubtedly satisfying tasks of this research is the acknowledgment of help and encouragement given by many people at different stages of the project. This inherent problem is compounded by the time taken to complete this research, and the change in environment and life style of the author. Help was received over two distinct periods; during my initial three years as a postgraduate student at Swansea, and subsequently whilst employed by Tesco Stores Ltd. Fortunately, a few enthusiastic individuals have spanned the duration of this period.

During my time at Swansea I appreciated the help of many individuals in the Geography Department; Professor's Greenwood, Stephens and Herbert provided, at various times, the facilities of the department, and Alan Cutliffe helped with photographic advice. Dr. Terry Marsden proved to be both a colleague and friend over this period, and my fellow postgraduate students, especially Ms Beverley Penney, helped provide a friendly environment for study. Especially, however I must thank Dr. Colin Thomas without whose supervision this thesis would not have been produced. He guided the research throughout, initiating my interest in retail geography, providing material for the work and allowing me the undoubted pleasure of thinking that I was making independent progress during the research. He managed to maintain interest in the work despite the time lapse and my movement away from Swansea.

Mrs Mary Viner of the Computer Centre at Swansea provided much technical guidance throughout the thesis, and was especially helpful in transferring my original database from Swansea to Cheshunt.

From official bodies, John Bullivant of the West Glamorgan Central Research Unit willingly gave of his time and assistance at various stages. Similarly, Nick Mills of the West Glamorgan Planning Department provided time for numerous discussions and allowed me access to the West Glamorgan Shops and Office Floorspace Survey during 1978/79.

The second period of this research dates from August 1981, when I commenced work with Tesco Stores Ltd. Since that date many individuals from the company have contributed to my work by allowing me time to complete the research. In particular, Ivan Higgins and John Gildersleeve have, at different times, granted me such facilities. During this period however, I was perhaps fortunate to meet Dr. Mel Marcus who has encouraged the completion of my research whilst having faith in my abilities. Many individuals work in the Research Unit at Tesco and they have perhaps unwittingly contributed to the completion of this thesis.

Bethan Nicholas has been present throughout this research. She has patiently suffered my arrogance for many years, and

willingly assisted at various stages of the research, from interviewing consumers, coding questionnaires and proof reading the final script. I must take this opportunity to say a special thank you for that help.

Other people have made small, but significant, contributions at various stages; Vic Lilygreen assisted in the field survey and Paula Maguire provided an expertise in proof reading part of the final script.

I must also mention the four hundred and fifty five respondents who completed the questionnaire interview stage of the research.

Finally, I am grateful to my parents for their encouragement and the educational opportunities they have afforded me.

INTRODUCTION

INTRODUCTION

Retailing constitutes a vital ingredient of our day to day life, and is consequently both a major activity of the urban system and a foci for studies of urban geography (Dawson and Kirby, 1980). After people and houses, the shop is one of the most common forms of unit found in towns and cities. In Great Britain, for example, there is approximately one shop to every one hundred people, or one to every forty households (Thorpe, 1978). 12% of the British labour force is employed in shops (Thorpe, 1978) and Scott (1970, p.11) has observed that when measured in terms of employment, retailing "is the largest single industry in many British towns". Furthermore retail sales alone accounted for over 55% of total family expenditure in 1978. On a similar theme, Davies (1976) noted that in 1971 retailing in Britain generated sales of £15,000 million and, in providing 2.5 million jobs, made itself the third greatest contributor to national output after the manufacturing and office service sectors. Shops and markets therefore constitute a very significant component of the physical fabric of the built environment. Shopping is a necessary part of life for all households, providing for fundamental human needs and is virtually a daily activity for much of the population. In principle, shopping involves a spatial decision each time it occurs and logically, shopping facilities could be viewed as constituting a focal reference point for human awareness and the organisation of space (Potter, 1982).

Any approach to the subject is of potential relevance to a broad range of social science disciplines, amongst which can certainly be listed economics, history, sociology, marketing, geography, planning; as well as psychology, architecture, operational research, regional science and politics (Potter, 1982, p.1). Retailing is therefore an important and worthy topic for study and it is not surprising that the subject has been the focus of enquiry for a geographical approach. Thorpe (1978, p.84), in considering the importance of retail activities clearly states; "without careful thought this ubiquity can all too readily lead research into detailed studies of the

obvious. As in some other fields of geography some uncertainty has existed as to whether the overall objective of the geographer's study of retailing should be a fuller definition of the processes which lead to uniformities between areas or whether processes are to be examined in order to account for differences that exist between places". It is clearly evident, despite a certain confusion in objectives that both the supply aspects of the structural distribution of shops and the demand function of the patterns of consumer behaviour are of potential significance to any study. The emphasis adopted in this present thesis is primarily a geographical (or spatial) one. Such an approach is imperative in contemporary retail studies (Potter, 1982) and particularly relevant to the urban scale of enquiry. As Herbert and Thomas (1982, p.197) state; "the physical expansion and increasing functional complexity of urban life in Western cities in the twentieth century has resulted in a proliferation of the quantity and variety of services needed by the urban population". These services are, as they identify, dominated in number by those associated with shopping activities. It is however, the interaction between the system of shopping services and the spatial patterns of utilisation behaviour of the urban population that is of direct interest to this work. Retail services are important in ensuring access to the necessities of life and many consumers expect adequate access to shops regardless of the considerations of commercial viability (Thorpe, 1978). It is this fact which has led one author (Harvey, 1973) to classify retailing as a semi public good. The issues raised by such an important activity are numerous and varied and the contributions that geographers can make (and in fact have made) are considerable. The organisation of space and its diversity is central to many of these issues, however, there is undoubtedly a continual need to understand more fully the processes behind this diversity.

The attempts to study retail geography have provided an array of general texts. Good examples of these texts are provided in Berry (1967), Scott (1970), Davies (1976) and particularly a recent collection of essays by Dawson (1980). This latter text provided a structured review of the material relevant to the study of retail geography.

It provided four component areas of the subject, which all obviously interact but do warrant separate study. Retail location studies, retail organisation, and the influence of public policy on retailing (retail planning) accompany the initial area of urban consumer behaviour. This subject concentrates on the demand for shopping services and consequently the 'spatial processes which have been isolated as influencing shopping behaviour' (Dawson, 1980). The main feature of studies of consumer behaviour has been the way in which individual consumers react to "trade offs" in selecting a service centre (Herbert and Thomas, 1982).

The main focus of this thesis is a detailed study of urban consumer spatial behaviour. The initial chapter reviews the recent academic literature relevant to the analysis of spatial patterns and processes associated with urban consumer shopping behaviour. From this literature review notable deficiencies in previous studies are isolated and combined into a single approach. The precise research objectives are thus identified in order to increase our overall understanding of consumer behaviour and ultimately advance the development of theory. Chapter two proposes a research design and methodology whereby these objectives can be attained. The subsequent analysis embodies five chapters prior to concluding the research.

CHAPTER 1:

APPROACHES TO THE STUDY OF CONSUMER BEHAVIOUR

Introduction

Chapter one initially focuses attention on the recent academic literature relevant to the detailed analysis of the geographical patterns and processes associated with urban consumer shopping behaviour. From this broad literature review, a methodology for research, whereby advances in the understanding of many of the aspects highlighted, will be proposed. This approach will isolate the research aims of this thesis. The relevant literature is exhaustive. Overall reviews of such a literature have been attempted and the work of Shepherd and Thomas (1980) provides a clear and concise attempt to produce such an exercise. Their review covers the majority of the recent literature relevant to the subject and furthermore was produced and structured in such a way that definite conclusions for further research and improvements in the understanding of urban consumer behaviour are possible. The review did in fact form the initial presentation of a wider discussion on the nature and scope of geography and retailing, under the sponsorship of the Social Science Research Council during 1978 and 1979 (reported in Dawson, 1980). Consequently this work provided considerable guidance to the following discussion. Given the extent and variety of the relevant literature the review presented will overview certain areas that are more than adequately covered elsewhere. Alternative attempts to comprehensively review the literature on consumer behaviour have been made, notably by Thomas (1976), Davies (1976) and a recent text by Potter (1982). Other authors have not attempted such a comprehensive coverage (e.g. Dawson and Kirby, 1980) although such contributions are obviously of importance. The following review describes and evaluates the range of approaches adopted and suggests inter-relationships between these studies. Attention is made to the gaps in the current levels of knowledge although again, the work of Shepherd and Thomas covers such aspects.

Primarily, the review emphasises geographical source material although the interdisciplinary nature of the subject is recognised and appropriate references are made to the marketing literature (which manifests many of the economic, psychological and

sociological concepts and methods relevant to the subject). Broadly, the review tends towards an empirical analysis. From this source material, certain areas of research are identified which can conveniently be grouped into a single study to enable an increased understanding of many of the processes of urban consumer behaviour. Such a methodology should alleviate the lack of integration identified by Thomas (1976) and substantially influence his recent statement that "a refined theory of consumer spatial behaviour does not at present exist" (Shepherd and Thomas, 1980 p.19).

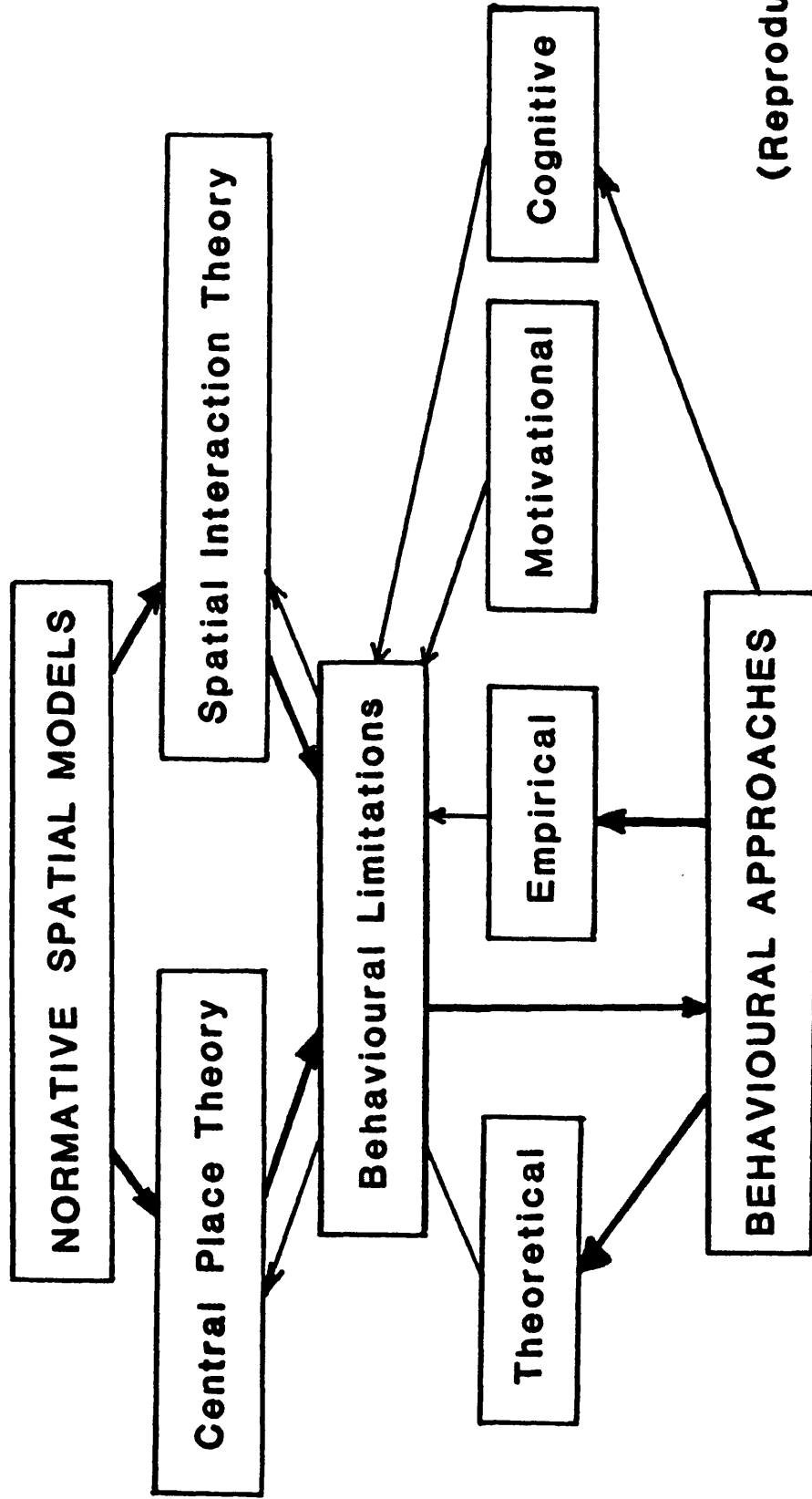
The research aims are clear. Undoubtedly, the approach seeks to improve our knowledge and understanding of the multi-faceted dimensions of urban consumer behaviour.

Part One A Review of the Previous Approaches to the Study of
Consumer Behaviour

1. Introduction

Early studies of retail geography, of which the pioneering work by Proudfoot (1937) is a good example, rarely considered consumer behaviour specifically. The emphasis of these early studies was concerned with the empirical recognition and explanation of regularities in the geography of shopping centres. The work of Berry and Garrison (1958) and Berry et al (1963) are good examples of the explanation of commercial structure, albeit via central place theory. Such systems were assumed to be in a state of adjustment with consumer demand. In normal circumstances a consumer was assumed (rather than demonstrated) to shop at the nearest centre offering the goods or services required. Thus, as Shepherd and Thomas (1980, p.18) point out; "from a knowledge of the distribution of consumer demand and the spatial structure of the shopping system, the vast majority of behavioural interaction might be predicted with ease". Clearly this will not explain the situation prevailing in modern Western cities today. Developments in the organisation and control of retailing have resulted in changes in the geographical patterns of retailing which do not reflect consumer pressure. (Dawson and Kirby, 1980). As a result of the inadequacies of these early studies, much interest has grown in the study of consumer spatial behaviour and a great variety of approaches and methods of analysis now exist. Thomas (1976) and Shepherd and Thomas (1980) provide an exhaustive review of these approaches and methods and clearly state; (p.19) "the resulting corpus of literature is not well integrated Nevertheless, it might be suggested that a unifying theme can be recognised in this work in that the aim of much of the research is to explain behavioural patterns and their variations and ultimately, to predict future relationships". Both reviews are broadly structured in a similar way. Figure 1.1, reproduced from Thomas (1976), summarises the structure of these essays. A basic distinction is made between the normative spatial models and behavioural approaches and these are further subdivided into additional categories. As most of the literature falls into these categories

Figure 1.1: Interrelationship between Alternative Approaches to the Study of Intra-urban Consumer Behaviour

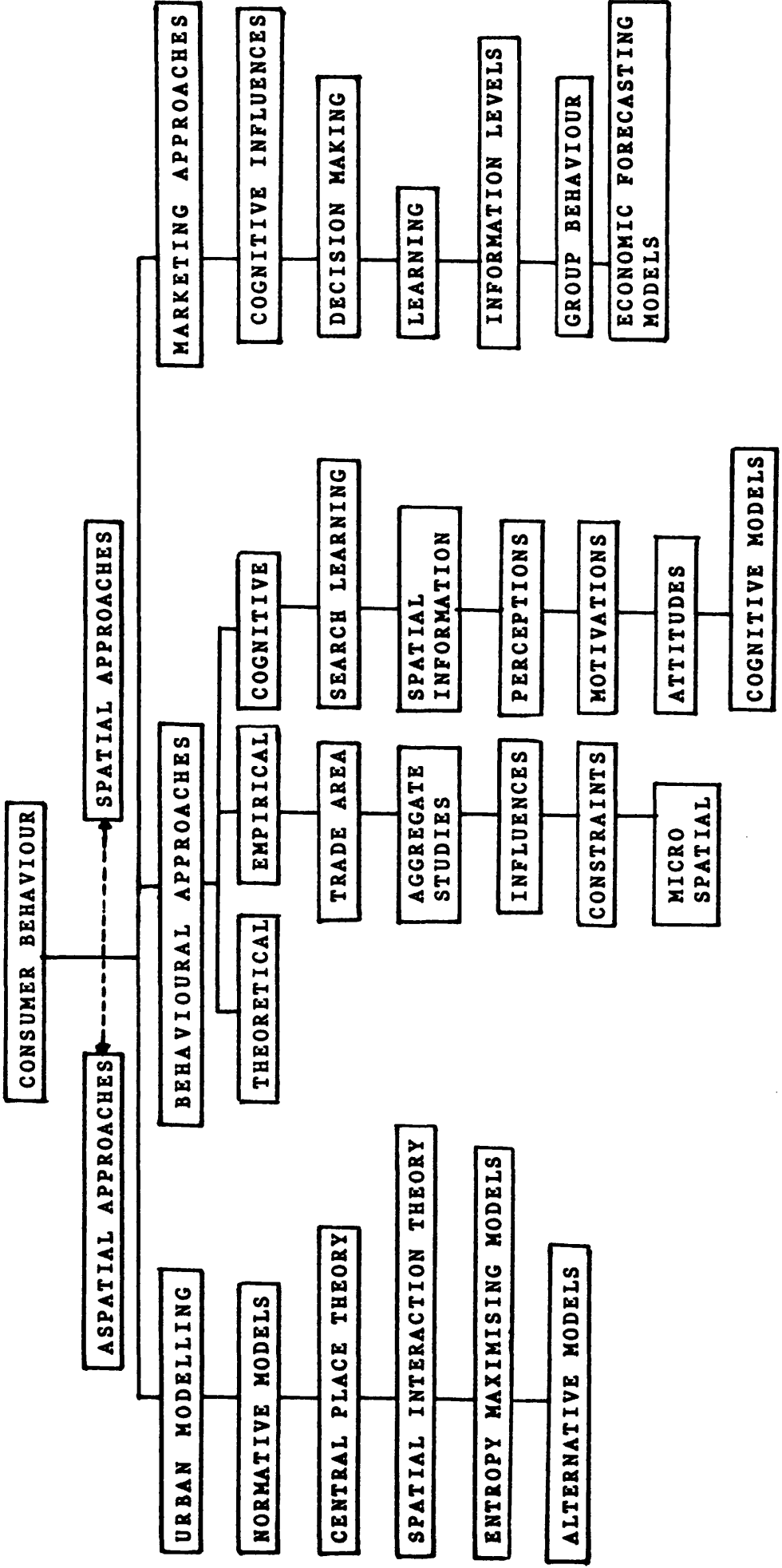


(Reproduced
from
Thomas, 1976)

for the purpose of preliminary discussion, the structure of the proposed review in this chapter will not detract considerably from this basis. Certain contemporary studies fall into a number of categories and additional areas of work have emerged over the last ten years. Consequently Figure 1.2 provides the basis for the following discussion. As a structure it does not indicate the inter-relationships that undoubtedly exist between the categories. Notably the approaches classified under the marketing domain encompass both spatial and aspatial elements. Appropriate excursions into the literature from this area will be made throughout the ensuing discussion. The literature on consumer behaviour can therefore be viewed from a spatial approach or the wider, aspatial issues of the marketing approaches. Geographical studies encompass both urban modelling, including normative spatial models, and behavioural approaches (Thomas, 1976).

Urban modelling approaches to the subject are seen to include a group of spatial models representative of an aggregate approach to the study of consumer behaviour. In particular these are associated with central place theory, spatial interaction theory and gravity models, entropy modifications and alternative models which include, for example, those originating from a minimisation of effort formulation (Bacon, 1971; Evans, 1972) or the recent research into aggregate statistical models derived from studies of repeat buyer behaviour in marketing (Ehrenberg, 1972; Wrigley, 1980). Three categories of behavioural approach are identified. These originated from the limitations of normative spatial models and encompass the categories of theoretical, empirical and cognitive behaviour. Theoretical behaviour seeks to develop an alternative theory of consumer behaviour; the empirical approach concentrates specifically on the clarification of certain aspects of information; whilst the cognitive behavioural approach concentrates on the perceptual dimension of consumer decision making. All these areas have concentrated on the spatial problem of consumer behaviour. The marketing approach assumes geographical patterns and processes and investigates a multitude of wider (aspatial) issues. The marketing approaches are viewed as complementary to the geographer's study of consumer behaviour.

Figure 1.2: The Variety of Approaches to the Study of Consumer Behaviour



2. Urban Modelling

The field of urban modelling has generated an expansive (and growing) body of literature involved in the development of highly sophisticated mathematical and statistical models. Aspects of this work, as exemplified by Wilson (1970, 1974), Batty (1976, 1978) and Openshaw (1975, 1976), are undoubtedly of relevance to the study of consumer spatial behaviour. This review, taking the advice of Shepherd and Thomas (1980), sees such research as outside the essential scope of this study. Certain aspects are covered by a number of authors in Dawson (1980). Nevertheless, aspects of the normative spatial models and alternative approaches require attention. Groups of people are considered to behave in accordance with postulated assumptions or norms which are seen as resulting in optimal patterns of spatial behaviour. Central place theory and spatial interaction theory are cited by Shepherd and Thomas (1980) as of relevance in a comparable discussion.

Central Place Theory originated with the work of Christaller (1933) and has since produced a considerable amount of literature. Comprehensive reviews of the subject are readily available (Beavon, 1977; also covered in Potter, 1982) and do not need reiteration here. Concern with consumer behaviour in this field has been largely inferred, and assumed to conform to the concepts of economic man. The theory assumes that every consumer will undertake an economically rational journey to consume. Given assumptions on suppliers' decisions, the consumer is expected to travel to the nearest centre supplying the goods or service required. It is this nearest centre hypothesis that has promoted interest in the basic behavioural rule of central place theory. Shepherd and Thomas (1980) again summarise the relevance of central place theory and provide details of the relevant information on the subject. The work of Pred (1967), Clark (1968), Day (1973) and Ambrose (1967), all demonstrate the limitations of central place theory in the Western urban context. Constant changes in shopping opportunities and consumer characteristics such as increased mobility and awareness, seek to further reduce the explanatory value of central place theory. Recent research by Fingleton (1975)

confirmed its lack of applicability in the intra-urban context. In the Netherlands, the recent work of Saey and Lietaer (1980) and commentaries from Buursink (1981) have led to further debates on the subject.

A research review by Warnes and Daniels (1978) tended to reassess the value of central place theory. They suggested; (p.7) "... to a very large extent the residents of British towns do use the nearest shopping centre offering a given type, quality and combination of goods and services". Whilst this is generally correct, it is highly debatable and promotes the question as to the 'given type, quality and combination of goods and services'. Invariably these will differ between particular shopping trips and individual consumers. As Thomas (1979, p.7) states; "... thus, it appears at the moment that, at best central place theory provides only a partial explanation for shopping behaviour in the intra-urban situations ... further investigation of consumer spatial behaviour is likely to progress through either a modified or an alternative research framework".

Spatial Interaction Theory offers this alternative, and again Shepherd and Thomas (1980) review the subject, but a brief statement of the main considerations will be made here. Discarding the nearest centre hypothesis, behaviour is assumed to be determined by a complex trade off of the advantage of centre size (attraction) against the disadvantage or disincentive of distance of shoppers from the centre. It is reasonable to assume with varying degrees of probability (Huff, 1963) that in urban areas more than one centre will be used by residents of one particular area. Developed from the 'law of retail gravitation' (Reilly, 1931), the behavioural assumptions of spatial interaction theory were incorporated into a 'probabilistic reformulation of the gravity model' by Lakshmanan and Hansen (1965). The model formulation (refer to the original article; Shepherd and Thomas, 1980 or Thomas, 1976 for details) was designed to estimate the shopping expenditure flows between a residential area and a shopping system. A considerably flexible model, it can be disaggregated with variations in the behavioural dynamics of shopping analysis,

established from empirical results (Thomas, 1976). Spatial interaction models have been used in various applications. Lakshmanan and Hansens' formulation was applied in metropolitan Baltimore and found to give a reasonable description of behaviour. Bucklin (1971) and Mottershaw (1968) both provide ensuing evidence evaluating spatial interaction models. Numerous variants of the basic model have been applied by planning authorities in Britain, usually at the sub regional scale of analysis. Examples are provided in Shepherd and Thomas (1980) and include the widely referred Haydock study (Kantorowich, 1966). Developments and modifications have been introduced to the model and these again are well detailed with additional writers providing technical commentaries (Openshaw, 1975 and Jensen - Butler, 1972, for example). Littler (1976) in an application in South Wales concluded that refinement in the model formulation was necessary to improve its predictive capabilities.

Despite the considerable problems associated both with the principles and practical operations of the probabilistic reformulation of the gravity model at the intra-urban scale of investigation, spatial interaction theory still provides potential practical value. Shepherd and Thomas (1980) find it surprising that little research effort has gone into attempts to refine the original formulation in the context of retail planning within cities. Thorpe (1978) notably, has called for increased attention to be applied to the model, with special reference to behavioural modifications. Similarly, as Thomas (1976) notes, it does appear logical that the attraction of centres, the disincentive of distance and the competitive influence of alternate centres all appear to exert an influence on behaviour.

Empirical evidence has been provided from studies by Pacione (1974) in Tayside and Lieber (1977) in Buffalo that substantiate centre size or attractiveness and distance travelled as important determinants of behaviour. Recent developments have been minimal, and, despite Olsson's (1975) comprehensive review, contemporary research still tends to avoid the validation of the probabilistic formulation of the gravity model. Modifications to the basic

gravity formula have been suggested in the development of comprehensive models of urban system associated with the Entropy Maximising Approach. This approach to urban modelling is exemplified in the work of Wilson (1970, 1971, 1974) and related to consumer spatial behaviour by Batty (1976) and Openshaw (1978). Littler (1976) provides a commentary of such modifications and a comprehensive review of entropy and gravity models can be found in NEDO (1970). Turner and Cole (1980) provide a comparison of a range of urban shopping models including central place theory, the gravity model and an entropy model. For each of the model variants, parameters are estimated for four towns in the U.K. The models were then used to forecast changes in local shopping environments. In a series of conclusions all the models performed better for large shopping centres than for small sized centres and through using a variety of estimation procedures, found that different models gave comparable fits. The study does, however, highlight the fact that the performance of all of these models depends upon the physical structure of the shopping environment and the demographic characteristics of the population. Turner and Cole proceed to state that "a decomposition of shopping study in social as well as spatial terms is desirable". This closely resembles the conclusions of Shepherd and Thomas referred to previously.

Alternative Modelling approaches include the revealed preference approach to an alternative theory of consumer behaviour. This method is classified by Shepherd and Thomas (1980) and Thomas (1976) as a theoretical behavioural approach and consequently will be discussed in a later section. Others include the minimisation of effort models and stationary purchasing behaviour models, often referred to as the NBD/LSD (Negative Binomial/Logarithmic Series Distribution) model developed by Chatfield, Ehrenberg and Goodhardt (1966).

The minimisation of effort models assume that a consumer's choice of shopping centre may be modelled from a basis of objective information about shoppers themselves and the opportunities available to them. Such models can be formulated from aspects of actual shopping behaviour and, as such, closely relate to the

forthcoming discussion of behavioural approaches to the study of consumer behaviour. Minimisation of effort models have been researched by Bacon (1971) and Evans (1972). Bacon (1971) proposed that a shopper would buy various categories of retail goods at varying frequencies and does in fact attempt to organise a sequence of shopping trips which together will minimise the total costs incurred in travel over a period of time (effort minimisation). Evans (1972) provides a linear program to model this function as a statement of shopping behaviour. Little research has been undertaken into such a formulation and no published reports or empirical tests of the model have been produced. The data requirements of such a model are fairly severe as it cannot be tested against simplistic information about 'main' shopping trips for types of retail goods; the method requires detailed information from a diary or consumer panel type survey. It is worth noting that one researcher, Guy (1981), has taken up this methodology.

The stationary purchasing behaviour model is another approach relying on consumer panel or diary survey data. Originally, the NBD/LSD model was the work of Chatfield, Ehrenberg and Goodhardt (1966), with Ehrenberg (1968, 1969, 1972) in particular, empirically testing the model formulation. Such work lies fundamentally in the domain of the marketing approach to consumer behaviour. Notably, Wrigley (1980) has developed the model and ideas in a geographical context. A detailed discussion on such aspects will be included under the marketing approach to consumer behaviour with reference to the original work of Ehrenberg and Wrigley's application. Furthermore a series of cognitive models (Cadwallader, 1975, 1981; Timmermans, 1982; Hudson, 1974, 1976) which constitute a further approach are discussed in a separate section on cognitive behaviour.

3. The Behavioural Approaches

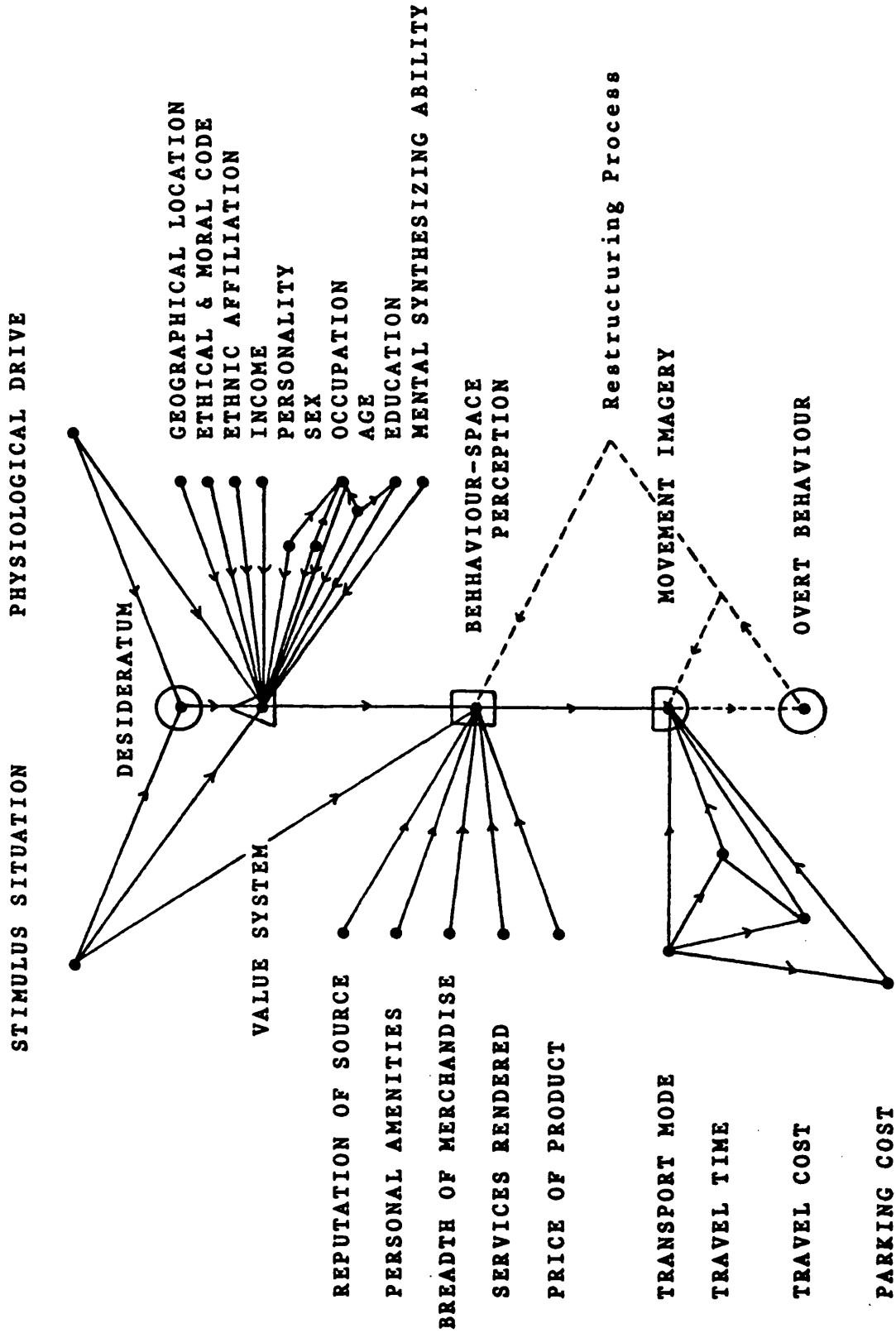
The limitations of the aggregate assumptions of normative spatial models have been seen to strongly indicate the need for research which contributes to the development of a theory of consumer behaviour from information derived at the individual scale of inquiry (Thomas, 1976). The various inter-relationships between

these behavioural approaches can be discussed with reference to Huff's (1960) conceptualisation of the consumer decision making process (Figure 1.3). Huff suggests that behaviour results from the interaction of three compound elements each of which have a partly objective and partly perceptual facet. The first comprises the effects of geographical location and social differentiation, the second, the nature of the available service facilities and the third, the influence of personal mobility.

The three categories of the behavioural approach to the study of consumer behaviour (Figure 1.2) are theoretical, empirical and cognitive. The theoretical approach attempts to develop an alternative theory of consumer behaviour subsuming the factors suggested by Huff and is, therefore, analogous to the normative spatial models. The empirical behavioural approach clarifies the effects of specific factors such as residential location and social differentiation. The cognitive approach has similar foci of attention, but concentrates on the perceptual dimension of consumer decision making (Thomas, 1976).

(i) The Theoretical Behavioural approach originates from the work of Rushton, Gollege and Clarke (1967) in rural Iowa, and Rushton (1969), and comprises an attempt to develop an alternative theory of consumer behaviour. A comprehensive review of the original methodology and subsequent developments is provided in Pirie (1976) and the reviews previously cited. In essence the approach, known as 'revealed space preference', was claimed to provide sufficient insight to enable researchers to develop "logically consistent rules of spatial behaviour" (Pirie, 1976). Rushton's method (op.cit) viewed spatial behaviour as the outcome of a search among alternative spatial opportunities and reckoned that preferences for certain alternatives accounted for observed spatial behaviour. The methodology was believed to avoid the limitations of earlier behavioural studies which tended towards description. Clark and Rushton (1970) applied the methodology to the intra-urban situation. The method has achieved little success as an alternative theory of consumer behaviour. Numerous criticism or doubts have been expressed by many writers (Eyles, 1971; Pirie,

Figure 1.3: Huff's Conceptualisation of the Consumer Decision Making Process (Reproduced from Huff 1960)



1976) noting that the concept of revealed preference is incomplete, for if an individual does not have the choice or opportunity to behave in a certain way then his preference cannot be revealed. Furthermore, man is a 'social animal' (Eyles, 1971) and shopping patterns cannot be isolated from other aspects of behaviour. Shepherd and Thomas (1980, p.32) state that; "... the approach tends to be far too normative and insufficiently related to behavioural processes". The overall value of revealed space preference is summarised by Pirie (1976) in that it "merely approximates patterns of consistent choice behaviour in space rather than unveiling preference based laws of spatial behaviour".

Nevertheless, many people have researched the theory (Girt, 1976; Pipkin, 1977; Letnek et al, 1975) and the debate still continues in this area today (Hubbard and Thompson, 1981; Timmermans, 1979; MacLennan and Williams, 1979; Timmermans and Rushton, 1979). It is interesting to briefly note the work of Letnek et al (1975) in a study of inter-urban shopping behaviour. Amongst a comparison of revealed preference they found that food shopping behaviour conformed to a "dual assignment rule" whereby consumers living close to a limited range of shopping opportunities exhibit a high probability of visiting the nearest centre; whereas shoppers living some distance from the nearest opportunity prefer shopping in larger places at greater distance. It appears that once a shopper is forced to travel a long distance, they may be tempted to continue the journey past available shopping opportunities, to a more preferential centre where there is likely to be a greater choice of shopping opportunities. Analogous behaviour has been noted in the convenience shopping behaviour of high and low status residents in Leeds (Davies, 1969) and Swansea (Thomas, 1974).

(ii) The Empirical Behavioural approach as classified by Thomas (1976) and Shepherd and Thomas (1980) subsumes a diffuse range of studies that provide information relevant to the evaluation and improvement of existing theories of consumer behaviour. These approaches reflect a lack of integrated objectives, although the all encompassing term 'empirical' includes a variety of subheadings

(Shepherd and Thomas, 1980 and Figure 1.2). These headings considerably overlap but include a number of distinct foci for research. The reviews referred ^{to} previously, provide considerable information on these areas and, to avoid unnecessary repetition, will be given only cursory attention in this discussion.

Trade Area Analysis is concerned with the functioning of service centres and uses information obtained from interviewing shoppers both within shopping centres and at the household level. Shepherd and Thomas (p.34-36) provide a critique of the relative advantages of both types of data collection. Many studies have been produced in this area, including the work of Applebaum (1965, 1968) in the USA, Thorpe et al (1972) in Britain, Thorpe and Kivell (1971), Pacione (1979), Shepherd and Newby (1978) and the marketing literature of Mason and Moore (1970). The result of much of this work has been the emergence of a number of behavioural generalisations. There is a tendency, due to the friction of distance, for shopping centres of all hierarchical levels to draw the largest proportion of their customers from nearby areas. The higher the hierarchical status of any given centre then the wider this area and accordingly a tendency for trade areas to overlap occurs. These generalisations are, as Shepherd and Thomas (1980, p.34) state "consistent with the intra-urban version of the gravity model". Trade area studies are still popular (Hallsworth, 1981) and, given the advice of Shepherd and Thomas (1980) regarding the collection of household survey information, can still provide important information on many principles of consumer spatial behaviour. A systematic approach to trade area analysis may result in some systematic and refined results.

The second subheading of Aggregate Consumer Behaviour Studies tends to emphasise the descriptive aspects of consumer behaviour and to illustrate both the broad patterns and possible determinants of behaviour. Shepherd and Thomas (p.37) note in some detail that any attempts to analyse the specific determinants of particular shopping trips are less well developed in such studies, on account of the fact that the randomly distributed sample of respondent consumers creates problems. In Western cities, variability is the

prime feature of both the characteristics of the population and of the spatial patterns of shopping opportunities, available to them. Overt behaviour may be related to variations in socio-economic characteristics, variations in shopping opportunities, or a complex combination of both. Research discussed under a forthcoming heading of the empirical approach will comment further on such influences of consumer spatial behaviour. Nevertheless, Shepherd and Thomas are quite definite in their discussion of aggregate behaviour studies (p.37); "it is usually only possible to describe and to explain tentatively the behaviour variations which occur. It is not possible to isolate the independent effect of specific factors as determinants of shopping behaviour". This area is consequently an obvious gap in the knowledge of consumer spatial behaviour and as such could be seen as a priority both for future research and as a way of integrating many of the studies outlined.

Notwithstanding this, many studies conducting broad household surveys of urban area, have provided a rich source of information on consumer spatial behaviour. A number of important British studies along these lines have been undertaken by Davies (1973), Daws and Bruce (1971), Daws and McCulloch (1974) and Williams (1975, 1979). The details of the studies by Davies (1973) in Coventry and Daws et al in Watford have been extensively reported and summarised elsewhere (Shepherd and Thomas, 1980; Thomas, 1976; Davies, 1976; Potter, 1982; and the specific studies themselves) and therefore it is unnecessary to repeat the details in this discussion. The main results to emerge however are important. Davies' results confirmed the importance of a strong residential location effect upon behaviour and a considerable orderliness in the journey to shop. "Consumers shop either within their immediate surroundings or alternatively go to the nearest largest centre to them" (ibid). Furthermore, these results led Davies to support the modified behavioural postulates of central place theory. In addition, socio-economic variations in behaviour resulted. Again this highlights the limitations of an aggregate approach to the problem and supports the contentions of Thomas (1976) and Shepherd and Thomas (1980) detailed earlier. The work by Daws and his team at the Building Research Establishment in Watford, provided some

interesting findings on the type and destinations of shopping trips, and of the importance of frequent top up convenience trips to nearby centres as a complement to bulk provision or specialised shopping trips. All the results presented by Daws and Bruce (1971) are disaggregated by various consumer sub-groups. Williams (1975, 1979) in a study of South West Birmingham defined 'shopper trip types' by a combination of behavioural variables (mode of travel, trip frequency and centre size) and found these significantly related to socio-economic variables and psychological or cognitive aspects. The work of Williams goes some way to bridging the categories of the various approaches. Despite analytical limitations (Shepherd and Thomas, 1980) aggregate studies of consumer behaviour have provided a considerable amount of descriptive information. Additional research is necessary and should be developed to explain further the results of these previous studies. Shepherd and Thomas (1980) call for such work to be repeated periodically to identify new behavioural trends. The work of Williams (1975, 1979) attempted to clarify the lack of refinement of 'shopper trip types' identified previously by Mottershaw (1968). Again, as a reflection of the true realities of behaviour such considerations should not be overlooked. Other areas criticised by Shepherd and Thomas include the concentration of much geographical work upon single purpose trips. A 'holistic' view to consumption has been suggested by Shepherd (1979) and Shepherd and Thomas (1980) as an additional area for future consideration. The three suggestions of multi-purpose shopping, combined purpose trips and activity management command much attention in the reviews by these authors. Substantiated by the results from Yeates and Garner (1976) on both multi-purpose shopping and combined purpose trips and the results from the Watford Studies (Daws et al, 1974 and Bentley et al, 1977), such considerations are seen as essential to increasing our understanding of consumer spatial behaviour. Combined or multi-purpose trips are clearly an important consideration for future research. Similarly, the concept of activity management, popularly treated as a time-budgeting problem, also requires consideration. The work of Cullen et al (1972) is clearly relevant to consumer studies in urban areas. Further studies drawing on the geographical work of Hagerstränd (1970) and illustrated by

Thrift (1977, 1977) can similarly aid the study of consumer behaviour. Shepherd and Thomas (1980) again provide detailed coverage on these topics and relate shopping activities to all other activities in a unified fashion. They draw attention to the constraints characteristic of shopping behaviour and view this subject as a short term priority to be analysed fully if the ideas of space-time budgets are to contribute to the overall understanding of consumer behaviour.

The factors influencing shopping behaviour and the constraints imposed upon shopping behaviour assume similar dimensions. The influence of time budgets, discussed above, can in fact be viewed as a constraint upon consumption. These approaches to the study have been developed primarily to overcome the analytical limitations of the group of aggregate studies. Emphasis is concentrated upon the clarification of the influence of specific factors on behaviour and the constraints on behaviour imposed by particular socio-economic characteristics. Such work provides an additional insight into the study of consumer behaviour. In accordance with a wider geographical theme, behavioural research is seen to be influenced by a number of cultural, demographic, economic and geographical phenomena. Recent empirical research has successfully illustrated the influence of certain variables on consumer behaviour. From a geographical basis the early research of Davies (1968, 1969), Nader (1969), Potter (1977), Ray (1967), Raybould (1973), Thomas (1974), Hanson (1977), Lloyd and Jennings (1978) and Williams (1975, 1979) have shown the influence of such variables as income, age, sex, occupation, and geographical location upon observed patterns of shopping behaviour. The results of these studies are well documented (Thomas, 1976 and Davies, 1976 provide good examples of such texts). Similarly in the marketing literature from North America, the influence of these and other variables, such as life cycle and ethnic affiliation, on shopping behaviour are well documented (Rich and Jain, 1968; Katona, 1960; Lansing and Kish, 1957; Martineau, 1958; Wells and Gubar, 1966; Goldman, 1978). In Britain the marketing work of Foxall (1975) and Chisnall (1975) indicate such influences.

A detailed discussion, both on past studies and the future potential of such influences, is found in Shepherd (1979), Shepherd and Thomas (1980), and in the marketing literature of Foxall (1975) and Chisnall (1975). The marketing literature does, in fact, include a wide range of the traditional and alternate influences on consumer behaviour as a step towards market segmentation and stratification. Whilst not directly concerned with spatial behaviour, such influences provide an important background to the understanding of the subject. The concept of personality and its influence on behaviour has promoted discussion in the marketing literature. Kassarian (1971) and Foxall (op.cit) have researched the influence of personality on behaviour. From a geographical perspective the views of Irving (1975, 1978), whilst not directly related to consumer behaviour, have been developed.

Shepherd (1979), reproduced in Shepherd and Thomas (1980, p.44), in drawing attention to the relative success of these traditional concepts, states; "despite the attractiveness of these results, geographers must face up to the fact that these traditional variables may not be the only ones in operation; that there may well be other intervening variables which have yet to be identified ...". Similarly, Pahl (1970) in discussing the traditional concept of occupational influences, calls for a further disaggregation to discover the limits of consumer choice, and, as such, places greater emphasis on the constraints of spending. Eyles (1971) also considered that greater attention should be paid to constrained groups in order that planners can account more fully for the future needs of such consumers. This resulted in a series of research ^{exercises} of which the general perspective was that the shopping behaviour of particular sub-groups of the community (such as the lowest social classes, ethnic and minority groups) is restricted on account of income, mobility, race or a combination of these and other factors. Shepherd and Thomas (1980) cover this aspect in much detail. They identify two basic constrained groups; those related to environmental inadequacies like shop location and those based on consumer attributes like mobility. Together these constraints are viewed to effect the frequency of shopping and reduce the choice of visiting various centres. Many issues are

currently being researched in this field. Particular attention has been paid to the problems of accessibility (Mitchell and Town, 1977; Hillman et al, 1973), where, for example, the ownership of a car has a direct impact on both the number of shopping trips undertaken and also on the distance travelled. The magnitude of this constraint varies geographically; in urban areas, for example, approximately 45% of the population are deprived of ^{private} transport (Mitchell and Town, 1977). Eyles (1971) also indicates a further inter-relationship over time with consumer awareness and perception. Hillman and associates (Hillman et al 1976, 1977, 1978) have produced a series of research ^{exercises} into this problem. Traditionally, car ownership is used to measure mobility but, according to Hillman and Whalley (1977), even this obscures the extremities of potential mobility. The results of such studies, plus the specific work of Banister (1977) and Guy (1977), have contributed to a number of conclusions. Notably, future behavioural studies must take far more cognisance of the effect of variation in potential mobility rather than apply a crude surrogate such as car ownership. The policy implications of such work for shopping, concern local, small scale shopping facilities. Such matters are outside this current review, however the vast and growing literature on the subject should not be ignored (see Dawson, 1977; Dawson and Kirby, 1980).

The importance of mobility constraints on behaviour is often inter-related with other social and economic variables. Social class and low income are relevant here, as is the emphasis on women and a gender constraint on activity patterns. Tivers (1977) explored in detail the spatial activity patterns of women with young children within the context of this "gender role" constraint. Such influences on consumer behaviour have been previously recognised by Thomas (1974) in Swansea and Potter (1977) in Stockport. Both authors suggest the constraining influence of pre-school children on shopping behaviour. Similarly, low levels of personal mobility (and the inter-relationship with low income) have a link with the restricted patterns of shopping behaviour demonstrated by ethnic minority groups. Shepherd and Thomas (1980) and Davies (1973) refer to this aspect, which has generated

considerable study both in the USA and recently in Britain. Caplovitz (1967) in a study of New York provides empirical evidence on the behaviour patterns of the Black population as does Davies' study (1973) of Coventry. Generally such research is still in the embryonic stages in Britain and further work would seem appropriate (Dawson, 1980). The widely ranging series of principles and approaches found in the welfare approach to geography (Gray, 1975) would clearly seem to be relevant in this context.

The influences of a number of variables on behaviour are unquestionable. These influences may manifest themselves more as a constraint upon behaviour, rather than allowing pure choice; nevertheless, they undoubtedly command increased attention. The analysis of both the traditional influences (like social class, age etc), plus the reappraisal of influences (from the marketing literature) such as family life cycle in a geographical context, the effect of mobility and gender constraints plus alternative variables, require consideration. There does appear to be a need for research to appreciate more fully the relationship between the detailed socio-economic characteristics of consumers and characteristics of the spatial opportunity set of retail facilities. This must occur within a research framework that will allow the clear identification of the determinants of consumer spatial behaviour. The interim conclusion of Thomas (1976) and Shepherd and Thomas (1980, p.55) therefore seems to apply; "advances in the understanding of intra-urban consumer behaviour are likely to require the disaggregation of behaviour patterns with respect to socio-spatial differentiation in the city".

These remarks can be applied to the recent views of Brooker-Gross (1981). She, in recognition of Garner's contention (1970) that the required new behavioural approach to consumer spatial behaviour should emphasise both social and psychological dimensions, contends that recent research has pursued the psychological approach at the expense of social mechanisms. Brooker-Gross (op.cit) states; "socio-economic groups have, of course, been recognized but such categorisations are too broad to account for the impact of family and friends or for the interactive

processes that occur in face-to-face transaction". In essence, a reappraisal of both traditional influences, plus recognising additional correlates of behaviour, is a requirement for future research.

It would appear fruitful from these general conclusions to concentrate research effort into an empirical study that focuses on particular consumer segments within the population. Certain influences have been identified, and it would appear that the future development of shopping behaviour could require specific, detailed empirical studies of these influences. Contextual factors are highly important in the study of consumer behaviour; it is apparent that socio-economic status differences should be examined more closely and that there is a relationship between residential differentiation and service provision (Herbert and Thomas, 1982).

The subheading of microspatial aspects of the empirical behavioural approach is concerned with the detailed spatial patterns of behaviour exhibited whilst shopping, and the attribution of these patterns to microspatial aspects of the shopping destination. Shepherd and Thomas (1980, p.55 - 61) allocate a considerable discussion to the array of work in this field and the associated applications for three areas of research; notably, geographical issues, methodological issues and planning issues. Recent interest has been generated in the investigation of consumer behaviour within shopping centres (Bennison and Davies, 1977; Davies and Bennison, 1978) in an attempt to identify the determinants of recurrent patterns of behaviour, consumer attitudes and develop principles for further shopping centre schemes. A range of studies from the early work of Nelson (1958), the study of spatial affinities by Getis and Getis (1968), and Davies (1973), to the recent comprehensive example provided by Bennison and Davies (op.cit) in Newcastle upon Tyne are relevant here. Further examples are provided in the work of Bishop (1975) in Portsmouth, Schiller (1972), and Taylor (1974) from the marketing literature.

The major dimensions of this area of study are rather oblique in their link to the main theme of the research presented, intra-urban shopping behaviour. Apart from methodological issues the geographical considerations of approach are at the micro level of scale (considerations like pedestrian flows and shopping paths for example). The methodology only really links to the determinants of intra-urban spatial behaviour in the area of cognitive behaviour and the consumer's perception or image of geographical issues of microspatial behaviour. The findings from studies under this heading could therefore be viewed as a refined contribution to areas of study concerned with consumer perception of shopping centres. Clearly such considerations are associated with the cognitive approach to studies of consumer behaviour.

(iii) The Cognitive Behavioural Approach concentrates upon the perceptual elements of consumer decision-making which derive from Isard's concept (1956) of individual space preference. The essence of the approach is that a consumer's perception of the available shopping alternatives determines the decision to shop. Thus, as Huff (1960) argued, "an understanding of the perceptual basis of the decision-making process is considered essential to an understanding of consumer shopping behaviour".

Since 1970 a variety of cognitive approaches to spatial choice have occurred. An inherent difficulty, noted by an early study (Downs, 1970), is the distinction between whether an individual's perception of alternative shopping opportunities determines behaviour or is the result of spatial behaviour caused partly by intervening stimuli. Shepherd and Thomas (1980) view the relationship as interactive and see this as the consequence for recent research only attempting to provide information illustrating the relationship between image and the environment. As Figure 1.2 illustrates a number of research areas have been developed under this heading. The cognitive behavioural approach is closely allied to many of the marketing approaches to consumer behaviour. The marketing approaches defined, tend generally to be concerned with aspatial matters of behaviour, although many studies have a strong geographical element.

Search learning processes are the geographers conceptual framework of consumer decision making based on "the learning cycle" developed by economists in the 1960's. Shepherd and Thomas (1980) detail the development of this behavioural cycle with reference to the work of Katona (1963, 1964). They detail a number of circumstances whereby genuine decision making regarding product choice occurs. These are sufficiently clear to enable geographical testing. Contemporary work in the marketing literature has led to several other conceptualisations. These will be discussed in the next section although the remarks of Shepherd and Thomas (1980, p.63) are specific; "there are several other such conceptualisations in the marketing literature, but they say little that is of direct interest to the geographer".

The geographer's conceptual framework of search learning and the market decision process is exemplified by the work of Golledge (1967, 1969) and with Brown (1967). They considered that the market decision process can be likened to a learning procedure whereby a newly arrived consumer searches before ultimately developing habitual behaviour. Explanations of consumer behaviour should subsume a range, from an initial search stage through to habitual response. Research is still at the exploratory stage and the development of alternative mathematical models still continuing. The time dimensions involved are precise. Research by Smith (1976) in Hamilton, Ontario, and Hudson (1975) in Bristol have both produced spatial evidence relating to these notions. Hudson (1975) suggested two factors inhibiting spatial search; firstly, the cost of distance, and secondly, the varying attraction of different locations. Smith (1976), on the other hand, acknowledged the occurrence of search learning for as long as five years after residence, before saturation occurs. Such a conclusion, if substantiated elsewhere, should have far reaching implications for improvements in the understanding of intra-urban consumer behaviour. Further examples and discussion are provided by Shepherd and Thomas, although they conclude that the learning cycle continues to be neglected despite many interesting geographical ramifications. More important, however, they state (p.66); "there is, as yet, little indication of the relative

importance of this line of investigation to the development of a comprehensive understanding of shopper behaviour".

Spatial information studies are, in the main, concerned with the measurement of the range of shopping opportunities known to consumers. The essential hypothesis to this work relates to the consistency of the relationship between the spatial information field and centres used. Drawing on the work of Horton and Reynolds (1969, 1971; discussed in detail by Shepherd and Thomas, 1980), a number of consumer behaviour studies have sought ^{to identify} the relationship between the areal extent of the information field, overt behaviour and socio-economic correlates. Good examples of this work are found in the series of articles on Stockport by Potter (1976, 1977, 1979) and recently in Swansea (Potter, 1982), Parker in Dublin (1976), Hanson in Sweden (1977) and Smith in Ontario (1976). The results of these studies are relatively consistent; information fields are found to be sectoral in shape and biased towards city centres. Socio-economic status influences the dimensions of these fields and information levels relate to location and not characteristics of stores (Hanson, 1977). The work by Potter (op.cit) is interesting in that he has tested his approach (and previous conclusions) in a different British city. The analysis presented indicated a general replication of his previous results. Potter (1982, p.198) viewed this as implicit; "that the marked variations that characterise the usage and information fields of consumers are not merely a reflection of the method of response elicitation employed by these earlier studies". Furthermore, he concludes (ibid); "that the strong social contrasts identified in the overall scale and complexity of such fields appear to be genuine in the sense that the effects of the differential residential placement of consumers in relation to urban retailing structure were negated in this research as were the effects of consumer status". This supports the consistency of previous results and is interesting in that the research design adopted followed similar objectives to that of Davies (1969) and Thomas (1974) and sought a spatial juxtaposition of contrasting social status groups to control the effect of geographical influence.

Notwithstanding, the consistency of the results of these studies Shepherd and Thomas (1980) in particular, maintain the view that no attempt has been made to decide whether behaviour is determined by space perception or whether the reverse is true. Nevertheless, such considerations are important to the overall understanding of consumer behaviour. Perception studies of consumer spatial behaviour relate to the consumer's image of the characteristics of a shopping centre as a determinant of subsequent behaviour. Shoppers perception of the attraction of a specific shopping centre has been comprehensively studied by Downs (1970). This work is discussed in detail elsewhere (Thomas, 1976; Shepherd and Thomas, 1980; and Downs op.cit) and provides an important insight into shopper's images and hence, the role of the relative attractions of shopping opportunities as a determinant of behaviour. Such work is considered an essential prerequisite for model or theory building. An earlier study conducted by Kunkel and Berry (1968) using a slightly different methodology, similarly suggested the appropriateness of a number of elements of retail imagery. A number of studies have been generated since this work (for example; Wagner, 1975; Pacione, 1975; Parker, 1976; Potter, 1979; Wood, 1979; Meyer, 1977) and again these are comprehensively presented elsewhere (Shepherd and Thomas, 1980).

In the main these studies have a strong explicitly perceptual orientation to their approach. A small number of reseachers have combined elements of perception with wider empirical studies of consumer behaviour. Davies (1973) for example termed the approach 'trip motivations' and viewed it as one which might provide additional insight into the determinants of shopping behaviour. Similar approaches (e.g. Thomas, 1978) have applied these ideas and a number of significant factors have tended to emerge. For example, accessibility, in association with competitive or qualitative service attributes of alternative shopping centres, appears to be an important determinant of behaviour. Such results are equally supported by the explicit perceptual studies of Pacione (1975) and Parker (1976). Nevertheless, the study of trip motivations could appear to be a fruitful area for additional research. The determinants identified may not be the only ones in

operation. Certainly, over time, for varying socio-economic groups these determinants may change. In times of economic uncertainty and high unemployment, for example, different factors may apply.

This area of consumer perception and imagery is one considerably well documented in the marketing literature. Mackay and Olshavsky (1975) in North America provide results similar to those detailed above. Other work emphasising store image is especially well developed, but as Shepherd and Thomas (1980) point out, it is well known in the marketing field that consumers invariably build complex images around non-geographical attributes. Nevertheless, these approaches appear to offer considerable potential for further research. A debatable issue, however, involves the precise research methodology to be adopted. Geographers have applied a range of techniques from the psychological literature to such problems (see Pocock, 1976; Downs, 1970; Williams, 1975; Davies, 1973). In the view of Hoinville (1971) however, the specific use of attitude research techniques are required. These techniques are well developed in the marketing literature (Trier et al, 1960; Stone, 1954; Fisk, 1962) and have been applied in many geographical studies of consumer spatial behaviour. The aggregate approach of Daws et al (op.cit), and the study by Williams (1975, 1979, 1981) pay considerable attention to such issues. Williams' study (op.cit), in particular, uses the large body of research from the marketing literature to relate attitudes and consumer spatial behaviour. He clearly states; "information about a consumer's attitudes and goals gives some indication of his likely shopping centre preferences". This implies that the relationship between attitude and behaviour is oneway, which is somewhat controversial given previous researches by both geographers (Downs, 1970) and psychologists (Gross and Niman, 1975). Unfortunately, Williams' study (op.cit) is characterised by the wider problems of the aggregate approach (see the previous discussion), and also adopted a rather crude technique for measuring attitudes. Nevertheless, considerable information is provided and similar to the work of other researchers (Madge, 1969; Lieber, 1977) has gone some way to clarifying the determinants associated with spatial choice. Shepherd and Thomas (1980, p.71)

are again quite explicit in their conclusions; "... research methodologies vary considerably, as do the strength of their conclusions ... consequently, more work is necessary."

Cognitive models have been developed by geographers, despite the characteristic of many previous cognitive behavioural approaches to clarify partial aspects of decision making. The work of Cadwallader (1975, 1981) has been notable in this respect and is reviewed in some detail by Shepherd and Thomas (1980). Cadwallader proposed a cognitive formulation of the gravity model as a useful means of predicting consumer spatial behaviour. The evidence from his latter paper (1981) identified the mass (or centre attractiveness) component as far more important than the distance component as a determinant of behaviour. Cadwallader (op.cit) calls for further research on this aspect. Shepherd and Thomas, in reviewing Cadwallader's earlier work, agree the potential usefulness of the approach but are critical of its predictive capacity. They recognise the possibilities for such predictions but categorise the model of Cadwallader as 'descriptive'. Conceptually, a similar experimental approach has been proposed by Hudson (1974, 1976). Again, the consumer's mental models of the retail environment formed the input into a model of behaviour. Hudson viewed his study as exploratory and acknowledged the descriptive component of his results. Timmermans et al (1982), in a similar exploratory analysis, concluded that any attempt to model consumer spatial behaviour must rely on identifying the cognitive representation of the retail environment. They additionally proceed to restate other advantages of a repertory grid methodology (used by Hudson, op.cit; but questioned by Shepherd and Thomas) and more importantly support the need for disaggregated spatial choice models to account for the variability in consumer shopping patterns. The cognitive behavioural approach to the modelling of shopping behaviour is still in its embryonic stages; research will continue and be viewed by certain researchers as a possible priority area.

In general terms, the cognitive behavioural approach has clarified many aspects of consumer decision making despite the

exploratory nature of many studies. It is an approach, as Shepherd and Thomas (1980, p.74) point out, which appears "quite capable of being integrated with some of the alternative approaches to the study of spatial behaviour".

4. The Marketing Approach

This approach to the study of consumer behaviour identified in Figure 1.2 demands a separate recognition from other areas of study on the basis of its wider applicability. The distinction between the majority of work classified under this heading and that previously detailed relates to the geographical aspects of behaviour. Naturally, certain studies are specifically spatial while others have highly important implications for geographical analysis. Consequently, these studies have been tentatively referred to throughout the discussion. There is, however, a field of consumer behaviour in the marketing literature which is considerably wider than these studies suggest. Attempts to classify these approaches into a geographical framework are few. Shepherd and Thomas (1980) attempt to discuss the marketing approach to the study of consumer behaviour in a similar separate category. Other researchers refer to the relevant studies in a less structured fashion (for example; Davies, 1976 and Dawson, 1980). The range of material available under this heading is vast. A considerable number of books reviewing the field of consumer behaviour in marketing are available from both North America and Britain (for example; Engel, Kollat and Blackwell, 1973; Ward and Robertson, 1973; Walters and Paul, 1970; Foxall, 1977 and Chisnall, 1975), although the former of these two countries has produced the majority of this work. The approaches and methodologies of the marketing literature derive from a combination of psychology, sociology and economics and therefore, much of the work is fundamentally different to that previously discussed. The marketing literature predominantly focuses on the determinants of buyer behaviour and on the influence upon the choice of product as opposed to specific behaviour in space. Shepherd and Thomas (1980, p.74) quite categorically state; "the geographical aspects of consumer behaviour are barely mentioned

explicitly in these books". Nevertheless, recurring themes are discernible which have important connections to many of the geographical approaches reviewed. The subtitles of cognitive influences, decision making, learning theory, information levels of consumers, group behaviour, and forecasting models all have their relevance to the array of studies presented. It is therefore important to recognise the existence of such approaches, and, whilst a number of themes are of secondary importance to the study of consumer spatial behaviour, the general principles and methods applied demand careful consideration. Typical examples of such work can be seen in the marketing literature related to the influences on behaviour. The classical work of Rich and Jain (1968) has already been referred to, but numerous other studies are important. For example; Bartos (1977) on the influences of female employment; Kassarian (1971, 1973) on personality; Lansing and Kish (1957) on life cycle; Martineau (1958) on social class and Goldman (1978) on income, all demand attention. Cognitive structures are similarly well developed and the role of perception and research into the attitudes and motivations of buyer behaviour considerably well established (Fisk, 1962; Lunn, 1968; Mackay and Olshavsky, 1975; Kunkel and Berry, 1968; Myers and Alpert, 1968; Wells and Tigert, 1971 and Trier et al, 1960).

One particular section of the marketing literature seeks to build comprehensive models of consumer decision making based on a mixture of ecological, behavioural and cognitive theories. Shepherd and Thomas (1980, p.74) aptly summarise this section of the marketing literature; "the literature is replete with such models of consumer decision making usually developed by business academics for expository or pedagogical purposes". This discussion cannot provide a detailed description and critique of the many models available (the marketing literature exemplified by Engel et al, 1973 or Chisnall, 1975 provides this). The review of Shepherd and Thomas (1980) summarises nine common characteristics of these models, and questions their relevance to geographical approaches to consumer spatial decision making. The notable exception to this statement is based upon the work of Ehrenberg (1968, 1969, 1971, 1972) and the theory and application of repeat purchase behaviour.

This approach has been developed for geographical research by Wrigley (1980) and, although briefly mentioned in a former section on alternative modelling approaches to consumer behaviour, requires some discussion here. The approach suggested, aims not to explain why consumers behave as they do but merely to model (in a simple and precise way) how in fact they do behave, in other words, as Wrigley (1980) states; "to model the major regularities in purchasing behaviour". Ehrenberg modelled such behaviour on large quantities of consumer panel data gathered by market researchers. Typically, such information does not include details of shop location and hence is of limited potential (Wrigley op.cit). Nevertheless, potential does exist to extend such considerations. Ehrenberg's model is in fact an aggregate statistical model based upon considerable verifiable data. Wrigley (1980) provides a highly detailed discussion of both the form and utility of the model, often referred to as the NBD/LSD (Negative Binomial/Logarithmic Series Distribution) model. He outlines the potential of such models in geographical studies of consumer shopping behaviour by moving from brand choice to store choice. The essence of the approach is thus to develop statistical models of aggregate behaviour.

Wrigley

(1980, p.83) is highly favourable towards such an approach and suggests that the adoption of the stationary purchasing behavioural model is an area of considerable potential₁.

Footnote 1: Since the formation of this review, Wrigley has undertaken an extensive research project in Cardiff extending such principles. The work is currently being produced (See Guy et al 1983, and Wrigley and Dunn 1984 a,b,c,d) and the initial results appear promising.

This work highlights the interrelationship between those approaches classified as marketing and the array of approaches adopted by geographers. Notably, the general approach of marketing, the empirical aspects of the subject and the methodological and technical aspects of the work, have a relevance to the geographical investigation of consumer spatial behaviour. Shepherd and Thomas (1980) recognise that at least the marketing approach might stimulate further ideas for geographical study, as is exemplified by the work of Wrigley.

5. Concluding Remarks

The previous discussion has illustrated that studies of consumer behaviour are extremely varied and that a large amount of information on the subject has been generated. The interrelationship between some sections of the literature are tenuous and as Thomas (1976, p.58) states; "a refined theory capable of either describing the present relationship or of predicting a future situation does not exist". Distinct foci are apparent and provide areas of potential study to clarify the current level of knowledge on the subject. Interlinkages are increasing and the findings from the marketing approach have an important role in future studies. Consumer behaviour research needs to be integrated; the focus of research demands a more complete coverage and a rigorous research framework. The contention of Thomas (1976, p.59) which is covered in Shepherd and Thomas (1980) still applies, notably that "... approaches to the study of intra-urban consumer behaviour pay insufficient attention to the undoubted importance of the influence of socio-spatial differentiation in the city. It might be suggested that future behavioural analysis should be disaggregated with respect to both social and spatial segregation, if future research effort is to be maximized and the development of theory advanced".

Part Two Towards an Integrated Approach to The Study of
Consumer Behaviour

There is a general consensus of opinion regarding the current state of research into consumer behaviour. Dawson (1980) presents a selection of essays which encompass both past studies and proposals for the future. The previous discussion has briefly reviewed the current level of knowledge on the subject. A wide range of material was presented in a structured format closely resembling that of Shepherd and Thomas (1980). Many implications for each category of study are apparent. These can be briefly detailed as a prerequisite towards an integrated approach to the study of consumer behaviour.

(i) Research has indicated that consumer behaviour is closely related to the influence of centre attractiveness, the disincentive of travel and the competitive influence of other centres in the system.

(ii) Research needs to recognise that behaviour is not determined solely by preference and choice - it is necessary to account for the constraints upon consumption.

(iii) Research has shown that variation in the social characteristics of consumers significantly influences many aspects of their spatial behaviour. Past studies have tended to concentrate on the influence of variations in such factors as income, socio-economic status, age, personal mobility, life cycle and ethnic affiliation providing some reasonable results. Nevertheless, refinement of the techniques applied would enhance this area of research especially in conjunction with proposals to identify and consider other intervening variables. There is a need to appreciate more fully the relationship between these detailed socio-economic characteristics of consumers and the characteristics of the spatial opportunity set available.

(iv) Research has shown that the development of a comprehensive theory of consumer behaviour is still at a very early stage.

Consequently, potential exists for studies to clarify previous findings and improve our understanding of behaviour.

(v) Research has shown that studies of shopping behaviour should not be investigated in isolation from other aspects of spatial behaviour (the 'divided man' syndrome of Eyles, 1971).

(vi) Research has demonstrated that the methods and approaches of a descriptive nature, illustrative of pattern and its possible determinants, should be disaggregated and looked at in terms of specific trip types reflecting the realities of behaviour.

(vii) Research has shown that micro-spatial facets of the shopping environment do exert a significant influence upon centre choice.

(viii) Research has illustrated that the individual's image of the shopping environment, which does not adequately resemble the actual opportunity set, is an important influence upon overt shopping behaviour. Furthermore, a number of principal determinants or motivations are associated with the choice of shopping centre and these factors vary between different consumer groups. More research is needed to identify consumers' attitudes to the available facilities.

(ix) Consumers do not have a perfect knowledge of the shopping opportunities, since the areas to which the consumers are confined constrain their decision making. Irrespective of cause or effect, there is a strong relationship between behaviour and spatial information fields.

(x) The market decision process can be likened to a learning procedure, whereby initial research ultimately develops into habitual or routine behaviour.

These ten areas represent the considerations required to further our knowledge and close a number of the deficiencies identified both in the previous discussion and by a number of authors (Thomas, 1976; Shepherd and Thomas, 1980 and Dawson, 1980).

The integration of many of these characteristics into a single study is an approach requiring attention. By concentrating research into the shopping behaviour of selected consumer groups many of the behavioural aspects of the existing theoretical and conceptual discrepancies can be clarified. Disaggregation of behavioural patterns can be analysed and account made for the influence of a variety of independent variables which all seek to determine behaviour. Clear consequences exist here for the development of both descriptive and predictive models of consumer behaviour. Aspects of consumer perception and imagery can be included and the primary determinants or motivations influencing shopper behaviour identified. Attitudinal research can be developed as a sophisticated mechanism to collect such information. The constraints upon consumption will be evident in such a study. The scale of analysis for such an approach can be identified with reference to Figure 1.4. Based on Shepherd (1979), recognition is made of the variety of levels to the study of consumer behaviour. The time scales involved identify intra-urban behaviour as a task for the present day. At the intra-urban level, in fact, many of the dimensions of consumer demand are manifest in the form of consumer transactions. Equally important, considerable variability occurs, both in terms of shopping behaviour and in the available shopping opportunities.

Contemporaneous thought by retail geographers supports such an approach. The call for a disaggregated behavioural approach by Thomas (1976) has been detailed. A recent report outlining research priorities in retail geography (Dawson 1980) specifically calls for research on the shopping behaviour of specifically defined consumer segments. As one of eight areas for research, the considerations detailed in Dawson are worth repeating; "research effort ... on consumer behaviour ... had become stuck in a behaviouralist mire. A narrowing down of the objectives of behavioural studies was suggested as a way forward first by limiting studies, in the first instance, from consumer behaviour to shopping behaviour and secondly focussing empirical studies on particular consumer segments. These could be defined by life cycle, social class, race, mobility, residential location or by any of a number of established segmentation procedures" (p.7).

Figure 1.4: Recognition of the Various Levels and Areas to the Study of Consumer Behaviour

Spatial Resolution	Behaviour	Goods /Services	Time
Inter Regional	Total	Higher Order	Past
Inter Urban Intra Urban	Shopping	Middle Order	Present
Micro Behaviour	Specifics	Lower Order	Future

(Based on Shepherd, 1979)

The message is therefore clear; research into the spatial patterns of the shopping behaviour of rigorously defined consumer groups is required. An integrated approach to this subject, given the findings of the literature review, forms a natural basis for this research.

Garner in 1970 (p.182) wrote that the new behavioural approach to consumer spatial behaviour should emphasise, "social and psychological mechanisms which have explicit spatial correlates and/or spatial structural implications". It would appear that such advice was not generally accepted in many previous approaches. Potter (1982, p.167) is clear in his view that, "few studies have examined simultaneously, aspects of consumer behaviour and cognition". An integrated research design is essential. Other authors advocate a similar approach. Timmermans (1982), in a recent paper calling for research devoted to the nature of the decision making process and the perception of subsets of consumers, also maintained that such information must identify the personal and environmental factors constraining consumer spatial behaviour.

Given that variability is a prime feature of both the social and retail geography of cities, any approach extending this multitude of influences on behaviour must isolate the independent effect of specific factors as determinants of behaviour. Failure to follow such proceedings can result in behavioural variations which might be related to variations in socio-economic characteristics of the consumer, to variations in the shopping opportunity set or to a combination of both. Shoppers cannot be regarded as a uniform and undifferentiated mass. A small number of studies, however, have attempted to overcome this problem. Davies (1969) and Thomas (1974), in particular, and to a lesser extent, Potter (1982), adopted a research design whereby survey areas were designated which had access to similar shopping opportunities and, as far as was possible, only differed with respect to the factors being investigated. Thomas (1976) has extended the applicability of this view into wider studies of urban services in general (for an example of such work see Phillips, 1978, 1979).

In accepting such principles for a research design the question arises as to the most important aspects of segmentation that require control. The previous empirical investigation of factors influencing shopping behaviour indicate the importance of socio-economic variation between consumers to the development of an explanation of behaviour. Furthermore, the nature of the shopping opportunity set has been demonstrated as a highly important determinant of spatial behaviour. It would thus seem applicable to constrain behaviour in accordance with a combination of socio-economic and spatial correlates of behaviour. A survey design similar to that adopted by Thomas (1974) and Phillips (1978, 1979) does realistically overcome such consideration. To study the behaviour of social groups within city areas a physical juxtaposition of contrasting social consumer segments, with a comparable physical access to a standardised service (or shopping) environment, is a necessity. This current research proposes to study the intra-urban shopping behaviour of selected consumer groups. Further details of the design approach adopted follow in a subsequent chapter. The discussion now proceeds to detail the precise aims of the research.

Research Aims

Warnes and Daniels (1980, p.6) have expressed the view that "more effort be devoted to the description and comparison of intra-urban shopping travel distribution, for apriori it is believed that there are other repeated characteristics to be observed, some of which may be strikingly obvious once they are adequately described".

This statement, in conjunction with the other views presented and the deficiencies identified in the review of previous approaches, subscribe to the fundamental aim of this present research. Notably, that the study of specific consumer groups will lead to an improvement in the understanding of intra-urban consumer behaviour. The approach proposed will clarify many of the behavioural aspects of the existing theoretical and conceptual approaches. A rigid adherence to a refined research methodology is

seen as a method to accomplish this. The study therefore will be concerned with the disaggregate analysis of intra-urban behavioural patterns by a variety of independent influences. These variables will include the classic socio-economic correlates, the group influences from the marketing literature, the constraints upon consumption plus aspects of perception, imagery and the primary motivational and attitudinal determinants of behaviour. Initially, shopping behaviour will be constrained in terms of its variability. This will reflect the need to narrow down the objectives of consumer behaviour studies to 'shopping behaviour' (Dawson, 1980) and the realities of behaviour and the precise relationship between convenience, durable and specialist goods behaviour identified. Similarly the 'holistic' view to consumption behaviour will form an integral part of the study. Details of convenience shopping behaviour will be clarified further in an attempt towards a precise nomenclature of convenience goods shopping. Given such precision in behaviour, the resultant variability will be subjected to a total disaggregation with regard to profiles of that behaviour. For example spatial variability in behaviour, once identified with respect to the designated influence reflected in the survey design (socio-economic status and geographical opportunities), will be analysed with respect to the characteristics of that behaviour. Hypotheses, such as the influence of travel mode on behaviour, will be tested. Further disaggregation will then occur with respect to the influence of consumer groups on behaviour. The fundamental influences of geographical location and socio-economic status, once clarified, will subsequently be held in control and the partial influence of other groups analysed. Notable classifications in this respect include the influence of the range of social, demographic and economic indices detailed in Table 1.1. The precise nature of these classifications is referred to in the subsequent chapter on research design and methodology. These influences account for all the range identified by previous geographical and marketing approaches to the study of consumer behaviour. Furthermore, the findings of Letnek et al (1975) relating to a "dual assignment role" can be tested fully in an intra-urban context.

Table 1.1: INDENTIFICATION OF CONSUMER SUB GROUPS

Consumers can be grouped on the basis of:

1. Geographical location
2. Designated social status; group
3. Social class of the sample
4. Family life cycle
5. Age group of respondent
6. Household composition
7. Household type
8. Household size
9. Number of children resident in the household
10. Number of children resident in the household less than 5 years of age.
11. Work status of the respondent
12. Type of work undertaken by the respondent.
13. Number of cars owned
14. Driving ability of the respondent
15. An index of personal mobility.
16. Freezer ownership
17. Length of residence

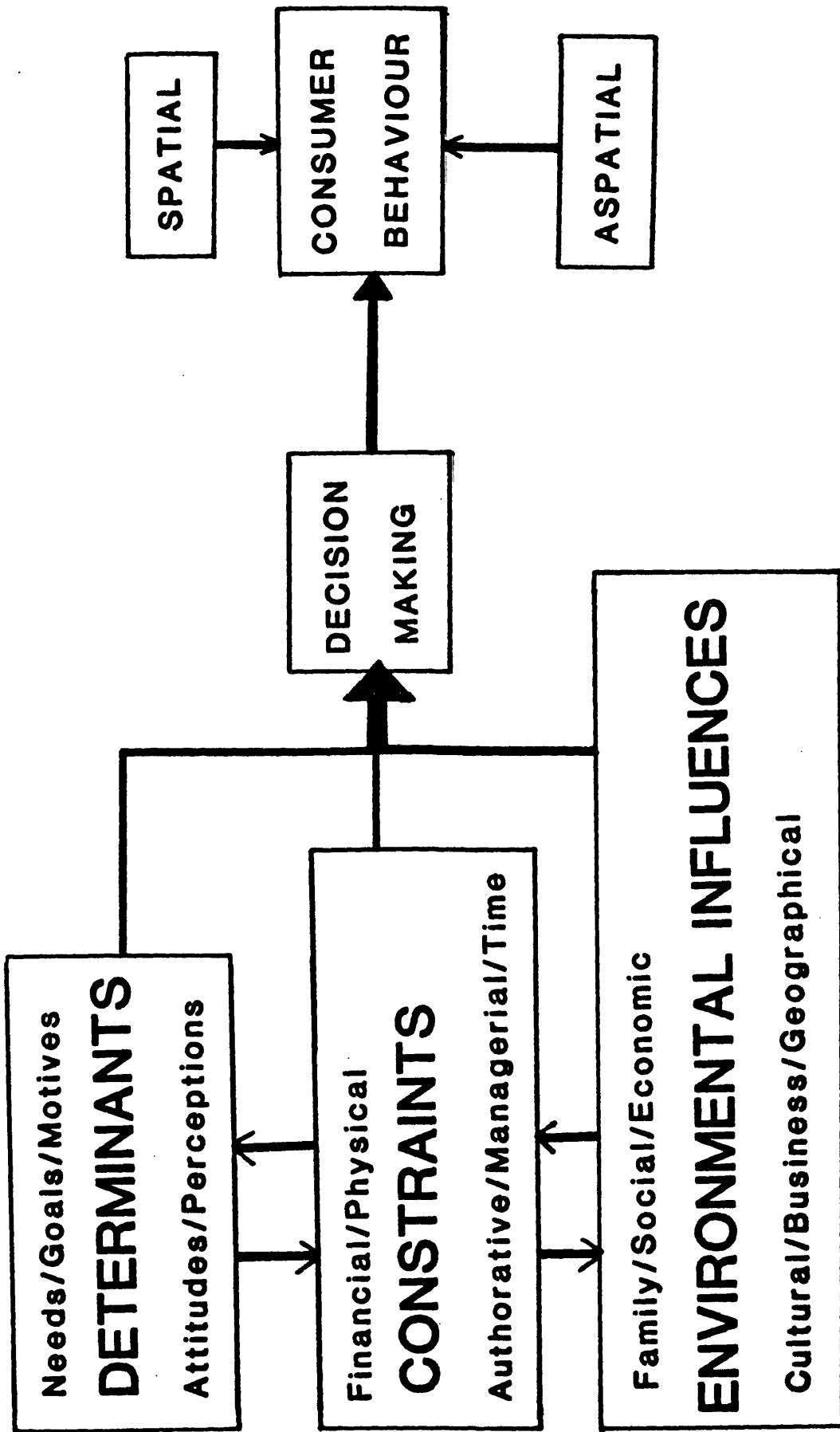
The psychological or cognitive dimension to consumer behaviour commands equal attention in such an integrated approach. Cognition is analysed through the application of an array of motivational and attitudinal research techniques. Consumer motives, viewed as possible determinants of behaviour are identified from a review of previous studies plus additional observations. Initially these are analysed in their own right as characteristics of behaviour. The research consequently aims to disaggregate these motivations in accordance with the previously defined consumer groups and the patterns of overt spatial behaviour identified. Ultimately this will result in spatial patterns of behaviour by geographical and social consumer groups being related to motivational determinants of that behaviour. The relationship between the cognitive and empirical approaches to consumer behaviour is therefore illustrated. Additionally, the research aims to corroborate the

previous cognitive findings by a more refined research technique. The aims are broadly similar albeit with the nature of shopper attitudes being closely defined. Information about a consumer's attitude will give some indication of likely shopping centre preference and details of the nature and origins of this preference. Again the research aims to relate shopper attitudes to overt spatial behaviour with respect to each geographical and social consumer sub-group identified. In respect of the aim towards the inclusion of 'holistic' consumption, the analysis of durable good shopping behaviour forms a separate component to the original constraints on convenience behaviour. In essence, the approach to durable goods behaviour is the same. A number of product groups will be analysed to identify a nomenclature of durable shopping trip types. The overt spatial behaviour will be disaggregated by consumer sub-group and subsequently in relationship to the patterns of convenience goods behaviour. This latter analysis will extend the knowledge on combined or multi-purpose shopping trip behaviour.

It is therefore clearly apparent that the analysis of specific consumer groups favours the integrated approach, currently sought, to the analysis of consumer spatial behaviour.

Figure 1.5 provides a simple framework for the research. A similar structure can be found in the marketing literature (Walters and Paul, 1970). The basic determinants of behaviour are identified as needs, goals, motives, attitudes, and hence perception. Given these individual determinants on behaviour, environmental influences modify these actions. Family, social, economic, business, cultural influences are all applicable in this respect. Counteracting these two spheres are constraints, such as financial, physical, authoritative, managerial and time. Constraints influence the decision making choice. Together these three areas interrelate and influence the overall decision making process which manifests in action or consumer shopping behaviour. This behaviour has both a geographical and an aspatial aspect. Ultimately satisfaction or dissatisfaction with behaviour will feed back through the system.

Figure 1.5: Framework for the Research



As a framework for research, Figure 1.5 encompasses the aim of the study; which is ultimately to improve the existing level of understanding of intra-urban patterns of consumer behaviour.

The research objectives, therefore, reflect a number of aspects identified in the review of the literature presented earlier in this first chapter. Before proceeding to the detailed analysis of the spatial behaviour for convenience goods shopping, the discussion will identify a series of general shopping behaviour characteristics, moving towards a nomenclature of convenience goods shopping and the resultant behaviour characteristics from this (chapter three).

The influence of an array of socio-economic, geographical, demographic and activity (or time) variables on the overt patterns of spatial behaviour for convenience goods will be analysed in chapter four. The information presented in chapter four forms the focus for all subsequent analysis and is fundamental to the research.

From these overt patterns a transition towards the relationship with cognitive aspects of behaviour will be explained. Chapter five considers the aspects of convenience shopping trip motivations or determinants. The characteristics of these motivations are identified prior to examining the relationship with overt spatial behaviour. Chapter six directly relates to the cognitive behavioural approach by analysing shopper attitudes. The characteristics of attitudes are initially sought, subsequent to the interrelationship with shopping behaviour.

The final empirical section, chapter seven, examines further durable goods shopping behaviour. A cognisance of the previous approach is presented, initially identifying a product nomenclature prior to examining overt spatial behaviour and the relationship between durable and convenience goods shopping behaviour. Chapter seven extends the knowledge on 'holistic' consumption with respect to combined or multi-purpose shopping.

A number of considerations arise from the proposal to investigate such topics. Differences in behaviour and, in particular, consumer motivations and attitudes, may be influenced by numerous factors operating at various scales, not all of which may be successfully controlled by the research design. It is very difficult, and arguably impossible, to escape completely from such problems in an empirical behavioural investigation. Therefore the underlying aim of the research must be to contribute to and increase our understanding of consumer behaviour for shopping goods. These problems are compounded by the constraints imposed on an individual research worker with respect to time, and limited resources (personal and financial). The research design was adopted in the belief that wider inferences could be developed from the analysis of overt spatial behaviour, its influences and cognitive determinants. The research design provides information which could contribute to the further development of a model or theory of consumer spatial behaviour. This aim to enhance the present levels of knowledge provides the fundamental objective of this research project.

CHAPTER 2: RESEARCH DESIGN AND METHODOLOGY

Introduction

Chapter two will focus on the research design and methodology followed in this thesis. A research design has been described as; "the arrangement of conditions for the collection and analysis of data in such a way that they are relevant to the research purpose, as free as possible from bias, and as economic as possible to obtain" (Jahoda, 1967, p.140 in Halloran). This aptly summarises the purpose and scope of chapter two, in that a research design simply helps to obtain clear answers to the problems identified. The design and methodology should be a link between the ideas, concepts, and hence, research aims and the results that follow. Consequently, there cannot be a single 'best' research design, rather, a variety of possible designs are appropriate for varying purposes and the solution must relate to the research objectives, check against bias and be workable with a total regard for economy of effort. Finally, the research design must take account for the methods of data collection, influence the selection and estimation procedures and affect the methods of analysis. As O'Murcheartaigh (1977, p.2) points out; "in an ideal situation, the choice of methods of analysis should be made as an intrinsic part of the survey design". Jahoda (op.cit, p.149) similarly emphasises this point; "from the very inception of a study the investigator must keep in mind this crowning step of the research process which leads directly into the formulation of results and conclusions. The preceding decisions on the research questions, the choice of design and the methods of data collection already determine to a large extent the nature of the analysis". These principles for a research project have been scrupulously followed; at all stages the specified aims of the research link with the methods adopted and decisions made.

Chapter two commences with a brief description of the geography of the study area. Both physical and social issues are outlined before a detailed description of the retail geography of the area is presented. This discussion is followed by an introduction to sample selection; the theoretical aspects of sampling are discussed, followed by a description of the use of urban sub-area analysis (area sampling), the choice of techniques adopted and the data sources applied. The results of the sample selected are described with reference to the analysis of both principal components (varimax solution) analysis and cluster analysis

techniques, as a means of classifying residential differentiation in the study area of Greater Swansea. The collection of data from the sample selected is accordingly identified, the use of a questionnaire based approach justified and the principles of questionnaire design emphasised. Finally, chapter two concludes with a detailed presentation of the survey characteristics, the survey response and the classification of consumers from the survey results.

The research design and methodology therefore embodies the three groups of problems facing social survey research. Notably:

- from whom to collect the information,
- what methods to use to collect the information,
- how to process, analyse and interpret the information.

None of these three areas are mutually exclusive. The first two are covered in detail in the forthcoming discussion on sample selection and data collection. The final statement is, as many authors point out, partly conditioned by the results of the first two whilst simultaneously influencing the form of these (O'Murcheartaigh, op.cit; Dixon and Leach, 1978; Kish, 1965). A rigorous research design is, therefore, of overwhelming importance to any research project. The advice of Oppenheim (1966, p.3) is *relevant* for the "survey literature abounds with portentous conclusions based on faulty inferences from insufficient evidence wrongly assembled and misguidedly collected".

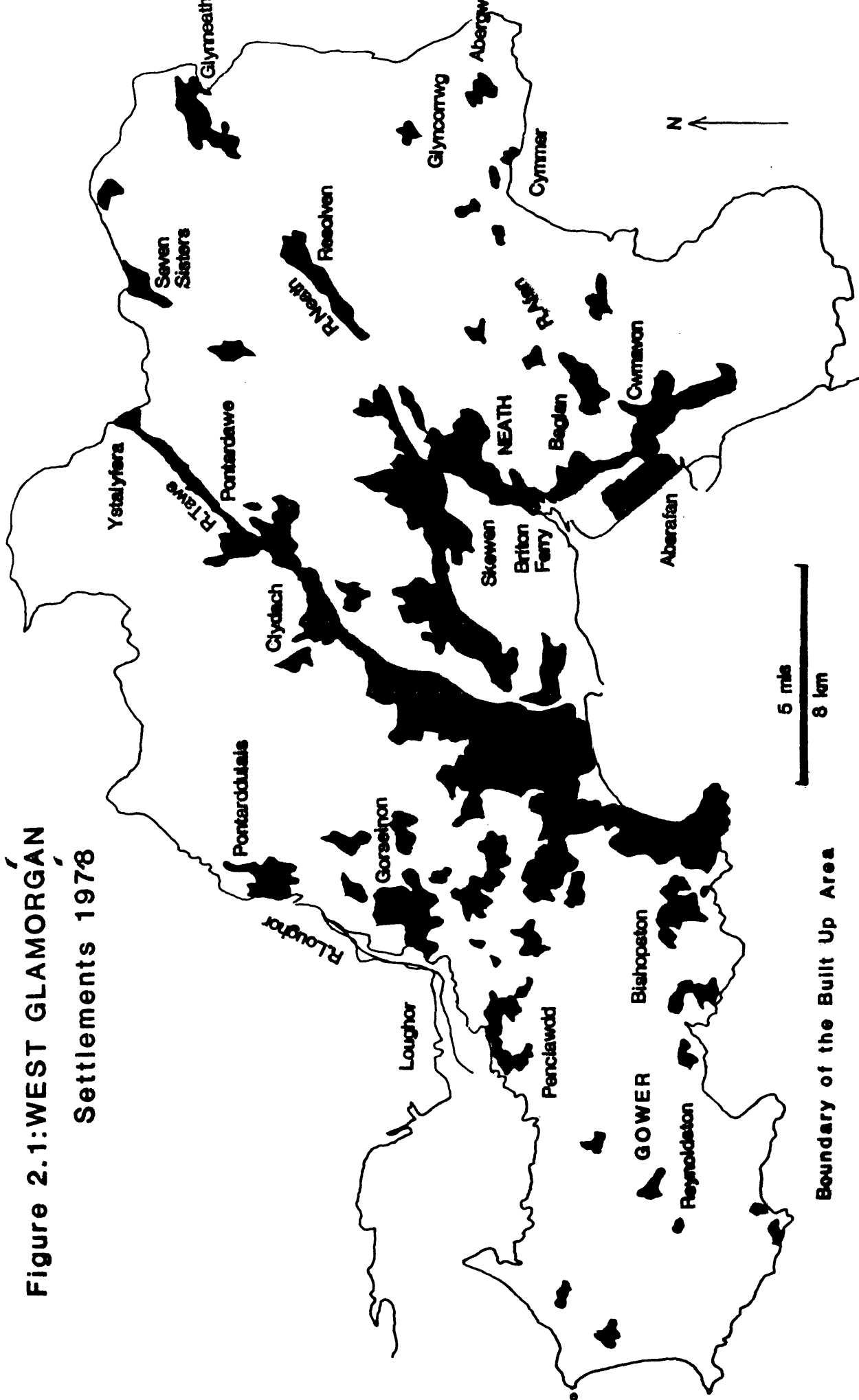
The process of research design and methodology as a whole, must be aimed at precision, logic, economy and efficiency.

1. The Study Area: A Social and Retail Geography of Greater Swansea and West Glamorgan.

The chosen geographical area for research into the intra-urban shopping patterns of selected consumer groups is the City region of Swansea.

Swansea (the population was over 167,000 in 1981) is the major city of the County of West Glamorgan. The County of West Glamorgan (201,779 acres in area) extends from Gower, Loughor and Pontarddlais in the west, to Kenfig and Abergwynfi in the east. Northwards from Swansea it includes most of the Neath, Dulais, Afan and Swansea Valleys and the surrounding uplands. Although a compact area, its geography divides the County into distinct communities which focus on Neath, Port Talbot and, of course, Swansea. (Figure 2.1) In terms of physical geography the Swansea Bay area geologically occupies the south western corner of the South Wales coalfield. Balchin (1971) provides a series of essays which comprehensively outline the physical characteristics of the area. The majority of this information does not demand repetition in this discussion. Local relief however has been an important influence in the human landscape of the area. A basic physical arrangement originally existed all around Swansea Bay. Lining the bay behind the high tide level was a line of sand dunes, which originally extended virtually unbroken, except at the river mouths from Oystermouth in the west, to Porthcawl in the south east. Behind this lay a low-lying, ill drained, marshy area underlain by alluvium or glacial clay. The lower slopes of the hills rise up from this ill-drained area, bordered in turn by the steep slopes of a former cliff line cut into the rocks by higher sea levels in the geological past. On top of the steep slopes the land was flat and plateau like or gently undulating. Each of these zones varies in width and importance in various places around Swansea Bay, but the arrangement is always the same. Other important physical features include a ridge, highest in the west, extending from Penclawdd in North Gower, through Townhill and Kilvey Hill to Briton Ferry in the east. Between this ridge and the steep edge of the coalfield plateau to the north is an area of generally lower land with gentler slopes. Consequently the human landscape has, throughout a significant

**Figure 2.1: WEST GLAMORGAN
Settlements 1978**



period of economic and industrial development since the seventeenth century, been influenced by this physical geography. This continuous development in the area is well referenced (an excellent account of the historical detail appears in "Swansea and its Region", Balchin, 1971; also Humphrys, 1972) and has produced the present day settlement geography of the region that will now be discussed in some detail. Swansea, as the principal service centre (Davies, 1972) for the County of West Glamorgan, provides the main commercial, industrial and administrative function of what is a loosely integrated region. The County is administratively divided (since 1974) into four constituent districts; Afan, Lliw Valley, Neath and Swansea. Swansea District, in the reorganisation of 1974, was extended to include the previously rural district of Gower. Figure 2.2 outlines the post and pre-1974 local authority districts of the county. The pre-1974 boundary of Swansea C.B. is important as subsequent analysis is based upon this defined area.

The population geography of the area has fluctuated over the period since 1951. Swansea has always been the dominant centre by population, and an examination of the recent trends between 1971 and 1981 (Table 2.1) shows a decline in both the population of the County and of the Swansea district over the period. This can be credited to a combination of reduced birth rate and outward migration from the County.

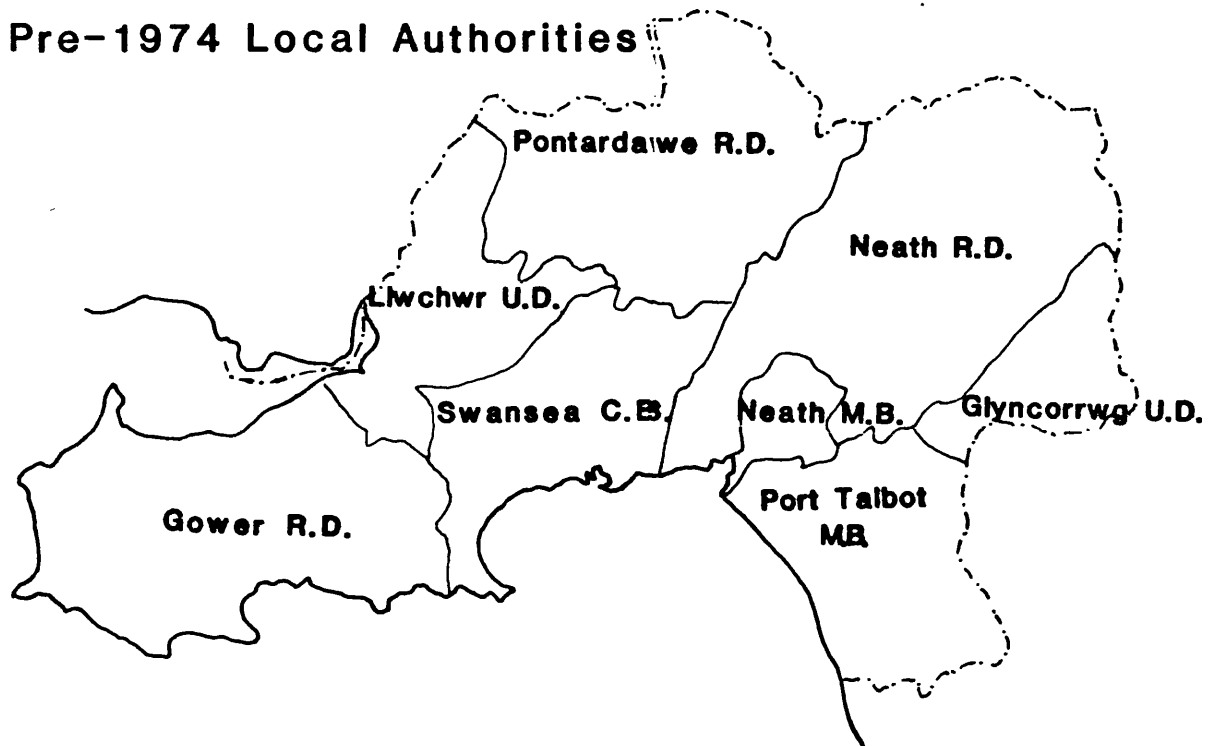
Table 2.1: Population 1971 - 1981 West Glamorgan

<u>Districts</u>	1971	1981	Percentage Change
Afan	59,368	54,404	- 8.4%
Lliw Valley	57,443	59,663	+ 3.9%
Neath	67,801	66,068	- 2.6%
<u>Swansea</u>	<u>185,989</u>	<u>183,484</u>	<u>- 1.3%</u>
W.Glamorgan	370,607	363,619	- 1.9%

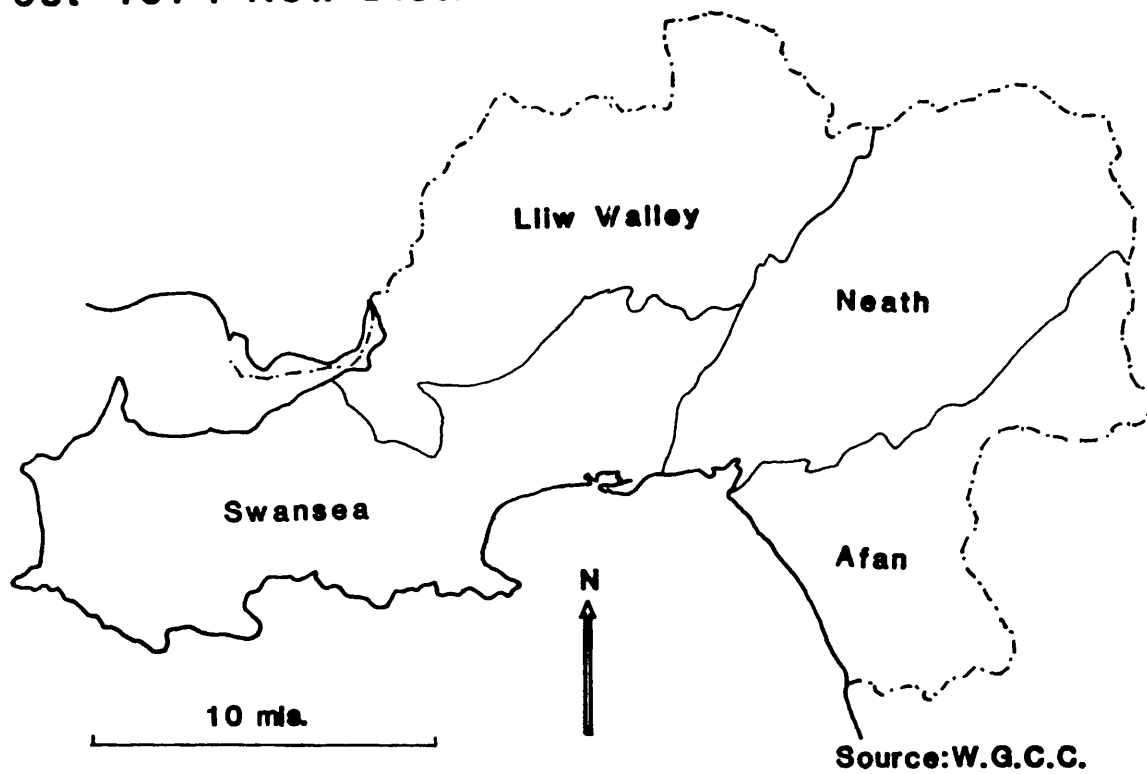
Source: W.G.C.C.

Figure 2.2: WEST GLAMORGAN

Pre-1974 Local Authorities



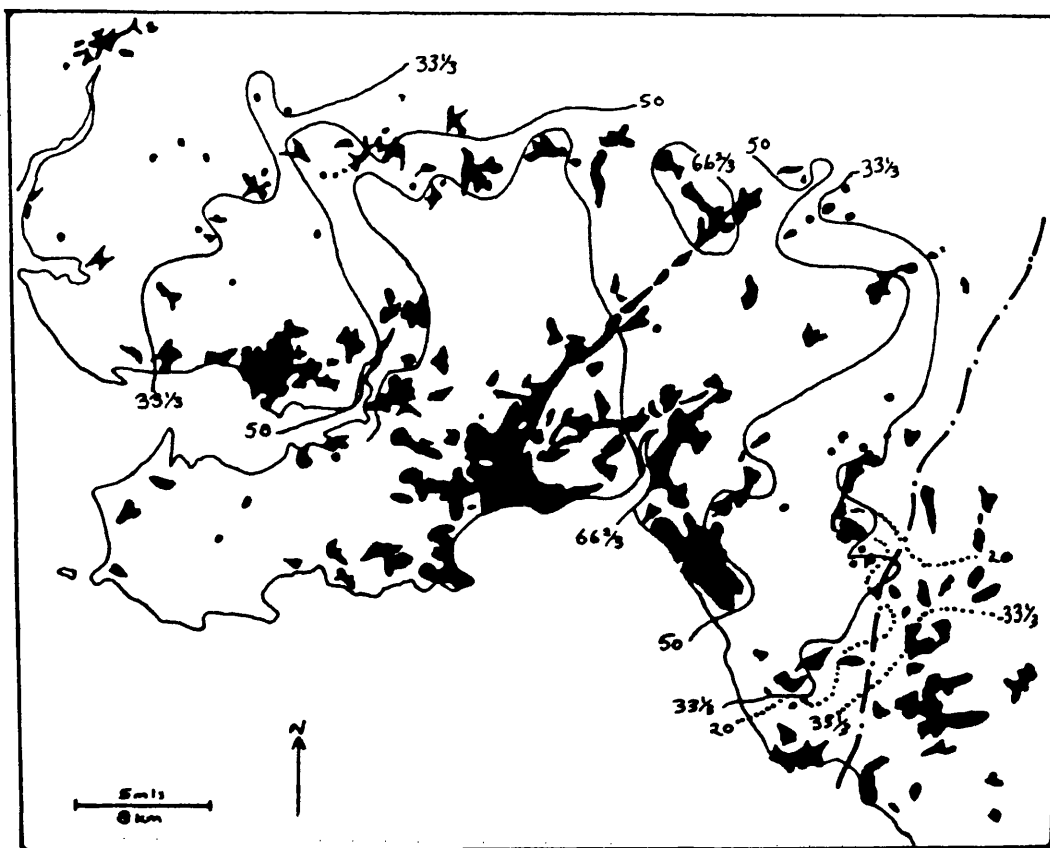
Post-1974 New Districts



Swansea is clearly the main area of population in the County. The function and potential catchment area of the city is much wider than these administrative boundaries and for many activities, including high order durable shopping, it is a main centre for South West Wales. Davies (1972) applied the concept of a city region (see Herbert and Thomas, 1982 for a discussion on the typology of urban regions) to define Swansea, based upon an investigation of high order shopper trips. Data was gathered from a survey of trips and a particularly significant map was produced, showing the percentage of interviewees who travelled to either Swansea or Cardiff to shop in the month prior to the survey date. Davies considered the 33% line as the breakpoint of demarcation between the hinterlands of Cardiff and Swansea. The resultant map is reproduced in Figure 2.3 and clearly illustrates the potential catchment area of the city.

The urban social geography of Swansea is relatively typical of many provincial cities in Britain. Figure 2.4 illustrates the built up area of Swansea in 1978. Internally the city can be divided into a relatively high status residential area in the south and west, mainly concentrated along the coast, but also extending onto the Gower Peninsula. Much of the remainder of Swansea is composed of lower status residential districts. Concentrations of small nineteenth century terraced houses are located east of the River Tawe, near to the docks, and are associated with the early industrial suburbs of the lower Swansea valley (see Bromley and Humphrys, 1979) notably; Hafod, Landore and Morriston. To the northwest of the town are located extensive areas of local authority houses built since 1919 (see Figure 2.5 and Davies, 1982). The remaining settlements of the County of West Glamorgan are near the coast and largely industrial in character, and range in size from the smaller centres of Pontarddulais and Gorseinon in the extreme west, to the larger centres of Neath and the major concentration of heavy industry at Aberafan. The latter two settlements have small enclaves of higher status private housing to the north east at Cimla and to the north west at Baglan. Settlement in the coalfield area consists largely of small nineteenth century terraced housing clustered near to coal mining and metallurgical industries and extending in characteristic linear patterns along the valley floors. These have been areas of population decline for some years. The development of these patterns of settlement, with a belt

**Figure 2.3: The City Region of Greater Swansea—
showing generalized consumer behaviour and
trade area boundary (reproduced from Davies, 1972)**



Isopleth showing percentage of sampled households who visited

— 20 Swansea at least once in previous month

..... 33 1/3 Cardiff at least once in previous month

**- · - · Theoretical trade area boundary between Cardiff
and Swansea**

Figure 2.4: Greater Swansea-Built Up Area

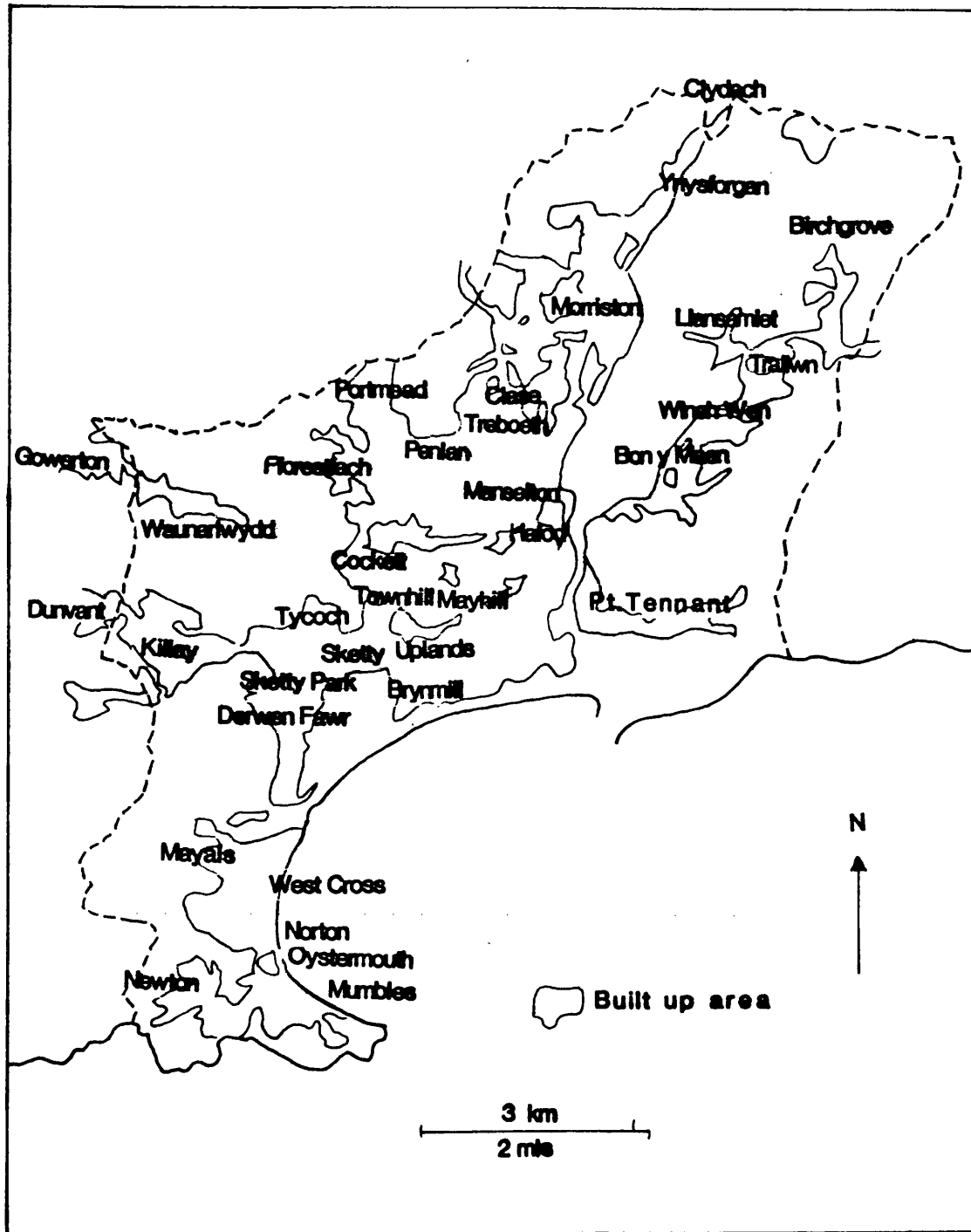
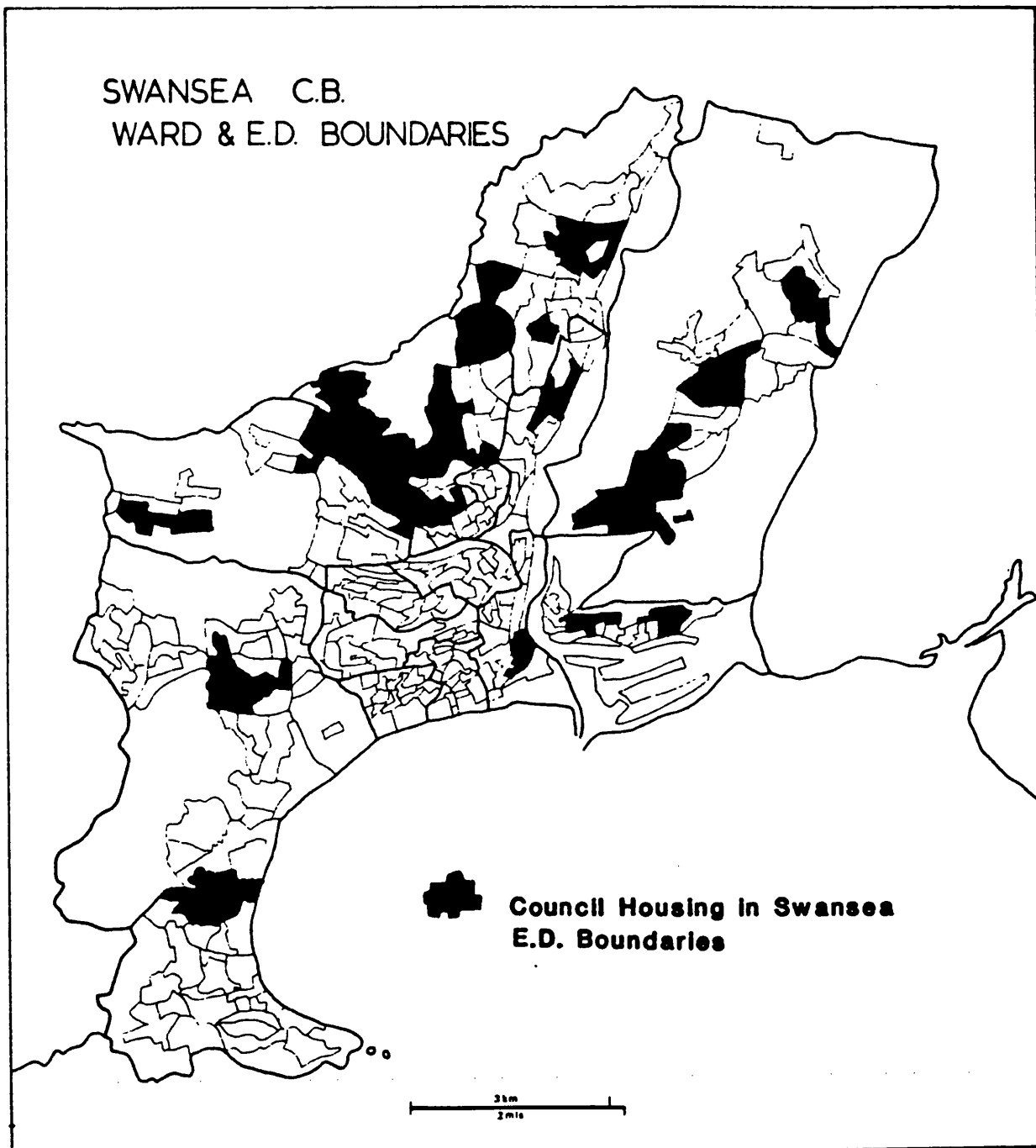


Figure 2.5: The Location of Council Estates in Greater Swansea



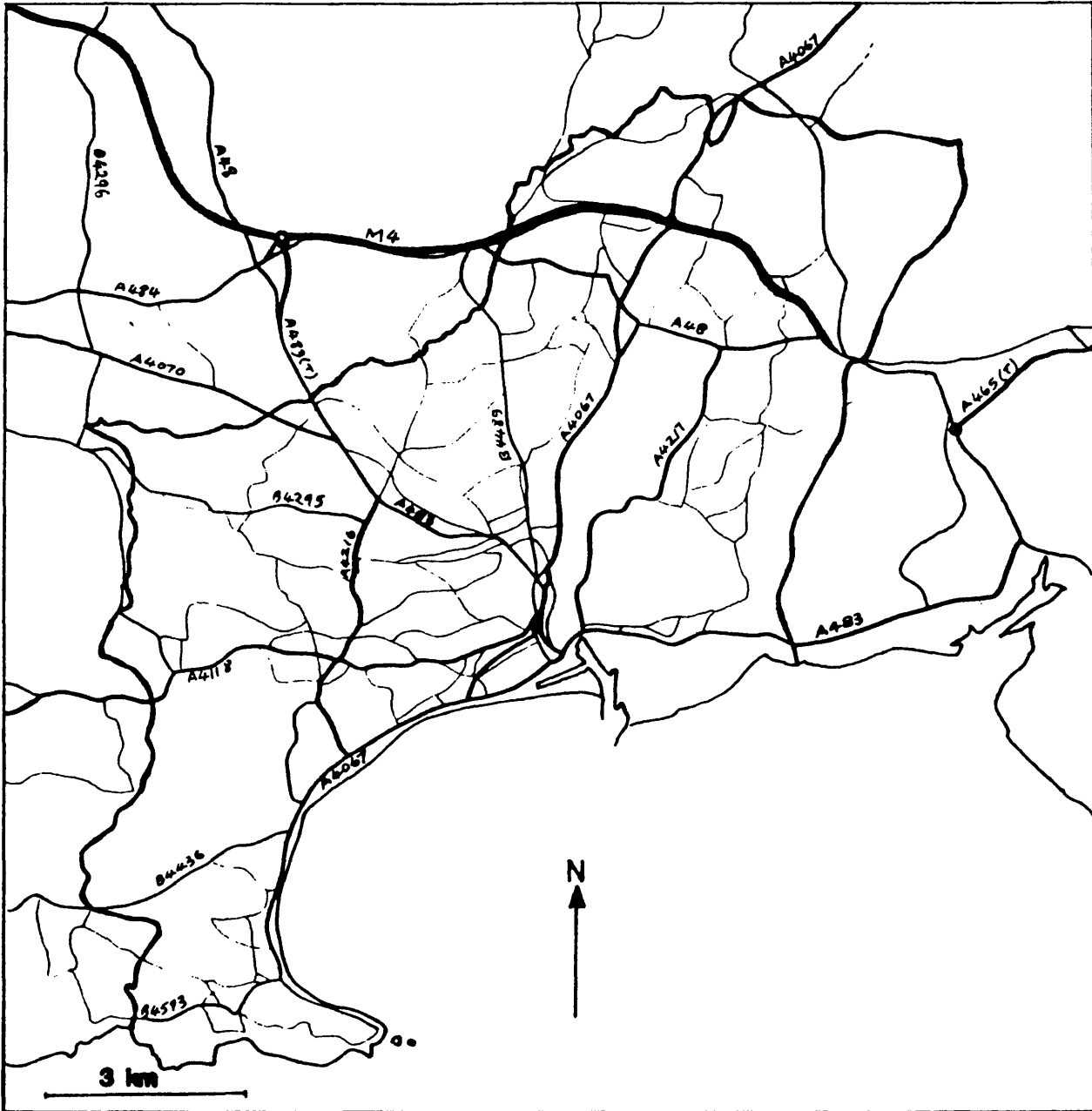
of coastal industry, has led one author to favour the term 'Swansea Bay City' (Humphrys, 1972) although Davies (1972) views the area as a conurbation and a city region (Figure 2.3). The forthcoming research concentrates on the main urban area (termed Greater Swansea) as can be delimited by the pre-1974 Local Authority boundary. This area broadly encompasses the continuous urban area and permits a convenient alignment with published statistics for the area.

The transportation geography of the County has similarly influenced the urban development. Following improvements in road communications during the 1950's the urban area of Greater Swansea became more physically and functionally integrated. The current pattern of road transport both within the County of West Glamorgan and the urban area of Greater Swansea is illustrated in Figures 2.6A and 2.6B. The main corridor of movement in the County is along the coastal plain. In addition, secondary corridors radiate along the main valleys and to the west. The national road network comprises the M4/A48 to Cardiff and London, the A48 to West Wales, and the A465 to the Midlands via the Neath Valley. Road transport in the Swansea urban area has been influenced by the hilly topography which has resulted in a rudimentary distribution network of roads, with only a few alternative routes and an inadequate connection between the radial roads. A single orbital route (Cockett Road) runs from the South West to the North Western part of Swansea. Consequently, traffic congestion, and the associated problems of parking and pedestrian and vehicle conflict, are characteristic of the area. Many shopping facilities are located alongside these routes or at nodal intersections of this network and consequently, patterns of consumer behaviour are influenced by the network of road communications in the area.

Swansea clearly can be viewed as an important sub regional centre for South West Wales. The urban social geography of the city is typical of many British provincial cities with recognisable high and low status residential areas.

The detailed retail geography of the area can be illustrated with reference to the wider approaches of the subject, in respect of retail location, retail organisation and public planning policy. The study of

Figure 2.6B: GREATER SWANSEA: Road Network



these aspects is covered in considerable detail by Dawson (1980) and this discussion does not so much attempt to review the literature, but to apply the inherent principles to the Swansea area.

South Wales, and in particular the County of West Glamorgan and the City area of Greater Swansea, exhibit examples of all the national changes in shopping facilities that have occurred since the 1960's in Britain. The significance of these changes is, as Thomas (1978) notes, clearly apparent if viewed in the context of the hierarchy of shopping centres in the region. A problem facing geographers and planners alike in discussing a retail hierarchy is the availability of recently collected and statistically refined data. Previously, such studies relied on a National Census of Distribution and other Services (1971 for example) but clearly in the absence of such a census an alternative source is required. Information on the size of retail centres in West Glamorgan is based upon a survey conducted by the County Planning Authority in 1976/77 (Shops and Office Floorspace Survey, West Glamorgan County Council, 1977/78). This survey provided detailed information and allowed an authoritative picture of the retail hierarchy of West Glamorgan to be developed. The shops and office floorspace survey recorded information on the location of all retail outlets in the County. All outlets were categorised by a land use coding that can be aggregated into convenience and durable shopping categories. Shops selling convenience type goods were defined in terms of the Standard Industrial Classification (S.I.C.) 1968, as Minimum List Headings 820/1 (grocers and provisions dealers); 820/2 (other food retailers); and 821/1 (confectioners, newsagents and tobacconists). Durable goods shops can be defined by S.I.C. Minimum List Headings 821/2 (clothing and footwear shops); 821/3 (household goods shops); 821/4 (other non-food retailers) and 821/5 (general stores). General stores include 'large mixed retail businesses' like department stores and variety stores, selling predominantly durable goods but often containing an element of convenience goods, plus superstore type developments. This latter group sell appreciable numbers of both convenience and durable goods.

The forthcoming discussion of the retail hierarchy in West Glamorgan relates to total sales areas in order to overcome any such ambiguity and restrictions in the confidentiality of the data utilised. To understand

fully the situation within the County area of West Glamorgan, and especially the urban area of Greater Swansea, the regional context of shopping centres in industrial South Wales needs to be broadly outlined. Thomas (1978) provides a detailed discussion of the hierarchy of shopping centres in industrial South Wales based largely upon the 1971 Census of Distribution. Figure 2.7 outlines the hierarchy as presented by Thomas, and is a useful indication of the situation in 1978. Four main categories of shopping centre can be identified. At the highest level, the regional centre of Cardiff includes over 1 million square feet of retail floorspace in 1971, whilst the centres of Swansea and Newport at 766,000 and 536,000 square feet net sales area respectively, achieve a sub regional importance in their respective areas. As Thomas points out, Cardiff achieves a much higher degree of specialisation than either Newport or Swansea. The third category identified by Thomas is that of small town centres. These have a restricted significance and are found in the smaller towns like Bridgend, Pontypridd, Merthyr Tydfil and Neath. Table 2.2 taken from Thomas (op.cit) details the respective retail floorspace statistics for these centres. Below this level are the major district centres. Much smaller than small town centres, Thomas (op.cit) credits the great majority of major district centres in South Wales with less than 100,000 square feet of net retail floorspace.

Complementing this broad hierarchy within South Wales are a number of superstore and hypermarket type developments. Thomas (op.cit, p.17) provides a general working definition of superstores and hypermarkets, and this will not be repeated in detail here. Suffice to state that superstores in South Wales are generally free standing, single storey buildings of between 25 and 50,000 square feet gross area, whilst hypermarkets are greater than 50,000 square feet gross area. Figure 2.8 taken from Thomas (op.cit, p.21) details both the location of trading superstores and hypermarkets with those that were the subject of the planning authorities in 1978.

The consideration of this current research is intra-urban behaviour. The structure of retailing in both the County of West Glamorgan and furthermore the city area of Greater Swansea require a detailed examination to provide the basis for the analysis of intra-urban shopping behaviour. Planning policies in the County are not extensively

Figure 2.7: The Hierarchy of Shopping Centres in South Wales 1978
 (Reproduced from Thomas, 1978)

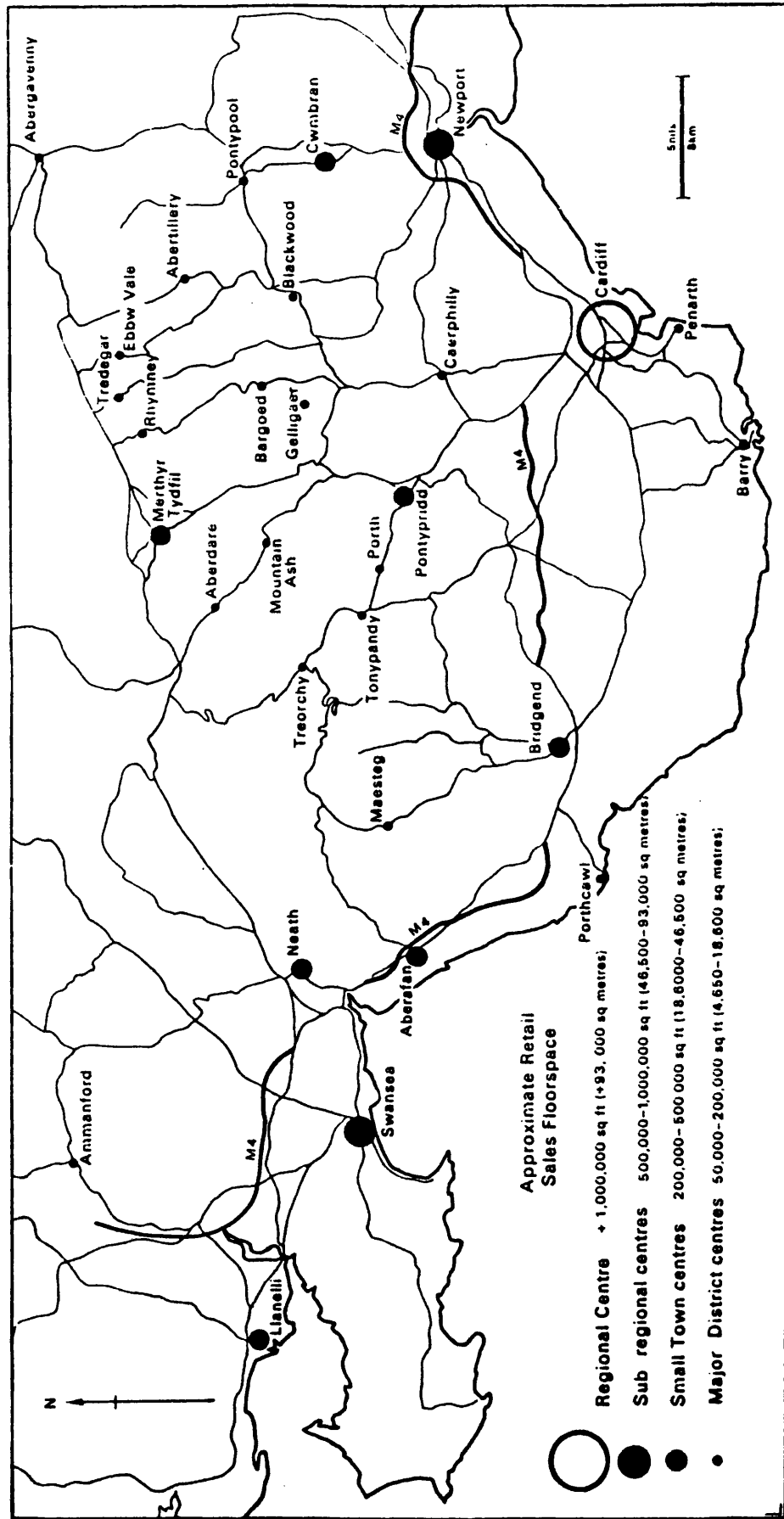


Table 2.2: The Hierarchy of Shopping Centres in Industrial South Wales

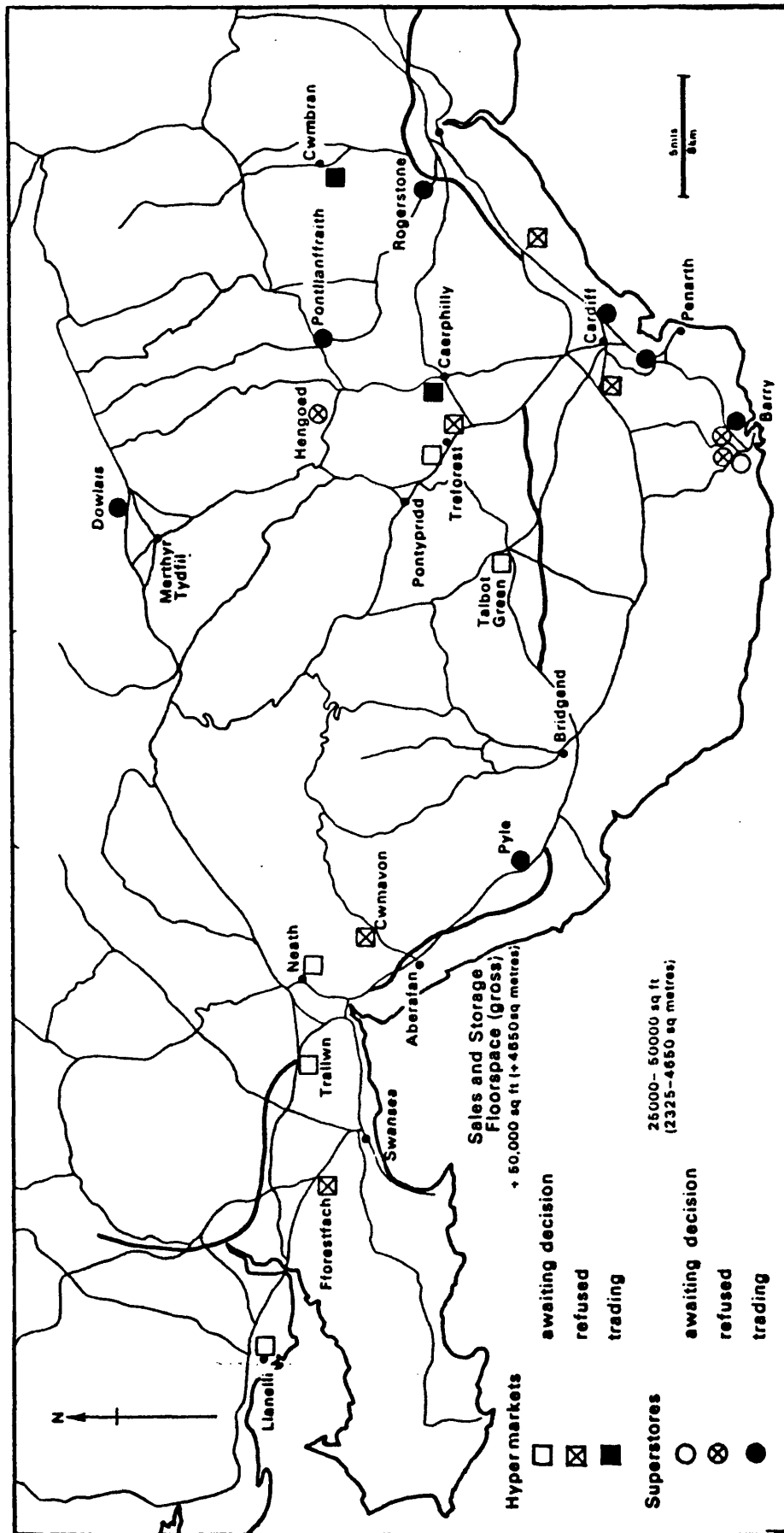
Regional, Sub-regional and Small Town Centres 1978.

	Population 1971	Retail Floorspace (Sales/net. 1971) ('000 sq. ft.)	Turnover 1971 £('000)
Cardiff	278,221	1,038	45.511
Swansea	172,566	766	35.057
Newport	112,048	536	24.911
Cwmbran	31,614		?
	(50,000 Est. 1975)	330 (Est. 1975)	
Llanelli	26,320	252	11.314
Pontypridd	34,465	240	8.925
Neath	28,568	223	9.683
Merthyr Tydfil	55,215	177	6.572
Aberafan	50,658	169	6.259
(Port Talbot)			
Bridgend	14,531	Comparable status to Pontypridd (Raybould, 1973)	

Source: Census of Distribution and Other Services,
Wales Area Tables 1971.

(Reproduced from Thomas, 1978)

Figure 2.8: South Wales: Superstores and Hypermarkets 1978
(Reproduced from Thomas, 1978)



discussed in this essay. The relevant planning documents (W.G.C.C., 1977) and the work previously referred to, covers such considerations. The discussion has centred upon a straightforward approach to the concept of a retail hierarchy. Both this, and the more detailed forthcoming discussion, primarily relate to the context of a complete urban retail structure drawing on the work of Berry (1967) and Garner (1966). The scheme presented by these authors and the notion of a hierarchy was adapted and applied by Davies (1972) into a structural model of retailing facilities in large urban areas. Hence, the Central Business District became a microcosm of the whole city. Nucleated, ribbon and special area characteristics were identified, with the nucleations being structured in belts of diminishing threshold value, giving an outward continuum of shop types from the city centre to peripheral neighbourhood shopping centres. Kivell and Shaw (1978), also reproduced in Dawson (1980), provide an extensive discussion of such considerations and a detailed examination of these concepts need not be provided within this chapter. Nevertheless, the basic conceptual framework outlined by such authors are followed in the discussion of retailing in the area of Greater Swansea.

Retail facilities within the County vary considerably in accordance with the distribution of population. Shopping centres of any significant dimensions are highly dispersed throughout much of the County, and only within the area of Greater Swansea are the detailed aspects of a retail hierarchy illustrated. The forthcoming discussion seeks to examine and describe the patterns of retail facilities within the area. Figure 2.9 provides an illustration of the major shopping centres in West Glamorgan in 1978 using information from the Shops and Office Floorspace Survey of 1977/78 previously detailed. Six components to the shopping hierarchy of the County are provided in Figure 2.9. These are differentiated by the total size of floorspace sales area for the centres identified (Table 2.3). Only the defined grade IV type centres include reference to the configuration of shops within each centre. Grade IV centres are defined as either nucleations, ribbons, dispersed centres or free standing superstore developments. Grade V centres are the smallest retail centres identified. These are defined in terms of floorspace statistics of less than 4,000 square feet total sales area. 42 centres are found in this group and can be termed Local Shopping Centres. The majority of these centres are found within the defined area of Swansea C.B.

**Figure 2.9: Major Shopping Centres
in West Glamorgan 1978**

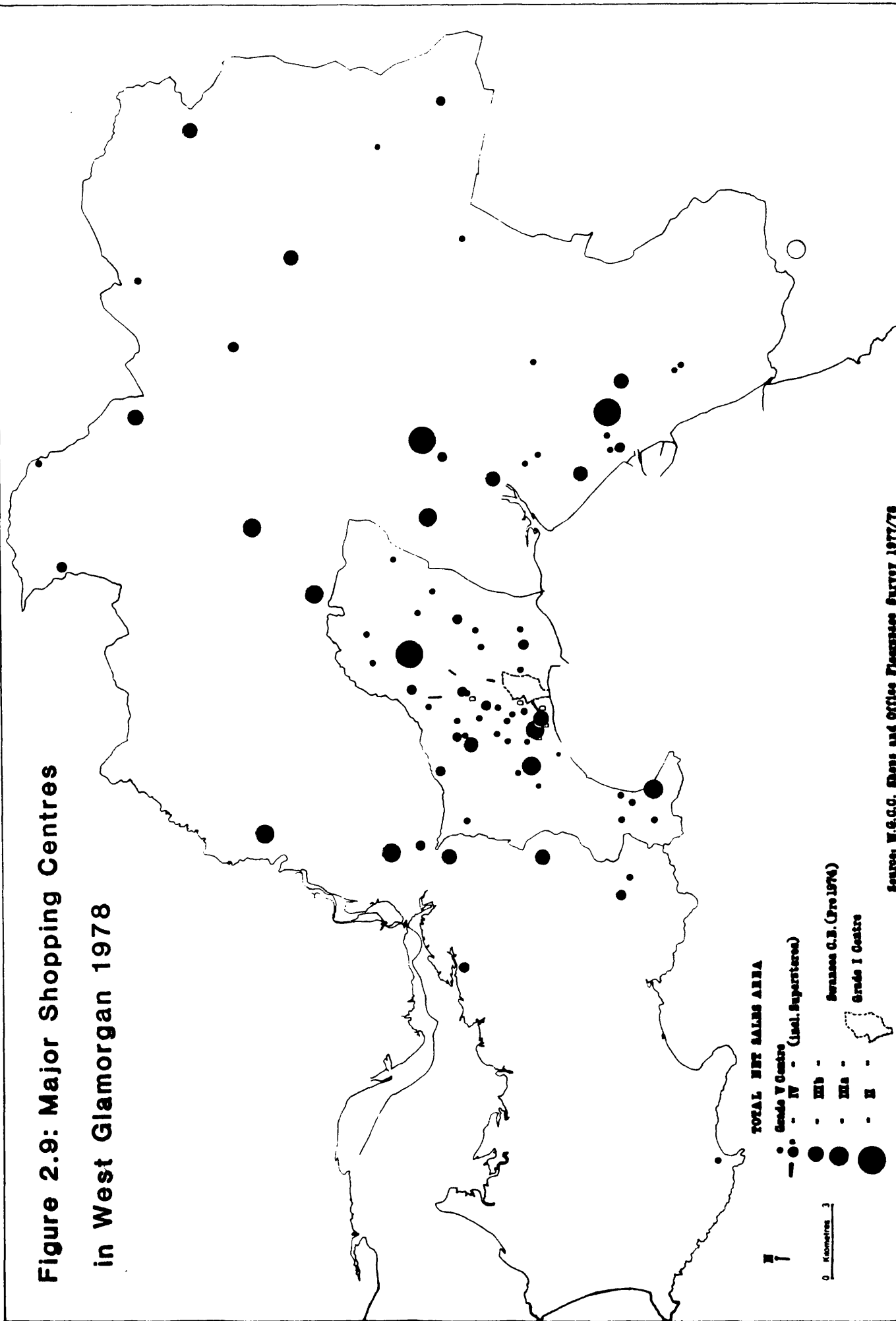


Table 2.3: Shopping Centres in West Glamorgan 1978

District	Shopping Centre	Floorspace (Ft ²) Total Sales Area	Centre Typology
Swansea	Newton	1500	V
	West Cross A	1530	V
	West Cross B	790	V
	West Cross C	2420	V
	Oystermouth	32420	III A
	Sketty Park	2835	V
	Killay	11830	III B
	Sketty	24000	III A
	Tycoch	3700	V
	Uplands	27520	III A
	Swansea U.C.	1750	V
	Rhondda St.	5130	IV
	Bernard St.	4940	IV
	Hanover St.	2760	V
	Glanmor Rd.	1185	V
	King Edward Rd.	6160	IV (D)
	St. Helens Rd.	4170	IV (R)
	Western St.	6690	IV (D)
	Hafod	5360	IV
	Cwmbwrla	7000	IV
	Mayhill Rd. 1	2620	V
	Townhill Rd.	1270	V
	St. Thomas	2470	V
	Cwmrhydyceirw	2480	V
	Ynysforgan	1100	V
	Pen-y-Graig Rd.	3900	V
	Graiglwyd Centre	1080	V
	Gors Avenue	1895	V
	Birchgrove	1160	V
	Llansamlet	340	V
	Waunarlwydd	1580	V
	Bryn-y-Mor Rd.	13675	III B
	Gendros	12565	III B
	Penlan	1920	V
	Rheidol Avenue	7105	IV
	Llangyfelach Rd.	7085	IV (R)
	Portmead	4020	IV
	Brynhyfryd Sq.	4250	IV
	Eaton Rd.	3480	V
	Morrison	96970	II
	Pt. Tennant	940	V
	Dan-y-Graig	8760	IV
	Bonymaen	1320	V
	Winch Wen	6405	IV
	Trallwn	2970	V
	Pentrechwyth	955	V
	Plasmarl	5510	IV
	Swansea City Centre	1,418,995	I
	Conway Rd.	3955	V

District	Shopping Centre	Floorspace (Ft ²) Total Sales Area	Centre Typology
Swansea	Ravenhill Rd.	5610	IV
	Manselton	7875	IV (D)
	Middle Rd. Upper	1585	V
	Middle Rd. Lower	2725	V
	Tesco at Fforestfach	8800	IV (S)
	Bishopston	2490	V
	Kittle	4025	IV
	Penclawdd	4820	IV
	Port Eynon	2380	V
Julians at Garngoch	(Estimated 6500)	IV (S)	
Afan	Blaengwynfi	5650	IV
	Cwmavon	1230	V
	Fairwood Dr.	3270	V
	Glyncorrwg	2510	V
	Tollgate Rd.	2325	V
	Margam Rd.	1680	V
	Mayberry Rd.	775	V
	Pt. Talbot Town Centre	164980	II
	Sandfields	10750	III B
	Sandown Rd.	3295	V
	Taibach	16100	III B
	Victoria Rd.	6210	IV
Ysguthan Rd/Water St.	1800	V	
Lliw	Clydach	21840	III A
	Cwmllynfell	3810	V
	Gorseinon	50,525	III A
	Gowerton	10,250	III B
	Gwaun Caer Gurwen	5900	IV
	Pontardawe	34660	III A
	Pontarddulais	24520	III A
	Ystalyfera	13585	III B
Neath	Briton Ferry	17720	III B
	Crynant	4200	IV
	Dyffryn Cellwen	2560	V
	Glynneath	15530	III B
	Melincryddan	7150	IV
	Neath Town Centre	195,700	II
	Resolven	10,400	III B
	Seven Sisters	2920	V
Skewen	29010	III A	

Table 2.3 details the breakdown of all the shopping centres in West Glamorgan by local authority district. A total of 89 different locations are detailed and shown on Figure 2.9.

- (D) Dispersed Centre
- (S) Superstore type development
- (R) Ribbon development

Grade IV centres include a mixture of retail configurations that are between 4,000 and 10,000 square feet total sales area. They have been labelled Neighbourhood Centres and include a number of free standing developments of a 'superstore' nature. 25 centres of this type are found in West Glamorgan. Grade III centres can be differentiated into two types. Termed District Centres, IIIB centres are between 10,000 and 20,000 square feet total sales area and IIIA centres, 20-90,000 square feet total sales area. Ten examples of type IIIB district centres and eight of type IIIA district centres are found in West Glamorgan. Grade II centres are termed Small Town Centres and the three examples found in West Glamorgan range from 96,000 square feet total sales to 195,000 square feet. Finally, the Swansea city centre or C.B.D. dominates the hierarchy and accounts for over 1.4 million square feet of floorspace.

The discussion will initially consider the retail hierarchy of the County area before proceeding to detail the intra-urban hierarchy of Greater Swansea. In 1971, retail turnover for the County of West Glamorgan was recorded at £102.2 million. Approximately 59% of this figure (£60.3 million) was accounted for by Swansea shopping centres, with the city centre area (Grade I centre) accounting for £35.1 million. Clearly, retail centres outside Greater Swansea are of secondary status to the city centre, and the Grade II or small town shopping centres of Neath and Aberafan/Port Talbot provide a strong convenience and secondary durable function for their local populations. These centres initially developed as a result of the local economic history of the area, whereby largely independent industrial centres served an immediate hinterland with goods and services. Improvements in communications throughout the area since the mid 1950's have integrated these towns within Greater Swansea. As a result, it would appear that shopping trips, in particular for higher order goods, occur across the County (Thomas, 1974). A similar small town centre, not detailed, is Llanelli, approximately 10 miles west of Swansea, outside of the County boundary. District centres in West Glamorgan, outside Greater Swansea, provide a similar convenience shopping function for their local populations and are found along the valley floors (for example Clydach, Pontardawe in the Swansea Valley; Pontarddulais in the Loughor valley to the west of the County and Glynneath and Resolven in the Neath Valley). Small district centres are

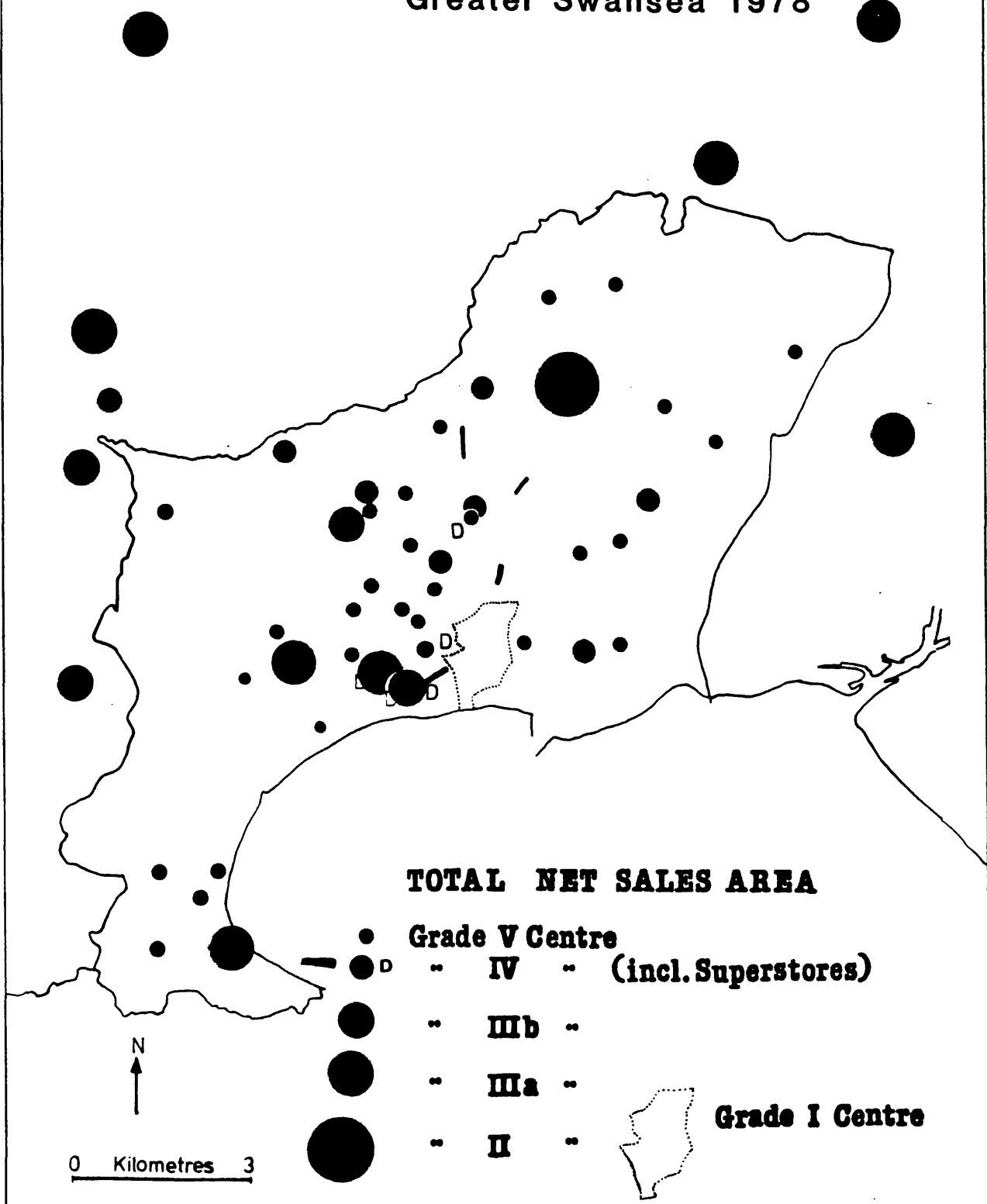
also found in the populated areas along the coastal belt towards Neath and Aberafan (Skewen, Sandfields and Taibach). Neighbourhood and local shopping centres support this hierarchy throughout the County and are generally found in the smaller communities. These centres can range from a few small shops in an isolated community to a shopping centre of 7,000 square feet selling area.

The intra-urban shopping hierarchy of Greater Swansea is illustrated in Figures 2.10A and 2.10B. The city centre dominates the area. The second largest centre, and classified here as the equivalent of a small town centre, is Morriston which is located in the north of the city. Morriston is far larger than any other suburban shopping centre and provides a variety of outlets selling convenience, durable and specialist products. The development of Morriston has again resulted from the economic history of the area, originating as an industrial centre approximately four or five miles inland from the coast, with a relatively distinct and separate community.

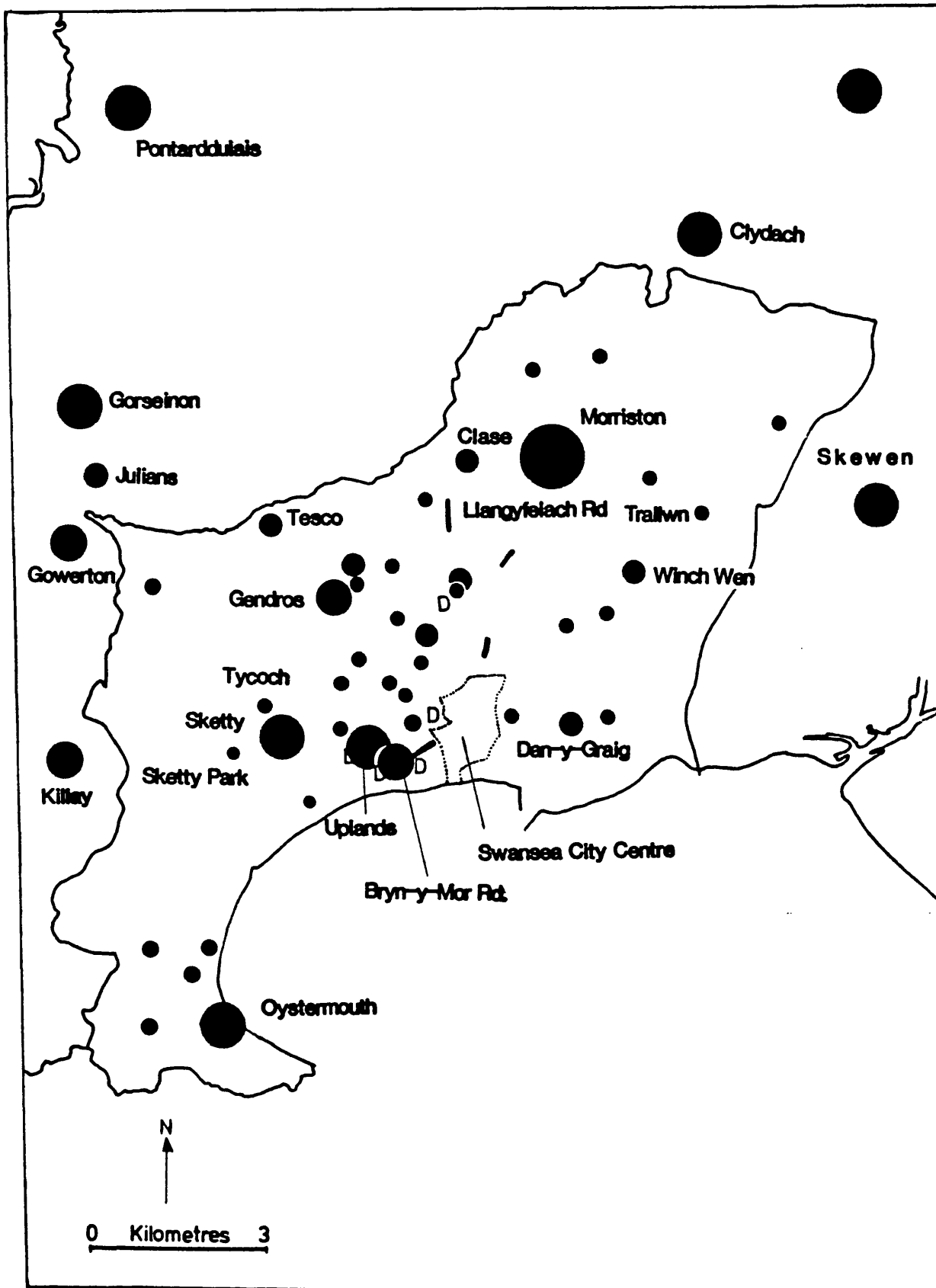
Table 2.3 details six district centres of between 10 - 90,000 square feet total selling area within Greater Swansea. Serving a strong complimentary function to Swansea city centre, these district centres offer a strong convenience but also a secondary durable goods shopping function. Three of the centres are larger than the others. Uplands and Sketty are to the west of the city, whilst Oystermouth in the south west also provides a certain minor specialist shopping function as a centre for tourism in the area. The smaller district centres are at Killay and Gendros/Fforestfach in the west and Bryn-y-Mor Road to the south west of the city centre.

Below this level, centres, classified as neighbourhood facilities, function predominantly for short distance convenience goods shopping and isolated durable purchases. A variety of retail facilities of this type are found in Greater Swansea, ranging from nucleated facilities (for example Dan-y-Graig in east Swansea), a number of dispersed outlets within 50-100 metres of each other (for example Manselton to the north of the city centre), ribbon facilities along major arterials (for example St Helens Road, west of the city centre) and small free standing superstore developments. Two examples of the latter are found to the north west of

**Figure 2.10A: Major Shopping Centres in
Greater Swansea 1978**



**Figure 2.10B: Names of the Major Shopping Centres
in Greater Swansea 1978**



Swansea; Tesco at Fforestfach and Julians at Garngoch (a retail warehouse). These examples are named on Figure 2.10B.

Local shopping facilities provide the lowest level in the retail hierarchy, and primarily function for secondary or complementary convenience shopping. A variety of centres are found throughout the built-up area of Swansea. Also illustrated on Figures 2.10A and 2.10B are a number of retail centres outside the defined area that could be considered possible outlets for intra-urban consumer behaviour. District centres are found in the communities of Gowerton, Gorseinon, Pontardawe, Clydach, Skewen and Pontarddulais.

The retail hierarchy of the study area is quite varied. Six components of the hierarchy have been presented. A high density of retail establishments in the inner city zone, especially along main roads from the city centre is noticeable. Suburban shopping centres generally occur at the intersections of road networks, whilst smaller centres are scattered in the intervening areas. A number of centralised shopping facilities are illustrated in Plates 1 to 6.

The retail hierarchy, therefore, provides a basis for the research objectives as detailed. Intra-urban patterns of shopping behaviour can be disaggregated by retail opportunity on the basis of the hierarchy of facilities presented.

MAJOR SHOPPING CENTRES IN GREATER SWANSEA

PLATE 1 : SWANSEA CITY CENTRE



PLATE 2 : SWANSEA CITY CENTRE



PLATE 3: MORRISTON SMALL TOWN CENTRE



PLATE 4: UPLANDS DISTRICT CENTRE



PLATE 5: SKETTY CROSS DISTRICT CENTRE



PLATE 6: KILLAY DISTRICT CENTRE



2. Sample Selection

2.1 The Theory of Sample Selection

The theory of sampling provides the social researcher with an extensive array of rules and guidelines which enhances the understanding of this integral part of research design. Many authors have written on this subject (Kish, 1965; Moser and Kalton, 1971; Dixon and Leach, 1978; O'Muirchaetaigh and Payne, 1977) and the variety of different methods, expertly covered within these texts, will not be extensively discussed here. Instead, this section will provide an overview of the theory of sample selection; it will cover the relevant rules for a sample and develop a sample frame for the research project.

When properly designed, a sample survey can be a most efficient research tool. There is no one 'best' sample, only a series of principles to follow. As Kish (1965, p.25) profoundly states; "there is no unique definition that exists for a good, desirable sample". A sample design has two aspects; the selection procedure, where elements are chosen for inclusion in the sample, and the estimation process, which is the method or operation used to compute sample statistics. Commonly accepted as a respectable method of social inquiry, the purpose of sampling is simply to select and observe, and from this basis make wider inferences. The advantages of sampling are considerable in terms of time, cost and potential for accuracy and control. To obtain these advantages, however, the sampling procedure chosen must be optimally suited to the research aims. As Kish (1965) emphasises the survey objectives should determine the sample design. The costs of using a sampling method are a combination of the financial cost of collecting the measurements and developing the sampling frame and the time spent in the field, and beforehand in designing and obtaining the frame and drawing the sample. It is these costs and time limits, plus the constraints at the analysis stage, which inevitably determine the final characteristics of sample selection; sample size. Social research needs to select a method in which subjective choice is removed and hence ensure that each sample, each possible combination of events, has exactly the same chance of selection. Sampling theory enables this 'chance' to be estimated and

the likelihood of the sample being a good representation of the wider population (providing certain rules have been adhered to) to be measured.

There are innumerable classificatory types of sample.

O'Muirchaetaigh and Payne (op.cit) identify two: — — — model sampling as used by Kish (defined as the selection procedures which are based on broad assumptions, usually not explicit, about the population) and probability sampling (selected by the use of a probability mechanism, commonly referred to as random samples). They propose a taxonomy of sample selection methods, the fundamental difference between their classifications of sample types relating to the probability and non-probability of sample selection. Model sampling, due to the nature of the selection procedures involved, does not generally define the broader population to which inferences can be properly made, unless the untestable, implicit assumptions can be justified. A probability sample is selected by the use of a probability mechanism. The term random sample is often used synonymously here and as Herbert and Evans (1974) point out; "for most surveys randomness is essential in the selection of a sample". A random sample selection can be defined as "one which gives each of the units in the population to be covered a calculable (and non zero) probability of being selected" (Moser and Kalton, 1971, p.80). These techniques therefore are designed to be easily related to a wide range of statistical tests. The components of probability sampling may be combined with one another, and many sample designs will incorporate more than one of these components.

A good sample design needs to balance a number of criteria. Kish (op.cit) states 4 main criteria; 'goal orientation' (related to the research aims), 'measurability' (allowing estimates to be derived), 'practicality' (simplicity, clarity, completion) and finally 'economy' (the fulfillment of objectives with the minimum of costs, effort and efficiency in non statistical terms). Moser and Kalton (op.cit, p.79) summarise this by stating that "the major principle underlying all sample design is the desire to avoid bias in the selection process and to achieve the maximum precision for a given outlay of resources". In view of this statement, the principle of randomness in the selection process cannot be over emphasised; it forms an essential part of the protection

against sample bias. The manifestation of sample design is inevitably through a sampling frame. The first stage in sample selection is to establish a frame which contains all the elements in the target population. Given restrictions on time or resources, a readily obtainable sample frame is sometimes used. This enables a researcher to rapidly apply sampling procedures (for a discussion on the varying availability of sample frames see Moser and Kalton, *op.cit*; Dixon and Leach, *op.cit*). The format of the sampling frame will, to a large extent, determine the possible sampling methods. Inevitably, a suitable frame will not always be readily available and the social researcher will need to construct one.

In this current study of consumer behaviour, the importance of the research objectives required the development of a sample frame. The primary significance of variations, in both the social characteristics of the urban population of Swansea and the spatial pattern of the available shopping opportunities available to residents throughout the city, necessitated a specific sample frame. Existing sample frames used in a variety of other social scientific analyses do not explicitly account for the detailed peculiarities of the geographical considerations of this study. The research aim, to disaggregate behaviour for the influence of social and geographical differentiation, subsumes a degree of control in these variables. Consequently, the study required a sample frame whereby both the retail opportunities and the social characteristics of the population are controlled. This demanded the use of a sample frame whereby contrasting social status groups, which are geographically juxtaposed, were identified, so that for any single sample area a stable shopping environment is maintained. This research frame would allow, as far as was possible, only one significant factor to vary and, therefore, facilitate the explanation of the determinants of shopping behaviour.

A similar approach has previously been applied in studies of consumer behaviour by Davies (1969), Thomas (1974) and Potter (1982). The research aims clearly condition the sampling frame, and assume that the criteria for subdividing the population before selecting a final sample should be geographically based. The use of urban sub-area sampling is the obvious method to achieve these objectives. Similarly, the sample

design can be subjected to caution, rigour of method and thoroughness. On account of this integral element of control, the research overcomes any doubts regarding the validity of the data base collected.

2.2 Urban Sub-Area Analysis and Sample Selection

The design of a method whereby suitable sample survey areas could be selected is of paramount importance to this study. The time spent at this design stage would prove to be invaluable in the quality of data and resultant analysis. Consequently, a series of decisions were made which resulted in the application of a 'multi-staged' sampling approach to the selection of sub-areas for detailed survey. Inevitably the method described draws upon stratification procedures before selecting a purely random sample. As a procedural step, stratification does not imply any departure from the underlying principle of randomness. All the method seeks to accomplish is the simple division of a population into a series of operational stratum before the final selection of a random sample. In research on shopping behaviour, stratification has the distinct advantage of allowing the representation of sub-groups within a population. This distinctly relates to the research aims for a total analysis. A decision over sample size within each defined stratum is crucial and must be resolved with reference to the overall research objectives, with due regard for the techniques of analysis and the relative homogeneity of the sub-group population. Further decisions were required in the use of either a uniform sampling fraction and the selection of a 'proportionate stratified sample', or a variable fraction and a 'disproportionate sample'. The current research objectives related the problem of sample size to the proposed method of analysis, and hence selected on the basis of a proportionate stratified sample at the final stage of selection. Often the basis for stratification can involve a major decision in the design stages. A number of authors (Herbert and Evans, 1974; Johnston, 1976, 1979; Walker, 1975 and Phillips, 1978) have concentrated on the applicability of area sampling and stratification; however, as has been suggested, the aims of this research can be obviously accomplished by applying such methods. Stratification within area sampling can be based on the selection of different types of area, assuming the relative homogeneity of residential neighbourhoods. This approach encompasses the

study of social areas within a city (Shevky and Bell, 1955).

Consequently, a method is required which will unravel the complexities of the differences, both between and within, residential districts. In this particular application, the need for a standard service environment adds a further selection criterion. The identification of the retail hierarchy in Greater Swansea is thus crucial to the selection of sample areas.

This methodology has a highly subjective element. Despite the use of seemingly objective methods for analysis, the reliance of the approach on census generated material, subjects the research to external decisions. Since the research problem concerns areal characteristics (and thus, the amalgamation of individuals), the patterns of such areas, their size and shape all affect such investigations. Consequently, Johnston's, statements (1968) of caution are well noted.

2.3 The Choice of Technique, Data Source and Selection of Input Variables

The decision as to the most appropriate data source to use and the statistical technique of analysis to apply is covered in much detail by Herbert and Evans (1974), Johnston (1976) and Walker (1975). This section will not extensively duplicate this debate, it is sufficient to refer to these discussions and to state that a decision was taken to make use of (at the time) the most recent U.K. national population census (1971) and computerised multivariate analyses techniques, as an initial base for classifying small areas of the city of Swansea.

The principles of social area investigation are followed through the manipulation of factor analysis based studies. This area has received much attention over recent years and the use of such techniques in models of ecological structures ('factorial ecology' as defined by Sweetser, 1965, p.219) is well documented (Johnston, 1976; Berry, 1971; Rees, 1972 and Evans, 1973). Areal classifications of the city of Swansea, via the use of these statistical techniques, in conjunction with a knowledge of the retail system, will enable the fundamental aims of the research to be met. The method of identifying social areas of the city will guide the selection of sample sites to the requirement for a spatial and social juxtaposition of groups with access to a standard service environment.

The final selection of survey sites will effectively become a stratified areal framework for the selection of type areas for detail^{ed} study. 1971 census data are to be used as the primary data source for the analysis. This decision is very much in line with previous studies and is viewed as providing the basis for an excellent classificatory procedure. Subjected to the computer based multivariate techniques of principal components analysis and cluster analysis, an objective statistical method, albeit within the confines of subjective decisions (Johnston, 1968), will be followed. The areal unit to be analysed is the enumeration district (E.D.). Defined in census terms on the basis of the area that a sample enumerator could conveniently cover, it is sufficiently small (typically no more than 150 households) to be regarded as relatively homogenous. Reference to the Small Area Statistics (Ward library) provides for each E.D. an extensive range of census variables. Given a large number of selected variables for each E.D., the use of principal components or cluster analysis techniques, will handle the data and produce a relatively straightforward classificatory procedure. As Herbert and Evans state (1974, p.175);

"This allows E.D.'s to be classified in terms of 'social space' and 'geographic space', both of which have applications in sampling procedures".

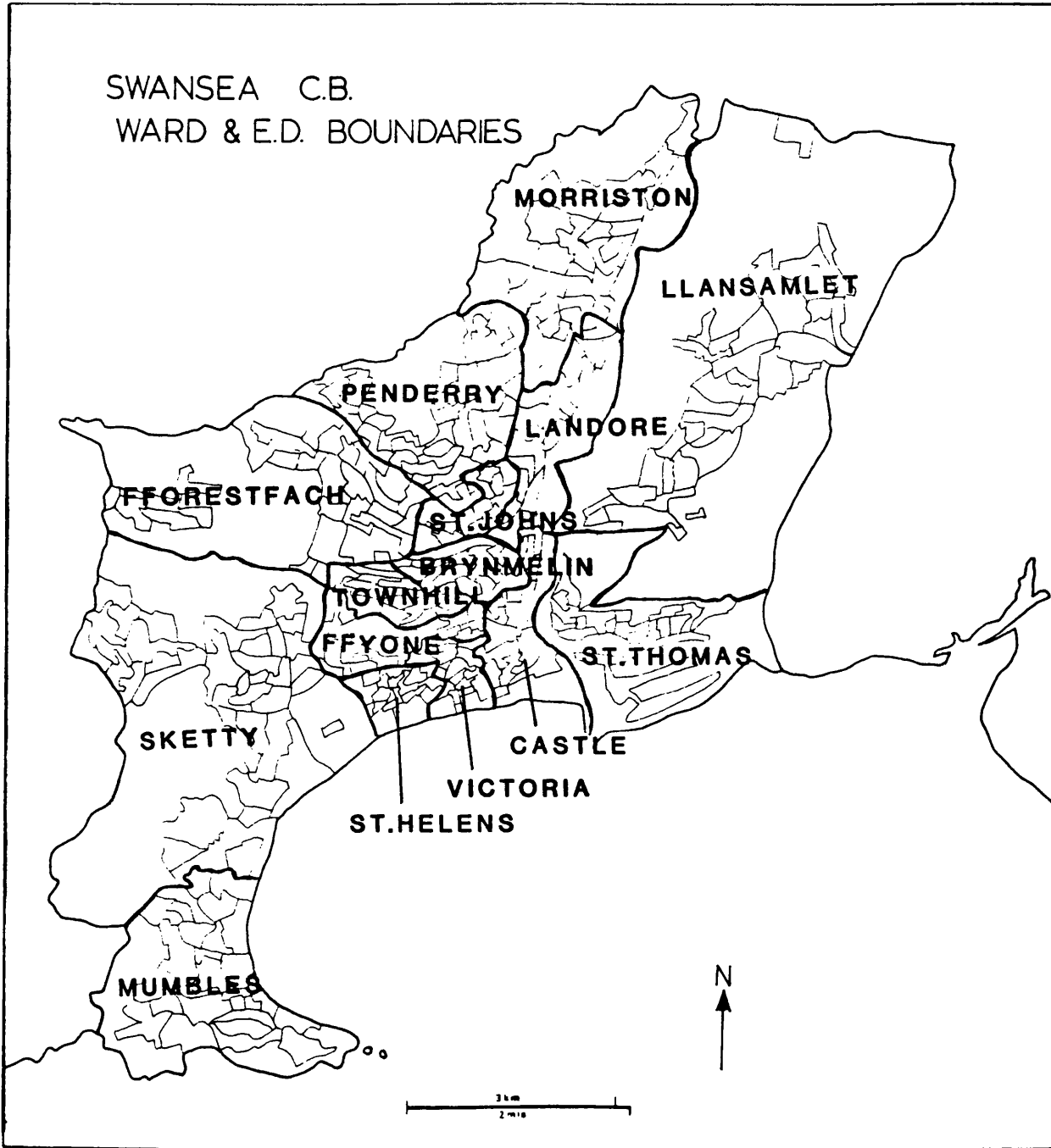
The research commanded the use of an analysis of this type, rather than the reliance upon existing sampling frame classifications of social areas (Phillips, 1978 and Webber, 1976), on account of the vulnerability of such procedures to the variables selected. The techniques of principal components and cluster analysis will only provide a classification reflecting the choice of input variables; consequently, they cannot provide definite answers to the social differentiation of cities.

Twenty seven variables were selected from the Small Area Statistics (Ward library) for the 322 enumeration districts of the 15 wards constituting the city borough of Swansea (Figure 2.11). These variables (see Table 2.4) were selected with caution and generally provide a well balanced array covering the major socio-economic and demographic characteristics of the urban mosaic. Furthermore, the variables cover the range of the major influences upon shopping behaviour identified in the literature. These influences encompass a range of the cultural,

Table 2.4: Input Variables for the Principal Components Analysis

1. % population present in private households aged 0 - 4 years.
2. % population present in private households aged 5 - 14 years.
3. % population present in private households (males) aged 65+ years.
4. % population present in private households (females) aged 60+ years.
5. % population (resident) born outside U.K.
6. % households with no children.
7. % dwellings owner occupied.
8. % dwellings rented from local authority.
9. % dwellings rented and unfurnished.
10. % dwellings rented and furnished.
11. % households in shared dwellings.
12. % single person households.
13. % households with exclusive use of all amenities.
14. % households sharing/lacking a fixed bath.
15. % households lacking an inside w.c.
16. % households with persons living at a density over 1.5 per room.
17. % dwellings with 1 - 3 rooms.
18. % dwellings with 7+ rooms.
19. % households with 6 or 7 persons present.
20. % economically active females aged 15+ years.
21. % economically active males aged 15+ years.
22. % economically active females (married) in private households.
23. % of total population moved into the L.A. during past 12 months.
24. % of total population moved into the L.A. during past 5 years.
25. % economically active and retired heads of households in socio-economic groups 1, 2, 3, 4 and 13.
26. % economically active and retired heads of household in socio-economic groups 7, 10, 11 and 15.
27. % households with no car.

**Figure 2.11:Ward and Enumeration Districts in
Swansea C.B. 1971**



demographic and economic milieu identified by Huff (1960) plus the successful results of empirical research which has identified the association of income, sex, age, occupation, ethnic affiliation and geographical location with overt behaviour (Shepherd and Thomas, 1980). Specific studies have indicated the influence of alternative variables like life cycle, car ownership and personal mobility, social class, the gender constraints of young children and the work status of women on differences in observed patterns of shopping behaviour (Foxall, 1977; Thomas, 1974; Hillman et al, 1972; Davies, 1969; Tivers, 1977 and Potter, 1977). The influence of search learning is accounted for by the inclusion of residential mobility indicators.

Five generic types of variables were selected from the Small Area Statistics (Ward library) reflecting;

- i) the social and demographic structure of the population
- ii) housing tenure
- iii) household size and condition
- iv) economic activity rates and socio-economic status
- v) migration rates.

The time spent selecting such variables is justifiable, given Evan's statement (1973, p.89); "a careful selection of variables will considerably improve the chances of useful results being obtained". Similarly Johnston (1976, p.230) in his conclusion offers; "perhaps more concern should be expressed about the nature of the material fed into factorial ecologies than with the method itself".

2.4 The Principal Components Analysis

Principal components analysis is a widely accepted method used in studies of intra-urban residential differentiation. It is a technique which at the descriptive level provides (within the constraints of the variables and areas) suggestions and maps of the basic patterns of residential differentiation. A number of methodologies of potential power exist, and the analyst must choose from these basic techniques and select an appropriate path through the procedure. The interpretation of

the output, notably the 'meaning' of the components/factors which is basic to the whole procedure, also involves personal assessments.

This section of chapter 2 will consider the results of the analysis of the solution to a varimax rotation (for a detailed discussion of principal components analysis techniques and the debate on varimax rotation see Child, 1970; Davies, 1971; Mather, 1976 and Johnston, 1976). It is assumed that the reader is familiar with the basic principles of the technique as no detailed discussion will be made within the structure of this thesis. Figure 2.12 illustrates a flow diagram (taken from Johnston op.cit, p.204) of the procedures involved in the factorial ecology method, and is intended as a summary guide to the methodology.

A varimax solution is a commonly used form of rotation technique applied to a principal components analysis. The procedure has been developed to enhance the purpose of precise interpretation by relating components more closely to specific clusters of inter-correlated variables. Varimax rotates the primary components orthogonally with the aim of relating the extracted components more closely to specific clusters of related variables (Child, 1970). This is accomplished by redistributing the variance of a selected number of components from the primary solution, so that the number of very high and very low component loadings are increased at the expense of the moderate loadings. This results in a solution which summarises a similar amount of the original variance, but enables the components to be interpreted as rather more precise dimensions of variation. Component loadings allow the leading components to be identified and a label attached. The number of components selected is based on an interpretative decision as to the specification of the eigenvalue, and hence, the point of cut off for the computer analysis. Debate has occurred as to determining this eigenvalue and the ultimate decision is based on the researcher's judgement. Typically the principle of extracting components with eigenvalues greater than unity is widely accepted.

The analysis proceeds through certain of the steps outlined in figure 2.12. No extensive discussion of the primary component solution is provided. Tables 2.5A and 2.5B identify the number of components

Figure 2.12: Flow Diagram of the Procedures Involved in the Factorial Ecology Method (Redrawn from Johnston, 1978, p204.)

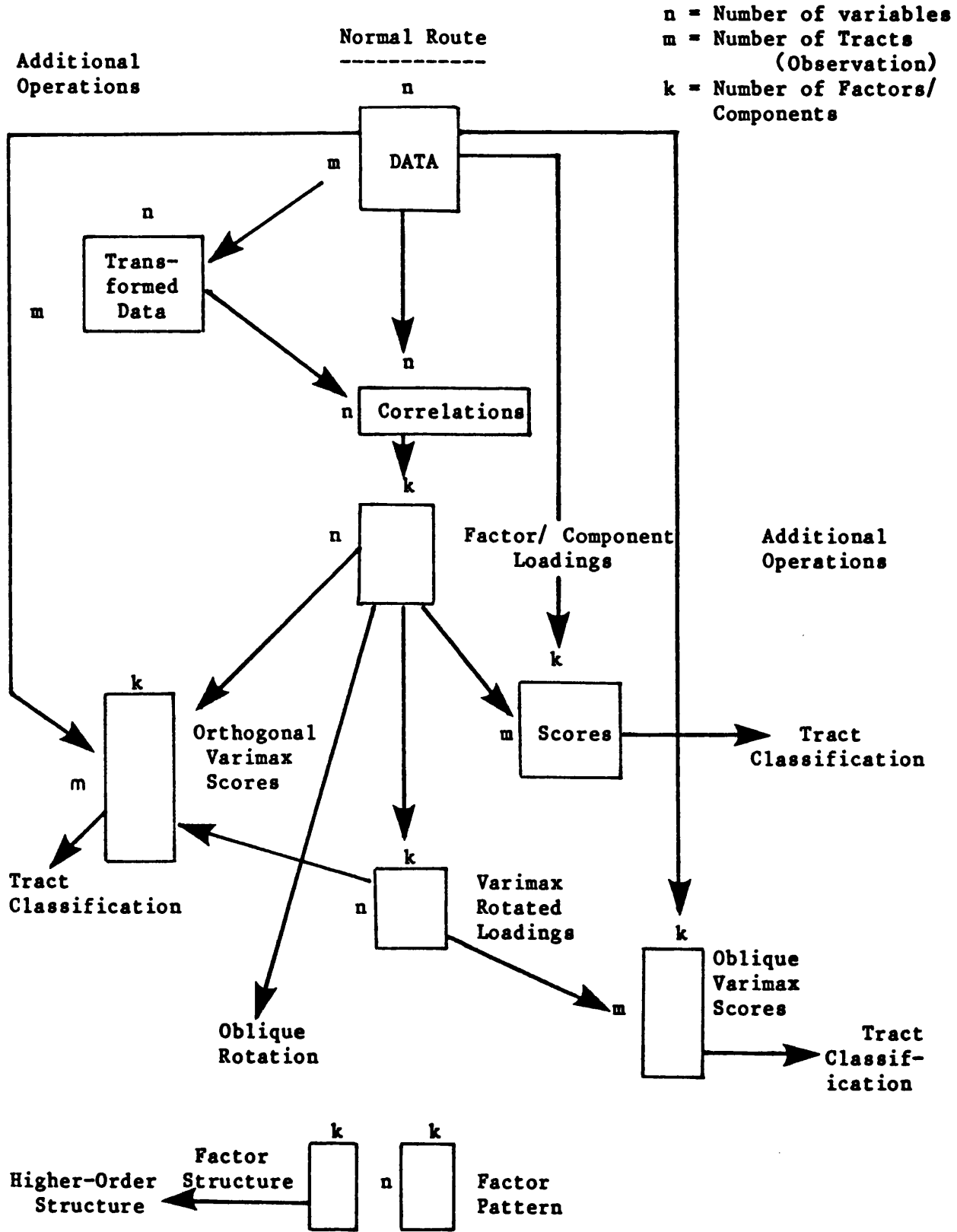


Table 2.5A: Percentage of Explained Variance: PRIMARY SOLUTION

<u>Component</u>	<u>Percentage</u>	<u>Cumulative Percentage</u>
I	27.5	
II	17.9	45.4
III	11.6	57.0
IV	10.2	67.2
V	6.6	73.8
VI	4.0	77.8

Table 2.5B: Percentage of Explained Variance: VARIMAX SOLUTION

<u>Component</u>	<u>Percentage</u>	<u>Cumulative Percentage</u>
I	19.2	
II	17.6	36.8
III	14.4	51.2
IV	15.0	66.2
V	7.3	73.5
VI	4.3	77.8

produced with eigenvalues greater than unity for both the primary solution and varimax rotation. The primary solution is provided for comparative purpose and also to permit an assessment of the stability of the solution utilised. Six primary components, accounting for 77.8% of the total variance, were subjected to a varimax rotation. The component loadings matrix (Table 2.6) allows the leading components to be identified and labelled accordingly. Only the varimax solution is presented. Component I suggests a demographic variable of age structure, with those variables with high positive loadings being measures of younger age groups, whilst variables of the opposite character have negative loadings. Component II is equally as straightforward and is clearly related to a social status dimension. High positive loadings measure owner occupancy and professional socio-economic groups, whilst variables of no household car ownership, local authority housing, low socio-economic groups and overcrowding are negatively related. Component III is a more complex component, being highly and positively related to variables of rented furnished dwellings, small numbers of rooms per dwelling, overseas population and shared dwellings. There are no high negative values. Thus Component III can be described as one of housing subdivision.

Table 2.6: Varimax Rotated Component Solution

<u>Variable</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>Communality</u>
1	0.80	0.08	-0.03	0.05	-0.12	-0.35	.78
2	0.72	-0.18	-0.25	-0.23	-0.08	0.34	.79
3	-0.83	0.05	-0.04	0.19	-0.21	0.01	.77
4	-0.89	0.04	0.05	0.20	-0.15	-0.08	.88
5	-0.09	0.16	0.72	0.16	0.11	0.14	.61
6	-0.89	-0.03	0.25	0.20	0.02	-0.06	.91
7	-0.03	0.80	-0.20	0.32	-0.22	-0.11	.85
8	0.17	-0.74	-0.11	-0.56	0.09	0.02	.91
9	-0.25	0.09	0.24	0.71	0.22	0.22	.73
10	-0.23	0.10	0.85	0.10	0.08	-0.03	.81
11	-0.24	0.03	0.69	0.14	0.06	0.13	.57
12	-0.64	-0.13	0.56	0.23	-0.07	-0.25	.87
13	0.14	0.14	-0.12	-0.94	0.06	0.07	.95
14	-0.14	-0.10	0.22	0.91	-0.02	-0.07	.91
15	-0.08	-0.14	-0.16	0.93	-0.09	-0.06	.93
16	0.28	-0.50	0.40	0.05	-0.30	0.07	.59
17	-0.15	-0.24	0.81	-0.03	-0.03	-0.31	.83
18	-0.27	0.53	0.38	0.11	-0.12	0.51	.78
19	0.41	-0.62	-0.02	-0.17	-0.05	0.50	.83
20	0.29	-0.28	0.01	-0.06	0.83	0.10	.87
21	0.71	-0.15	-0.21	0.05	0.23	-0.10	.64
22	0.09	0.01	0.12	0.02	0.91	-0.10	.87
23	0.13	0.47	0.51	-0.10	-0.05	0.18	.54
24	0.21	0.60	0.44	-0.16	-0.19	0.06	.66
25	-0.11	0.74	0.14	-0.23	-0.06	0.23	.69
26	0.08	-0.73	-0.10	0.18	-0.02	0.04	.58
27	-0.25	-0.83	0.12	0.33	0.03	-0.01	.88
Eigen- values	7.44	4.83	3.13	2.75	1.79	1.08	

Component IV is clearly characteristic of housing conditions, with variables of substandard or lack of basic facilities having high positive loadings, whilst the variable representative of an exclusive use of all amenities has a high negative loading. Components V and VI account for less variance. Component V is a specific component relating to the economic activity rates of women. Both variables with high loadings refer to the economic activity rates of the female population. Component VI loads on variables of large households and dwellings.

Once 'labelled', the component scores allow the patterns to be identified in geographic space. Figures 2.13 - 2.18 illustrate the cartographic representation of component scores which were subsequently used as a basis for the selection of type sample areas. The forthcoming section 2.3.6 refers to this exercise in detail. Figures 2.13 - 2.18 illustrate a variety of geographical patterns. Component I - age structure shows a varying pattern throughout the city area. ~~The~~ elderly population is concentrated in the western half of the city, the areas of Mumbles/Oytermouth and Uplands - Sketty, highly representing this component. In contrast, the areas of younger population are notable in the newer housing estates of west Swansea (Killay - Dunvant) and the local authority housing areas of the east valley (Bonymaen area). Component II - social status identifies the higher status areas of the west of the city (notably Mumbles/Oytermouth, West Cross, Newton and Langland areas) and smaller enclaves throughout the north and eastern sectors, with the large local authority housing estates of Townhill and Penlan at the opposite end of the scale. Component III - housing subdivision identifies the 'bedsitter' type lands of the Brynmill area of the city. The substandard component IV highlights the older terraced housing of the Tawe Valley, St. Thomas and Pt. Tennant. Component V loads specifically upon the economic activity rates of women and produces an interesting pattern of dispersion throughout the city. There is a reasonable association between the geographic areas of high negative scores on Component IV (lower economic activity rates) and high positive scores on Component I (younger age structure). Similarly Component VI loads specifically on household size. A varied pattern is again visible,

Figure 2.13: Varimax Component I: "Age Structure"

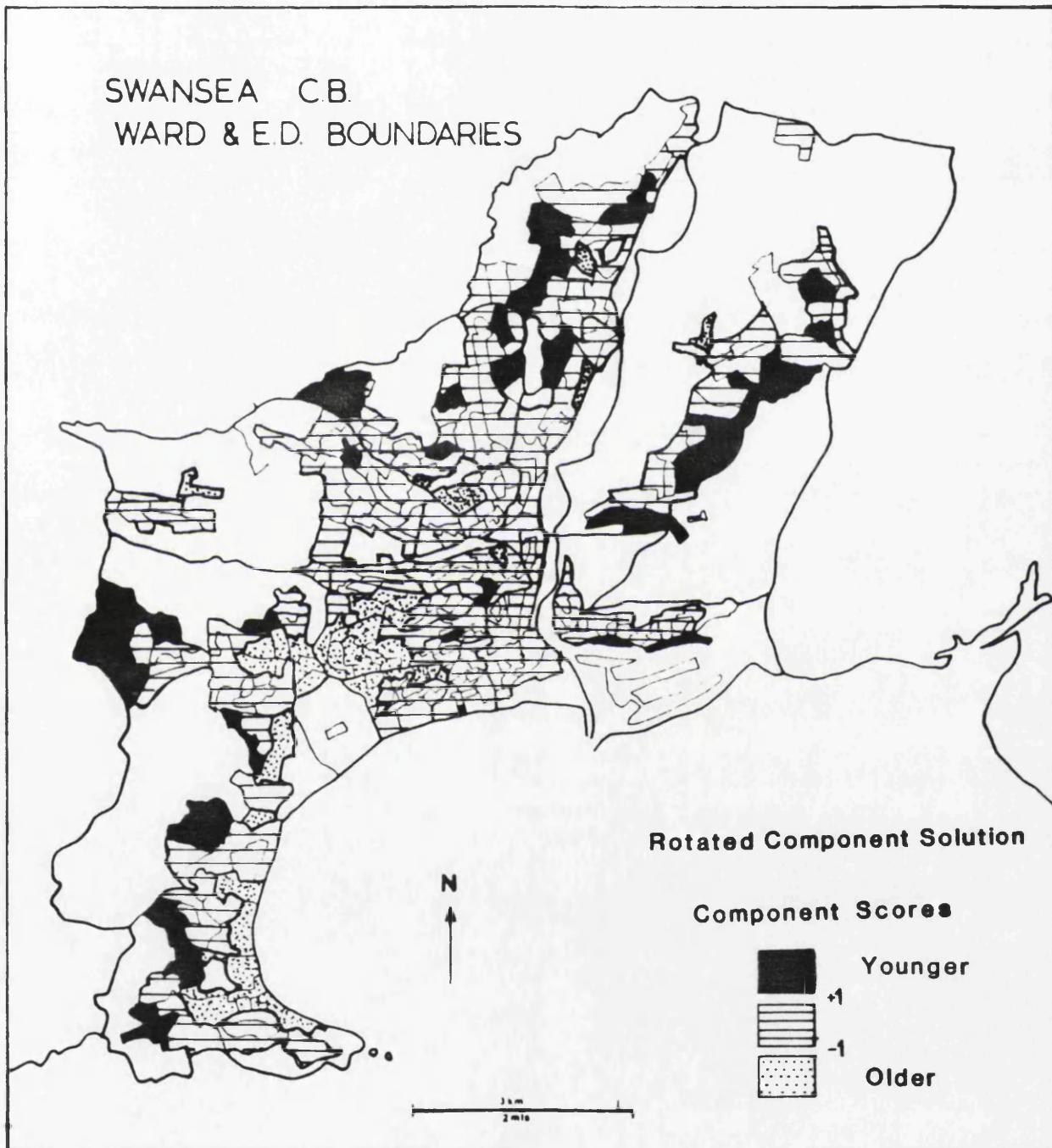


Figure 2.14: Varimax Component II: "Socio-economic Status"

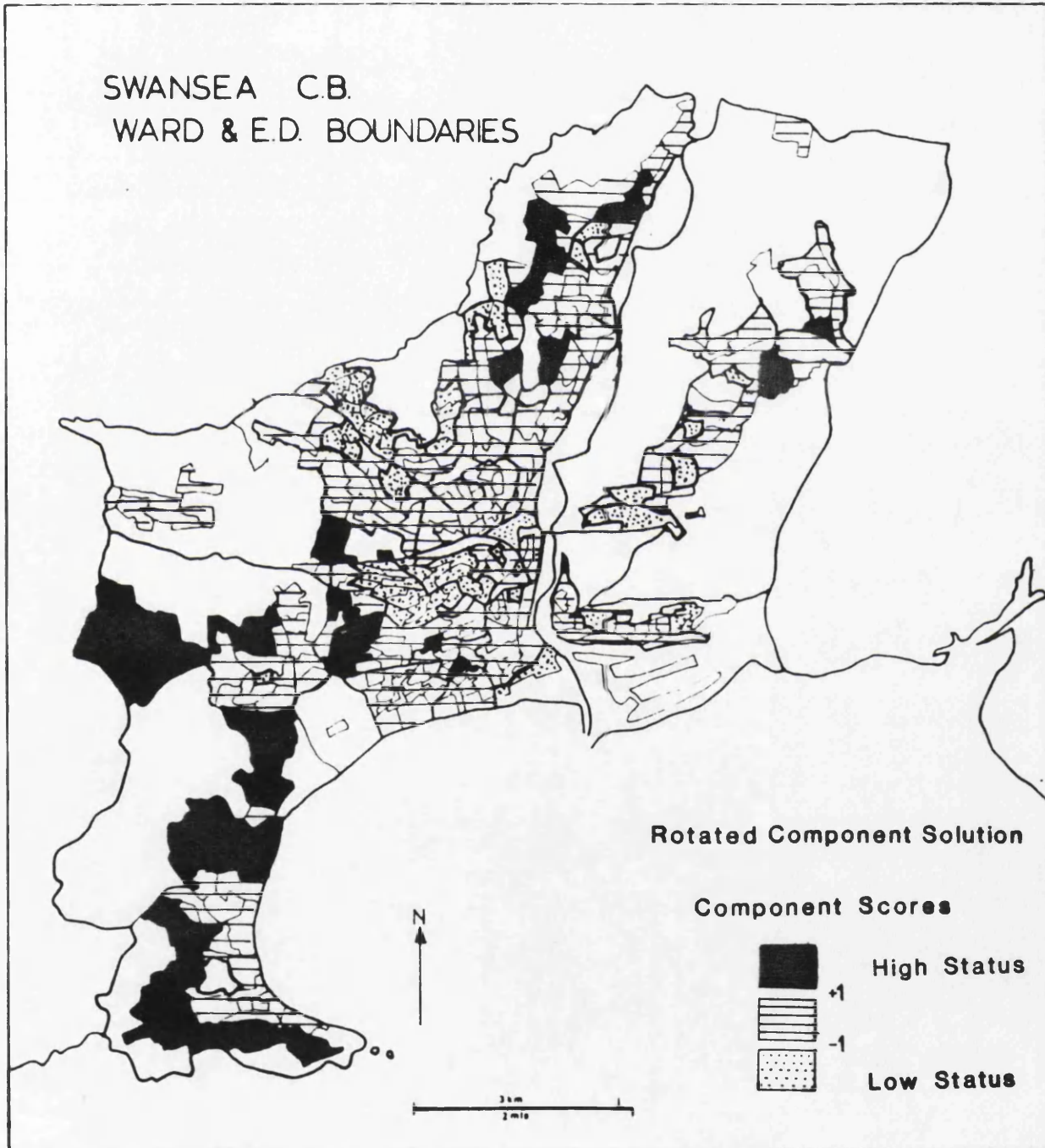


Figure 2.15: Varimax Component III: "Housing Subdivision"

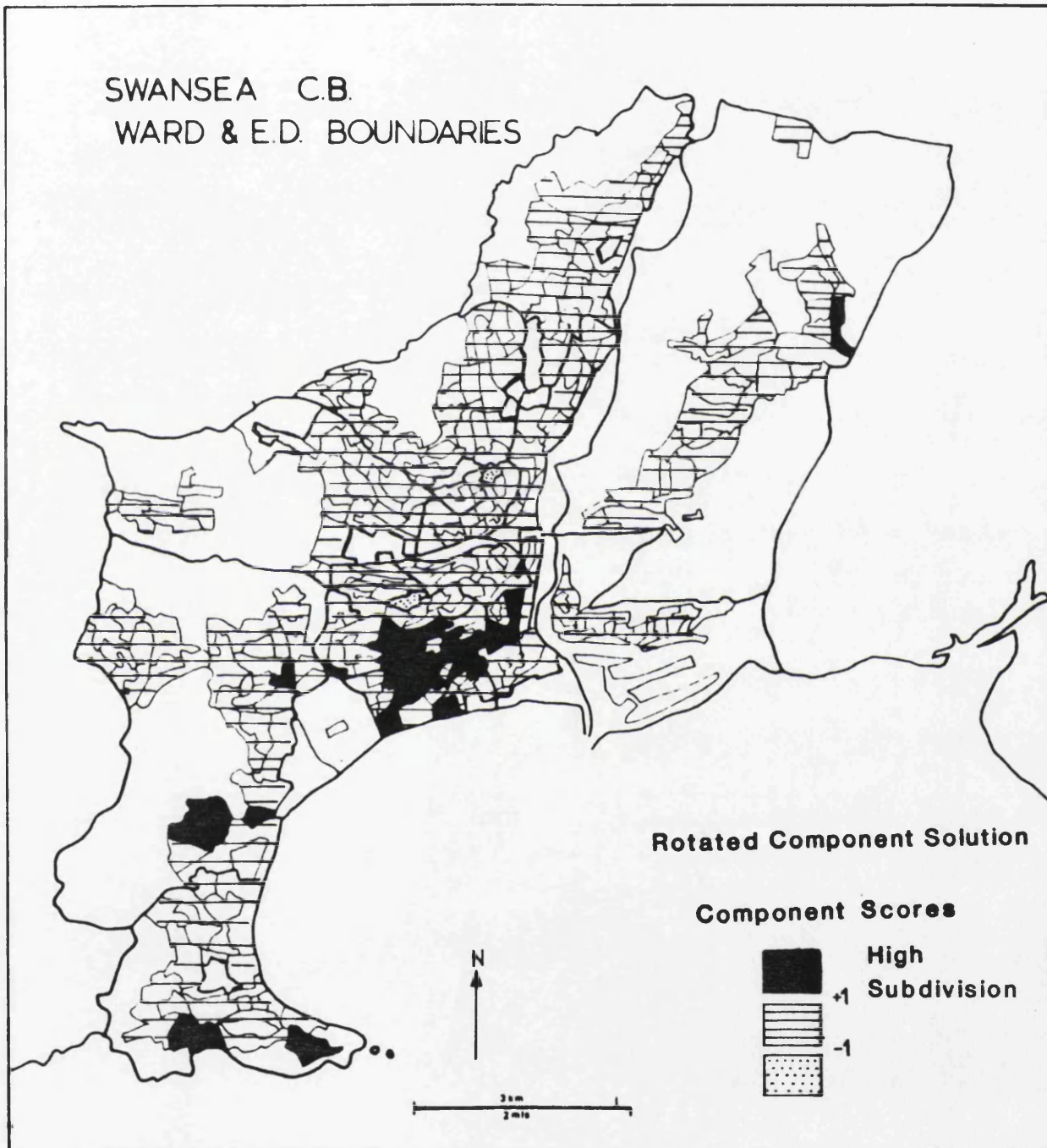


Figure 2.16: Varimax Component IV: "Substandardness"

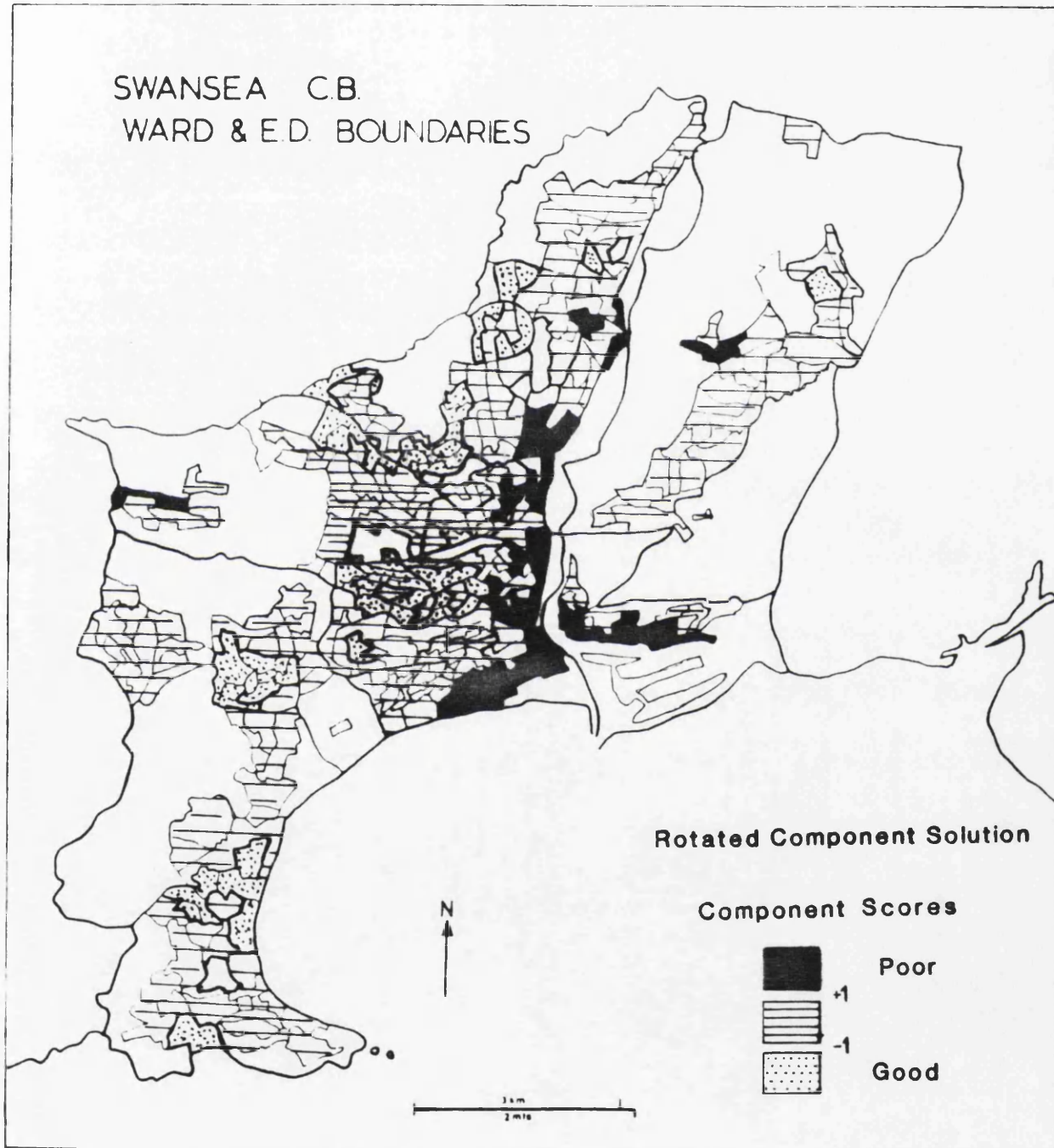


Figure 2.17: Varimax Component V: "Economic Activity Rates of Women"

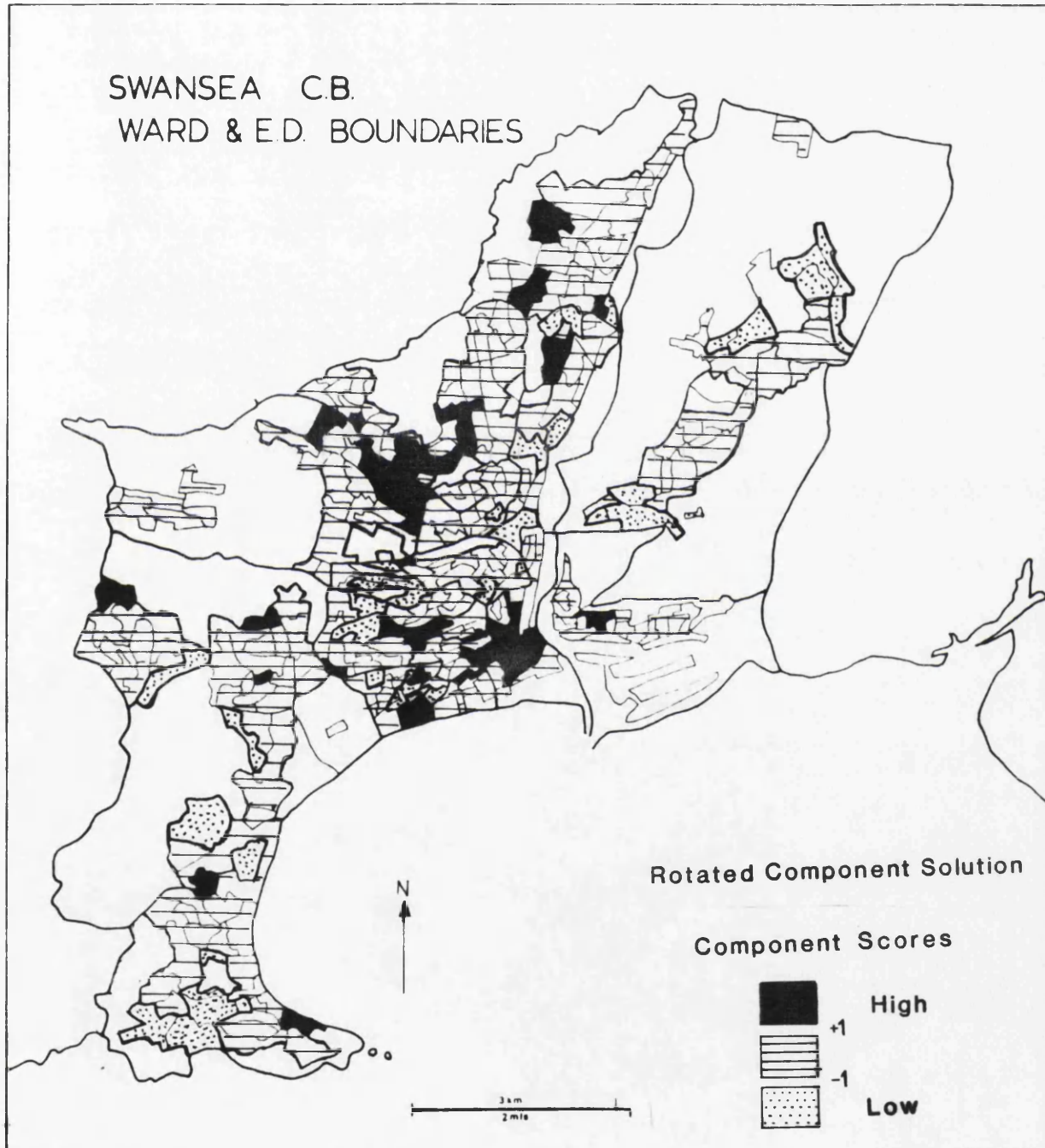
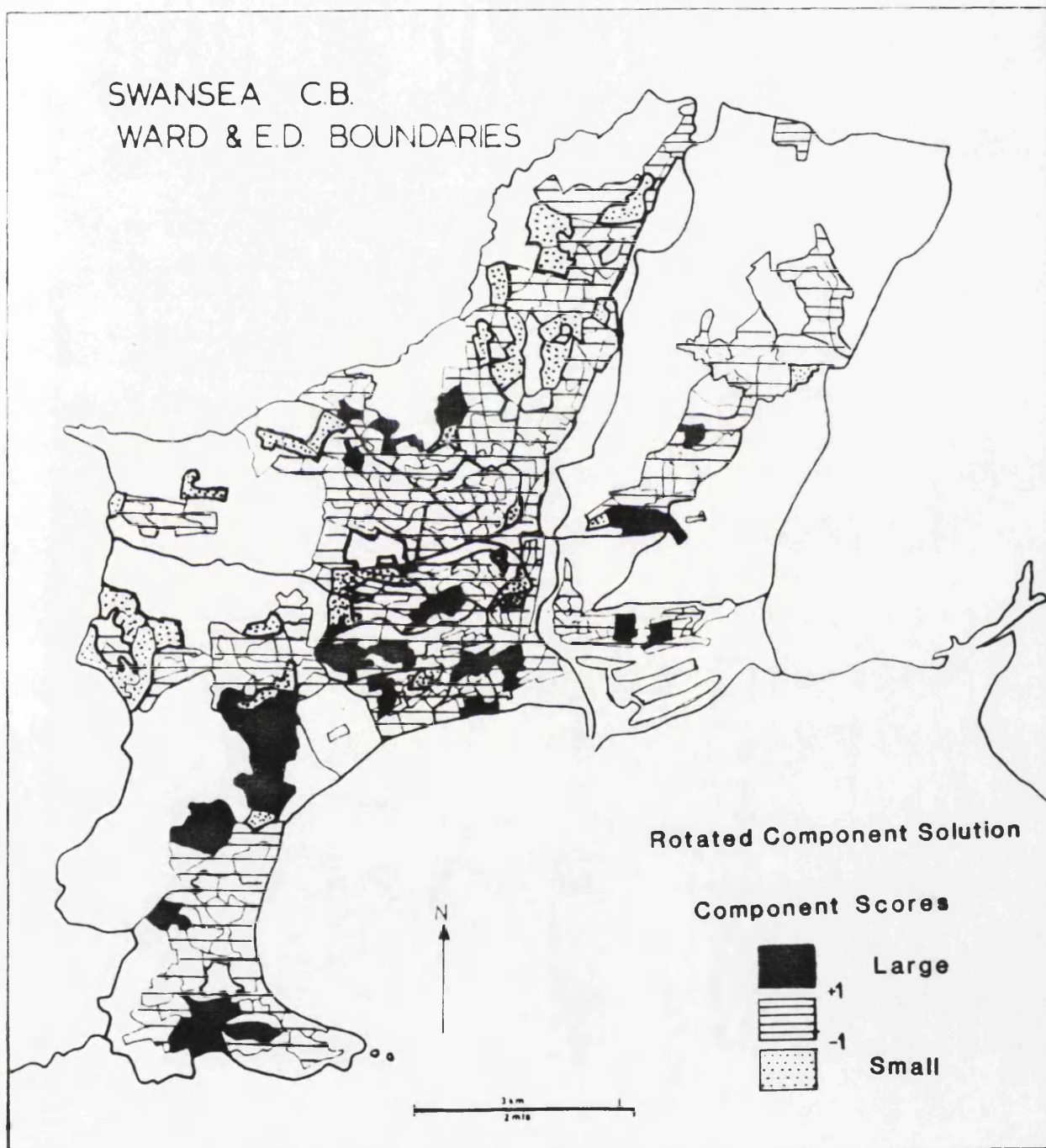


Figure 2.18: Varimax Component VI: "Household Size"



although areas of high negative scores and smaller households are concentrated in the west of the city at Killay, with larger households found in the high status areas of Derwen Fawr.

2.5 The Cluster Analysis: Patterns of Residential Differentiation in Greater Swansea

Whereas the principal components analysis has provided a means of identifying areas of the city according to a set of important but different dimensions, it has not indicated the relative homogeneity of small areas in terms of the dimensions identified simultaneously. Cluster analysis is a technique which will categorise each unit of study in terms of the major components identified. Cluster analysis can also be used to enable the researcher to produce a single map of geographical space which illustrates the patterns of residential differentiation throughout the city. Clearly this, if considered alongside the retail structure of the study area, can be used as a basis for further decisions regarding the selection of sample areas. Accordingly, the research objectives for a spatial juxtaposition of contrasting social groups (with access to a standard shopping opportunity set) can be maintained as a basis for the analysis of overt behaviour.

Cluster analysis is a classification procedure and hence, is highly subjective to individual interpretation (Johnston, 1968). It is a procedure of innumerable methods which share the common aim for a technique which seeks to separate data into constituent groups (Everitt, 1974). A cluster is an ill defined term; there is no single universal agreement of what constitutes a cluster but nevertheless a variety of techniques do share a common aim; to produce a classification or grouping of objects or of their characteristics (Mather, 1976). Consequently, a variety of clustering techniques exist, many of which only exist to serve the various goals of their users, but all seek to separate a set of data into groups or clusters.

Everitt (op.cit) provides an excellent review of the field of cluster analysis and offers an explanation of the differing techniques.

The demands of this particular survey design necessitated a procedure whereby 322 enumeration districts are successively fused, theoretically culminating at the stage when all the individual observations are in one group. This agglomerative procedure permits the identification of an "optimal level" of classification, whereby a number of cluster groups remain. The application used Ward's Error Sum of Squares (1963) method of grouping on the basis of the availability of the relevant computer software (Wishart, 1970). Reference should be made to Everitt (op.cit) for a full discussion on the method. Basically, however, Ward proposed that at any stage of an analysis the loss of information which results from the grouping of individuals into clusters can be measured by the total sum of squared deviations from the mean of the cluster to which it belongs. At each step in the analysis the union of every possible pair of clusters is considered and the two clusters, whose fusion results in the minimum increase in the error sum of squares, are grouped. The input of the 1971 census data for Swansea, for the cluster analysis, was the scores of the six leading components from the previous analysis. E.D's were categorised into clusters on the basis of their similarity in this multi dimensional space. The dendrogram output would, if provided, illustrate the individual steps in the clustering procedure, however it is sufficient to state here that the 317th stage of grouping produced an 'optimal' solution of five cluster groups for the city of Swansea. The percentage loss of detail at this stage was 19.55%.

Figure 2.19 illustrates the graphic breakdown of the loss of detail experienced at each stage. The resultant solution can be mapped to illustrate the spatial grouping of each of the clusters identified. Figure 2.20 illustrates five spatial clusters identified on the basis of their similarity. The general characteristics of these clusters will be briefly discussed, the categories being numbered as in Figure 2.20.

Cluster 1: this category identifies extensive areas of local authority housing estates with the associated high provision of basic facilities. The age structure of ^{the population in} these areas varied from middle aged to young but with a variable size of household unit. Notable areas in this category include Blaen-y-Maes, Townhill - Mayhill, Penlan, Clase, Sketty Park Estate and areas east of the

Figure 2.19: Loss of Detail by Cluster Step

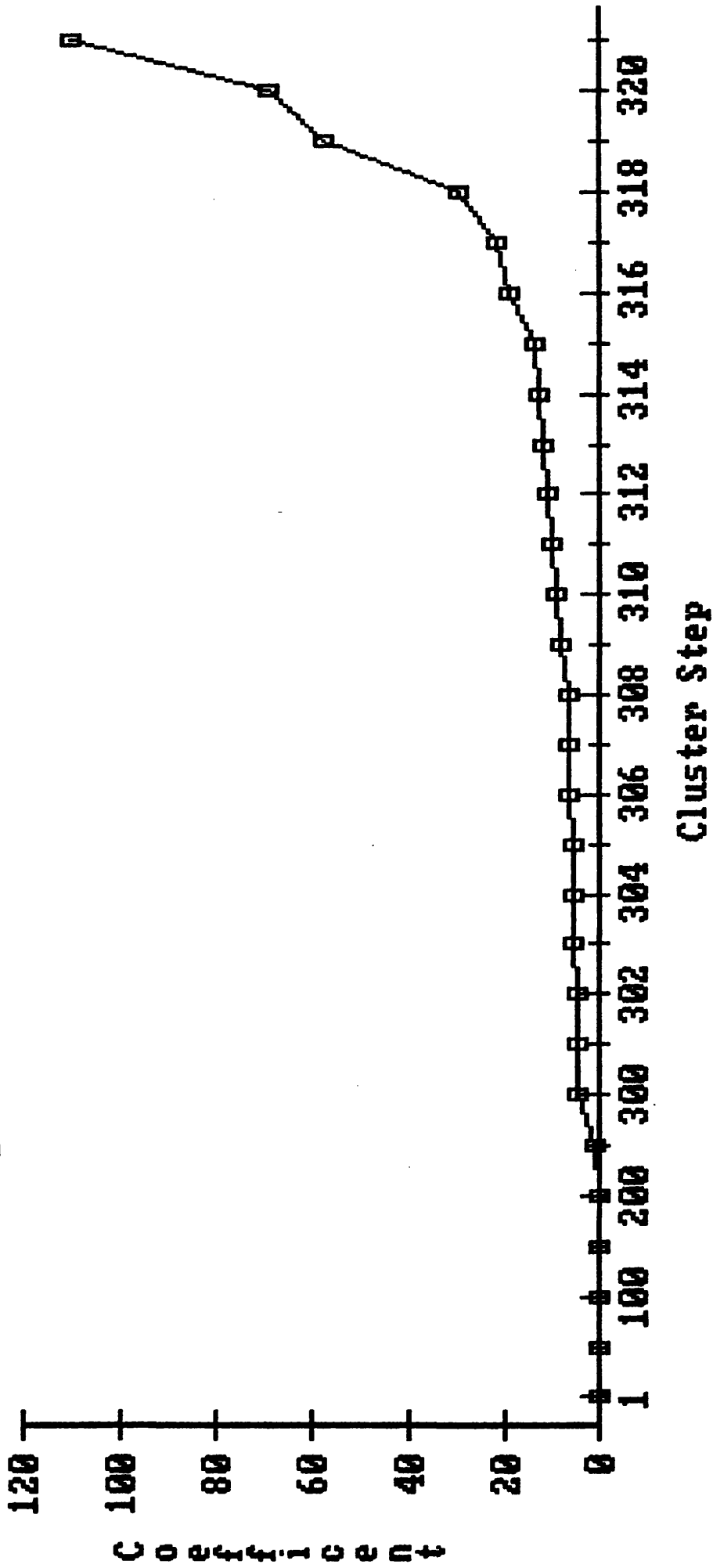
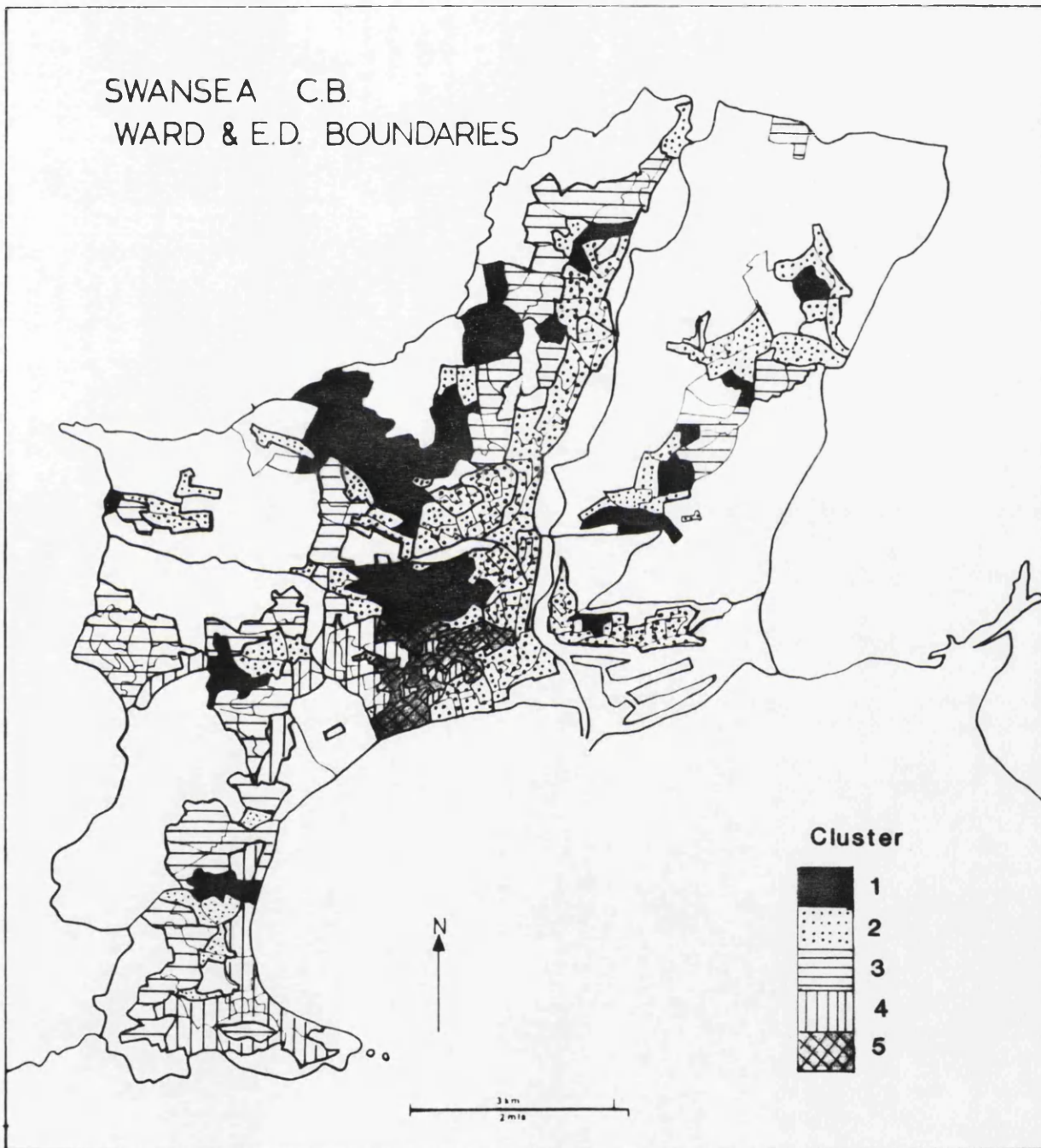


Figure 2.20: Spatial Groupings from the Cluster Analysis



River Tawe. Cluster 2: this cluster group comprises areas of a mixed demographic component, low socio-economic status and a mixture of household size. Notable areas included in this group are the older communities of the lower valley region and the St. Thomas/Port Tennant area east of the River Tawe. Housing stock is predominantly of an older, terraced type in these areas. Cluster 3: this group tends towards the middle social class areas but does include some of the highest status private residential areas of the city. Characteristic of this category is a mobile population, generally mid aged to young in age structure, resident in private dwellings. Notable areas include much of the western side of the city (Mumbles, West Cross, Derwen Fawr, Tycoch and Killay - Dunvant) but also north Swansea around Morrision and selected enumeration districts of private housing in the eastern side of the valley. Cluster 4: comprises areas of specific elderly population which are found in the south west of the city in parts of Mumbles and in the Uplands area to the west of the city centre. Cluster 5: this category consists of a smaller area of sub-divided households between the University and the city centre. Characteristically, this area is the "bedsitter" area of Brynmill and Mount Pleasant.

Cluster analysis has served to provide a series of classifications of enumeration districts on the basis of the input of census variables. A comprehensive representation of the main elements of the socio-geographic structure of Swansea has been accomplished and thus provides a basic framework for the further decisions on area sampling. A considerable degree of objectivity has been introduced into what is a subjective categorisation of areas of known social composition. For many types of study, this stage is a sufficient basis for the selection of type areas, however the influence of the research objectives in this project require a further aspect of stratification. It is to a consideration of this topic that the chapter now turns.

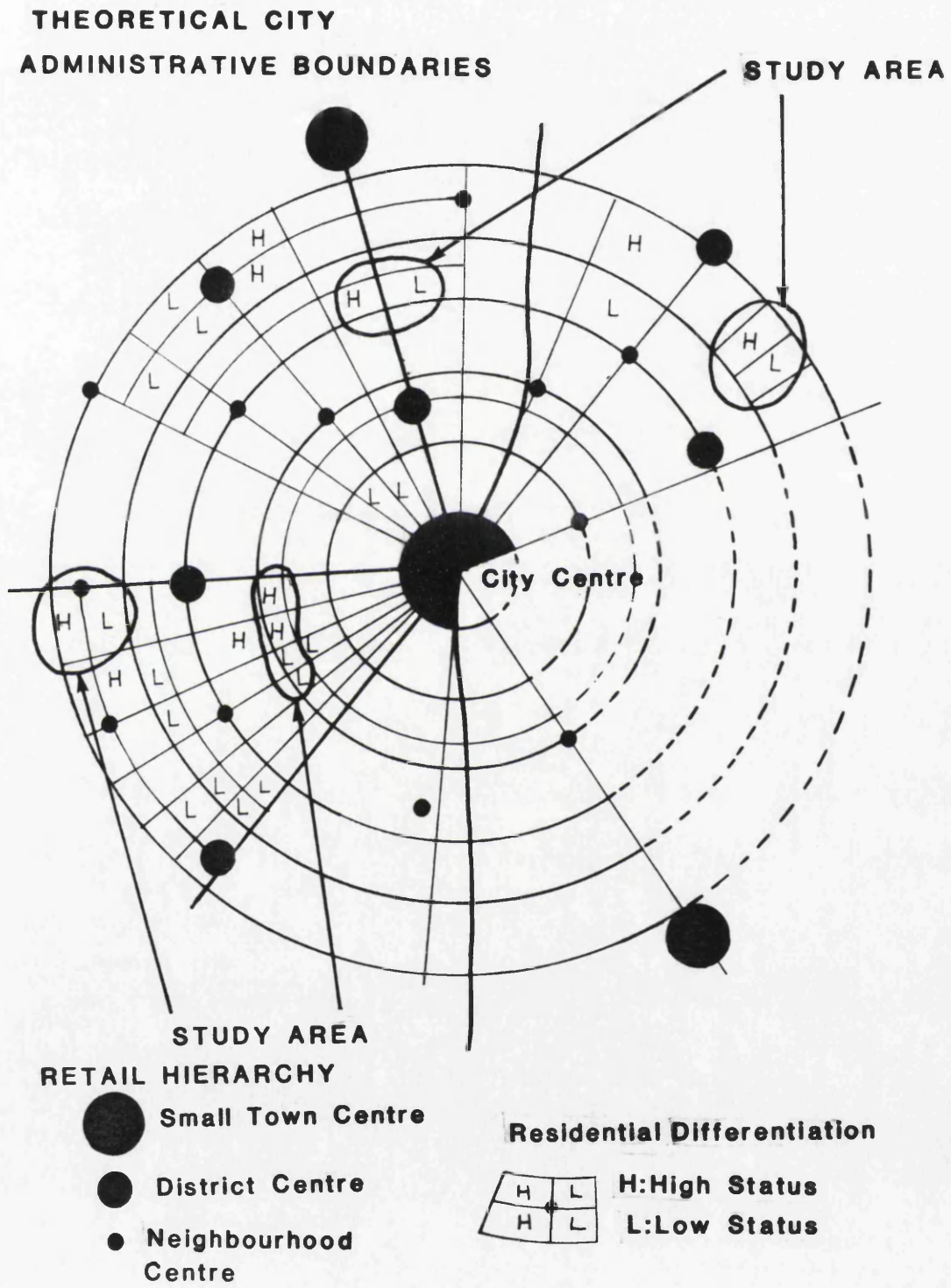
In a wider perspective this type of research design, whereby behaviour of social groups at various locations can be contrasted, is becoming increasingly used in social geographical research. The method successfully enables a standardised service environment to be maintained for spatially juxtaposed but socially different groups of consumers of services (Davies, 1969; Thomas, 1974; Phillips, 1978 and Potter, 1982).

2.6 The Selection of Sample Areas and Respondent Households

The research design needed to account for a spatial juxtaposition of contrasting social status areas but with a comparable retail service environment. The selection of sample areas therefore necessitated a further categorisation of the city to account for differential aspects of the retail hierarchy of the city of Greater Swansea. A number of important considerations prevailed at this stage of decision making. Firstly, the problem of using census data collected in 1971 needed to be considered. Secondly, the time and cost constraints of the data collection exercise demanded attention. A decision had already been taken to make use of a single questionnaire schedule and interview to collect the data (see section 2.4 for a detailed discussion on the justification for this decision). The problem of using 1971 census data for a classification of social areas within the city of Greater Swansea, and then selecting type areas for detailed analysis, was relatively straightforward. Many previous studies using a similar research design (Phillips, op.cit and Evans, op.cit) had decided upon the use of the E.D. as the input for detailed social survey investigation. This present study sought a broader perspective and used the E.D. as a sample choice determined only in its 'widest sense'; field validation would override the selection of type areas. Furthermore, the population structure of the city of Greater Swansea is relatively stable; the study area is not an area of excessive in-migration and the majority of new residential development is outside the city boundary and hence, the study area.

The second problem, relating to the data collection exercise was constrained by practicality. As mentioned earlier, the research design specifically called for a juxtaposition of survey sites having access to the same shopping opportunities. The basic comparisons were to be between two sites designated in what can be termed one 'survey area'. The sites selected would enable the fundamental hypotheses of social and geographical variations in consumer behaviour to be empirically tested. In the selection of areas the aim for a detailed study necessitated the practicabilities of following a segmentation approach to the sample survey. Segmentation, as it relates to this research, draws upon the identification of 'social areas' (in the broadest sense) within the city and their relationship to the retail structure. Figure 2.21 illustrates a theoretical model of this segmentation approach.

Figure 2.21: A Theoretical Segmentation Approach



The classification of the city into areas of social and residential differentiation superimposed on the retail hierarchy of the city region, enables the selection of a 'segment' of the city for detailed analysis. By selecting a segment of known social and spatial compositions (and areas of internal consistency), conclusions representative of other areas can be developed. The ultimate consideration here is for the depth of study and analysis that can be achieved at the expense of brevity throughout a wide number of areas. The ultimate selection of sample areas was made with due consideration to the methods of analysis. Three pairs of survey areas were selected, this would enable the survey to cover a wide area of the city and also provide a sufficiently high number of respondents for analysis. The survey aimed to select approximately 150 respondents from each of the three areas, which, basing the residential neighbourhood around the E.D., would result in approximately a 20% sample. The selection procedure for the three areas can be discussed with reference to Figures 2.13-2.18 and 2.20 and Figure 2.22. Figure 2.23 illustrates the relevant E.D.'s selected for final validation and detailed survey.

In the broadest sense the six sites selected for field validation were chosen on the basis that they belonged to the same two clusters. These can be identified as cluster 1; local authority housing areas and cluster 3; the middle/high social status private residential areas. Reference was also made to the precise knowledge of the demographic structure and socio-economic composition of E.D.'s resulting from the principal component solution on rotated components, I (age structure; Figure 2.13) and component II (socio-economic status; Figure 2.14)

The areas selected extend across single E.D.'s, as can be seen in Figure 2.23. The sample sites can be designated as relatively high and low status respectively, and subsequent reference is made to the sites in these terms. The survey areas are located at Trallwn in east Swansea, Treboeth in north Swansea and Tycoch in west Swansea. The Trallwn high status boundary extends across two E.D.'s which originate from the same cluster analysis category 3. On component II, 'socio-economic status' (Figure 2.14) this area encompasses two categories of component score (from +0.01 to +2.0). The Trallwn low status site also extends across two E.D.'s which similarly both fall into cluster category 1. On

**Figure 2.22: Residential Differentiation
and Shopping Centres in Greater Swansea**

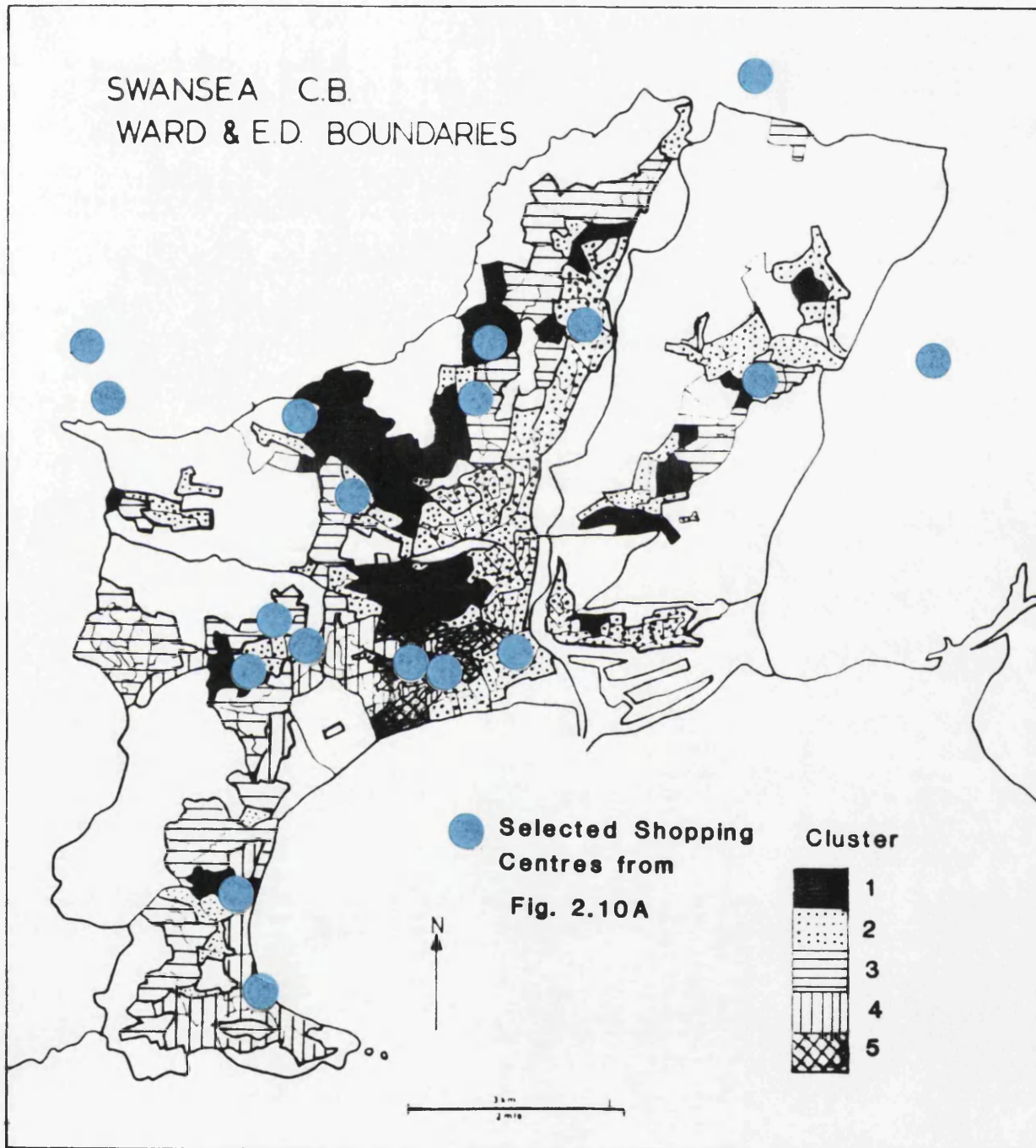
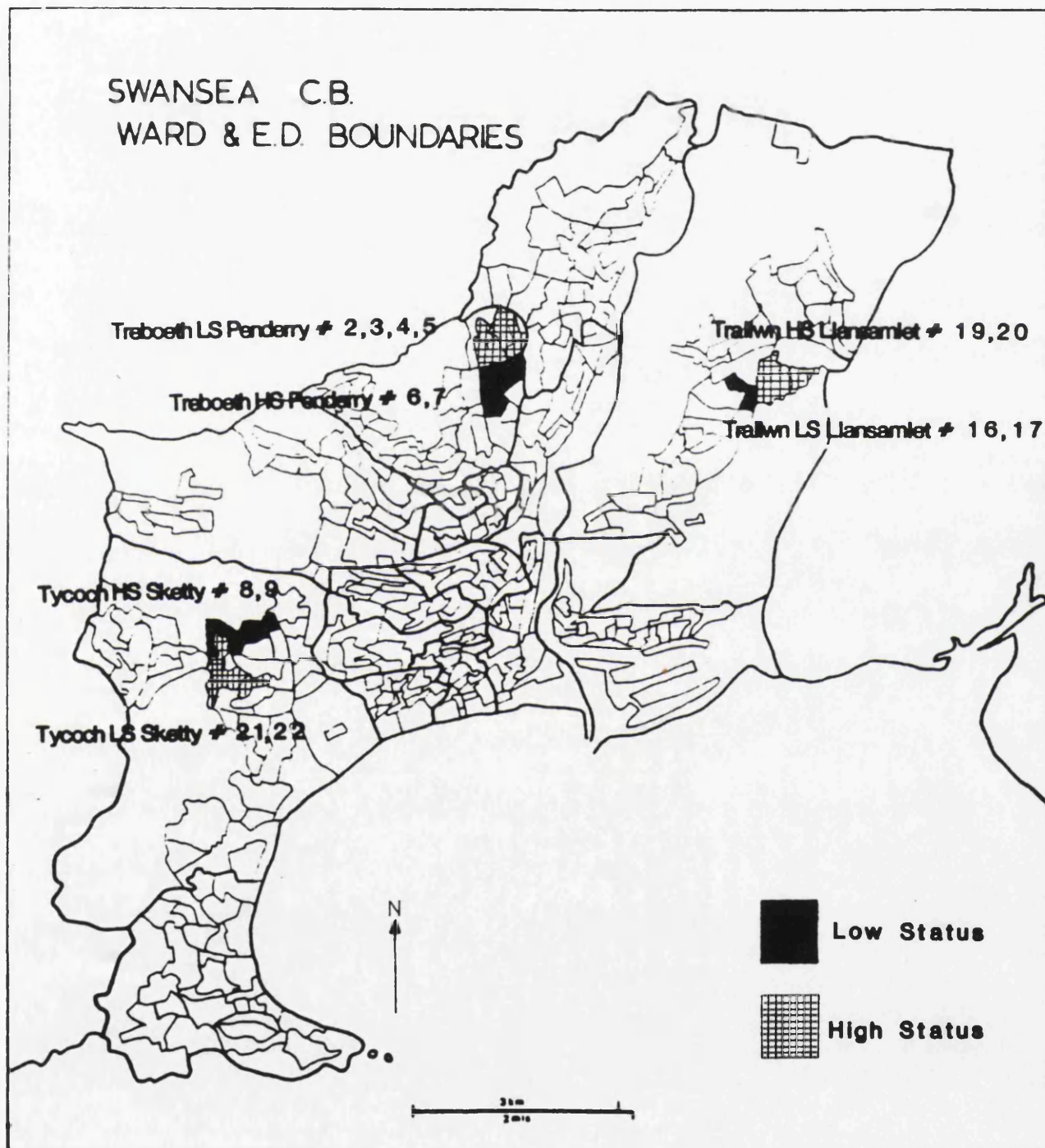


Figure 2.23: E.D.'s Selected for Field Validation

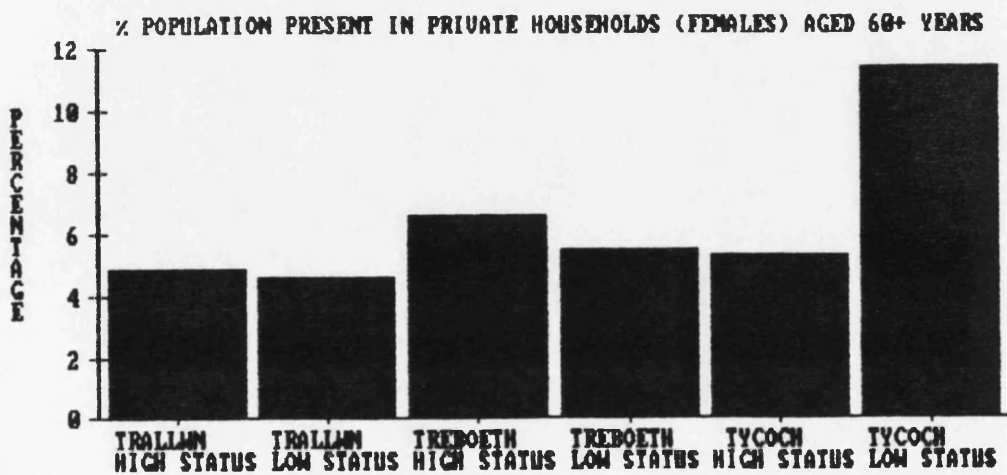
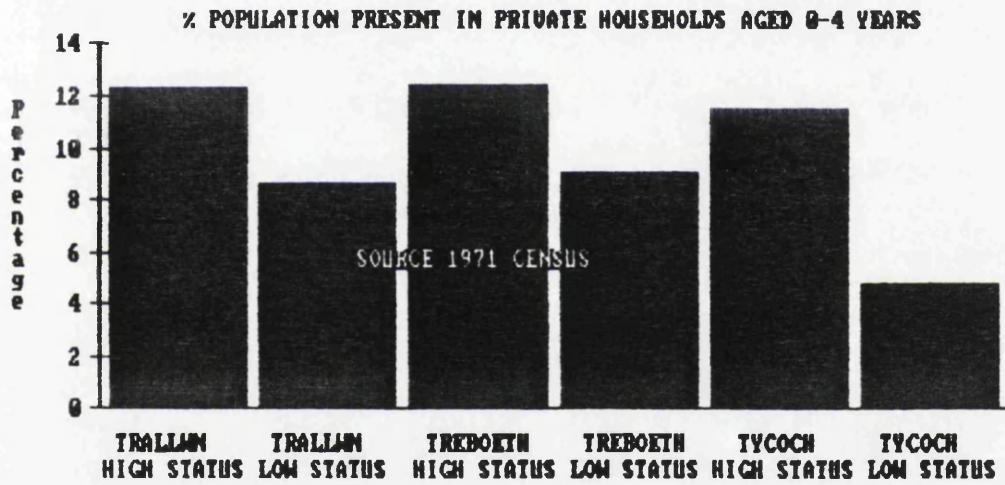
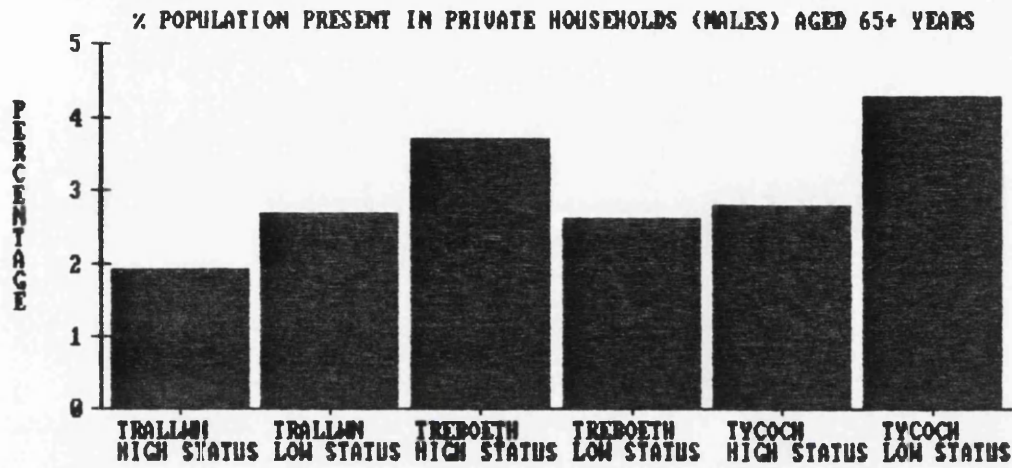


component II this site encompasses the component scores -0.01 to -2.0. All the E.D.'s concerned are included in the same component score category on rotated component I (age structure). At Treboeth, the high status site encompasses two E.D.'s of cluster group 3 and on component II, 'socio-economic status', the component score categories +0.01 to +2.0. The Treboeth low status site extends across four E.D.'s all in cluster category 1. Component scores on component II, 'socio-economic status', are all contained in the values -0.01 to -2.0. The component scores of age structure for both areas are contained within +0.01 to +2.0. The final area of Tycoch extends across two E.D.'s for both the low status and high status sites. The Tycoch high status site falls into cluster category 3. On component II, 'socio-economic status', both E.D.'s have a component score between +1.01 and +2.0. The Tycoch low status site is contained in cluster category 4. Scores on component II for Tycoch low status are between -0.01 to -2.0. All the E.D.'s concerned are within the same component score category on component I (age structure), that is, +0.01 to +1.0.

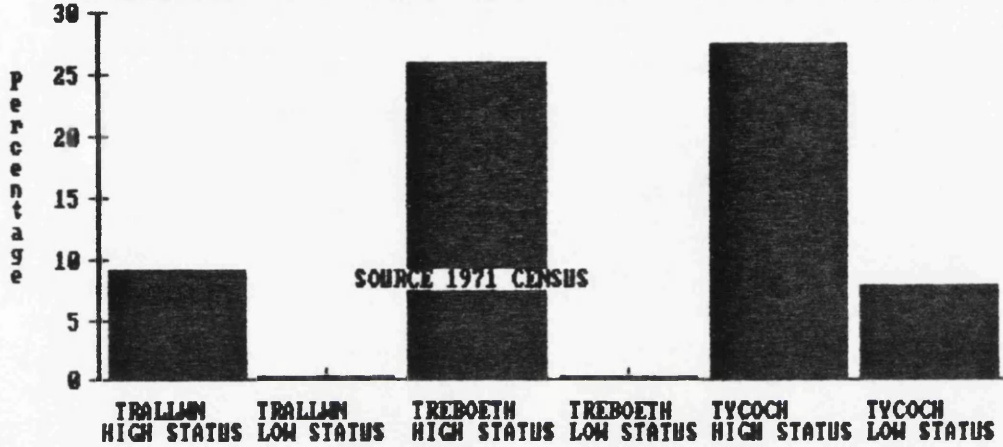
Each of these survey areas have comparable access, with their opposite status group, to a similar shopping environment. Furthermore, all three areas have a similar level of retail opportunity available to them, in that they all have immediate access to neighbourhood or local shopping facilities. Trallwn and Treboeth are approximately the same straight line distance from the small town centre of Morriston whilst Tycoch is nearer to the city centre of Swansea. A detailed comparison of the six sites selected, in terms of some of the census variables which helped shape the original components, is provided in Figures 2.24 A, B and C. These summary histograms avoid the need to include a large amount of descriptive detail concerning the characteristics of the selected E.D.'s. However, as an essential background to the research findings both the shopping opportunities and the general characteristics of the areas will be discussed.

Prior to this it is necessary to detail the procedure of field validation in the selection of these areas. The previous discussion outlines the method by which a basis for detailed sample selection was developed. The precise boundaries of the final areas chosen, far from being a cold statistical exercise, were made with substantial field observations.

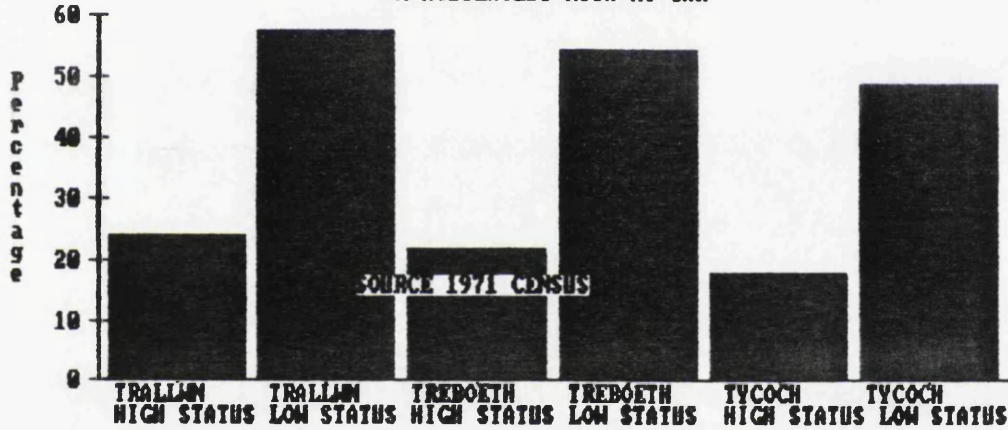
Figure 2.24: Selected Census Statistics
for the Six Sample Sites



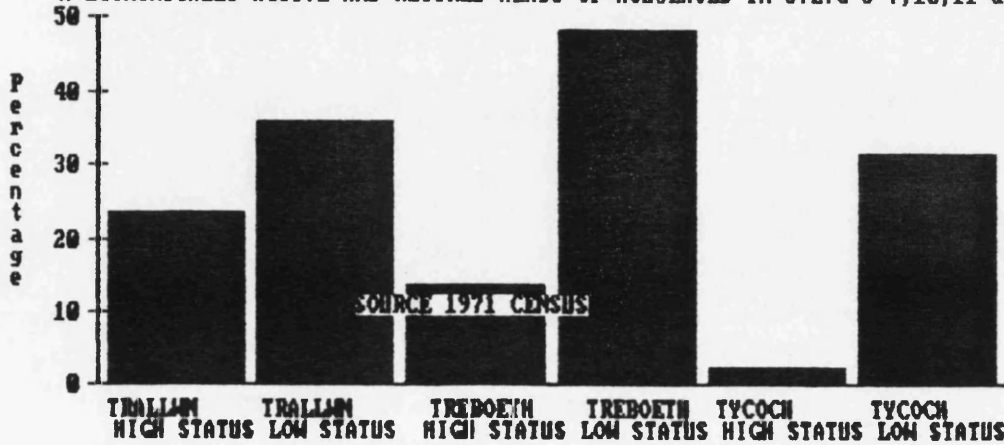
% ECONOMICALLY ACTIVE/RETIRED HEADS OF HOUSEHOLD IN S.E.G'S 1,2,3,4 & 13



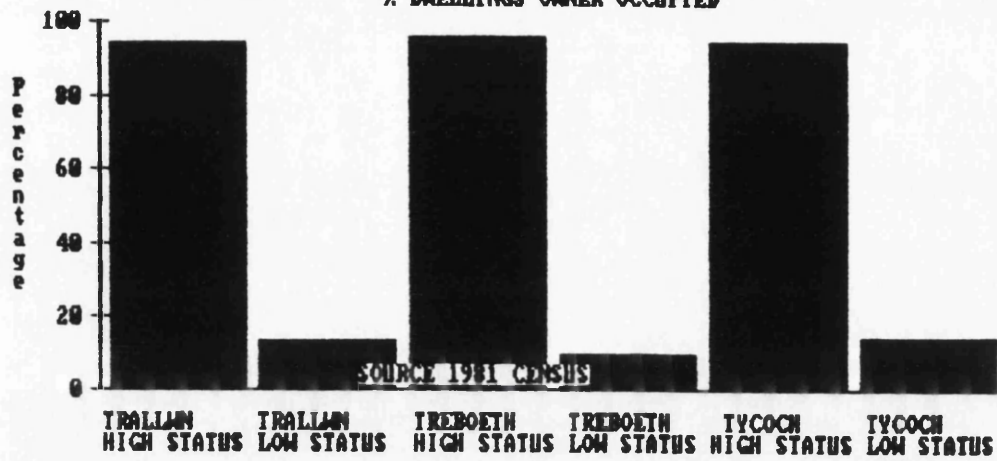
% HOUSEHOLDS WITH NO CAR



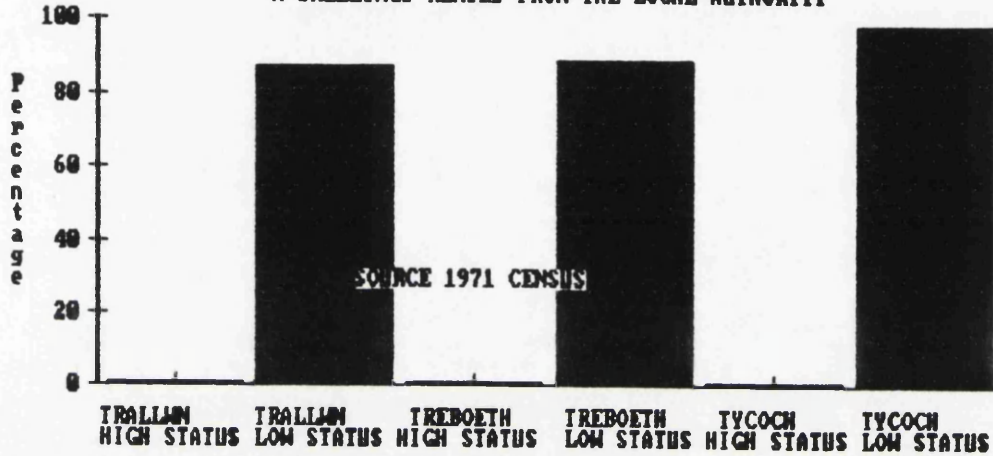
% ECONOMICALLY ACTIVE AND RETIRED HEADS OF HOUSEHOLD IN S.E.G'S 7,10,11 & 15



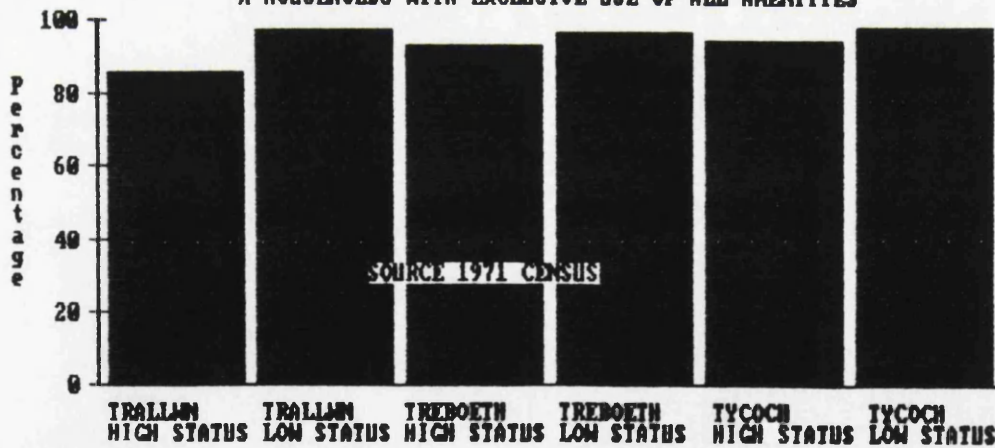
% DWELLINGS OWNER OCCUPIED



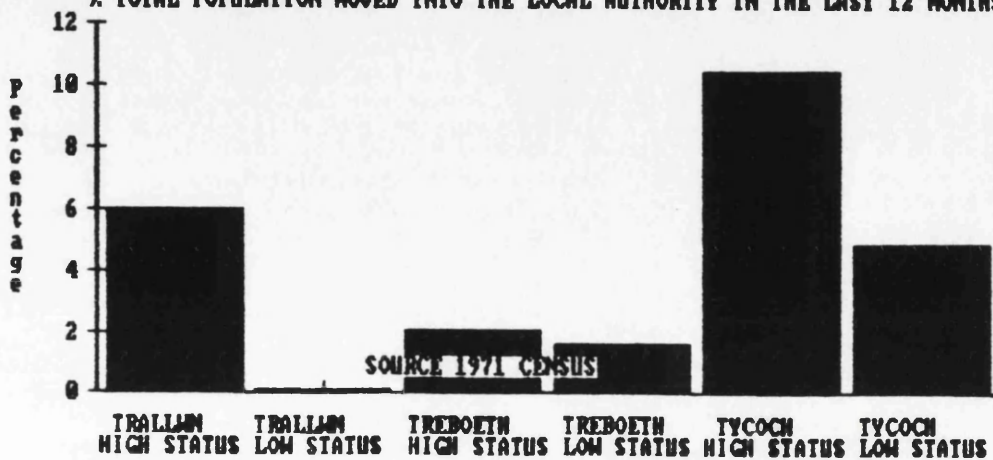
% DWELLINGS RENTED FROM THE LOCAL AUTHORITY



% HOUSEHOLDS WITH EXCLUSIVE USE OF ALL AMENITIES



% TOTAL POPULATION MOVED INTO THE LOCAL AUTHORITY IN THE LAST 12 MONTHS



A number of alternative sample locations were comprehensively dismissed during this exercise and the areas selected were extended slightly to account for new residential development. Similarly, extreme caution was taken in the local authority estates to constrain the target population to 'single storey' dwellings, and although high rise blocks of rented accommodation are inevitably a separate E.D., caution was necessary.

Each pair of survey sites will be considered under the three areal headings of Trallwn, Treboeth and Tycoch. The discussion will present information on the shopping opportunities, the general characteristics of the survey site and the boundary of the survey sites after field validation (Table 2.7).

Trallwn (Figure 2.23, 2.25, Plates 7, 8, 9)

This area is located east of the Swansea Valley, approximately 4 miles from the city centre of Swansea. The two sites selected lie across a local access road (Trallwn Road) alongside which is situated a small parade of shops (plate 9) constituting a local shopping centre (2,970 square feet total sales area). The low status area is split by the designated higher status sector, the smaller section of low status dwellings having been constructed during the early 1970's. These dwellings are similar to a number of those in the designated high status area and were in fact part of a local government purchase during this period.

The Trallwn low status site consists of a mixture of local authority semi-detached dwellings, terraced and flatlet houses. The higher status is similarly a mixture of recently constructed semi-detached homes and mixed, detached and semi-detached bungalows. Figures 2.24A - 2.24C illustrate some differences in age structure of the wider E.D. boundaries although the major variations occur in housing tenure, car ownership and socio-economic groups. Migration statistics from the 1971 census indicates a low proportion of migration into the survey area. The boundaries of the sample sites included 430 households in the high status sector and 407 households in the low status sector (Table 2.7).

Table 2.7: The Six Survey Sites

Site Name	Original E.D.'s Selected (1971)	1971 E.D.'s Number of Households	E.D.'s Covered by Sample after Field Validation	Number of Households in Sample Area
TRALLWN	Llansamlet Ward)
HIGH STATUS	A19, A20	466	A19 (Part A20)) 430
TRALLWN	Llansamlet Ward		A16, A17)
LOW STATUS	A16, A17	323	(part A18)) 407
TREBOETH	Penderry Ward		A6)
HIGH STATUS	A6, A7	452	(Part A7)) 421
TREBOETH	Penderry Ward		A2, A4,)
LOW STATUS	A2, A3, A4, A5	793	A5) 428
TYCOCH	Sketty Ward		A8, A9)
HIGH STATUS	A8, A9	481	(part A1)) 438
TYCOCH	Sketty Ward		A21, A22)
LOW STATUS	A21, A22	416	(Part A23)) 434

1. Source: Electoral Register

Note: The sites are referred to in the text as high and low status respectively. A number of tables however abbreviate this to HS and LS to facilitate production.

Figure 2.25: Trallwn Survey Site (East Swansea)

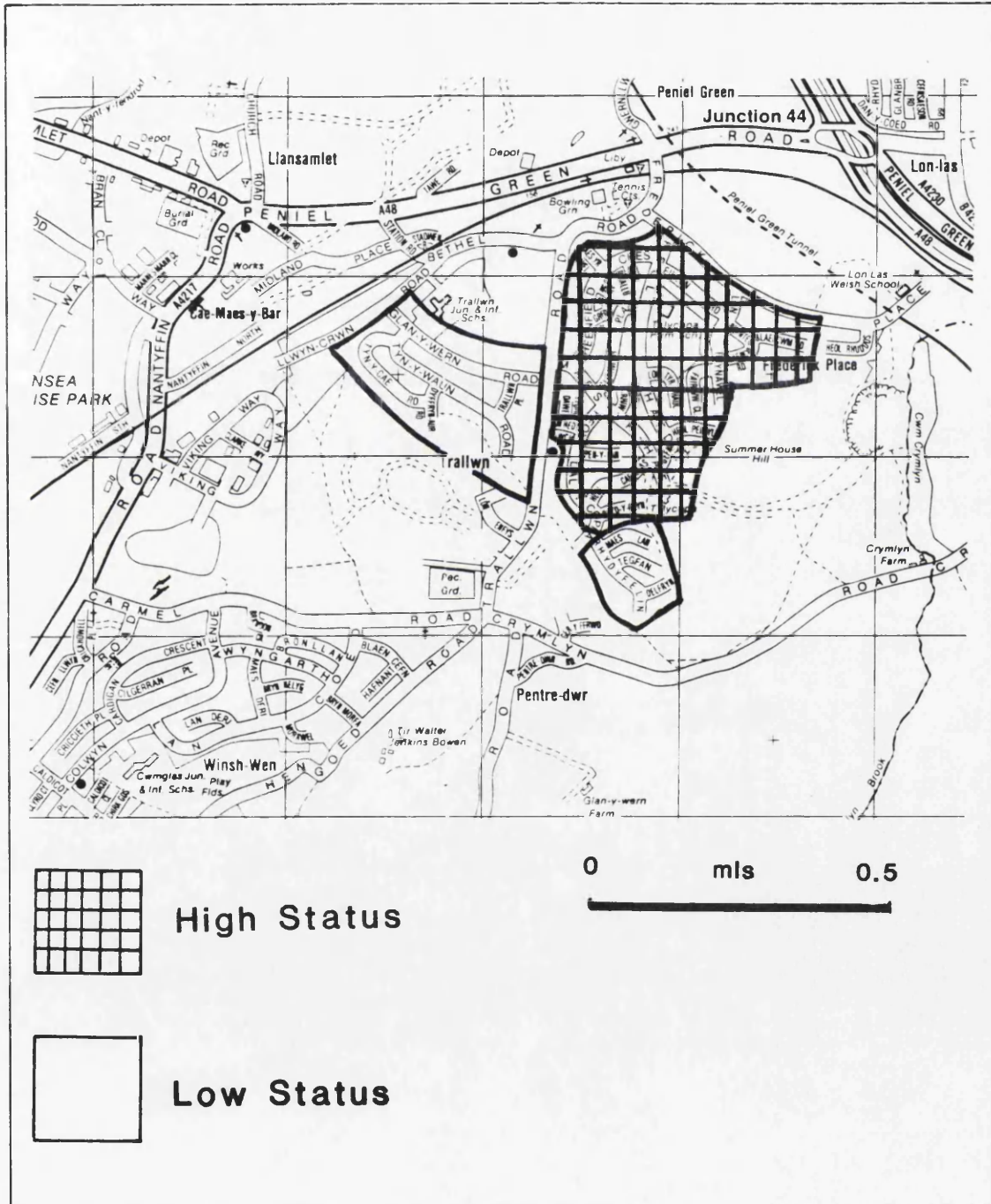


PLATE 7: TRALLWN HIGH STATUS PRIVATE HOUSING

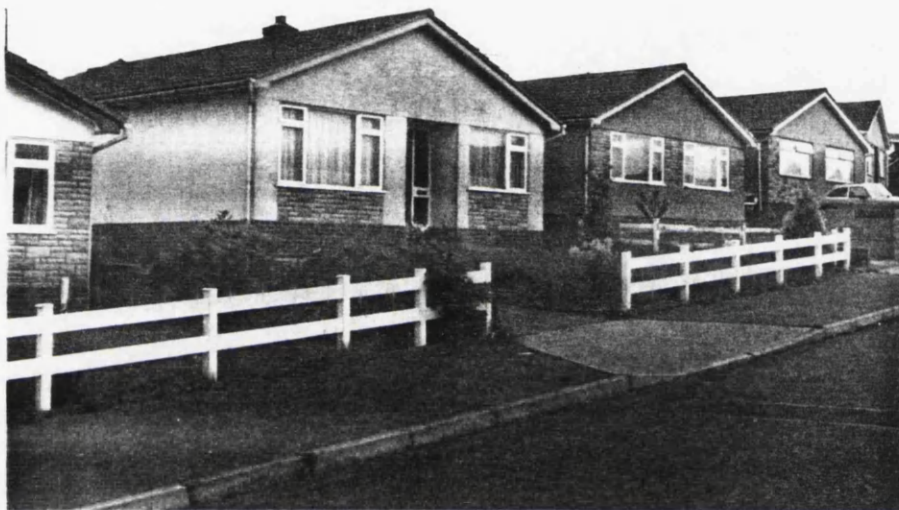


PLATE 8: TRALLWN LOW STATUS LOCAL AUTHORITY HOUSING



PLATE 9: TRALLWN LOCAL CENTRE

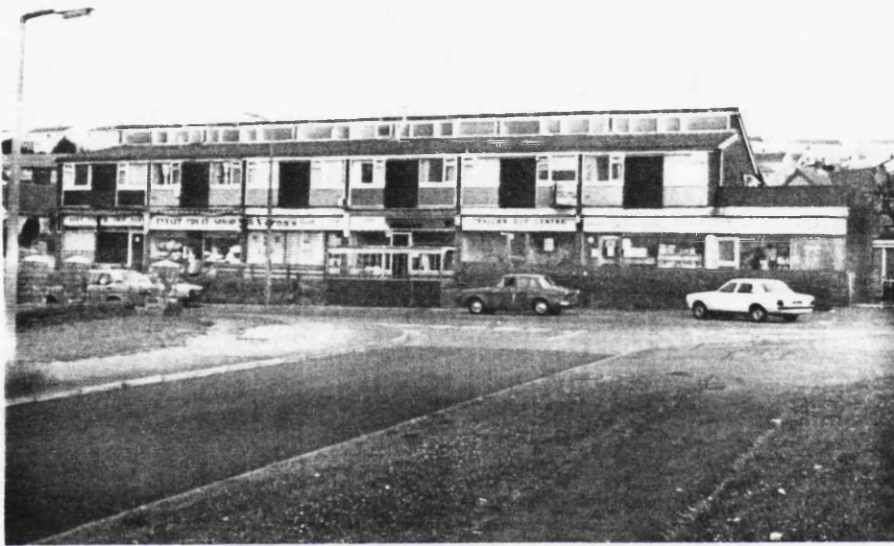


PLATE 10: CLASE NEIGHBOURHOOD CENTRE (RHEIDOL AVENUE)



The retail opportunity set available to Trallwn residents (Figures 2.10A and 2.10B) includes the local shopping centre of Trallwn, a variety of alternative local or neighbourhood centres in the east Swansea valley communities, the Morryston small town centre (2.5 miles west of the site; 96,970 square feet total sales area) and Swansea city centre. An alternative small town centre is located at Neath, 6.5 miles east of Trallwn (195,700 square feet total sales area). The free standing small superstore facilities of Tesco, Fforestfach or Julians at Garngoch are a considerable distance west of Trallwn; an indirect motorway route, however, connects from Trallwn to these centres. Consumers resident in the Trallwn area thus have a variety of centres at their disposal. The shopping centres of Morryston and Swansea city centre are connected by direct local public transport to the Trallwn survey area.

Treboeth (Figures 2.23, 2.26; Plates 13, 14)

This survey area is located in north Swansea, approximately 2.75 miles from the city centre. The two contrasting social status sites are separated by a minor access road (Mynydd Garn Llwyd Road). The designated low status area consists of 428 dwellings of a mixture of semi-detached, terraced and flatlet houses predominantly rented from the local authority. The broader E.D. based statistics indicate the low status of the area, with only approximately 45% of households owning a car or vehicle. Socio-economic groupings of economically active or retired heads of households are similarly low status. Migration rates into the area are low (approximately 2%). In contrast to this, the designated higher status area consists of modern privately owned semi-detached and detached houses and bungalows. Figures 2.24A - 2.24C illustrate the difference between this site and the adjacent low status site. A total of 421 dwellings are contained within the boundaries of the Treboeth high status sample site.

The available shopping opportunities in the area include a ribbon type development of a neighbourhood centre status on Llangyfelach Road, (plate 12) and a nucleated neighbourhood type centre on Rheidol Avenue and Solva Road (plates 10 and 11). This latter centre consists of a number of convenience outlets totalling 7,000 square feet sales area, including a small Cooperative supermarket.

Figure 2.26: Treboeth Survey Site (North Swansea)

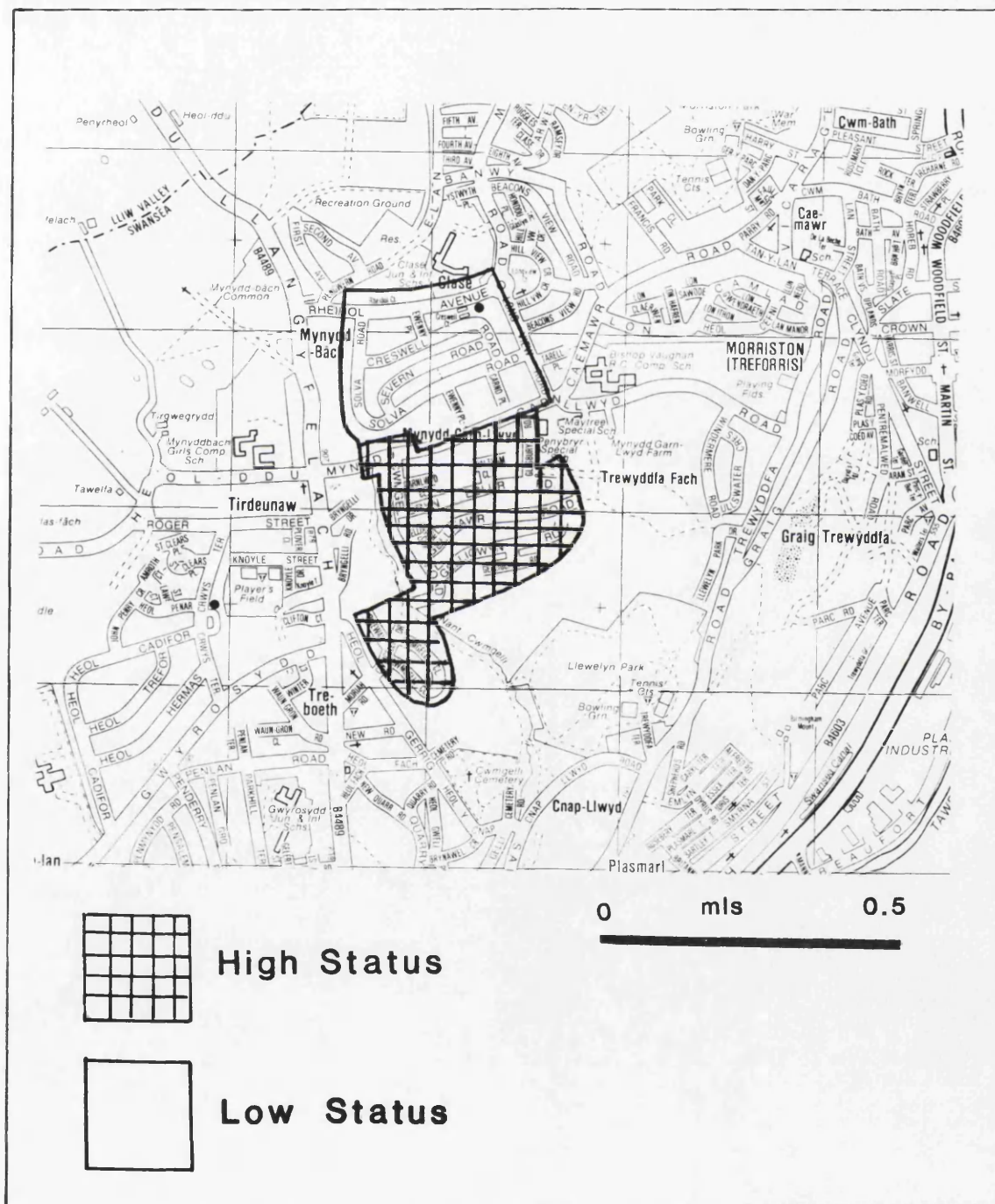


PLATE 11: CLASE NEIGHBOURHOOD CENTRE (COOP SUPERMARKET, SOLVA ROAD)



PLATE 12: LLANGYFELACH ROAD (RIBBON DEVELOPMENT OF SMALL SHOPS)



PLATE 13: TREBOETH HIGH STATUS PRIVATE HOUSING



PLATE 14: TREBOETH LOW STATUS LOCAL AUTHORITY HOUSING
(CLASE)



Physical access to all these shops is similar for both sites, although certain households from the Treboeth low status area are located virtually adjacent to the opportunities on Solva Road.

Further shopping opportunities are located at the Morryston small town centre (1.8 miles east of the survey area), the Swansea city centre (2.75 miles) and also the small free standing superstores (3.1 miles west of Treboeth). An alternative neighbourhood facility is available at Brynhyfryd Square, approximately 1 mile south of the area along the main Swansea city centre access road. Direct public transport facilities link the Treboeth survey area to both the city centre and Morryston.

Tycoch (Figures 2.23, 2.27; Plates 15, 16, 17)

The survey area of Tycoch is located in west Swansea, approximately 2 miles from the city centre. The two contrasting social status sites are physically separated by a distance of approximately 1/4 mile, but perhaps more significantly, by a main arterial route into Swansea from the Gower Peninsula (A4118; Gower Road). The high status site consists of 438 households of a mixture of private, semi-detached and modern detached housing. Figures 2.24A - 2.24C illustrate the different socio-economic and demographic characteristics of the relevant E.D.'s between this high status site and the lower status site. Fundamentally, car ownership, socio-economic group of household heads and housing tenure distinguish the two sectors. Demographically, the E.D.'s comprising the Tycoch low status site include a higher proportion of elderly population and correspondingly few children under 4 years of age. The low status site consisted of 434 households in the revised boundary which were a mixture of semi-detached, terraced and flatlet local authority housing.

The available shopping opportunities for both of these groups are virtually identical. Local centres are situated within both sites (Tycoch Square local centre comprises 3,700 square feet total sales and Sketty Park 2,835 square feet total sales and include a similar mix of individual shops; plates 18, 19). Alternative opportunities are available at varying distances from both of these sites. District centres at Killay (0.7 miles west of Tycoch; 11,830 square feet total sales area) and Sketty Cross (0.5 of a mile east of Tycoch, 24,000 square

Figure 2.27: Tycoch Survey Site (West Swansea)

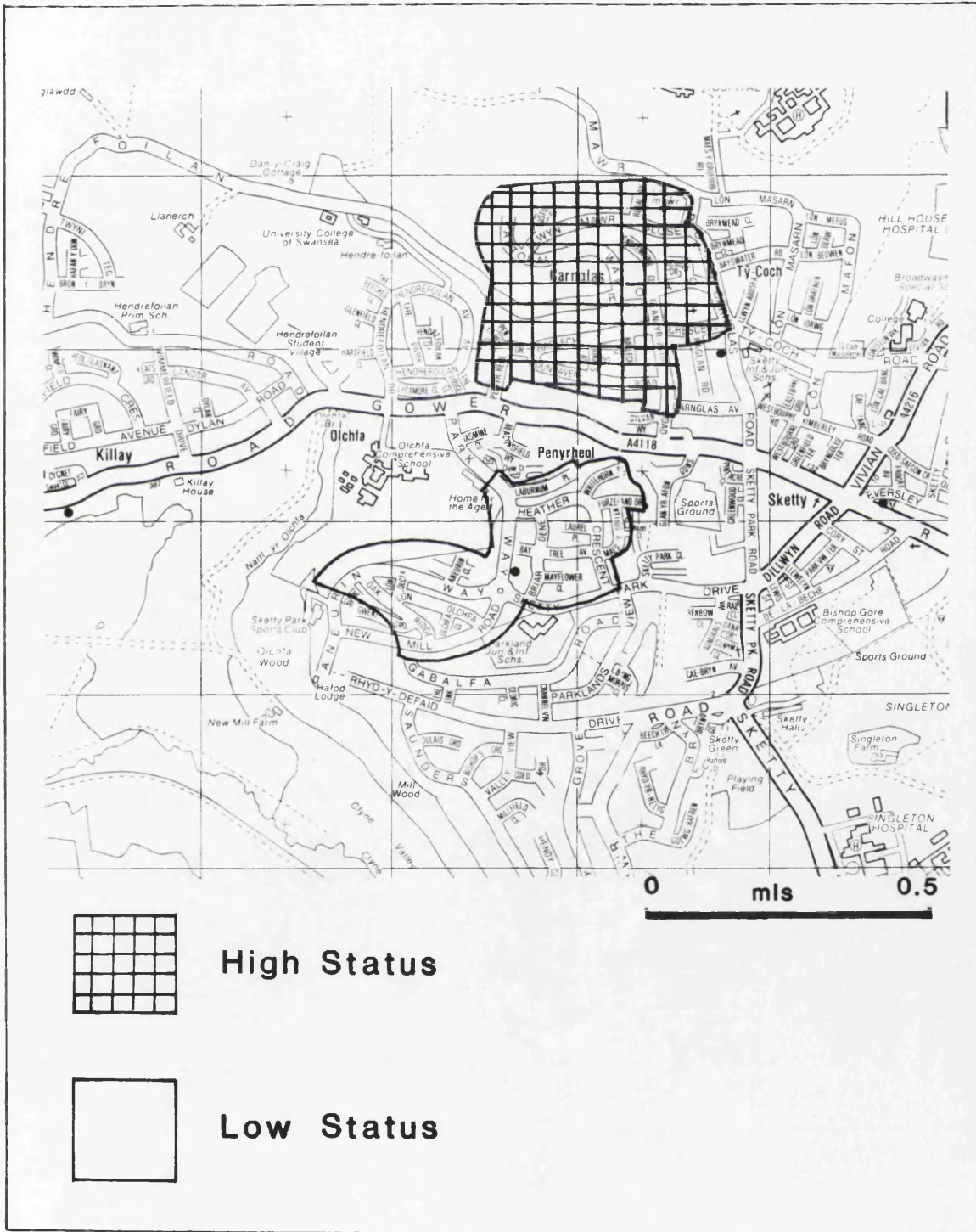


PLATE 15: TYCOCH HIGH STATUS PRIVATE HOUSING



PLATE 16: TYCOCH HIGH STATUS PRIVATE HOUSING



PLATE 17: TYCOCH LOW STATUS LOCAL AUTHORITY HOUSING
(SKETTY PARK ESTATE)



PLATE 18: SKETTY PARK ESTATE LOCAL SHOPPING AREA



PLATE 19: TYCOCH SQUARE LOCAL SHOPPING CENTRE



feet total sales area) are nearby and Swansea city centre is only 3 miles away. The free standing superstores are approximately 2.5 - 3 miles from the Tycoch site, but an essential difference between this area and the previous two study areas is the lack of a nearby small town shopping centre. A direct public transport route connects both the high and low status sites with Swansea city centre.

This completes the introduction to the survey areas. The centralised shopping opportunities discussed are illustrated in the series of plates 1 - 6 presented earlier. The discussion now proceeds to the third stage in the sampling procedure, the selection of the individual households for detailed study.

The three areas chosen from this detailed stratified areal framework are the defined units for further survey. Each area now becomes the statistical unit for areal sampling on a random basis. The next objective was to select individual respondent households. A number of procedures were employed which illustrate several general principles. These procedures are well documented (Herbert and Evans, op.cit; Phillips, op.cit) and need only be summarised here. The requirement for a range of detailed street maps and town plans was supplemented with reference to the electoral register, to produce a current list of household numbers for detailed selection.

The combination of both sources of information enabled the total number of dwellings for each area to be calculated and hence, the universe for sampling to be defined.

From this list a random selection of households was taken for sampling. An important decision at this stage concerned the size of sample to select from each of the designated areas. Jahoda (op.cit, p.143) points out the importance of selection when she states; "perhaps the most obvious source of potential bias lies in the selection of respondents". Consequently this aspect and the number of respondents selected was crucial. This decision was again made with respect to the research objectives and likely methods of analysis. Dixon and Leach (1978, p.7) point out that "the larger our sample, the more confident we can be in our predictions, or the narrower the range in which the

predicted value lies". Furthermore, the precise sample size will be affected by the variability of the population under study. The research design adopted reduced this possible variability by the selection of sub-areas of homogenous population. In general, as Dixon and Leach (op.cit) indicate, a sample of 30 is the smallest that can be expected. However, the larger the sample, the more accurate will be the statements made about the population. Further considerations of sample size also make it necessary to consider the minimum numbers needed in particular sub groups of the population to be compared. Again, the research aims for a disaggregated analysis of intra-urban shopping behaviour are highly applicable to this case. Dixon and Leach (op.cit, p.10) conclude by stating; "in practice ... sample size is usually determined by time and resources". A further consideration concerns the proposed methods of analysis. This research demanded the use of cross tabulation procedures on categorised data whereby minimum observed frequencies for individual cells needed to be considered. Overt patterns of spatial behaviour would be classified by the six levels of the retail hierarchy identified (section 2.2) subdivided into nearest centre or alternative centre. The final decision over sample size was taken with regard to all these considerations. A period of five months was allocated to collect information from a personal field survey. The research design adopted had precisely identified sub-areas of the city for detailed investigation. Populations under study are relatively homogenous for each site, and consequently the survey aimed to obtain 75 completed responses from each of the six sub-areas. This figure was considered sufficient for cross tabulation purposes and feasible, given the time and resources available. The research expected a certain level of non-response, and to counter this a list of approximately 120 randomly selected households was drawn from the target population for each of the six sites. This random selection was accomplished by assigning a numeric series 1...n to each of the dwellings, and drawing random numbers to reach the required sample size. The success of the sample selection procedure, in relation to the adopted method of data collection and overall response, is discussed in the forthcoming sections 2.4 and 2.5.

The selection of sample respondents for detailed analysis has been achieved through a number of stages in research design. This approach is termed 'multi-stage' sampling (Moser and Kalton, 1971, p.107-8). The defined urban area of Swansea accords to the 'Primary Sampling Unit' from which urban sub-areas of certain characteristics are chosen as the second level sampling unit. The third stage involved the selection of households from within the selected areas.

3. Data Collection

The selection of a sample for detailed analysis usually draws upon certain established theories and, generally, the researcher can make the process of sampling as precise and rigorous as the available resources permit. The resultant sample requires a method for the collection of information. This process is less well developed and mainly less systematic. There does exist a well experienced and vast literature, but generally only a few coherent sets of principles. Moser and Kalton (1971) provide a thorough treatment of this area and this present discussion will not resort to non essential repetition of such work. Furthermore, the assumption is made that the reader is conversant with the basic texts of social survey^{research} (for example Oppenheim, 1966; Dixon and Leach, 1978; Crimp, 1981 and Chisnall, 1973). This stage of data collection often produces compromise, as technical knowledge must be matched by a certain creativity and 'flair' for the exercise in question. Jahoda (1967, p.145) aptly summarises this; " the translation of a research question into a method of data collection is a complex and challenging task". A number of different conceptual levels exist, and a multitude of methods for collecting data are apparent. All relate to one prerequisite; that of translating the concepts and objectives of the research project into solid and dependable instances. Only then can these be readily accepted as a relevant illustration of the research aims. Moser and Kalton (1971) classify methods of obtaining data about a group of people into four types:

- i) based upon simple documentation
- ii) based upon the 'classical' method of observation
- iii) based upon mail questionnaires
- iv) based upon interviewing techniques.

None of these types are wholly singularly important. More often or not combining one or two of the methods and making use of their different strengths, is appropriate. (Gray, 1957, for example, combined a sample survey with both a postal and interview stage). Consequently, a wide body of literature has developed in each of these areas, with numerous specialised papers dwelling on individual aspects of each (for example; Oppenheim, 1966; Morgan, 1974; Walker, 1976; Dixon and Leach, 1978; Scott, 1961 and Atkinson, 1967). This current discussion will only detail aspects of a single method of data collection, that of the

personal interview technique. Such a decision cannot be made in isolation from the previous decisions on sample design. Inevitably the choice of approach used is made with respect for the research objectives and with reference to the totality of the project. Alternative procedures were researched. The possibilities of collecting data using a form of mail questionnaires, or a variation based upon a 'drop and collect' technique (for a detailed discussion on this see Walker, 1976) with the associated difficulties of non-response (Morgan, 1974; Scott, 1961 and Gray, 1957) were considered. Similarly, the possibilities of using a diary or panel survey method (Dixon and Leach, 1978) were considered. The use of diaries to collect data has occurred frequently in studies of consumer behaviour (Davies' 1973 study in Coventry was based on a sample of city wide consumers conducted in 1969; similarly Daws and associates in 1971 and 1974 combined both a single personal interview and a later diary survey) and whilst being a highly appropriate technique, the problems associated with diary panel surveys and the overall scope of this research rendered such a method impractical. In using diary techniques to collect data, certain problems arise in persuading respondents to co-operate and maintain records. On many occasions, financial inducements to ensure completion are paid. Similarly, a respondent, knowing that she/he has a diary to complete, may modify her/his behaviour or act more concisely than is usual. Furthermore, the design and analysis of the diary form can be problematic. Such considerations, combined with the restrictions on financial, labour and time resources favoured the use of a single questionnaire interview with each household respondent. This is acceptable given the advice of Dixon and Leach (1978, p.10); "the methods finally adopted are likely to be those most successful in obtaining a good response and a sufficient quantity of analysable data".

3.1 Interviewing and Questionnaire Design: The Need for Rigour and Caution

The most widely and frequently adopted (and unfortunately occasionally abused) method of data collection is that of the interview and associated questionnaire schedule. This approach embodies a series of decisions and technical tasks. These apply both to the format of the questionnaire schedule and to the interview itself, which is an

exceedingly problematic area. Both aspects can introduce bias and hence, invalidate the results. Nevertheless, a wide variety of aspects have been studied via a questionnaire interview approach. The two technical considerations - the tasks of interviewing and questionnaire design will be discussed separately, although there is an inevitable degree of interaction between the two areas.

Personal interviewing is a widely used method of collecting information. A survey interview is a possible area of error and bias as it is simply a conversation between an interviewer and a respondent with the purpose of eliciting certain information from the respondent. Such an interaction appears straightforward but the attainment of a successful interview is much more complicated than this might suggest. An interview is a social process involving an interaction between two individuals and hence, cannot be simply regarded as merely a means of extracting or recording information. Interviewers can all too readily affect the response. Nevertheless, interviews may be flexible. It is possible for an interviewer to build up and maintain a sufficient degree of rapport (a motivating force) to keep the respondent interested and hence, ensure a complete response to the end of the interview. Correct questionnaire design cannot be separated from such an intention. As Oppenheim (1966, p.31) states; "the interview situation is fraught with possibilities of bias. The interviewer may give an inkling of her own opinion or expectations by her tone of voice, the way in which she reads the questions, or simply by her appearance, dress and accent. She may unwittingly influence the respondent by pausing expectantly on certain points, by probing with leading questions and by agreeing with the respondent in an effort to maintain rapport. Her own expectations and her selective understanding and recording of the answer may produce bias".

Despite these comments the interview can be a carefully controlled outcome. Design and preparation at all stages enhances the final information collected, and a standard code of practice will ensure a consistency between each interview. The length of the interview is important. Dixon and Leach (op.cit, p.17) suggest a maximum duration of 20 - 45 minutes in the home. Given all the relevant considerations, the interviewer must be aware of the need for training. Dixon and Leach are of the opinion that it is hard for a researcher to interview on his own

survey, as new ideas which develop during the interview may become incorporated or redefined. While accepting this comment, the practicalities of this present study necessitated that the survey be conducted primarily by the author (although two additional individuals assisted with 20% of the response₁). Stages of training and preparation for the interview are necessary in order to be thoroughly acquainted both with the questionnaire and with the technique of gaining rapport. Considerable reference was made to Atkinson's guidelines (1971) at this stage of the research design. Overall, personal interviewing of respondent households is an acceptable technique for the collection of information in relation to shopping behaviour. A thoroughness of approach is essential and was recognised during the interviewing stages of the research design adopted.

The second crucial decision in the collection of data is the design of the questionnaire schedule. A questionnaire has been defined by Oppenheim (1966, p.2) as:

"essentially a scientific instrument for measuring and for the collection of particular kinds of data. Like all such instruments, it has to be specifically designed according to a particular specification and with specific aims in mind. The data it yields are subject to error".

A prodigious amount of material has ^{been published} about the procedures to adopt in designing a questionnaire schedule (for example Moser and Kalton, 1971; Oppenheim, 1966; Dixon and Leach, 1978; and Jahoda, 1967) and certain rules to follow are appropriate. There is a fundamental requirement at this stage for caution and total rigour of method. The questionnaire is simply an instrument, but one which the approach depends upon. Moser and Kalton 1971, p.308 state conclusively that "no survey can be better than its questionnaire". Furthermore, irrespective of the efficiency of previous decisions on sample design or expected sophistication in the methods of analysis followed, ambiguous questions will produce non comparable answers. Similarly, leading questions will produce a biased response and vague questions only vague answers. There is no general principle or conceptual guideline to questionnaire design.

1. A selection of cross tabulations subsequently showed no evidence of bias between different interviewers. All interviewers were thoroughly trained within the given resources available.

For every conceivable question asked there are a number of possibilities and theoretically acceptable forms. The choice between them is a combination of a knowledge of your target population and subject area, experience, common sense and thorough testing or 'pilot' work.

The researcher needs to make a number of decisions before commencing any questionnaire design. Oppenheim (1966, p.24) discusses these decisions in some detail. Simply they can be summarised below as:

- (i) A decision on the method of data collection
- (ii) A decision on the method of approach to the sample respondents
- (iii) A decision on the sequence and ordering of questions and other techniques within the framework
- (iv) A decision for each main variable on the order of questions, the "funelling" of questions
- (v) A decision on the use of pre-coded or free response questions
- (vi) The need for well ordered pilot work

The questionnaire designed for this particular project (reproduced in appendix 1) resulted from following these principles of design. The decision was taken to conduct a personal interview with the randomly selected respondent households. Each household would be approached by the interviewer on up to three occasions to elicit a contact and make arrangements for an interview. The decision on the sequence and ordering of questions, and the main variable dimensions of the questionnaire, related to the objectives of the research. Logically, the ordering concentrated on aspects of food shopping, then food motivations, durable goods behaviour, and finally the specialist area of attitudes. The decision to use pre-coded questions was made in relation to the ease of data preparation and final analysis. The original questionnaire design was subjected to a separate pilot survey in a comparable survey site (conforming to the aim for a social and spatial juxtaposition of survey sites). Thus, the respondents sought for the pilot survey were as similar as possible to those of the main survey, and the sub-group differences that are appropriate in the main sample were represented in the pilot. The pilot survey identified a number of small problem areas with the questionnaire. Aspects of wording, length and overall format were modified accordingly. Additionally, two particular areas of the proposed questionnaire - that of consumer motivation and attitudinal research, survived the pilot exercise exceptionally well.

From the beginning of this project it was apparent that the questionnaire needed to contain both the factual details of behaviour and information on consumer opinions and motivations. These specific areas warrant special attention in the process of questionnaire design. The factual sections on behaviour naturally were subjected to all the rules of wording, length and ambiguity that the texts cited cover so efficiently. The section on motivation and attitude questions involved additional decisions.

3.2 Questionnaire Design: The Special Case of Consumer Motivation and Attitude Research

The study of motivation and opinion (attitude) is basically much more problematic than that of fact. Opinions are a highly subjective matter and a respondent's attitude can be latent or virtually many-sided. Moser and Kalton (op.cit, p.316 - 318) in discussing such a subject matter go on to categorically state; "in short, there probably is no one correct answer to the survey question" (author's emphasis). Hence, the use of specific concepts and techniques. The discussion will cover in some detail these two areas, but does not enter into the debate found in the social psychological literature on the precise relationship between attitude and overt behaviour.

This is widely covered and will be referred to in the forthcoming analysis. The discussion in this section simply considers the variety of possible techniques and the decision to use a particular method. For ease, the two areas will be treated separately.

(i) Motivation Research

The importance of studies of consumer trip motivation to the overall knowledge of consumer behaviour has been highlighted in Chapter 1. Motives can be classified as either biogenic (physiological needs) or socio-genic (affective and actualisation needs) and consequently research into consumer motives must account for both aspects. Previous approaches to this problem (Davies, 1973; Downs, 1970 and Williams, 1975 for example) have made use of a variety of methods to identify the perceptual determinants of shopper behaviour. This research identified, from the previous literature, the major dimensions of response by shoppers

(summarised in Table 2.8) and combined these results with a rating scale. Basically, three categories of consumer motivation are apparent. Firstly; factors pertaining to both the physical and perceived geography of the shopping centre/place of residence interface. Secondly; factors pertaining to the retail composition of the shopping centre. Finally; factors pertaining to the individual product sought during the shopping trip.

The final list of seventeen motivational statements is shown in Table 2.9. This table reflects the findings of the literature review plus additional hypothesised factors. The research design allows these dimensions to be considered by the respondent and 'rated' on a numeric scale of 1 to 5, indicating the relative strength of importance assigned to each dimension. A rating scale allows a numeric value to be allocated to some form of judgement (Oppenheim, 1966). Rating scales demand caution; they can easily result in possible error but, nevertheless, do have the considerable advantage of simplicity. The technique is straightforward, easy to understand and quick to administer; all of which are important considerations in this present study. A problem arises in that respondents can tend to avoid the two extremes of the scale and hence conform to the centre or middle viewpoint. Moser and Kalton (1971) term this "the error of central tendency". Despite being a single item scale, a rating has the distinct advantage over a straight Yes or No choice of answers. Furthermore, rating scales are acceptable in straightforward survey topics. Food shopping behaviour can be viewed in such terms.

The use of such a method proved to be successful during the pilot survey and the reservations over the approach were strongly considered in administering the technique. Each respondent had the method comprehensively explained to them during the interview.

(ii) Attitude Research

Attitude research has been identified as an area of research priority for the study of consumer behaviour. The complexities of attitude warrant a specific design within the construction of the questionnaire schedule. Asking attitude questions complicates the overall design of the schedule, adding a whole array of particular problems and

Table 2.9: List of Motivation Statements Administered in the Questionnaire Survey

1. Actual distance between shops and home.
2. Ease of access to the shops by car.
3. Ease of access to the shops by bus.
4. Ease of access to the shops by foot.
5. Convenience of car parking.
6. Convenience of bus facilities.
7. Variety of shops in the centre.
8. Reputation of shops in the centre.
9. Availability of a supermarket.
10. Choice of products sold by the shops.
11. Quality of goods sold by the shops.
12. Price of goods sold by the shops.
13. Service received from store staff.
14. Ability to combine shopping and another activity.
15. Availability of specialist food shops.
16. Routine/habit - always shop there.
17. Familiarity with the shopping centre.

considerations to one section of the interview. An attitude has been defined by Allport (1935) as:

"a mental or neutral state of readiness, organised through experience, exerting a directive or dynamic influence upon the individuals response to all objects and situations to which it is related". (reproduced in Thomas, 1971, p.19).

As such, attitudes are reinforced by beliefs (cognition) and often attract strong feelings (emotion) which may result in particular forms of behaviour (action). It is, however, this relationship between attitude and overt behaviour that is a somewhat vexatious issue (Gross and Niman, 1975). Tittle and Hill (1967) reported, however, that when the attitude formed a multiple item and the behaviour consisted of patterns occurring under usual circumstances, then the relationship between attitude and behaviour would be most consistent. It is sufficient to state that, despite such reservations, the act (or ritual) of shopping is an activity which occurs with sufficient repetition in the overall behavioural activity patterns of individuals. The discussion will return to this debate in the appropriate chapters.

Attitudes are of an elusive nature and cannot be observed. They must be inferred or more appropriately measured somehow. Handyside (1960) notes the use of attitudes as hypothetical entities to describe consistencies in behaviour and furthermore, goes on to state their non suitability as explanatory principles.

Attitudes are accessible via research techniques and although skill is needed to obtain such measures, a well developed body of literature on methods of measuring attitude exists (McKenna, 1977). Consequently, researchers who are not specialist psychologists can apply either directly or in a modified form, methods of attitudinal measurement within the confines of a questionnaire schedule. Attempts to measure attitude concentrate on trying to place a person onto a continuum in such a way that the person can then be described. If this continuum is scaled, a person can then be assigned a numerical score to indicate his/her relative position on that particular dimension of interest. Such 'attitude scaling', as it is termed, takes the form of a number of basic types, each of varying degrees of sophistication. The characteristics of attitude scales and the various types are exceedingly well documented.

Moser and Kalton (op.cit), Oppenheim (op.cit), Phillips (1977) and McKennel (1977) all provide a basic outline of the respective techniques. For a discussion on the relative merits of Likert, Guttman and Thurstone scales or Osgood's semantic differential, reference should be made to these texts.

In the geographical literature, Thomas and Williams (1976) and Phillips (1978) specifically employed a Likert type analysis. Downs (1970) in an investigation of shopping centres favoured a semantic differential approach. Williams (1975) in a study of spatial choice behaviour in Birmingham applied a simple rating scale, but interestingly, concluded with a call for a more refined measurement and scaling technique.

Irrespective of the method followed, all attitude scaling procedures consist of assembling a set of statements (items) from which the final scale is selected. Since so much depends on the way in which the issue is worded, a single question or item is often unreliable and as it may only approach an attitude from one particular direction, can result in a biased response. Consequently, a large number of statements are originally assembled from which the attitude scale is selected.

The rules of questionnaire design previously outlined need to be reinforced when constructing attitude statements. Each needs to be meaningful, interesting and, perhaps, exciting to the respondent.

An attitude scale requires considerable preparation, preliminary work and especially piloting. In certain specific studies a large battery of items would be piloted and analysed to produce a single scale for the main survey (McKennel, 1977). Attitude scales are, however, relatively crude measurement techniques; their primary aim is to divide individuals 'roughly' into a broad number of groups, with regard to a particular attitude. They are techniques for placing people on a continuum in relative terms. The form of the attitudinal statements is influenced by the choice of scaling technique. The final decision on the precise composition of the statements is made on the basis of both the pilot study and judgement. This current study decided to follow the use of a Likert scaling technique. Not the most sophisticated of scales,

respondents are asked to choose between general response categories, indicating varying strengths of agreement and disagreement. The categories are then assigned scores and the respondents attitude measured by his total score. Moser and Kalton (op.cit) refer to this as a 'summated rating scale'.

The essence of the approach is that the sum of the item ratings gives an overall score which is more reliable than any single item rating, since it is less vulnerable to wording biases in any one item or to random errors. The precise choice of scoring depends on the actual statement. If a decision is made to score a favourable statement positively (say from one to five) then an unfavourable attitude statement would be scored in the reverse order (negatively, from five to one). When using Likert scales it is advantageous to include an equal number of positive and negative statements to force the respondent to consider each carefully. Finally, it is essential that all the items measure the same thing; Oppenheim (1966) refers to this as unidimensionality. Methodologically, a Likert scale requires a large pool of items to be constructed for piloting and further judgement before presentation to the main survey. This particular research project reduced an item pool down to 32 statements for the final survey. The original pool of items was developed from previous studies in the literature (Williams, 1975; Daws and Bruce, 1971 and Madge, 1969 for example) discussions with individual shoppers, hypothetical factors and the pilot survey.

Table 2.10 details the final list of 32 statements. All the statements measure attitude to aspects of shopping behaviour and encompass five apriori sub-groups and are numbered as they appeared on the final questionnaire schedule.

A number of positive and negative statements are included. Statement number 1 is obviously positive; "I think that food shopping is generally an enjoyable activity", and a low score would indicate a strong agreement with the statement. Number 3, on the other hand, is negative; "Food shopping is very much a chore as far as I am concerned", and a strong agreement with the statement would be assigned a high score of 5.

Table 2.10: Attitude Statements in the Order Appearing on the Questionnaire

1. I think that food shopping is generally an enjoyable activity.
2. I do not find food shopping particularly tiring.
3. Food shopping is very much a chore as far as I am concerned.
4. I just like to go shopping, anywhere, to make a break from the housework.
5. When I get home after shopping for food, I feel a sense of relief.
6. I like to make a shopping list for food, planning what I am going to buy and where I am going to buy it from.
7. Food shopping has to be done irrespective of the time and effort it takes.
8. I think that supermarkets are the ideal place to get my food shopping.
9. I would still rather buy my food at the traditional smaller type of shop.
10. I like to be able to get all my food items in one place.
11. I always like to be able to use a car when getting my bulk food shopping.
12. I would not like to shop for food at the nearest shop to my home.
13. I think that buying food and travelling by bus present no problems.
14. I am willing to travel as far as is necessary to get to a better shopping area, where I can get all the food that I need.
15. I think that I prefer to do my bulk food shopping alone.
16. I like to buy my food shopping from the city centre.
17. I think what the shops are like is more important than how far they are away from my home.
18. I rarely like to compare prices between a number of shops before buying food.
19. I like to look for special offers and bargains when buying food.
20. I like to buy the best quality of food goods, irrespective of the price.
21. I like to look for nice fresh items of perishable type foods.
22. I always like to buy the cheapest make of food goods I want.
23. I think that getting value for money is the most important thing about food shopping.
24. I think that my local/nearest shops are as good as could possibly be expected.
25. I think that Swansea city centre provides quite a well balanced choice of shops: something for everyone.
26. I often like to have a day out in the city centre just looking, not specifically to buy anything.
27. I usually like to go shopping in the city centre on my own.
28. I look on city centre shopping trips more as a social outing.
29. I like to go into the city centre just to shop in the market for fresh produce.
30. I think that I would be willing to travel further to a shopping area by car, if a large, convenient car park was available.
31. I like to use my local/nearest shops for the occasional 'odds and ends' when and if I need them.
32. I think that the small, specialist food shop (like a butcher, greengrocer etc) still offers a lot to the careful shopper.

The use of Likert scaling provides a reliable method of attitude scaling. It does not possess the problems of construction that are characteristic of alternative techniques (Guttman scales for example are very complex) and, whilst Likert scales are poor in producability, they are less laborious and more popular than the alternatives. As Oppenheim (1966, p.141) states; "Likert scales tend to perform very well when it comes to a reliable, rough ordering of people with regard to a particular attitude".

3.3 The Questionnaire Employed

The result of the investigation into the principles of data collection was to administer, via a personal interview with the household respondent selected (defined as the main shopper from each household), a questionnaire schedule embodying many areas of information.

The questionnaire was thoroughly designed; it closely resembled the principles of social survey design and hence reflected the research aim for thoroughness.

The questionnaire was extensively piloted to a sample of 25 respondents in an additional area of West Swansea. This sample area closely resembled those areas chosen for the main survey, and the exercise proved particularly fruitful. Certain aspects of the wording of questions and the layout of the schedule were adjusted; attitudinal statements were developed and finally, as it resulted, the removal of a 'repertory grid' section. The pilot survey respondents found this last section very difficult to answer and many expressed a concern over the length of the questionnaire with such a technique included.

The resultant questionnaire (presented in appendix 1) can be divided into a number of sections. The interviewer introduced himself and proceeded to describe the nature of the research project. Each respondent was requested for an interview, either at that contact moment or by arranging a more convenient time. Each respondent from a household was asked a filtering question as to

their relative status in the shopping responsibilities for the household, as interviews were only completed with the principal shopper of the household. To begin with, the questionnaire identified the sociological and economic characteristics of the household group. Unlike the majority of recommendations (Dixon and Leach, 1978), this section was critical to the research, and required treatment in the first instance. A lack of such information was seen as detrimental to the research aims. The ordering of such a section proved to be problem free in the pilot survey. General aspects of wider shopping behaviour for food products (defined for the shopper) by the respondent were then elicited. Frequency of all shopping trips, timing of shopping trips and the respondents assessment of the characteristics of their behaviour was identified. The questionnaire then moved onto obtaining behavioural information of the use of shopping locations for a variety of commodity groups. The selection and inclusion of these product groups resulted from the literature and the pilot survey. The piloting did in fact eliminate the product group of "fruit and vegetables". In addition to locational information, respondents were asked to provide details of such behaviour, as travel characteristics, frequency of purchase and alternative locations visited.

Question 18 was included as a qualifying question used to check response. Question 19 sought to identify aspects of 'holistic' consumption; whilst question 20 sought information of the respondents' stability of behaviour and any possible changes. The next section sought to identify food trip motivations. Seventeen statements were delivered to each respondent, with an open ended question enabling the respondent to qualify any of the previous statements. Questions 22 through to 24 concerned a section devoted to the shopping behaviour for types of durable and specialist goods. A review of previous studies, and a knowledge of retailing, identified three product areas for definition. Personal clothing goods, household hardware and household electrical products were used as surrogate groups to identify such characteristics of behaviour. Respondents were requested to assess the frequency with which they combined durable or specialist goods shopping with food

shopping to extend the holistic view of convenience goods behaviour. The next section, encompassing questions 25 through to 30, concerned the use of Swansea city centre as a destination for both food and general shopping. A rating scale was included in this section to force respondents to consider the city centre as a location for shopping trips. Question 31 required the respondents to consider 32 attitudinal statements on shopping.

Towards the end of the questionnaire the respondents were questioned on their personal mobility levels. The simple car owning question was included in addition to questions relating to a composite index of personal mobility. Finally, ownership details of refrigerators and deep freeze appliances were sought.

All respondents were generously thanked, assured of the confidential nature of the survey and given the opportunity to ask questions at the termination of the interview.

4. The Questionnaire Survey in Greater Swansea

4.1 Details of Survey

Having designed a sample frame, selected respondent households, and designed a questionnaire interview schedule, the research proceeded to the stage of data collection. The process of collecting the information commenced in June 1980 and was completed within a period of 5 months, by November of that year; a total of 455 respondents successfully completed the questionnaire. This represented an overall response rate of 62.5% (Table 2.11). Three visits were made to each household in an attempt to gain a contact before rejecting that selection. 15% of those selected could not be contacted. A further 2.5% of households were vacant and 20% refused. Overall, the survey was a success and provides an average sample ratio of 17.6%. These figures remain constant for each of the six sample sites. The lowest overall response rate was experienced on the Treboeth low status site and the best at the Trallwn low status site. Refusal rates ranged from 26% of the Treboeth low status to 15% at the Trallwn high status site. Clearly the sample is devoid of any particular bias towards one survey site.

The data, therefore, ~~are~~ of a high quality and the research objectives can be met with confidence.

4.2 The Random Sample of Consumers: The Classification of Consumer Sub-Groups

The questionnaire survey provided a vast array of information of a behavioural nature, on consumer perception and on the social, economic and demographic structure of each respondent household. Prior to the discussion of the results on the former two areas, it is necessary to describe the characteristics of households selected.

Table 2.11: Details of The Questionnaire Survey

	No. of h/holds attempted	Response No.	Response Rate	Refusal Rate	Non Contact Rate	Vacant	Total Size Site	Sampling Ratio
Trallwn High Status	116	77	66%	15%	16%	3%	400	19%
Trallwn Low Status	122	80	67%	18	14%	1%	440	18%
Treboeth High Status	126	79	64%	22%	11%	3%	424	19%
Treboeth Low Status	136	79	58%	26%	14%	4%	428	18%
Tycoch High Status	115	70	59%	18%	20%	3%	438	16%
Tycoch Low Status	115	70	61%	21%	17%	1%	434	16%
Totals/	733	455	62.5%	20%	15%	2.5%	2564	17.7%
Averages								

(S.D. 3.4%)

This study, by which the behaviour of sub-groups of consumers can be analysed, draws fundamentally on geographical and social status influences on behaviour. Within these categories a number of additional variations are appropriate. This information strongly relates to the empirical approach to studies of consumer spatial behaviour and the factors influencing behaviour. As previously stated, a number of authors (Thomas, 1977; Shepherd and Thomas, 1980; Dawson, 1980 and Potter, 1982) have drawn attention to the need for research on the shopping behaviour of specifically defined consumer segments. This present discussion will therefore describe a number of methods of defining (and classifying) selected consumer sub-groups.

In accordance with the research aims, certain of the indices will be differentiated both geographically and socio-economically.

(i) Social Class Classification

Classification of a sample population by socio-economic status or social class categories can be a problem. The surrogate measures of this classification are ill defined. A variety of scales have been used for research purposes (for a discussion see Goldthorpe, 1980; Hall and Jones, 1950; Bechofer, 1969 and Watson and Susser, 1971) and it is fair to state that no conclusive solution has been developed. The majority of studies rely on an official Governmental based scale (DoE, 1972; OPCS, 1970) whilst typically in market research a classification, based on the results of the National Readership Survey (JICNARS, 1979), is used. For a detailed discussion on the typical social class groupings used in market research, see Crimp (1981).

The majority of these scales are based upon the classification of social class measured from the occupational status of the head of the household_{1, 2}. This present study classifies social class of households from the OPCS (1970) classification. This classification aims to bring together groups of "people whose social, cultural and recreational activities are similar" (OPCS, 1970, Page X). Such a classification is, as Goldthorpe and Hope (1974) point out, "... one of obvious prima facie attractiveness and utility". It is important to note the significance of sample size and the relative research aims of the

project. A wider socio-economic scale (for example the OPCS Socio-Economic Group, 17 point scale; or the Hope-Goldthorpe, 36 category scale) would result in problems for the analysis with respect to observed cell-frequencies.

Tables 2.12 A & B illustrate the social class classification from OPCS applied to the sample respondents.

The sub-groups within each of the survey areas are significantly different, and can be termed high status and low status respectively. Nevertheless, some detailed variation between the designated high status for each site is noticeable. The high status groups range along a continuum that is lowest at Trallwn and highest at Tycoch. The reverse trend is apparent within the low status groups, albeit with less variability (36.3% of the Trallwn low status are in social classes IV and V compared to 27.9% of Treboeth low status and 24.3% of the Tycoch low status site). The Trallwn survey area illustrates these differences

FOOTNOTE (previous page)

1. Definition of Head of Household

The head of the household must be a member of that household. He/She is the person, or the husband of that person, who:

- a) owns the household accomodation, or
- b) is legally responsible for the rent of the accomodation, or
- c) has the household accomodation as an emolument or requisite, or
- d) has the household accomdation by virtue of some relationship to the owner who is not a member of the household.

When two members of different sex have equal claim, the male is taken as the head of household. When two members of the same sex have equal claim, the elder is taken as head of household.

(Family Expenditure Survey, 1978, Appendix 4, Definition p.143. Dept. of Employment).

2. Definition of Household

A household comprises one person living alone or a group of people living at the same address having meals prepared together and with common housekeeping. The members of the household are not necessarily related by blood or marriage.

(Family Expenditure Survey, 1978, Appendix 4, Definition p.143. Dept of Employment).

Table 2.12A: Social Class Definition from 1970 OPCS Classification of Occupation. P.VII, PX.

- I Professional, etc. occupations
- II Intermediate occupations
- IIIM Skilled occupations - Manual
- IIIN Skilled occupations - Non Manual
- IV Partly skilled occupations
- V Unskilled occupations
- * U/C Inadequately described armed forces personnel and unclassified occupations

* Authors category

Table 2.12B: Sample Social Class (% Respondents)

		Household Social Class						
		I	II	IIIM	IIINM	IV	V	U/C
Trallwn	High Status	10.4	14.3	48.1	15.6	9.1	2.6	-
Trallwn	Low Status	-	8.8	33.8	6.3	26.3	10.0	15.0
All Trallwn		5.1	11.5	40.8	10.8	17.8	6.4	7.6
Treboeth	High Status	5.1	29.1	34.2	22.8	6.3	-	2.5
Treboeth	Low Status	-	2.5	39.2	5.1	25.3	7.6	20.3
All Treboeth		2.5	15.8	36.7	13.9	15.8	3.8	11.4
Tycoch	High Status	24.3	38.6	15.7	14.3	1.4	1.4	4.3
Tycoch	Low Status	-	7.1	41.4	10.0	14.3	10.0	17.1
All Tycoch		12.1	22.9	28.6	12.1	7.9	5.7	10.7

with 24.7% of high status households falling into a social class category of I and II compared to only 9% of the designated low status group. Only 11.7% of the Trallwn high status group are either semi or unskilled manual workers (social classes IV and V) compared to over 36% of the designated low status group. At Treboeth 34% of the high status sample respondents are in social class groups I and II compared to only 2.5% of the low status group. Almost 33% of the Treboeth low status group are in classes IV and V. Finally, these results are reproduced at the Tycoch survey area with 63% of the high status sample falling into classes I and II compared to only 7% of the low status group.

The figures in Table 2.11B comprehensively highlight a basic social status difference within each of the survey areas.

(ii) Personal Mobility

Personal mobility of the consumer can be measured in a number of ways. Traditionally, many studies (e.g. Thomas, 1974) have made use of simple surrogate measures of car ownership or car availability rates. A refined index of personal mobility encompassing 'lift availability' as well as car ownership and useage is proposed as a more sophisticated departure in classifying such an influence on consumer behaviour.

Household car ownership rates vary significantly between the designated groups. Car ownership forms a simple classification of consumer sub-groups and is based on straightforward availability or ownership, with no detail of usage or availability for consumption related behaviour. The definition of household car ownership used covers both household ownership and vehicle availability (a car may be owned by a company for example) of cars and vans.

Table 2.13 illustrates the details of the sample group of respondents.

The high status groups range from ownership rates of 92.8% through to 94% and the low status groups from 51.9% through to 62.9%. The ownership of two cars is much greater for the high status groups. 17% of the Trallwn high status sample own two cars compared to 13% of the low status group. Similarly, at Treboeth 24% of the high status group own two cars

Table 2.13: Household Car Ownership (% Respondents)

		Cars Owned	
		Non Owners	Owners
Trallwn	High Status	6.5	93.5
Trallwn	Low Status	46.3	53.7
All Trallwn		26.8	73.2
Treboeth	High Status	6.3	94.0
Treboeth	Low Status	48.1	51.9
All Treboeth		27.2	72.8
Tycoch	High Status	7.2	92.8
Tycoch	Low Status	37.1	62.9
All Tycoch		22.1	77.9

Number of Cars Owned by the High Status Groups

		1 Car	2 Car	0 Cars
Trallwn	High Status	76.6	16.9	6.5
Treboeth	High Status	69.6	24.1	6.3
Tycoch	High Status	47.1	45.7	7.2

Table 2.14: Index of Personal Mobility (% Respondents)

		Immobile	Partly Mobile	Totally Mobile
Trallwn	High Status	5.2	27.3	67.5
Trallwn	Low Status	30.0	48.8	21.2
All Trallwn		17.8	38.2	44.0
Treboeth	High Status	2.5	41.7	55.8
Treboeth	Low Status	38.0	31.7	29.9 (1.3) _A
All Treboeth		20.3	36.7	42.4 (0.6) _A
Tycoch	High Status	11.4	25.7	62.9
Tycoch	Low Status	31.4	54.3	14.3
All Tycoch		21.4	41.0	38.5

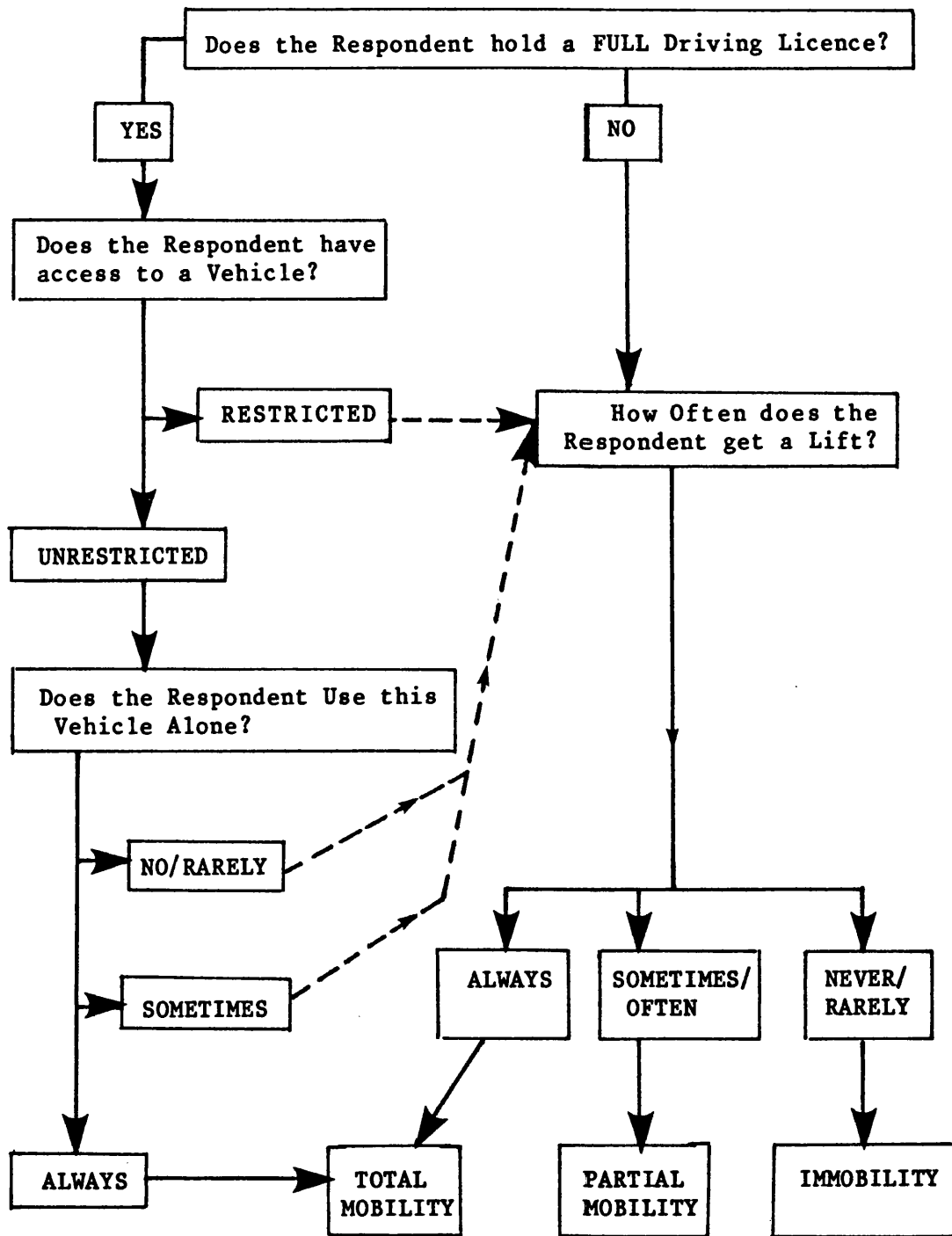
A Missing data value 1 row observation.

(compared to only 8% of the low status group) and Tycoch, where almost 46% of those high status respondents interviewed own two cars (only 13% of Tycoch low status respondents own two cars). Car ownership levels therefore provide a means of classifying groups of consumers.

This research seeks to extend the traditional measurements of personal mobility (car ownership/availability) and reflect fully the importance of car borne shopping. The Index of Personal Mobility presented, therefore, is based upon a number of questions from the interview, revealing information on the useage of a car for food shopping trips. The result is a three fold index. Figure 2.28 presents a flow chart of the steps towards such a composite index of mobility. Immobile respondents are those who cannot drive a vehicle and rarely receive a lift (from either within or outside the household group), those who can drive but have only restricted access to a vehicle and again rarely receive a lift; and finally respondents in households without a vehicle (drivers and non drivers) who rarely receive a lift. Partly mobile respondents are those who cannot drive (again they may or may not be in car owning households) but sometimes, or often, receive a lift, those who technically are capable of driving but have restrictions on vehicle access and sometimes or often receive a lift; and finally respondents who drive, who have access, but never make use of such a facility for food shopping, but sometimes or often receive a lift. Totally mobile respondents are those who drive without restriction and always use the vehicle and those who always (without fail) receive a lift.

Table 2.14 illustrates the characteristics of the sample respondents with respect to this index. Only 5.2% of the Trallwn high status group do not enjoy some degree of mobility. This contrasts to a figure of almost one third of the low status respondents. Futhermore, 67.5% of the high status group enjoy total mobility. At the Treboeth site only 2.5% of the high status, compared to 38% of the low status, do not enjoy some degree of mobility. Again over 55% of the high status group enjoy total mobility. Similarly at the Tycoch site, only 11.4% of the high status group are immobile compared to 31.4% of the low status group. A further 62.8% of the Tycoch high status sample experienced total mobility. Such an index of mobility, provides a satisfactory distinction between the consumer sub-groups. In the ensuing analysis, this index of mobility

Figure 2.28: Towards an Index of Mobility



will not be differentiated between each of the designated social status groups in order to avoid the inherent problem of observed cell frequencies. When especially interesting results are apparent between each of the status groups at a sample area, such factors will be discussed.

This characteristic of the research is experienced particularly in the classification of consumer groups by non economically based indices. In such instances, although the sample is described with reference to the designated status groups, the detailed cross tabulations with shopping behaviour will not be presented.

The attractions of this index of mobility are considerable. Simple car ownership is supplemented by car availability for shopping trips and hence, the mobility levels of consumers is fully identified.

(iii) Demographic Influences

Demographic influences upon spatial shopping behaviour have been highlighted by studies of imbalances in age structure, plus the associated relationship with life cycle and pre-school dependents (Raybould, 1973; Thomas, 1974; Potter, 1977 and Rich and Jain, 1968, for example).

This research views the influence of age structure as important and, consequently, seeks a classification of consumer sub-groups by such a dimension. This influence was given an important weighting in the design and selection of sample areas. The results of the urban sub-area analysis did identify age structure, ^{as a component} and the survey sites selected generally avoided concentrations of the elderly population. Table 2.15 indicates that variations in age between respondents are apparent in the current study, which will necessitate a thorough consideration as an intervening influence on behaviour.

The survey area of Tycoch illustrates the highest concentration of elderly respondents (66 years and above) with an average 13.6% of those interviewed falling into this category. At Trallwn only 3.2% and Treboeth only 5.1% of respondents are aged over 66 years. The 46 - 65

Table 2.15: Age Structure (% Respondents)

	Age of Respondent (years)			
	Less 35	36 - 45	46 - 65	66 +
Trallwn High Status	59.7	26.0	13.0	1.3
Trallwn Low Status	38.8	21.3	35.0	5.0
All Trallwn	49.0	23.6	24.2	3.2
Treboeth High Status	32.9	34.2	30.4	2.5
Treboeth Low Status	24.1	17.7	50.6	7.6
All Treboeth	28.5	25.9	40.5	5.1
Tycoch High Status	31.4	34.3	21.4	12.9
Tycoch Low Status	7.1	22.9	55.7	14.3
All Tycoch	19.3	28.6	38.6	13.6

Table 2.16: Family Life Cycle (% Households)

	Household Family Life Cycle			
	Young Couple	Middle-Aged Couple	Elderly Couple	Others
Trallwn High Status	50.6	36.4	7.8	5.2
Trallwn Low Status	30.0	35.0	25.0	10.0
All Trallwn	40.1	35.7	16.6	7.7
Treboeth High Status	25.3	57.0	7.6	10.1
Treboeth Low Status	15.2	25.3	38.0	21.5
All Treboeth	20.3	41.1	22.8	15.8
Tycoch High Status	24.3	51.4	14.3	10.0
Tycoch Low Status	4.3	32.9	44.3	18.6
All Tycoch	14.3	42.1	29.3	14.3

year category adds a further 24% at Trallwn, 40.5% at Treboeth and 38.6% at Tycoch to the age distribution of the sample. Significantly, this age distribution varies between the designated social status groups within each site. At Trallwn, the high status group is generally younger (59.7% of the Trallwn high status group are less than 35 years compared to 38.8% of the low status respondents). At Treboeth, the major differences are within the 36 - 45 year and 46 - 65 year categories, whilst at Tycoch 31.4 % of the high status respondents are less than 35 years of age (compared to only 7.1% of the low status group).

Family life cycle has been identified as a major influence on patterns of shopping behaviour (chapter 1). Consequently, this study sought a method of classifying households by 'family life cycle'. Intuitively, such a classification would encompass many factors of household type, composition and demographic variables. Practically, such a classification is manyfold, and inevitably results in problems of the number of observations apparent in any one cell. This research project was, unfortunately, not above such difficulties. The search for an ideal classification proved difficult. Many authors (Rosser and Harris, 1965; Lansing and Kish, 1957; Loomis, 1936 and Watson and Susser, 1971) have attempted a classification of family life cycle and certain dimensions are common throughout each. Foxall (1977) and Chisnall (1975) both summarise the concept. Chisnall (p.143) goes on to state; "a life cycle analysis should be sophisticated and allow for variables of age group, marital status, number and ages of children, social class, source of income etc". Such a statement as an aim for classification is admirable, but the practical problem of application, given a spatially disaggregated overall sample size of less than 500 respondents, is immense.

The lack of any clear consensus towards a typology has led the current study to develop a classification. This conforms with the view of Stacey (1969) that the classification of family life cycle should depend upon the subject and aspect under examination, bearing in mind the need for a simple and operational scheme. Consequently, a classification based on adults living together, age and the presence of children embodied a number of previously identified influences on shopping behaviour (Raybould op.cit, Tivers 1977) and the relative distribution of the sample selected. This extended classification provides a useful

description of the characteristics of the sample respondents. However, the possibilities of subjecting such a classification to a categorical analysis are fraught with problems. The research design took the decision to aggregate categories, to the exclusion of the influence of children. Such intervening influences on shopping behaviour are to be treated separately.

Appendix 2 illustrates the differences between the sample sites in terms of young and middle aged couples with at least one child. These vary between the status groups at Trallwn, Treboeth and Tycoch.

Table 2.16 indicates the aggregated categories of the family life cycle groupings. At Trallwn, 40% of all respondents are young couples, 35.7% middle aged and 16.6%, elderly. At Treboeth, these figures are respectively 20.3%, 41.1% and 22.8%. At Tycoch, 14.3% of the sample are young couples, 42.1% middle aged and 29.3 elderly. Elderly couples are defined in this categorisation as over the age of 55 years. Previous tables have identified the details of the age structure of the respondents. Clearly, an interdependence exists between respondent's age, family life cycle and the presence of children in the household.

The classification of consumer groups on the basis of children present within the household supplies an additional element to the research design. Previous studies have identified the role of gender constraints upon consumer behaviour (Tivers, op.cit and Thomas op.cit) and a detailed consideration is applicable here. Furthermore, separation of this influence from other classifications (for example family life cycle) will identify the intervening influence that children within the household may have on behaviour. Two classifications are applicable. Firstly, the total number of children present and secondly, offspring less than 5 years of age are presented. Children or offspring in this classification are defined in terms of economic dependency and normally would be less than 16 years of age. A number of households contained offspring older than this still economically dependent upon the household and involved in full time education. Stacey (1969) provides a number of important guidelines on such a classification.

Table 2.17 illustrates the sample characteristics of the total number of children present in household. At Trallwn, an average of 20.3% of sample households do not include dependent children. 19.1% contained three or more dependents and this varied from 26.3% of low status households to 11.7% of high status households. The Treboeth survey site illustrated a broadly similar pattern with 25.9% of households containing two dependent children and 12.7% containing three or more. Tycoch provides a slightly different picture, with 55.7% of the low status sample containing no dependent children. Only 28.6% of the Tycoch high status sample fall into this category. Consequently, the Tycoch sample differs between the status groups and as such this intervening effect will be carefully analysed.

A further classification based upon pre-school dependents is important. Such a classification embodies a 'constraint' upon behaviour (Tivers, op.cit). The definition applied in this case includes children below the age of 5 years. Table 2.18 shows the breakdown of the sample by pre-school dependents. 37.7% of the Trallwn high status sample and 22.5% of the low status group included at least one young child. At Treboeth, the figures are respectively 20.3% and 10.1% for the high and low status sites. Finally, of the Tycoch sample, 21.4% of the high status group include at least one young child compared to only 2.9% of the low status group.

The intervening influence of these 'demographic variables' will be included in the forthcoming analysis. The research design did not (and furthermore could not) account for all of these influences in detail during the sample selection. Age criteria were, however, loosely applied to the selection of urban sub-areas.

(iv) Time Availability

In the majority of cases (in excess of 98%, with only Trallwn low status falling to 92%) the principal shopper of each household (the definition of the respondent) was female. An important influence on shopping behaviour can be summarised by the available time the shopper has within their day to day activity patterns. A readily available surrogate measure of such a dimension can be found in the work status of

Table 2.17: Number of Children Present in the Household (% Households)

	Number of Children in Household			
	Nil	One	Two	Three+
Trallwn High Status	28.6	24.7	35.1	11.7
Trallwn Low Status	30.0	17.5	26.3	26.3
All Trallwn	29.3	21.0	30.6	19.1
Treboeth High Status	24.1	21.5	41.8	12.7
Treboeth Low Status	27.8	29.1	30.4	12.7
All Treboeth	25.9	25.3	36.1	12.7
Tycoch High Status	28.6	14.3	34.3	22.9
Tycoch Low Status	55.7	17.1	15.7	11.4
All Tycoch	42.1	15.7	25.0	17.1

Table 2.18: Pre-School Dependents (% Households)

	Households with Presence of Pre-School Dependents	
	Nil	One+
Trallwn High Status	62.3	37.7
Trallwn Low Status	77.5	22.5
All Trallwn	70.1	29.9
Treboeth High Status	79.7	20.3
Treboeth Low Status	89.9	10.1
All Treboeth	84.8	15.2
Tycoch High Status	78.6	21.4
Tycoch Low Status	97.1	2.9
All Tycoch	87.9	12.1

the respondent. A simple classification is to divide each respondent into full time workers, part time workers and others. Part time work is defined as normally occupying 30 hours a week or less, including overtime regularly worked (Family Expenditure Survey 1978, p.144, Department of Employment). The category of others include respondents involved in full time education, housewives and the unemployed. Table 2.19 illustrates the sample information. More of the designated high status respondents work than their low status counterparts. This differentiation is apparent in the category of full time employment, where, at Trallwn, 28.6% of high status and 7.5% of low status respondents work full time; at Treboeth 30.4% and 13.9% respectively and at Tycoch, 22.9% and 14.3% respectively.

(v) Household Size

A further classification of the household as a purchasing unit can be made with reference to the size of the household concerned. The Family Expenditure Survey characterises households from one to nine or more persons. The classification used here reflects the proposed analysis and concludes with a five or more person household group.

Table 2.20 illustrates the results of the survey. Very little variation is found between all the 6 sites, there is a low representation of single person households (reflecting the sample design) and a higher than national (10.8%) representation of the larger households. Nevertheless, the distribution of the sample between the three survey areas is relatively consistent. Within the Tycoch survey area a slight variation occurs with 47.1% of the low status group comprising of 2 persons compared to only 22.9% of the high status group.

Such a classification will, under a careful examination, identify further the possible intervening influence of such sociological variables on behaviour, given the fundamental influence of social and geographical differentiation.

(vi) Length of Residence

The previous classification of consumer sub-groups are all hypothesised to influence overt spatial behaviour. A further variable of

Table 2.19: Respondent Work Status (% Respondents)

	Full Time	Part Time (30 hours)	Other	All Workers
Trallwn High Status	28.6	24.7	46.7	53.3
Trallwn Low Status	7.5	35.0	57.5	42.5
All Trallwn	17.8	29.9	52.3	47.7
Treboeth High Status	30.4	29.1	40.5	59.5
Treboeth Low Status	13.9	27.8	58.3	41.7
All Treboeth	22.2	28.5	49.3	50.7
Tycoch High Status	22.9	24.3	52.8	47.2
Tycoch Low Status	14.3	28.6	57.1	42.9
All Tycoch	18.6	26.4	55.0	45.0

Table 2.20: Household Size (% Households)

Size of Household (No. persons)	1	2	3	4	5
Trallwn High Status	2.6	26.0	24.7	32.5	14.3
Trallwn Low Status	3.8	27.5	17.5	25.0	26.3
All Trallwn	3.2	26.8	21.0	28.7	20.4
Treboeth High Status	6.3	13.9	25.3	41.8	12.7
Treboeth Low Status	6.3	25.3	27.8	27.8	12.7
All Treboeth	6.3	19.6	26.6	34.8	12.7
Tycoch High Status	5.7	22.9	12.9	34.3	24.3
Tycoch Low Status	11.4	47.1	15.7	11.4	14.3
All Tycoch	8.6	35.0	14.3	22.9	19.3

explanatory significance can be classified as 'length of residence' of individual respondents. The explanatory value of this measure has previously been illustrated in the approaches classified as 'search learning' (chapter 1) whereby newly arrived consumers to any area 'search' before ultimately developing habitual behaviour.

Table 2.21 illustrates the length of residence of respondents for each of the designated survey sites.

Table 2.21:	<u>Length of Residence</u> (% Respondents)			
	Less 12 months	1 - 2 years	2 - 3 years	3 + years
Trallwn High Status	5.2	13.0	3.9	77.9
Trallwn Low Status	3.8	8.8	10.0	77.5
All Trallwn	4.5	10.8	7.0	77.7
Treboeth High Status	3.8	5.1	7.6	83.5
Treboeth Low Status	3.8	3.8	3.8	88.6
All Treboeth	3.8	4.4	5.7	86.1
Tycoch High Status	2.9	14.3	1.4	81.4
Tycoch Low Status	-	-	1.4	98.6
All Tycoch	1.4	7.1	1.4	90.0

A slight variation is apparent, but overall, in excess of 77.5% of all respondent groups have been resident in the household for over three years. This figure rises to a maximum of 98.6% for the Tycoch low status group. The survey site with the greatest proportion of new migrants (less than 12 months residence) is Trallwn high status where 5.2% of respondents had 'recently' moved into the area.

This discussion has described the social characteristics of the randomly selected sample of consumer households. The research design was based upon the need to select a social and spatial juxtaposition of survey sites for detailed analysis. Such an aim was successfully accomplished by the research. A vast array of behavioural information was collected, and can be differentiated by the characteristics of consumer sub-groups identified in this section. The sites are sufficiently different in terms of social status to be termed 'High and Low Status' accordingly. Tables 2.12B substantiate this difference.

Concurrently, a number of sociological and demographic classifications are provided. These variations within the social status groups at different locations will be carefully analysed for any intervening influence on behaviour.

Further social characteristics of respondent households are provided in appendix 2,3 and 4. These classifications do not acceptably distinguish between consumers, and their inclusion is intended for information purposes only. Ownership of a deep-freeze, a definition of household composition and an extended classification of family life cycle are included.

Footnote

Throughout the text certain terms and phrases are used as a form of short-hand expression; principally these are:

1. 'High-status' and 'low-status' where the full reference should be to 'high-status groups' and 'low-status groups' usually meaning the population resident in the different types of sample area.
2. Terms such as grocery behaviour, meat behaviour and bread behaviour should more correctly be read as grocery shopping behaviour, meat shopping behaviour and bread shopping behaviour. They refer to consumer shopping behaviour in relation to each of these products.

CHAPTER 3: PROFILES OF CONVENIENCE GOODS SHOPPING BEHAVIOUR

Introduction

The research now proceeds to investigate the basic profiles of shopper behaviour for convenience goods as a broad overview of the overt behaviour of the group of consumers interviewed. The information provided is deliberately descriptive. Shopper behaviour is viewed in terms of the general characteristics of behaviour such as overall trip frequency, aspects of multi-purpose shopping behaviour, stability of shopping behaviour and the involvement of additional people in the shopping trip. This information is provided to 'set the scene' before the total analysis of spatial behaviour. Following this description of general behavioural traits, the chapter moves on to describe the components of convenience goods shopping. A nomenclature of convenience product types is defined by an index of similar locations visited for six product groups. Grocery products are assumed to be the major items sought and the interaction between purchases and centre choice for meat, fish, bread, cakes and frozen foods is analysed. Consequently, the research objective to explore totally convenience goods shopping behaviour is closely followed. Having decided the nomenclature of product types for further spatial analysis, additional characteristics of grocery spatial behaviour are presented as an introduction to Chapter 4. This information is viewed as a basic introduction to the detailed analysis of spatial behaviour.

Chapter 3, therefore, could be viewed as an elaborate introduction to the forthcoming discussion on spatial behaviour. The response to a variety of questions is both described and analysed to logically guide the discussion through a continuum of general shopper behaviour, a nomenclature of convenience product types, ^{and,} the characteristics of the dominant product identified, before proceeding to the fundamental detail of spatial behaviour.

1. General Traits of Shopper Behaviour

A number of indices can be used to describe the general nature of shopping behaviour. In the following discussion four main dimensions are presented. These aspects introduce the general profiles of shopper trip behaviour before identifying three specific characteristics relating to individual involvement in the shopping trip, a holistic view to convenience behaviour and the stability of behaviour. These two latter areas specifically relate to the literature and the need to comment on multi or combined purpose shopping trips, plus the desire for a stable group of shoppers with repeat characteristics of behaviour.

(i) Profiles of General Shopper Trip Behaviour attempt to identify the frequency of all convenience shopping trips, characteristics of shopping habits plus the days and times normally favoured for these excursions. The information is presented with respect to the fundamental influences on spatial behaviour - geographical location plus social status.

The frequency of convenience shopping trips (Table 3.1) is based on information collected from each respondent relating to any type of shopping trip, irrespective of dimension and product sought. All groups within the sample shopped at least once a week. However, this varied between location and class. At the Trallwn site, whilst well over 90% of both groups shopped at least once a week, the low status group made twice as many daily visits to the shops than their high status counterparts. Similarly at Treboeth, the majority of the sample respondents reported on making a minimum of weekly trips; however this varied considerably between the designated status groups - only 5% of Treboeth high status respondents reported daily visits, compared to 38% of the low status group. At Tycoch, again, both status groups favoured at least one trip a week. The incidence of daily visits was more pronounced for the low status group (31%) compared to the high status group (20%). Overall it appears that convenience shopping trips are undertaken at frequent intervals. There does appear to be a variation between different social status groups in frequent (daily) shopping trips.

Table 3.1: Frequency of All Convenience Goods Shopping Trips
(% Respondents)

	Daily	Several Times/Week	Weekly	Every 2 Weeks	N
Trallwn High Status	10	25	60	5	77
Trallwn Low Status	20	29	44	7	80
(All Trallwn)	15	27	52	6	157
Treboeth High Status	5	39	47	9	79
Treboeth Low Status	38	28	27	8	79
(All Treboeth)	21.5	33.5	37	8.5	158
Tycoch High Status	20	27	46	7	70
Tycoch Low Status	31	41	23	4	70
(All Tycoch)	25.5	34	34.5	5.5	140

Table 3.2: Characteristics of Shopping Habits (% Respondents)

	One Trip	One Main & Subsid	Min 2 Main Trips	No Main All Subsid
Trallwn High Status	38	55	2.5	4.5
Trallwn Low Status	26	59	5	10
(All Trallwn)	(32)	(57)	(4)	(8)
Treboeth High Status	5	39	47	9
Treboeth Low Status	38	28	27	8
(All Treboeth)	(22)	(34)	(37)	(8)
Tycoch High Status	20	27	46	7
Tycoch Low Status	31	41	23	4
(All Tycoch)	(26)	(34)	(34)	(6)

The characteristics of individual shopping habits are obtained from a direct question, where respondents were provided with a pre-coded list and requested to indicate the characteristic which most accurately described their particular behaviour (Table 3.2). Overall, one main shopping trip plus the 'occasional' subsidiary excursion, when and as necessary, characterised many of the respondents. At the Trallwn survey area this trait predominated, with minimal variation between the social groups, although 'one main trip for all foodstuffs' was important for the Trallwn high status sample. At Treboeth, one main shopping trip, plus a subsidiary, account for 34% of all shopping habits with a variation between the social status groups. Equally of importance were two main shopping trips (37% of all Treboeth respondents), especially for the Treboeth high status respondents. One trip for all goods was a far greater characteristic of the Treboeth low status group (38% of all trips) than their high status counterparts. The results from the Tycoch sample show overall that the two characteristics, 'one main plus a subsidiary trip' and 'two main trips' are of equal importance. Social status variations alter this pattern with the high status group favouring two major trips, and the low status 'one main plus a subsidiary'. Additional information was sought on both the normal day and usual time of major food shopping trips.

Table 3.3 illustrates the predominance of major convenience goods trips towards the weekend period, albeit with variation. 46% of all the Trallwn group favour a Friday or Saturday, which varies between 40% of the high status and 51% of the low status groups. The results are similar for the Tycoch sample, although the Treboeth respondents favoured a Wednesday or Thursday for major trips. Social status variability within all of the three areas highlights the preference for the higher status groups to shop on a Wednesday or Thursday. It is difficult to account for these differences at this stage. Precise details of the socio-economic composition may be important, as may the role of time availability or choice of shopping destination (related to different opening hours).

Table 3.3: Major Day Used For Convenience Shopping Trips
 (% Respondents)

	Mon/Tue	Wed/Thurs	Fri/Sat	Any
Trallwn High Status	3	48	40	9
Trallwn Low Status	10	29	51	10
(All Trallwn)	(6)	(38)	(46)	(10)
Treboeth High Status	4	54	29	13
Treboeth Low Status	8	51	35	6
(All Treboeth)	(6)	(53)	(32)	(9)
Tycoch High Status	10	40	37	13
Tycoch Low Status	3	29	51	17
(All Tycoch)	(6)	(34)	(44)	(15)

Table 3.4: Time of Day Used For Convenience Shopping Trips
 (% Respondents)

	A.M.	12 - 2pm	2 - 5pm	7 - 5pm	Varies
Trallwn High Status	33	5	16	29	18
Trallwn Low Status	48	8	16	10	19
(All Trallwn)	(40)	(6)	(16)	(19)	(18)
Treboeth High Status	39	4	15	20	22
Treboeth Low Status	53	4	22	8	14
(All Treboeth)	(46)	(4)	(18)	(14)	(18)
Tycoch High Status	51	11	13	9	16
Tycoch Low Status	44	11	23	10	11
(All Tycoch)	(48)	(11)	(18)	(9)	(14)

The time of day favoured by respondents when purchasing major convenience goods is illustrated in Table 3.4. The details of the Trallwn sample indicate that 40% of all trips are morning trips (before 12.00 noon) with a further 19% after 5.00 pm. A number of respondents (18%) were unable to answer definitely, whilst a total of 22% shopped during mid-day and the afternoon period. At Trallwn, the influence of social status is important. Trallwn high status shoppers make use of the evening for 29% of their main convenience shopping trips compared to only 10% of the lower status group. The same characteristics are found amongst the Treboeth sample; 46% of all the Treboeth sample are morning shoppers with an additional 14% of all trips being undertaken in the evening. The high status Treboeth group do have a greater preference towards the evening period than their lower status counterparts, although, despite this, the morning period is overall still favoured. At Tycoch, almost half of all the respondents shopped in the morning, and the evening period accounted for fewer shopping trips. The only notable social group difference at Tycoch is found when the lower status tend to favour the afternoon period. Overall, there is a slight social group difference in 'time of day' for bulk shopping and a slight geographical based variation between the high status groups (Trallwn and Treboeth high status groups show a higher proportion of evening trips compared to Tycoch).

These four areas contribute to a general profile of shopper trip behaviour. Variations are apparent between frequency of shopping trip, the characteristics of the trip and when this trip is undertaken.

(ii) The Number of Persons Involved in the Shopping Trip is concerned with a specific aspect of shopping behaviour. By definition, the respondents interviewed should be that individual undertaking the majority (over 50%) of the convenience shopping of the household unit. In recognition that this main shopper may receive a degree of assistance, the survey evaluated information on aspects of shopping behaviour involving other individual members of the household. Each respondent was questioned on the number of individuals concerned with the shopping trip. All the information collected relates to the respondent and the results are presented in Table 3.5.

Table 3.5: Number of Shoppers Involved (% Households)

	One Only	One plus limited help	At least Two shoppers
Trallwn High Status	33	25	43
Trallwn Low Status	34	21	45
(All Trallwn)	(33)	(23)	(44)
Treboeth High Status	47	16	37
Treboeth Low Status	42	22	37
(All Treboeth)	(44)	(19)	(37)
Tycoch High Status	56	29	16
Tycoch Low Status	44	27	29
(All Tycoch)	(50)	(28)	(22)

Table 3.6: Type of Assistance Received (% Respondents)

	General Help	Choice of Product	Transport/ Carriage	Nil	Not Applicable
Trallwn High Status	44	3	33	14	7
Trallwn Low Status	46	-	13	28	14
(All Trallwn)	45	1	22	21	10
Treboeth High Status	47	4	18	20	11
Treboeth Low Status	25	1	23	30	20
(All Treboeth)	36	3	20	25	16
Tycoch High Status	39	-	21	30	10
Tycoch Low Status	39	1	17	26	17
(All Tycoch)	39	1	19	28	14

The Trallwn sample group illustrates some variability in the number of respondents shopping alone (33%), with some help (23%), or as a group (44%). These figures did not vary appreciably between the two designated social status sub-groups. At Treboeth the proportions vary; 44% of all respondents shop alone, 19% receive limited help and 37% of all respondents shop as a group. Minor social status variation is apparent, with slightly more high status respondents shopping alone (47% compared to 42%). Tycoch respondents show slightly different results; overall more respondents shop alone (50%), or with only limited help (28%), but again variation between the designated social sub-groups is apparent. More low status respondents receive assistance at Tycoch.

These findings could again be related to a multitude of phenomena. Further information, aimed at evaluating the type of assistance received by each respondent, is presented in Table 3.6.

Any assistance given to the respondents at Trallwn is in the form of 'general help or assistance'; 45% of those questioned stated this as the involvement from the household group, and 22% as assistance in transportation and carriage. Similarly, any assistance to the Treboeth sample is primarily of a general nature and also in terms of transportation and carriage; 36% of the sample received general help, a further 20% received assistance in transportation and 28% received no assistance in convenience goods shopping. The Tycoch sample again illustrates similar findings; 39% of all respondents received general help, 19% received assistance in transportation and carriage and 28% received no assistance in convenience goods shopping.

Very few persons are involved in each shopping trip and any assistance received is likely to be of a general nature, although, for some groups, transport and carriage is of importance. This latter finding adds support to the use of an explanatory variable of mobility that accounts for more than simply car ownership. As previously discussed this research will analyse the influence of an index of mobility on patterns of spatial choice behaviour. The precise importance of each respondent's role is supported by Table 3.7.

Table 3.7: Proportion of Shopping Undertaken by the Respondent
(% Respondents)

	30% -	56% -	71% -	91% +
	50%	70%	90%	
Trallwn High Status	-	19	17	65
Trallwn Low Status	4	21	7	67
(All Trallwn)	2	20	12	66
Treboeth High Status	3	21	13	63
Treboeth Low Status	3	14	10	73
(All Treboeth)	3	17	11	68
Tycoch High Status	1	9	4	86
Tycoch Low Status	6	7	10	77
(All Tycoch)	4	9	8	81

The majority of respondents (66%) at Trallwn indicated responsibility for over 91% of all the convenience goods shopping. There is only a minimal variation between the two social groups; more of the lower status respondents have less responsibility for convenience shopping. 23% of the low status group buy less than 70% of all the goods compared to 19% of the high status group. Similarly, the Treboeth sample show a majority (68%) taking responsibility for nearly all the convenience goods shopping. Social group variation is again slight, with the Treboeth high status group receiving more assistance. More of the Tycoch sample indicated higher levels of responsibility; over 80% of respondents stated that they were responsible for 91% plus of the convenience goods shopping. Again social group variation was minimal.

The sample respondents therefore are well equipped to provide detailed information on shopping behaviour. The majority of those questioned are fully responsible for convenience goods shopping; some do receive help but this appears to be only of a limited nature in terms of decision making.

(iii) Holistic Aspects of Convenience Shopping Behaviour

relate to the desire of future research to account for wider aspects of behaviour (Shepherd and Thomas, 1980). Many considerations have been suggested as being important in consumer decision making and the behavioural interactions with other activities. Chapter 1 details these areas and this research sought to identify such characteristics of behaviour as they occurred. A number of direct questions were asked of the respondents concerning the dimensions of the frequency, number and type of multi or combined purpose shopping trips.

Respondents were asked a simple question - "How often do you combine any food shopping with some other form of activity?". This provided much information which allows a comment on holistic consumption within this discussion.

As Table 3.8 illustrates, the Trallwn sample varied in the numbers indicating a multi-purpose shopping trip. On average 24% 'very often or always' combine food shopping with some other form of activity. Only 40% 'very rarely or never' combine behavioural activities. A similar result is apparent at Treboeth. 23% of the total Treboeth sample 'very often or always' undertake multi-purpose trips, with 45% 'never or rarely' doing so. Again social status variation is apparent, with a tendency for more high status shoppers to combine food shopping and other activities. The general findings are repeated within the Tycoch sample.

It does appear that multi-purpose shopping trips are important for a small group of the shoppers sampled. The majority of respondents did not combine activities, and those doing so were orientated towards the higher status sample sites. Further information on the dimensions of multi-purpose activities are provided in Table 3.9. The number and type of multi-purpose trips undertaken were obtained from direct questioning of the respondent. Slight rounding errors are contained within Table 3.9, for example the proportion of respondents not undertaking any multi-purpose trips should equate with the figure in Table 3.8 for those 'never or rarely' combining activities. Nevertheless, some interesting findings are apparent which might bear closer examination in future studies.

Table 3.8: Frequency of Multi Purpose Trips (% Respondents)

	Never	Rarely	Sometimes	Often	Very Often	Always
Trallwn High Status	18	12	22	21	10	17
Trallwn Low Status	34	16	21	9	11	9
(All Trallwn)	(26)	(14)	(22))	(15)	(11)	(13)
Treboeth High Status	34	8	11	18	19	10
Treboeth Low Status	35	13	22	14	10	6
(All Treboeth)	(35)	(10)	(16))	(16)	(15)	(8)
Tycoch High Status	27	7	30	11	13	11
Tycoch Low Status	44	6	17	19	10	6
(All Tycoch)	(36)	(6)	(24))	(15)	(11)	(8)

Table 3.9: Number and Type of Multi Purpose Trip (% Respondents)

	Nil	One	Two	Leisure// Social	Work/ Business	Other Shopping	Variety/ Combination
Trallwn HS	25	69	7	26	22	16	10
Trallwn LS	49	48	4	14	19	10	9
(All Trallwn)	(37)	(58)	(5)	(20)	(20)	(13)	(10)
Treboeth HS	41	44	15	7.5	22	7.5	23
Treboeth LS	43	44	13	12	17	14	16
(All Treboeth)	(42)	(44)	(14)	(9)	(19)	(11)	(19)
Tycoch HS	33	60	7	6	9	39	14
Tycoch LS	44	47	9	11	17	17	9
(All Tycoch)	(39)	(54)	(8)	(9)	(14)	(28)	(11)

Of the Trallwn sample, 58% of respondents combined food shopping with a single activity and only 5% combined food shopping with more than one activity. A number of activities are combined with food shopping by the Trallwn sample; 20% of all respondents made leisure/social and food combinations; 20% made work/business and food combinations and 13% combined food and durable goods shopping. 37% of Trallwn respondents indicated that they did not combine food shopping with another activity. This did vary between the sub-groups, with the Trallwn high status group having a greater incidence of combining food shopping with leisure/social activities as opposed to the low status group who, primarily, combine food shopping with work or business. The Treboeth sample group make more multiple combinations of trips. On average, 14% of all respondents combine food shopping with at least two forms of activity. The type of activity combined with food shopping is in 19% of cases work or business combinations and a further 19% mixed. The differentiation between the sub-groups is minimal, albeit that more of the low status group combine leisure/social or other forms of shopping with food purchases. At Tycoch, more single combinations are apparent (54% of all respondents) and these are primarily undertaken by the high status group. The majority of Tycoch respondents combining activities do so with other forms of shopping. In particular, the high status group appears to combine food and other forms of shopping.

The results do identify a certain proportion of respondents who combine convenience goods shopping with alternative activities. The information collected for this current study suggests a possible minority interaction between the different behavioural types. The study did not exclusively seek to identify 'holistic' aspects of behaviour, but the information does suggest an influence which might be considered in more detail by further research. The precise role of holistic behaviour would need to be identified, and the interaction with shopping behaviour examined, to elicit the relative status of alternative activities with food shopping.

(iv) The Stability of Shopping Behaviour recognises the role of learning theory and the changing nature of consumer behaviour. Food shopping behaviour, however, does occur with particular regularity and has promoted the study of repeat purchase in the marketing literature (for example, Ehrenberg, 1972).

Table 3.10: Stability of Convenience Goods Behaviour (% Respondents)

	Definitely Stable	Reasonably Stable	Variable
Trallwn High Status	68	27	5
Trallwn Low Status	55	36	9
(All Trallwn)	(61)	(32)	(7)
Treboeth High Status	75	19	6
Treboeth Low Status	66	28	7
(All Treboeth)	(70)	(23)	(6)
Tycoch High Status	77	20	3
Tycoch Low Status	80	20	-
(All Tycoch)	(79)	(20)	(1)

Nevertheless, as an overall check on the quality of the information obtained, the respondents were asked a series of questions relating to the stability of their shopping habits. The particular questions emphasised the location of shopping trips as opposed to specific product purchases. Each respondent was asked 'their view' of their patterns of shopping behaviour. Three main response categories are illustrated in Table 3.10.

At Trallwn only 7% of the overall sample indicated variability in the locations visited for main food purchases. 61% expressed definite patterns of behaviour and 32% were 'reasonably' confident in their activities. These results varied slightly between the two designated social status groups at Trallwn, with 5% of the high status group and 9% of the low status group expressing variability in their behavioural patterns.

At Treboeth, the findings were broadly similar, with 70% expressing that their behaviour remains 'definitely stable'. This again varied slightly between the two social groups, with more of the high status group (75%) expressing that their behaviour remained 'definitely stable'. The Tycoch sample illustrates even stronger results, with more

respondents indicating the definite stability of their behaviour. There is no discernible social status sub-group differentiation at Tycoch.

As a further indication to the stability of their shopping behaviour, an additional question was asked, which requested respondents to consider their convenience shopping behaviour from a specified date (January 1980). This provided some conclusive findings, for there had been no new retail developments of any great hierarchical status opened between January 1980 and the time of the survey. Of the Trallwn sample, only 18% of the high status and 19% of the low status indicated having changed their behaviour between these dates. When prompted for details of this change 13% (of a maximum 18%) of the high status and 16% (of a maximum 19%) of the low status, considered these changes as macro changes in locations visited. Further questioning identified no definite reason for changes in behaviour amongst the high status group, and only 5% (of a maximum 16%) of the low status group indicated 'price consciousness' as a reason for change. At Treboeth, the analysis identified 13% of the high status and 20% of the low status group as having changed their behaviour between the dates concerned. Detailed prompting for information of these changes revealed that 8% (of a maximum 13%) of the high status group and 14% (of a maximum 20%) of the low status group considered these changes as macro changes in location. Further analysis does not reveal any reason behind these changes for the Treboeth sample. Of the Tycoch group only 10% of the high status and 13% of the low status group indicated changes in their behaviour between the specified dates. Of these changes, 6% (of a maximum 10%) of the high status group and 4% (of a maximum 13%) of the low status group considered these changes as major locational changes.

The above discussion conclusively reveals the stability of the convenience shopping behaviour of the sample group of respondents. The majority consider their behaviour as being definitely stable, and very few indicated having changed their behaviour over the 6 - 9 months prior to the survey. None of the respondents consider their behaviour as erratic and, hence, all the conclusions can be viewed with confidence.

2. Towards a Nomenclature of Convenience Goods Shopping

The research aimed to narrow down the study of consumer behaviour into the specifics of convenience shopping behaviour. To accomplish this, the survey extracted a variety of information on the shopping behaviour of the six product groups of general grocery, meat, fish, bread, cakes and frozen foods. Information on centre choice for each of these products was supplemented by full details of the characteristics of that behaviour. Initially, the analysis will identify any variation between major centre visited for these product groups. The conclusions will identify a nomenclature of convenience goods shopping for detailed spatial analysis. Given the pre-eminence of a single product type, additional products can be analysed to both corroborate and detract from the detailed analysis of the dominant product.

Initially, the research hypothesised a difference between the locations visited by each respondent for different products (a hypothesis which negates the notion of a single shopping trip for a multitude of goods). The analysis shows the interrelationships between centre choice which, in accordance with the research aims, is disaggregated to account for the geographical and social consumer groups. The tendency for the sample selected to purchase multiple product groups from the same shopping centre will be thoroughly analysed by this approach.

The similarity index simply identifies, on the basis of the primary importance of grocery trips, the interaction of centre choice of grocery and other product groups. Table 3.11 presents the percentage index of similarity between the different product groups. Certain products were subject to fluctuations in frequency of purchases (e.g. fish and cakes) and consequently, all figures relate to the similarity of goods purchased regularly.

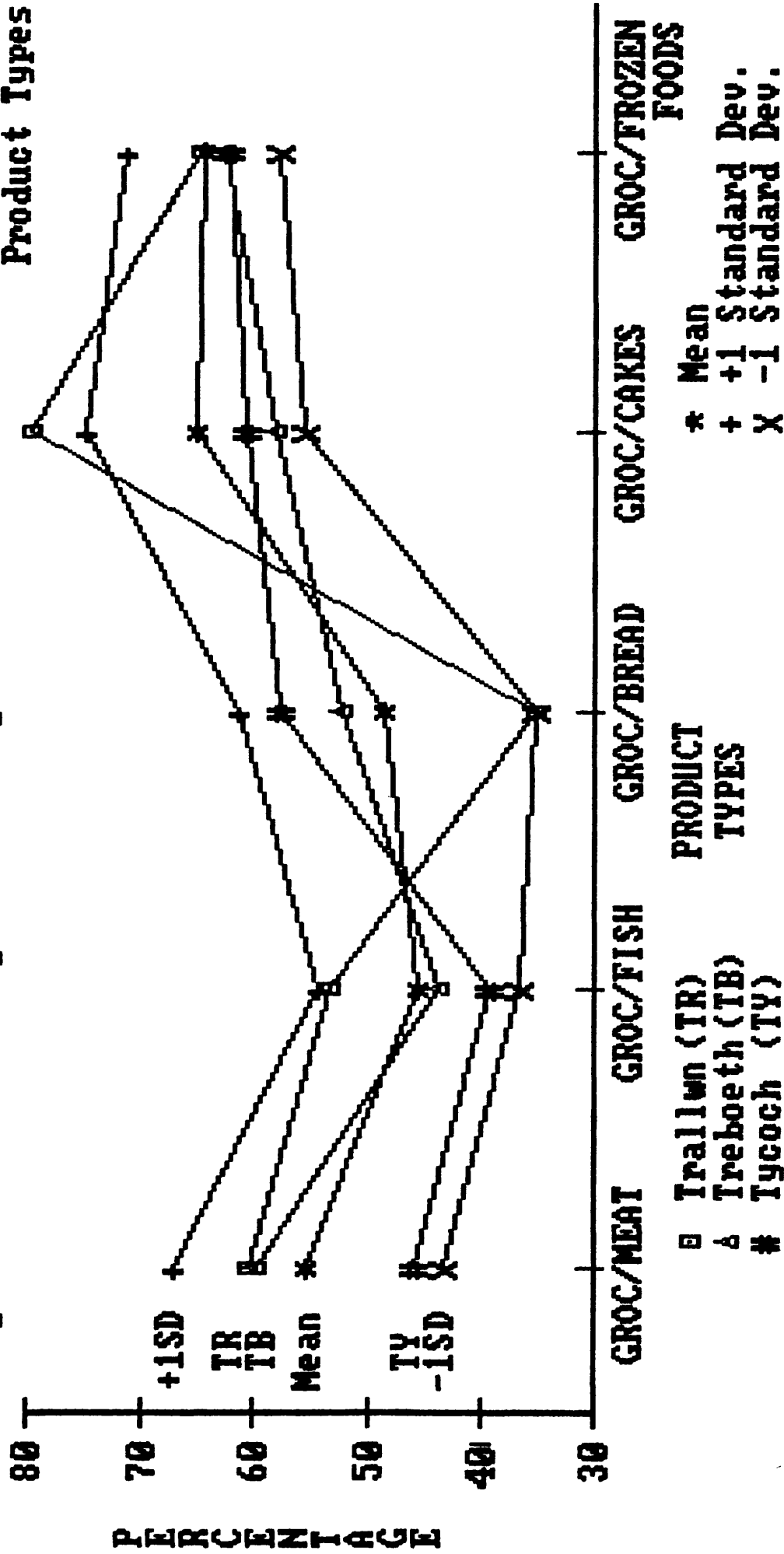
A number of interesting results can be seen in Table 3.11 and the associate graph, Figure 3.1.

The average across all sample areas illustrates that 55.2% of all major meat purchases are bought from the same shopping centre as major groceries. Fish, when purchased, is mainly bought separately (45.4%

Table 3.11: Percentage Index of the Similarity Between Major Centres
Used for Product Types

	Grocery with:				
	Meat	Fish	Bread	Cakes	Frozen Foods
Trallwn High Status	55.3	55.3	35.2	79.6	64.4
Trallwn Low Status	67.4	51.2	35.6	73.8	72.9
(All Trallwn)	(60.4)	(53.3)	(35.4)	(76.7)	(68.7)
Treboeth High Status	48.2	37.4	41.5	55.6	56.8
Treboeth Low Status	71.0	50.0	62.4	60.0	67.6
(All Treboeth)	(59.6)	(43.7)	(52.0)	(57.8)	(62.2)
Tycoch High Status	40.0	45.9	64.6	64.0	68.5
Tycoch Low Status	51.4	32.6	50.7	57.0	55.4
(All Tycoch)	(45.7)	(39.3)	(57.7)	(60.5)	(62.0)
<hr/>					
All Respondents	55.2	45.4	48.3	65.0	64.3
(Standard Deviation)	(11.8)	(8.7)	(13.0)	(9.7)	(6.9)

Figure 3.1: Percentage Similarity of Centre Choice for Different Product Types



similarity), as is bread. Cakes and frozen foods were bought, on average, 65.0% - 64.3% of the time from the same shopping centre as groceries. Within this overall average are a number of important variations. Standard deviation values indicate the variability around the mean, and the detail breakdown by both geographical and social status group is different.

Controlling for the influence of social status identifies that major grocery and meat trips are to the same location; 60% of all trips from Trallwn and Treboeth but only 46% of all trips from Tycoch. Grocery and fish interactions also vary slightly between geographical survey areas. At Trallwn, 54% of all grocery and fish purchases are from the same centre; at Treboeth, this figure is 44% and at Tycoch, only 39%. Similarly with bread, the interaction of major purchases from the same location is different for each area. The results for cakes and frozen foods are generally higher and can be considered sufficiently similar to major grocery centre trips to be excluded from any subsequent analysis. Figure 3.1 graphically illustrates this variability.

Further variation however, can be seen with the additional influence of designated social groups. The Trallwn high status group combine major grocery shopping with major frozen food purchases, major cake purchases and to a certain extent major meat purchases. Major fish purchases are similarly bought from the same location as groceries by 55.3% of Trallwn high status respondents. Bread, however, is bought from different centres to groceries by Trallwn high status respondents. Trallwn low status respondents similarly combine purchases from the same centre for grocery, cakes and frozen foods, but also for meat (67.4% similarity) and fish (51.2%). Bread is also bought from a different centre than groceries by the Trallwn low status group. At Treboeth, the results are different. Many more low status respondents combine meat and grocery locations than their high status counterparts. Furthermore, this trend can be seen with all the other product interactions for the Treboeth sample. A social status variation is evident amongst the Treboeth group of respondents. The Tycoch sample similarly illustrates variations that are accountable by designated social status. The low status group combines more grocery and meat purchases from the same major centre, less grocery and fish, and less grocery and bread purchases. It is interesting to note that 64.6% of the Tycoch high status group visit the same shopping centre for major grocery and bread purchases.

Despite minor variations there does appear a tendency for making multiple product shopping trips to a single centre for certain consumer groups. Prior to identifying a category of convenience shopping goods, the analysis of the actual number of centres, visited as major locations for purchases of both four product groups (grocery, meat, bread and fish) and the full six products, adds to the discussion. (Table 3.12)

Table 3.12 Number of Different Centres Visited for Four Product Types
(Main Trips) (% Respondents)

	One	Two	Three	Four	Mean	(Mean 6 Products)
Trallwn HS	18	42	31	9	2.31	(2.44)
Trallwn LS	20	55	22.5	2.5	2.08	(2.13)
Treboeth HS	15.2	41.8	31.6	11.4	2.39	(2.59)
Treboeth LS	31.6	54.4	13.9	-	1.82	(2.03)
Tycoch HS	20	50	27	3	2.13	(2.24)
Tycoch LS	24	54	19	3	2.00	(2.20)

Throughout all the survey areas, on average, over two main centres are visited for the four product categories. This varies from 1.82 at Treboeth low status to 2.39 at the Treboeth high status group (an early indication in itself of differences in spatial choice behaviour between consumer groups). The figures for the full six product category are provided for comparison purposes, but illustrate further the reliance of consumers on a small number of centres for major purchases of different products. The proportional breakdown of the number of centres visited substantiates further these findings.

The previous discussion has highlighted two important observations in the data collected from the Swansea sample. Firstly, that major grocery purchases are bought from the same shopping centre as major purchases for a number of other products. Frozen food purchases, cakes and, for many respondents, meat and fish are notable in this respect. Bread as a product group appears distinct, and main purchases tend to originate from different centres. The second important observation from this analysis is that variability in centres visited, in accordance with both geographical and social phenomena, is apparent. Further analysis is essential to explore fully this characteristic of overt spatial behaviour.

The analysis of similarity between major locations visited for different products identifies a continuum of 'key' product types, which could possibly be analysed in detail to both corroborate and detract from the fundamental analyses of grocery behaviour. Bread as a product type could generally be expected to detract from the main results of a grocery analysis, whilst shopping behaviour for meat products could support the findings of grocery behaviour. Chapter 4 will, therefore, be concerned with the detailed analysis of overt behaviour for grocery products, plus the consideration of both bread and meat purchases.

3. The Characteristics of Grocery Shopping Behaviour

As a preliminary to the detailed spatial analysis of grocery behaviour in Chapter 4, the main behavioural characteristics of grocery shopping can be conveniently outlined within the structure of this discussion.

Grocery purchases have been shown to be related, in terms of centre choice, to the purchase of alternative product types. Consequently, grocery shopping behaviour provides the fundamental information to which the subsequent analyses are related. In order to discuss fully the spatial characteristics of grocery behaviour this section will outline three behavioural characteristics of grocery purchases. The number of centres visited for grocery purchases, the allegiance of respondents to a single main centre and the frequency of visits to the main centre indicated will be presented.

The total number of different centres which respondents indicated visiting for grocery purchases is illustrated in Table 3.13. Almost 15% of all the Trallwn sample indicated the use of one centre for grocery purchases, 53% the use of two centres and almost 27% the use of three centres. These figures vary slightly between the designated social status groups, with the Trallwn high status sample tending to visit more locations for grocery purchases. Nevertheless, only 5.8 - 6.5% of both groups visit four different centres. At Treboeth, the results differ. On average 9% of the sample visit a single centre, 58% favour two centres and a further 28% three centres. Variation between the designated social groups at Treboeth results in the low status respondents visiting a greater number of centres for grocery purchases. The Tycoch sample group illustrate a slightly different pattern. 18%, on average, visit a single centre, 53% two centres, and 26% visit three locations for grocery purchases. Social status variation is apparent with the designated high status group favouring slightly more locations.

There is, therefore, a difference in the number of centres visited for grocery purchases, both between the sample areas and the social status sites within them. Geographical and social variations in behaviour are apparent in this brief analysis.

Having identified that respondents visit a number of centres for grocery purchases, the allegiance to the major grocery centre is an important characteristic of that particular behaviour (Table 3.14). Respondents were asked to provide information on the proportion of all their total grocery shopping bought from the particular centre identified.

Of the Trallwn sample, 50% of both the designated high and low status purchase over 90% of their grocery products from one centre. Only 16% of both groups purchase less than 70% of their goods at one centre. At Treboeth, 43% of the high status group buy over 90% of their groceries in one centre, compared to only 26% of the low status group. Similarly, the Treboeth designated low status group illustrate lower allegiance, with 25% of the group purchasing less than 70% of all their groceries from a single centre. The Tycoch sample show further variability in allegiance; 43% of the designated high status group purchase 90% of their goods from

Table 3.13: Number of Different Centres Visited for Grocery Purchases
 (% Respondents)

	One	Two	Three	Four +
Trallwn High Status	16.9	46.8	29.9	6.5
Trallwn Low Status	12.5	58.7	23.7	5.8
(All Trallwn)	(14.6)	(52.9)	(26.8)	(5.7)
Treboeth High Status	11.4	63.3	24.1	1.3
Treboeth Low Status	7.6	51.9	31.6	8.9
(All Treboeth)	(9.4)	(57.6)	(27.8)	(5.1)
Tycoch High Status	15.7	47.1	32.9	4.3
Tycoch Low Status	20.0	58.6	20.0	1.4
(All Tycoch)	(17.9)	(52.9)	(26.4)	(2.8)

Table 3.14: Allegiance to Major Grocery Centre (% Respondents)

	Less 70%	71 - 80%	81 - 90%	91% +
Trallwn High Status	16.6	11.7	23.4	49.4
Trallwn Low Status	16.2	11.2	22.5	50.0
Treboeth High Status	19.0	25.3	12.7	43.0
Treboeth Low Status	25.3	27.8	20.3	26.6
Tycoch High Status	30.0	12.9	14.3	42.9
Tycoch Low Status	22.9	8.6	10.0	58.6

a single centre compared to 59% of the low status group. The low levels of allegiance (less than 70% of all products) ^{found} at Tycoch are characteristic of the designated high status group.

This variation in grocery centre allegiance can be for a multitude of reasons. Interestingly, five of the six sample sub-groups show a relatively large proportion (55%) purchasing over 80% of their grocery products from a single centre. The Treboeth low status group is unusual in this respect. The levels of allegiance demonstrate the 'loyalty' respondents have to a single location and hence qualify the previous discussion.

The frequency of visits to the main grocery centre identified produced a variety of response, which is again discussed in terms of the sample sites selected (Table 3.15).

Table 3.15: Frequency of Visits to Location Identified for Major Grocery Purchases (% Respondents)

	Daily	Several Times a Week	Weekly	2 Weeks plus	N/A
Trallwn High Status	2.6	6.5	79.2	11.7	-
Trallwn Low Status	5.0 (3.9)	8.7 (7.5)	78.7 (79.0)	3.7 (9.6)	-
Treboeth High Status	1.3	12.7	69.6	16.5	-
Treboeth Low Status	17.7 (9.5)	24.1 (18.4)	49.4 (59.5)	8.9 (12.0)	-
Tycoch High Status	7.1	14.3	60.0	18.6	-
Tycoch Low Status	22.9 (15.0)	8.6 (16.5)	54.3 (57.7)	11.4 (15.0)	2.9 -

On average, 79% of the Trallwn sample visit their major grocery location once a week, with an additional 11% making more than one visit per week. These figures are relatively constant between the two designated Trallwn social status groups. The Treboeth sample shop at slightly more frequent intervals, only 60% shop weekly and an additional 28% shop more than once a week. There is a difference between the designated social status groups. The high status group shop at less frequent intervals (70% once a week), with nearly 77% making fortnightly visits. 58% of the Tycoch sample, on average, make a weekly visit to their major location for grocery purchases. A social group variation is apparent, with 23% of the low status group shopping daily as opposed to only 7% of the high status sample. By contrast, 19% of the high status sample make fortnightly plus visits.

Variability again characterises the frequency of visits to the major grocery location. The main differences are seen between the low status sample sites where the characteristics of the Trallwn low status group are more similar to their high status counterparts. Low status respondents at Treboeth and Tycoch tend to make daily shopping trips.

Again, the results illustrate the influence of geographical and social status characteristics on overt spatial behaviour. Chapter 4 will consider these and additional intervening influences on grocery spatial behaviour in detail. The characteristics of grocery shopping behaviour have been described and the differences between the fundamental influences of the survey design highlighted.

4. Summary

The initial analysis of the general profiles of convenience goods shopping behaviour produced a variety of interesting results. Three aspects of overt behaviour were presented. Initially, the discussion centred around four general traits of shopper behaviour, then proceeded to identify a nomenclature of convenience goods shopping, of which the dominant product characteristics were discussed.

The general traits of shopper behaviour included a discussion of a broad shopper profile for all convenience shopping in terms of trip frequency, trip characteristics and time and day favoured for shopping. Variability characterised this profile. Shopping trips generally occurred at least once a week albeit with variations between different groups of shoppers. The sample design, controlling for designated social status in particular, took account of these variations in trip frequency. Trip characteristics were simply the response to a direct question. Overall, the main trip characteristic expressed by shoppers was for one major shopping trip plus the 'occasional' subsidiary excursion. Notably, certain consumer groups preferred either a single trip for all food purchases, or two main trips. These shopping trips were mainly orientated towards the weekend period although, again, consumer sub-group variation was apparent. The timing of major convenience goods shopping trips similarly varied for different groups, with the morning period dominant for many shoppers.

A specific aspect of shopping behaviour concerning the number of persons involved was explicitly examined within the section on general characteristics. By definition, the respondent interviewed was responsible for the majority of convenience shopping for the household. Many respondents, however, receive assistance. This varied both in the number of persons involved in the shopping trip and the type of assistance received. A certain proportion (33 - 56%) of respondents shopped alone, some received limited help and in other households shopping was a shared responsibility. The details of each varied between the social status groups sampled. The type of assistance received by shoppers was of a general nature, although, for certain respondents, help in transport and carriage featured strongly.

The third element, contributing to the general characteristics of shopper behaviour, examined briefly the role of holistic behaviour. This aspect embodies the view that shopping behaviour increasingly interacts with a variety of other behavioural activities. The discussion presented information collected on the frequency, number and type of multi-purpose trips. Again a slight variation is apparent between certain consumer groups in certain geographical areas, and the research did indicate a possible minority interaction between behavioural types. However, the limited aspects studied in this research did not identify holistic aspects of behaviour fully. The precise relationship between shopping and alternative forms of behaviour needs to be identified and is a possible area for future study.

The final element in the initial section specifically concerned the stability of shopping behaviour. The majority of the respondents interviewed considered their behaviour stable in terms of locations visited, and very few indicated having changed their behaviour in the 6 - 9 months preceding the survey. The shopping behaviour of the sample of respondents surveyed was sufficiently stable to produce a high quality of information for additional analysis.

The analysis of the information collected from the survey required a narrower emphasis towards a nomenclature of convenience goods shopping. Information collected on centre choice, for a variety of products, was subjected to a simple analysis indicating the similarity between centre choice for each product. The results identified a continuum of product types which were both similar and different in terms of major centre choice. Grocery products feature strongly in the analysis, and the results concluded that two additional product groups could provide both corroborative and detractive evidence of behaviour. Grocery shopping behaviour was the major product group identified. Patterns of overt behaviour for meat purchases would (from the analysis of similarity) corroborate the grocery analysis, and patterns of overt behaviour for bread would generally be expected to detract from the main results. Consequently, Chapter 3 proceeded to examine in detail the characteristics of shopping behaviour towards grocery products. The number of centres visited for grocery purchases, plus information on customer allegiance to that centre and frequency of purchase, all

contributed to this section. The information presented is intended as a preliminary to Chapter 4 and provided some interesting findings. The results illustrated a difference in the number of centres visited for grocery purchases, both between the geographical sample areas and, within them, between the designated social status groups. A large number of respondents only visited two centres for all their grocery purchases; certain proportions visited three or more, whilst a varying minority relied on a single centre for grocery purchases. Customer allegiance to the major centre for grocery purchases produced, for five of the six sample areas, a relatively large proportion (55% plus) of shoppers purchasing over 80% of their grocery products from a single centre. Many respondents, therefore, demonstrate a 'loyalty' to one location for grocery purchases.

The analysis of frequency of visit to the major grocery centre identified produced a variety of responses. The information presented deliberately did not relate frequency to centre choice at this stage, but described the results by each of the sample groups of consumers. Variability was apparent. The major differences were between the low status sites, where low status respondents located in Trallwn shopped for groceries at intervals comparable to those of their high status counterparts. Social and spatial differences in the frequency of grocery purchases were apparent in the results presented.

The characteristics of grocery shopping behaviour were thus described, and provided an introduction for the subsequent detailed analysis of grocery spatial behaviour. Chapter 3, therefore, guides the research through the formative analytical stages. A logical discussion is developed, initially on broad aspects of shopper behaviour, including certain specific characteristics, and proceeding towards a nomenclature of convenience goods shopping identifying three product types for further analysis. The final section presented the behavioural characteristics of the dominant product group of groceries. The discussion proceeds to the details of overt spatial behaviour and the fundamental objectives of the research.

**CHAPTER 4: SPATIAL PATTERNS OF CONVENIENCE GOODS SHOPPING
BEHAVIOUR**

Introduction

The research now proceeds to investigate the patterns of overt spatial behaviour for convenience goods, as proposed in the research objectives in chapter one. This forms the fundamental information to which all other aspects of overt behaviour, attitudes and motivations are related. Previous approaches to the subject by retail geographers have considered amongst many aspects, number of trips, trip destination and a multiple classification of trip types. This discussion is concerned primarily with the type of shopping centre destination visited by consumers for the convenience product groups identified in chapter three. In accordance with the research objectives, the analysis will proceed by investigating the variations between the three sample areas, and within each area between the designated social status sub-groups of consumers. Further disaggregation of the behavioural variations will follow in an attempt to undertake a detailed analysis of the information. This is viewed as a development towards an increased understanding of consumer spatial behaviour. The type of shopping centre visited has been classified in accordance with the retail hierarchy of the urban area of Greater Swansea (Figure 2.10A) and all the subsequent tables relate to the available shopping opportunity set. Consequently, the analysis does not specifically present distance to shopping centre characteristics, as these traits are inherently expressed in differential patterns of behaviour. The classification of shopping centre visited does, as a result of the patterns of behaviour, combine a number of centre types of different hierarchical status. For example, neighbourhood and local shopping centres nearest to the sample place of residence are grouped under a single heading of nearest neighbourhood or local centre. This characteristic is a direct test of the nearest centre hypothesis. When applicable, small town shopping centres are thus divided into nearest and other available. The free standing outlets are grouped under a single heading and not differentiated into nearest or other available, on account of the geographical similarities in location between the two examples in the Swansea hierarchy. Additionally, all district centres are combined (to overcome the problem of observed cell frequency) and a final all encompassing heading of "other" centres, provided.

The disaggregated analysis of varying consumer sub-groups is not, unfortunately, always controlled for the six sample sites selected. The influence of social, economic and demographic factors are always controlled by geographical area - and, where the number of observations permits, simultaneously for the influence of designated social status. This characteristic of the information reflects the scale of the exercise but does not compromise the research aims, as the fundamental influences of geographical and designated social status are always tested. When possible, additional tables of the breakdown by further social, economic and demographic consumer sub-groups are provided. The discussion will, via this disaggregation of consumer sub-group influences, seek to explain the differences in behaviour from the norm as represented by the sample site patterns of behaviour (section 1 of this chapter).

The cross tabulations presented where possible, include the results of a statistical significance test. Chi square values and statistical significance are given where the information presented satisfies the requirements of the test. Appendix 5 discusses the technique of chi square.

Chapter four commences with the analysis of major grocery centre choice, then proceeds to supplementary grocery centre choice before corroborating or detracting from the results with the analysis of behaviour for meat and bread respectively. The conclusion to chapter four attempts to 'gauge' the relative importance of the influence of each consumer sub-group on consumer spatial behaviour.

1. Spatial Patterns of Grocery Behaviour

The variety of approaches to the study of consumer spatial behaviour derive considerably from three fundamental concepts. Firstly, the nearest centre hypothesis of central place theory (Christaller, 1933). Secondly, the trade off of the advantages of centre attraction against the disincentive of distance from the 'laws of retail gravitation' (Reilly, 1931). Finally, from the development of individual information processes as illustrated by conceptualisation of consumer decision making (Huff, 1963).

The questionnaire survey undertaken for this research study provided a considerable amount of information that enabled comments on these three concepts. Respondents were asked to provide details of the major centre visited for grocery purchases, the characteristics of those purchases and alternative centres visited for supplementary requirements. The research design adopted allowed this information to be disaggregated for the influence of a variety of socio-economic, geographical and demographic variables. The discussion proceeds to analyse overt patterns of grocery behaviour towards the major centre chosen. The fundamental influence of socio-spatial differences on behaviour are analysed, in conjunction with the influence of personal mobility, an array of demographic variables, 'time' availability, and the influence of household characteristics. Interim conclusions are then provided prior to discussing the overt spatial behaviour of shopping for meat and bread.

1.1 Major Centre Choice

In the Swansea sample, the research design enabled a comparison to be made between spatially and socially different consumer groups. Broadly, the three areas had a similar physical access to the sub regional city centre, two of the three areas enjoyed access to a small town centre and all three had neighbourhood or local shopping centres at their disposal. The detailed retail structure and the sample characteristics are extensively discussed in chapter two. Major centre choice for grocery products relates to the response to the question; "Where do you buy most of your grocery products?" (grocery products were defined prior to this question during the introduction to the interview). The analysis presented in the previous chapter details the relative allegiance of respondents and the trip characteristics to the major centre identified (e.g. frequency of visit and number of centres used). Overall, customer allegiance to the major centre for grocery purchases produced a high proportion of respondents demonstrating a strong loyalty to a single centre for grocery purchases. Consequently, the information collected on major choice is of a sufficiently high quality level to enable both a detailed analysis and wider conclusions on the nature of consumer spatial behaviour to be developed.

(i) The Influence of Socio-Spatial Differentiation

The influence of socio-spatial differentiation on shopping behaviour has been presented by many authors, notably Thomas (1974, 1976). Simply the results of Thomas' early study have shown that, for grocery shopping trips, high status consumers tend to travel further to generally higher order shopping centres. These variations are closely associated with levels of personal mobility. Clearly social class and levels of mobility are related. Corroborative evidence of the influence of social class on behaviour can also be seen in the work of Davies (1969), Nader (1969), Potter (1977, 1982), Rich and Jain (1968) and Foxall (1977). As Foxall (1977, p.137) states; "the pervasiveness of class related phenomena in any society extends to consumer behaviour".

The results from the Swansea survey illustrate a variety of locations visited. Table 4.1 illustrates centre choice for major grocery purchases by the geographical sample areas. Almost 50% of the Trallwn sample visit their nearest small town shopping centre for major grocery trips. A further 9% are prepared to travel to an alternate small town centre, whilst 22% visit the sub regional city centre of Swansea. Only 8% make use of the nearest neighbourhood or local centre for main grocery purchases. Overall, 80% of the Trallwn respondents travel to a high order centre (sub regional or small town) for main grocery trips. This figure contrasts with the second sample area of Treboeth, where a total of 52.5% of trips are to a high order centre. In detail, 39.3% of Treboeth respondents travel to their nearest small town centre, 13.3% to the city centre and over 30% to the nearest neighbourhood/local facility available. Decentralised, free standing outlets account for almost 14% of Treboeth trips. The Tycoch sample illustrate a different pattern, 37.9% of all trips are to the city centre, 32.1% to the nearest local/neighbourhood centre, with an increased proportion (19.1%) to the free standing outlets.

These results identify a geographical influence on consumer choice. Given no small town centre to visit, Tycoch respondents increasingly favour the city centre and free standing outlets. The nearest local or neighbourhood facilities account for a larger proportion of Treboeth and

Table 4.1: Centre Choice for Major Grocery Purchases by Geographical Sample Area (% Respondents)

	Sub Regional City Centre	Small Town Centre	Other	Neighbourhood/Local Centre Nearest	District Centre	Free Standing Outlets	Other	No. of Cases
Trallwn	21.7	49.7	8.9	8.3	3.1	5.1	3.1	157
Treboeth	13.3	39.2		30.4	0.7	13.9	2.5	158
Tycoch	37.9	1.4		32.1	9.3	19.1	1.4	140

Chi Square 140.37, 10 d.f Significant at 0.0001

Table 4.2: Centre choice for Major Grocery Purchases by Geographical and Social Sample Site (% Respondents)

Trallwn HS	18.2	48.1	15.6	7.8	1.3	5.2	3.9	77
Trallwn LS	25.0	51.3	2.5	8.8	5.0	5.0	2.5	80
Treboeth HS	16.5	44.3		12.7	1.3	22.8	2.5	79
Treboeth LS	10.1	34.2		48.1	-	5.1	2.5	79
Tycoch HS	34.3	2.9		24.3	7.1	28.6	2.9	70
Tycoch LS	44.4	-		40.0	11.4	7.1	-	70

Author's Note:

In the forthcoming discussion, a number of tables of the locations visited for Grocery purchases abbreviate centre types. This is to facilitate the production of the work. The terms are consistent and reproduced below:

	SCC	Sub Regional City Centre
	STC	Small Town Centre
	N	Nearest
	O	Other
	NNBH/LC	Nearest Neighbourhood or Local Centre
	DC	District Centre
	FSO	Free Standing Outlets
	Other	Other Centres
	No. of Cases	Number of Cases
Similarly:	HS	High Status
	LS	Low Status

Tycoch based trips. The geographical distribution of shopping centres appears to be an influence on consumer choice. Decreased distance to the free standing outlets for Treboeth and Tycoch residents results in increased usage of this location. The local geography of Tycoch supplies a number of district type centres within a relatively short distance of the survey site. Few trips are orientated towards these district centres. Accounting for social status within this framework clarifies the results (Table 4.2).

At Trallwn the influence of designated social status alters the patterns slightly. Fewer high status respondents visit the nearest small town centre and the city centre area. As an alternative, they prefer to journey to another small town shopping centre. This factor is obviously related to the social status differences and the implications of such a categorisation in mobility terms. Easy access to the nearest small town centres (presumably with some respondents using public transport facilities) appears important for the Trallwn low status group. The Treboeth site illustrates the significance of the social status differences further. The low status Treboeth shoppers are highly local in their patterns of behaviour, almost half those interviewed made use of the nearest neighbourhood/local shopping centre for major grocery purchases. This contrasts totally with the high status group, more of whom travel further to small town centres and free standing superstores. Again at Tycoch, this factor is apparent. Social status differentiation is significant, both groups still make heavy use of the Swansea City Centre, however, 29% of all high status trips are towards a free standing superstore compared to only 7% for the low status group.

The results do not categorically support the results of Thomas (1974) as not all high status shoppers tend to travel to higher levels of the retail hierarchy. The findings are mixed, the importance of the shopping opportunity set appears to be determining behaviour. The high status groups travel to a wider variety of outlets, but at certain locations (Tycoch) the nearest local/neighbourhood centre is of importance. The geographical factor can be isolated by comparing the behaviour of the social status groups separately. Within the high status sample, the Trallwn respondents appear to preclude the use of free standing stores on

the grounds of excess distance. As an alternative, trips are made to small town centres. In contrast to this, Tycoch high status respondents do not travel the distance to a small town centre given the choice of a nearer free standing outlet. The high status sample groups appear to overcome greater distances, to journey to a centre of sufficient hierarchical status. The city centre area is still important for many respondents (especially for the Tycoch high status group), with its significance varying according to alternate centre choices available. There is an interesting tendency for the Tycoch high status group to make a greater use of their nearest local/neighbourhood centre. This tends to imply that additional influences may be important for this group. Geographical location, and its relationship to the available retail opportunities, does appear to be influencing behaviour. The same overall principles apply to the low status respondents. Free standing outlets receive a minimum of use, however, the proportion of trips directed towards the city centre does vary. The slightly easier access to the city centre for the Tycoch sample and the lack of major alternatives (directly connected by public transport) constrains the behaviour of the Tycoch low status group. Use of district centres by this sample group is still relatively low (only 11.4%) given the available choice geographically near the site. The low status groups at Treboeth and Trallwn both favour the nearest small town centre for grocery shopping. Both sites are directly connected by public transport to this small town centre and any constraints on mobility may have been overcome. The nearest local/neighbourhood centre is still important for the Tycoch low status group.

It has become increasingly apparent that the geography of a city is of importance in determining main grocery shopping trips. Variations^{occur} in accordance with differences in the social status of respondents. These patterns are illustrated in Figures 4.1 and 4.2.

The socio-economic characteristics of each sample site were sufficiently different to be termed high and low status (chapter two). It is possible however, to investigate the social class influence further, by classifying all respondents in each of the three survey

**FIGURE 4.1: MAJOR
GROCERY TRIPS: HIGH STATUS**

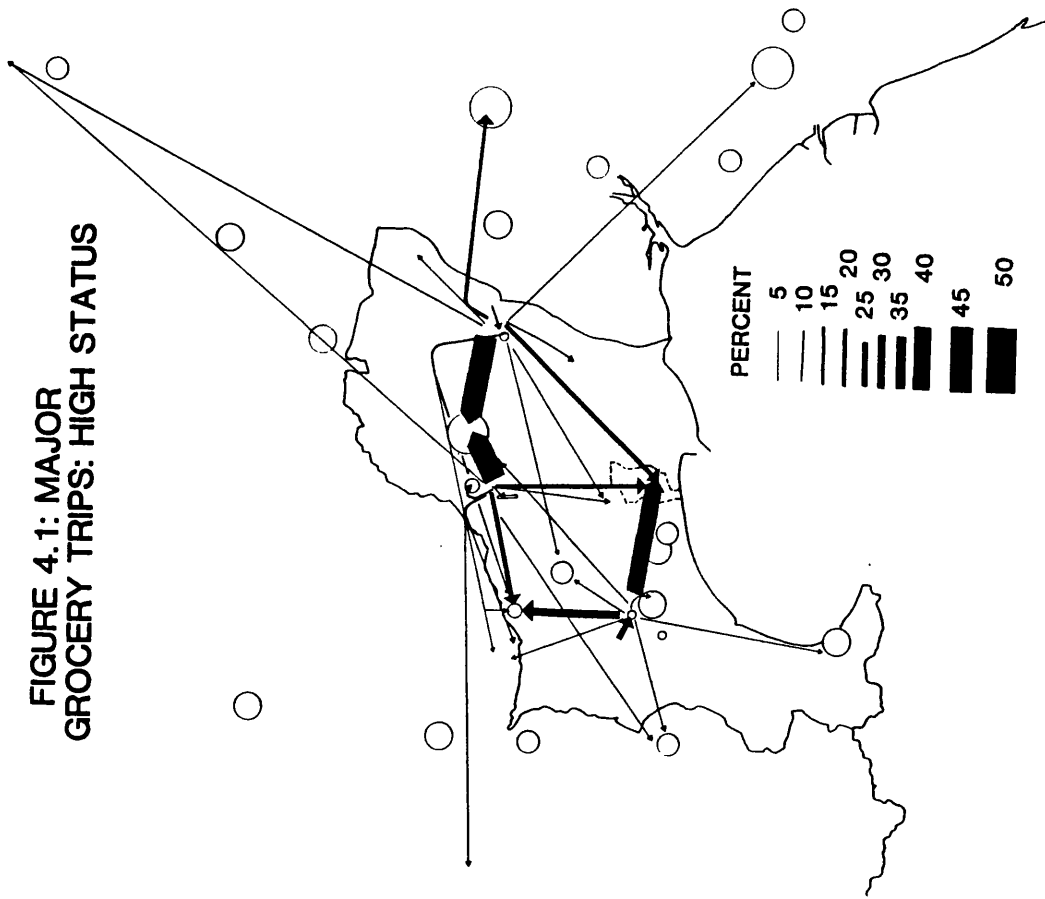
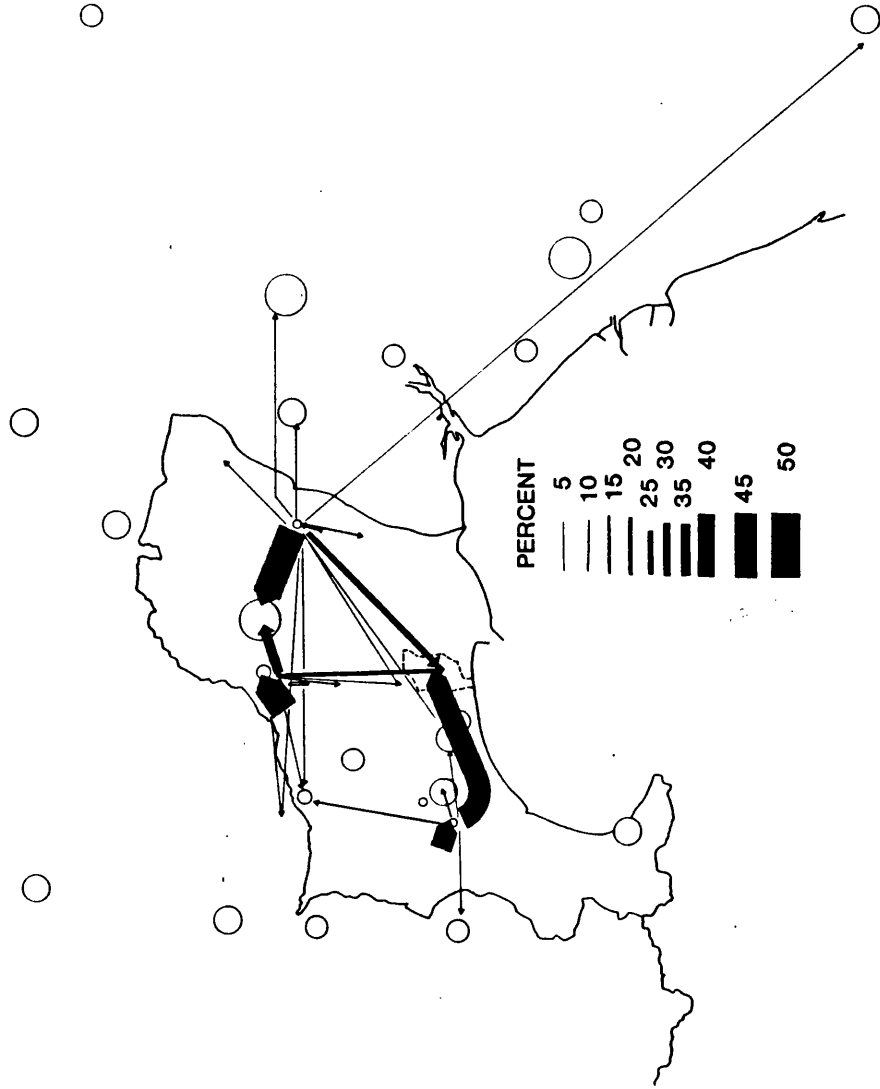


FIGURE 4.2: MAJOR GROCERY TRIPS: LOW STATUS



areas into a sample social class category. The classification of sample social class used is described in chapter two.

Table 4.3 illustrates the influence of sample social class upon the centres visited for main grocery purchases. Social Classes I and II; Professional, and Semi-Professional are grouped together to facilitate analysis. This also applies to Social Classes IV and V; Semi Skilled and Unskilled Classes.

Within the Trallwn data, the use of a classification by sample social class illustrates certain aspects of variability in the usage of shopping centres. The nearest small town centre is used increasingly by the lower social class groups (35% of all Class I & II trips compared to 58% of all Class IV & V trips), other small town centres by high social class groups and interestingly, also nearest neighbourhood/local facility by higher social classes. The use of free standing outlets is again predominantly by the higher social classes (Classes I, II and III non-manual in particular).

At Treboeth, higher social class groups tend to make a greater proportional use of the city centre (this centre accounts for only 3.2% of Class IV & V trips). The lower class groups prefer the nearest neighbourhood/local centre (45.2% of all Class IV & V trips), however, characterising much of the behaviour of the Treboeth site (and relatively constant throughout each class) is the use of the nearest small town centre facility.

The Tycoch sample illustrates similar patterns. The sub-regional city centre predominates throughout each social class, with the variability being expressed in the use of the nearest neighbourhood/local shopping centre. The lower social classes do make increasing use of such facilities. The use of the district centre is interesting, as this is dominated by social class III non-manual. Finally, the class differences are very apparent in the use of the free standing outlets. Social Classes I & II make considerable use of this outlet (42.9% of all Class I & II trips are to a free standing outlet).

Table 4.3: The Influence of Sample Social Class on Centre Choice
(% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	Other	No. of Cases
Trallwn								
I & II	15.4	34.6	11.5	15.4	3.8	15.4	3.8	26
III M	23.4	53.2	10.9	6.3	1.6	3.1	1.6	64
III NM	23.5	41.2	5.9	11.8	-	11.8	5.9	17
IV & V	21.1	57.9	7.9	5.3	5.3	-	5.3	38
U/C	25.0	50.0	-	8.3	16.7	-	-	12
Treboeth								
I & II	19.4	45.2	-	9.7	3.2	12.9	3.2	29
III M	15.5	46.6	-	24.1	-	13.8	-	58
III NM	13.6	40.9	-	18.2	-	22.7	4.5	22
IV & V	3.2	32.3	-	45.2	-	12.9	6.5	31
U/C	11.1	11.1	-	72.2	-	5.6	-	18
Tycoch								
I & II	32.7	4.1	-	16.3	4.1	42.9	-	49
III M	37.5	-	-	40.0	10.0	12.5	-	40
III NM	47.1	-	-	23.5	23.6	5.9	-	17
IV & V	47.4	-	-	47.4	5.3	-	-	19
U/C	33.3	-	-	53.3	13.3	-	-	15

Throughout the discussion the retail structure is influencing a certain proportion of overt behaviour differences between the survey areas. The influence of sample social class upon the remaining patterns of spatial choice is apparent, with the higher social classes visiting different centres compared to their lower class counterparts. Clearly, social status and geographical differences are apparent in the choice of major shopping centres for grocery purchases. Variation in centre choice does occur; this variation is seemingly related to alternative variables. The following sections of this chapter account for these variables and thus, move towards a wider explanation of the behavioural patterns described. In chapter one, emphasis was placed on the need to examine both traditional and alternative influences on shopping and to accordingly disaggregate spatial choice behaviour. A number of influences were identified; personal mobility, demographic influences like family life cycle, age structure and the constraints of young children, time availability plus household characteristics. The discussion consequently moves onto explain behaviour in relation to these factors within the design of the sample selected.

(ii) The Influence of Personal Mobility

Thomas (1974) offered evidence of the influence of personal mobility on shopping behaviour. He lends support to the notion that, for grocery shopping the mobile groups tend to travel further and consequently have a greater choice of shopping opportunity. Evidence was also presented on the close relationship between mobility and social class, although a greater importance was attached to the explanation of between group variations in shopping behaviour to the role of social class. Nevertheless, mobility was apparent in explaining inter-group variability. Many other authors (e.g. Banister, 1977; Guy, 1977; Dawson, 1977 and Davies, 1973) have demonstrated the importance of personal mobility and overt behaviour. Similarly, Hillman and Whalley (1977, 1978) in a wider discussion of the location of services, have identified a variety of issues. In particular, they are critical of the use of car ownership availability rates as an index of personal mobility. This is an index often used in empirical studies of shopping behaviour and obscures variations in mobility. Chapter two described the classification of consumer sub-groups both in line with the traditional

method of car ownership/availability rates and with an index of mobility. Information is therefore available to compare the results of this research with past studies of mobility and shopping behaviour, and also more significantly, to attempt to explain fully the patterns of spatial choice behaviour observed. The discussion will commence with the influence of simple car ownership/availability rates on centre choice before proceeding to the index of personal mobility.

Table 4.4 illustrates the influence of car ownership/availability on centre choice for main grocery purchases. All the designated high status sites have minimal levels of non ownership (approximately 6% of those interviewed) and are excluded from this discussion.

The impact of car ownership on the patterns of grocery behaviour at Trallwn is important. For the designated low status group, car ownership influences the behavioural patterns towards free standing outlets. Apart from this, the geographical influence of the retail structure remains constant. There is still a minor social status difference in the patterns of behaviour of low status and high status car owners. The situation at Treboeth produces some interesting results. Car ownership amongst the low status group results in a slight increase in visits to the city centre, a large increase in the use of small town centres with a reduction in trips to the nearest local/neighbourhood centre. Furthermore, the use of free standing outlets is slightly increased. Consequently, the two low status groups exhibit quite different patterns of spatial behaviour compared to the high status sample. At the Tycoch site the ownership of a car by the low status group produces only a minor variation in the patterns of behaviour observed previously. Non owners make slightly more visits to the city centre at the expense of not travelling to a free standing outlet. There is still a significant difference in the patterns of overt behaviour between the car owning high and low status Tycoch sample. Interestingly, disaggregation of the high status owners into one and two car ownership groups shows a different pattern, with the two car owners making a much greater use (50% of all trips) of the free standing outlets; these trips are made primarily in place of visits to the nearest local/neighbourhood centres.

Table 4.4: The Influence of Car Ownership on Centre Choice
 (% Respondents)

	SCC	N STC	O STC	N NBH/LC	DC	FSO	Other	No. of Cases
Trallwn Low Status								
Non Owners	24.3	62.2	-	8.1	5.4	-	-	37
Owners	25.6	41.9	4.7	9.3	4.7	9.3	4.7	43
Trallwn High Status								
Owners	18.1	45.8	16.7	8.3	1.4	5.6	6.9	72
Treboeth Low Status								
Non Owners	7.9	18.4		68.4	-	-	5.3	38
Owners	12.2	48.4		29.3	-	9.8	-	41
Treboeth High Status								
Owners	16.2	44.6		10.8	1.4	24.3	2.7	74
Tycoch Low Status								
Non Owners	46.1	-		42.3	11.5	-	-	26
Owners	38.6	-		38.6	11.4	11.4	-	44
Tycoch High Status								
Owners	35.4	3.1		20.0	7.7	33.8	-	65
(Tycoch High Status Owners)								
(1 Car	39.4	6.1		27.3	9.1	18.2)	
(2 Cars	31.3	-		12.5	6.3	50.0)	

Car ownership, as a measure of mobility, produces some results that clarify slightly the difference in behaviour between the social groups within each of the sample areas. The ownership of a car for the low status groups increases the variability of centres used, in particular, visits to the free standing outlets. Nevertheless, behavioural differences between the social status groups at each survey area still exists, as does the variation between geographical area. Social status and geographical location still appear to be more important than car ownership. This is a result that supports the findings of Thomas (1974).

The influence of an index of personal mobility that subsumes the factors of the respondents driving ability, vehicle availability and the possibility of receiving a 'lift' is presented in Table 4.5A. Overall, the type of centre visited for main grocery purchases, by the surrogate groups described, varies.

At Trallwn, the influence of personal mobility results in a decline in the use of the sub-regional city centre, nearest small town centre and nearest neighbourhood/local facility by the totally mobile group. Correspondingly, increases in visits to other small town centres (16% of all trips) and to free standing outlets arise (10.1%). Holding social status variations constant is problematic because of sample size, but nevertheless, it is interesting to note that the decline in city centre trips by the totally mobile group is from the designated high status group (Table 4.5B). Overt behaviour patterns of the partially mobile sub-group show an increase usage of the nearest small town centre (especially by the higher status partially mobile). Other variations are relatively minor. The Trallwn immobile group increasingly visit the nearest small town centre (53.6% of all immobile respondent trips), sub-regional city centre and nearest neighbourhood/local centre. The index of mobility illustrates different patterns of overt spatial behaviour at Trallwn; the extreme groups of the mobility index visit different centres. Immobile Trallwn respondents rely on the nearest neighbourhood/local centre and nearest small town centre. As has been noted previously, the nearest small town centre to Trallwn is on a direct bus route (a finding comparable to that of Davies, 1969). The results of the second geographical survey area, Treboeth, conclusively illustrate the influence of personal mobility.

Table 4.5A: The Influence of A Personal Mobility Index on Centre Choice
(% Respondents)

	SCC	N	O	N	DC	FSO	Other	No. of
		STC	STC	NBH/LC				Cases
Trallwn								
Immobile	28.6	53.6	-	14.3	3.6	-		28
Partial Mobility	21.3	55.7	4.9	8.2	6.6	1.6		60
Total Mobility	18.8	42.0	15.9	5.8	-	10.1		69
Treboeth								
Immobile	6.3	15.6		78.0	-	-	-	32
Partial Mobility	20.7	34.5		25.9	-	17.2	1.7	58
Total Mobility	10.4	55.2		10.4	1.5	17.9	4.5	67
Tycoch								
Immobile	26.7	-		56.7	16.7	-	-	30
Partial Mobility	48.2	3.6		30.4	7.1	10.7	-	56
Total Mobility	33.3	-		20.4	7.4	38.9		54

Table 4.5B: Selected Statistics for the Influence of Personal Mobility on Centre Choice by Designated Social Status Groups
(% Respondents)

	SCC	N STC	N NBH/LC	FSO
Trallwn High Status				
Partial Mobility		61.9		
Total Mobility	17.3	42.3		
Trallwn Low Status				
Partial Mobility		53.8		
Total Mobility	25.0	43.8		
		all STC		
Treboeth High Status				
Partial Mobility		42.3	14.2	
Total Mobility		52.3		20.5
Treboeth Low Status				
Partial Mobility		32.0	32.0	
Total Mobility		60.9		13.0
Tycoch High Status				
Partial Mobility	50.0		16.7	
Total Mobility	31.9		16.0	
Tycoch Low Status				
Partial Mobility	47.3		36.9	
Total Mobility	40.0		40.0	

Selected statistics reflecting the main findings of Table 4.5A
disaggregated for Social Status

The totally mobile respondents at Treboeth increase the proportion of trips made to the nearest small town centre and free standing outlets, at the expense of visits to the city centre and nearest neighbourhood/local facility. Controlling this variation for designated social status influences the results, with a notable increase in the use of the nearest small town centre by both the low and high status totally mobile groups. The influence on the low status group, is such that 60.9% of the totally mobile low status group visit this particular type of shopping destination. The increased use of the free standing outlets similarly changes within the low status group. Partially mobile Treboeth respondents are increasingly likely to visit the city centre at the expense of trips to the nearest neighbourhood/local facility. The decline in visits to the nearest centre is again a greater characteristic of the low status partially mobile respondents. Immobile Treboeth shoppers increasingly visit the nearest neighbourhood/local centre - 70% of all immobile trips are to this destination.

Comparable results are found at Tycoch, where increased mobility results in less visits to the nearest neighbourhood/local centre and increased visits to the free standing outlets. The partially mobile Tycoch group, interestingly, increase their use of the city centre (particularly the high status) at the expense of the nearest neighbourhood/local centre. Immobile shoppers similarly increase their reliance on the nearest neighbourhood/local facility and on the district centres.

The influence of an index of personal mobility on the spatial shopping behaviour of the sample group produces a number of interesting results. Mobility reduces the reliance on the nearest centre for the majority of groups (only the Tycoch low status partially mobile group does not reduce the proportion of visits made to the nearest centre). Geographical influences are clear, with the increased use of other small town centres by Trallwn respondents. The partially mobile groups increase their number of visits to the city centre except at Trallwn where they visit the nearest small town centre. Immobile respondents are constrained to using the nearest centre available to them. Further interesting observations can be developed from the associated influence of designated social status. Social status, independent of mobility,

can still be seen to produce different patterns of overt spatial behaviour. The influence of an index of personal mobility results in an overall variable pattern of spatial behaviour. The resultant changes in behaviour differ appreciably between geographical areas and within an area, ^{but only} slightly between the designated social status groups. Personal mobility is a highly important influence on the patterns of overt spatial behaviour.

Many of these aspects are further emphasised in the travel characteristics of respondents to the major centre for grocery purchases. Respondents were asked a number of questions on their mode and time of travel to the major location indentified.

Table 4.6 illustrates the characteristics of mode of travel to the main grocery centre visited. Car borne trips predominated throughout the sample, followed by foot or bus mode. Social and geographical variation was apparent, with the high status respondents predominantly favouring car transport for their major trips, and the low status group divided between car, bus and foot. Geographical differences are quite apparent between the low status groups of Trallwm, Treboeth and Tycoch. The manifestation of travel mode into journey time and ultimately in relation to overt behaviour is provided in Table 4.7 and 4.8.

The majority of trips for groceries are completed within a travel time of 20 minutes. Furthermore, many trips (52.3 - 72.2%) are completed within 10 minutes. Geographical variations are clear, with minor differences between the social groups at each sample site. All the three sample sites have centres of a high hierarchical status within a 10 minute car drive time. The disadvantage of non access to a car appears to be overcome by certain low status respondents, who are prepared to travel over 20 minutes to the grocery destination of their choice.

The inter-relationship between travel characteristics, in particular travel mode, and overt spatial behaviour, produces a number of interesting observations. Notwithstanding the reservations on the number of values within each category, Table 4.8 summaries the main dimensions of this relationship.

Table 4.6: Mode of Travel to Major Grocery Location (% Respondents)

	CAR	BUS	FOOT	OTHER
Trallwn High Status	84.4	6.5	6.5	2.6
Trallwn Low Status	43.7	42.5	8.7	5.0
(All Trallwn)	(63.7)	(24.8)	(7.7)	(3.4)
Treboeth High Status	87.3	1.3	6.3	5.0
Treboeth Low Status	38.0	13.9	46.8	1.3
(All Treboeth)	(55.6)	(6.7)	(23.6)	(3.2)
Tycoch High Status	75.7	7.1	11.4	5.7
Tycoch Low Status	32.9	27.1	35.7	4.3
(All Tycoch)	(54.3)	(17.1)	(23.6)	(5.0)

Table 4.7: Travel Time to Major Grocery Location (% Respondents)

	LESS 10 MINS	10 - 20 MINS	20 MINS +	OTHER
Trallwn HS	59.7	31.2	3.9	5.2
Trallwn LS	43.7	36.2	20.0	-
(All Trallwn)	(52.3)	(34.2)	(12.0)	-
Treboeth HS	73.4	15.2	5.1	5.1
Treboeth LS	70.9	15.2	12.7	1.3
(All Treboeth)	(72.2)	(15.2)	(8.8)	-
Tycoch HS	72.9	15.7	5.7	5.7
Tycoch LS	51.4	31.4	14.3	2.9
(All Tycoch)	(62.2)	(23.6)	(10.0)	-

N.B. 'Other' includes non response, unclassified information or as a result of 'SPLIT' journeys or varying times.

Table 4.8: Travel Mode by Major Grocery Location (% Centre Choice)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	Other
Trallwn High Status							
Car	79	87	100				
Bus	14	8					
Walk	7	5					
No. of Cases	14	37	12	6	1	4	3
Trallwn Low Status							
Car	30	54					
Bus	65	42					
Walk	5	2					
No. of Cases	20	41	2	7	4	4	2
Treboeth High Status							
Car	69	97		50		100	
Bus	8						
Walk	15			50			
No. of Cases	13	35		10		18	2
Treboeth Low Status							
Car	50	67		5			
Bus	50	26					
Walk		3.5		95			
No. of Cases	8	27		38		4	2
Tycoch High Status							
Car	79			41		100	
Bus	13			12			
Walk	8			47			
No. of Cases	24	2		17	5	22	
Tycoch Low Status							
Car	41			10			
Bus	55						
Walk				85			
No. of Cases	29			28	8	5	

Table 4.8 only highlights the main characteristics. As a result of small cell frequencies certain categories are excluded and hence, the figures may not total one hundred percent.

At Trallwn, similar proportions of respondents travel to the sub-regional city centre by car and bus transport. This however varies considerably between the two status groups; of the 14 high status respondents travelling to the sub-regional city centre, 11(79%) make use of a car, the remainder use a bus or walk. Of the 19 low status respondents travelling to the city centre, six (30%) use a car and twelve travel by bus (65%). Use of the nearest small town centre by Trallwn respondents (almost 50% of all Trallwn trips) is predominantly car orientated. Of the 78 respondents making a trip to this centre, 54 (69%) are by car. Accounting for designated social status alters this considerably. High status respondents travelling to the nearest small town centre make considerable use of a car (87% of all trips) whilst the low status group travel by bus in 42% of cases. At Treboeth the figures again highlight this social group difference. Of those Treboeth high status respondents travelling to the sub regional city centre, 69% do so by car (compared to 50% of the low status group). Journeys by the Treboeth sample to the small town centres differ by social group (97% of all high status respondents travel by car compared to only 67% for the low status group). Travel to the nearest neighbourhood/local centre by Treboeth low status respondents is predominantly on foot (95% of trips). Tycoch respondents mainly visit one of three centres. Of the trips to the sub-regional city centre, 79% of the high status group travel by car, compared to 41% of the low status group. Trips to the nearest neighbourhood/local centre by Tycoch respondents are predominantly on foot, although almost double the number of walk trips are made by the low status group (85% of all Tycoch low status trips to the nearest neighbourhood/local centre are on foot compared to 47% for the high status group).

The inter-relationship between overt spatial grocery behaviour and travel mode highlights further the status of geographical and social influences on behaviour. Behaviour is different between the fundamental sub-groups, however, the above results do tend to support the influence of personal mobility on grocery spatial behaviour for trips outside of a certain number of main locations, as specified previously. The influence of the geography of the city, manifested through the retail structure, is still apparent.

In summary, this section has emphasised the influence of differing personal mobility between the social status groups, in particular, showing the effect on overt spatial behaviour and the relationship between travel characteristics and centre choice. The simple index of car ownership illustrated that for the low status group especially, owning a vehicle increased the variability of centres used. Nevertheless, behavioural differences between geographical areas, and within each area between the social groups was still important. The increasingly sophisticated index of personal mobility produced an array of differences in centre choice. The significance of this variation fluctuated geographically, and to a lesser extent, socially. Overall, the general tendency was for mobile respondents to travel further afield, however, at Tycoch especially, mobile low status shoppers still relied on the nearest centre available. Additionally, the information showed how public transport (at Trallwn in particular) substituted for private transport and allowed immobile respondents to travel to a high order centre. The influence of personal mobility on behaviour is strong and has been shown to vary between different geographical and social groups. Increased personal mobility appears not to overwhelmingly diffuse the geographical variations in spatial choice behaviour as much as the social variations. Both influences are still apparent, with the former of greater significance. The discussion now proceeds to examine the simultaneous influence of a range of demographic based variables.

(iii) The Influence of 'Demographic Variables'

A number of authors have written on the influence of demographic based variables upon overt patterns of consumer spatial behaviour. The effects of variations in age structure on shopping behaviour has produced a series of evidence that is 'sparse and inconclusive' (Shepherd and Thomas, 1980). Raybould (1973) found that concentrations of both old persons and very young children tended to constrain shopping behaviour patterns. Similarly, Thomas (1974) suggested that an imbalance of families of pre-school age might be partly responsible for an unexpectedly high use of local shopping facilities in Swansea. Potter (1977) also showed the constraining influence of pre-school children and suggested a similar mobility constraint for those over 60 years of age. Additional research has occurred (e.g. Tivers, 1977) on this aspect of the 'gender role' constraint and on specific studies of the elderly.

In respect of age structure, Peace (1977), in a study of the elderly in an urban environment, suggested that old age is a leveller of spatial mobility and that intervening factors influencing mobility, important in earlier life, may cease to be as meaningful. Imbalances in age structure, both in terms of old age and the constraint of young children, have been identified as an influence on consumer behaviour. A related aspect, widely used as an explanatory variable in studies of consumer behaviour in the marketing literature, is stage of family life cycle (e.g. Rich and Jain, 1968). In reality, life cycle is a compound of a multiple of these variables. Chisnall (1975) points out that it is often difficult to disentangle other variables, especially social class, from a life cycle segmentation. Shepherd and Thomas (1980) further suggest grounds for reappraising its relevance in geographical studies. Nevertheless, consumers needs, and the ability to satisfy them, do vary from stage to stage of the family life cycle. An inherent difficulty in the classification of life cycle has been extensively discussed in chapter two. Notwithstanding these aspects, the research sought to examine a number of hypotheses that would identify the influence of respondent age structure, family life cycle, the number of pre-school children and finally the total number of children on shopping behaviour. A difficulty with this objective concerned the format of a number of tabulations. Owing to the small numbers which would have been involved in some cells on the contingency tables, certain response categories were combined. The discussion commences with the detailed influence of respondent age structure. Behavioural differences, between each of the classificatory groups proposed, are discussed in relation to the social and spatial differences in overt behaviour previously identified.

The detailed breakdown of the influence of age structure on patterns of main grocery behaviour is illustrated in Tables 4.9A and B.

At Trallwn the influence of respondent age on the patterns of behaviour for all shoppers is minimal, the only apparent variability lies in the marginal increase of the 36 - 45 year respondents to visit the free standing outlets. The original finding of the research; the predominance of Trallwn based trips to two locations, prevails.

Table 4.9A: Shopping Centres Visited by Age of Respondent
(% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO. OF CASES
Trallwn								
Less than								
35 years	22.1	45.5	9.1	10.4	3.9	5.2	3.8	77
36 - 45	18.9	54.1	8.1	2.7	2.7	8.1	5.4	37
46 - 65	23.7	50.0	10.5	10.5	2.6	2.6	-	38
66 +	20.0	80.0	-	-	-	-	-	5
Treboeth								
Less than								
35 years	11.1	40.0		20.0	-	28.9	-	45
36 - 45	22.0	34.1		22.0	2.4	14.6	-	41
46 - 65	10.9	42.2		40.0	-	4.7	-	64
66 +	-	37.5		50.0	-	-	-	8
Tycoch								
Less Than								
35 years	40.7	7.4		25.9	7.4	18.5	-	27
36 - 45	35.0	-		22.5	15.0	27.5	-	40
46 - 65	40.7	-		33.3	5.6	20.4	-	54
66 +	31.6	-		57.9	10.5	-	-	19

Table 4.9B:

Selected Cells of Centre Visited by Age of Respondents controlling for Designated Social Status (% Respondents)

Treboeth Low Status								
Less than								
35 years	10.5	36.8		42.1	-	10.5	-	26
Treboeth High Status								
Less than								
35 years	11.5	42.3		3.8	-	42.3	-	19
Tycoch Low Status								
66 +	30.3	-		50.0	20.0	-	-	10
Tycoch High Status								
66 +	33.3	-		66.7	-	-	-	9
Tycoch Low Status								
36-45	31.3	-		50.0	18.8	-	-	16
Tycoch High Status								
36-45	37.5	-		4.2	12.5	45.8	-	24

At Treboeth differences in the age structure of respondents result in variations in the patterns of overt spatial behaviour. Increased age results in declining use of the city centre and a large increase in shopping trips to the nearest neighbourhood or local centre. Younger respondents at Treboeth increasingly favour the free standing outlets for grocery shopping. At Tycoch, the eldest category of respondents make less use of the city centre, with a corresponding increase in visits to the nearest neighbourhood/local centre. Furthermore, no elderly respondents visit the free standing outlets. Clearly, in the latter two survey areas the elderly group are increasingly reliant on the nearest shopping centre for major grocery purchases. Old age does appear to be a leveller of spatial mobility and therefore, constrains the behaviour of certain shoppers to their nearest centre.

Extending the analysis further, by controlling for the influence of designated social status, reveals (albeit within the reservations of sample sizes) a number of interesting results (Table 4.9B). At Trallwn no further variation is apparent, however, in the Treboeth sample controlling for social status illustrates the significance of social variation in the proportion of young respondents (less than 35 years) travelling to a free standing outlet. Of the Treboeth low status, the 'young' group only slightly vary their patterns of overt behaviour to the behavioural characteristics of the total sample site (Table 4.2). The designated high status group less than 35 years of age, increasingly visit the free standing outlets at the expense of local shopping. Further variation can clearly be seen in the Tycoch figures. Of the 66 years plus group of respondents it is interesting to note the tendency for the high status 'elderly' to increasingly visit the nearest neighbourhood/local centre. Furthermore, of the 36 - 45 year age group of respondents, the influence of social status is again visible in the appreciable decline in the high status use of the nearest neighbourhood/local centre and the associated increase in trips to free standing outlets. Additionally, the low status respondents aged 36 - 45 years are more likely to shop at the nearest neighbourhood/local centre and district centre in place of the city centre and free standing outlets. Given this variation however, the influence of the geographical distribution of retail opportunities is clearly important.

The influence of respondents age has been demonstrated within the sample framework outlined. Old age does appear from the limited evidence available to be a leveller of spatial mobility across geographical and social boundaries.

The influence of a classification by family life cycle is illustrated in Table 4.10. Across the three sample areas the influence is slight. At Trallwn the classification of consumers results in a slight increase in the use of near and other small town centres and the nearest neighbourhood/local centre by the groups of elderly couples, single person households and unclassified respondents. At Treboeth this elderly group decrease their use of the sub regional city centre, small town centres and free standing outlets in favour of a considerable reliance on the nearest neighbourhood/local centre. (54% of all trips are to this location). The classification of 'young couple' at Treboeth increases the number of visits to the small town centre and free standing outlets at the expense of local shopping. A similar trend, with the additional use of the city centre, is apparent by the middle aged Treboeth couples. Finally at Tycoch, the elderly group increasingly use the nearest neighbourhood/local facility or sub-regional city centre at the expense of journeys to free standing locations. The remaining two groups, in direct contrast to this, make fewer local visits and more trips to the free standing outlets. Swansea city centre, however, still accounts for the majority of Tycoch grocery shopping trips. The influence of family life cycle is insignificant. Differences in behaviour occur at Treboeth and Tycoch and variations in accordance with definitions followed are apparent. The previous finding with respect to elderly respondents is corroborated. In two of the three areas certain elderly couples (together with single person households and unclassified households) are more likely to shop at their nearest centre at the expense of travelling distances. The retail opportunity set, however, still dominates behaviour at all the survey areas. Family life cycle as an explanatory variable is fraught with one of the inherent problems of sample survey; sample size. By definition, stage in family life cycle subsumes a multivariate situation, and in the present study the research design could not adequately cater for such a variable. Nevertheless, the results of the classification followed proved interesting and supported the previous evidence regarding the influence of old age on consumer

Table 4.10: Shopping Centres Visited by Family Life Cycle Groups
(% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO. OF CASES
Trallwn								
Young Couple	22.2	46.0	9.5	9.5	1.6	6.4	-	63
Middle Aged Couple	21.4	51.8	7.1	5.4	3.6	7.2	-	56
Elderly Couple	21.0	52.6	10.5	10.6	5.3	-	-	38
Others								
Treboeth								
Young Couple	12.5	46.9		12.5	-	28.1	-	32
Middle Aged Couple	18.5	43.1		16.9	1.5	15.4	-	64
Elderly Couple	8.2	31.1		54.1	-	4.9	-	61
Others								
Tycoch								
Young Couple	40.0	10.0		25.0	4.8	20.0	-	20
Middle Aged Couple	32.2	-		27.1	11.9	28.8	-	59
Elderly Couple	42.6	-		39.3	8.2	9.8	-	61
Others								

spatial behaviour. Within the confines of the geographical influence of the retail opportunity set, there does appear to be an influence of old age on spatial behaviour. At the Treboeth and Tycoch sites, in particular, a larger than average proportion of shopping trips by elderly consumers are to the nearest centre available. It would appear that the nearest centre hypothesis is applicable to the spatially immobile, elderly group of consumers.

The influence of pre-school children on spatial behaviour is initially viewed as a 'gender role' constraint upon spatial choice. This classification is a logical progression from respondent age and family life cycle in that it specifically identifies a certain group of consumers. Furthermore, it has previously been suggested (Potter, 1977) that the influence of pre-school children is comparable to that of old age. Accepting that the sample did not directly seek to stratify respondents on this basis, and hence the observed cell frequencies may be small, the results do show some interesting aspects (Table 4.11). All Trallwn respondents with pre-school children use different centres for major grocery purchases. The 'gender constraint' results in a slight decrease in the use of the city centre, nearest small town centre, which is compensated^{for} by slightly increased visits to the nearest neighbourhood/local centre, free standing outlets and 'other' centres. The results however are not especially conclusive, and do not support the notion that a gender constraint results in nearest centre behaviour. At Treboeth the difference between the groups is startling. Respondents with a pre-school child forego visits to the city centre, small town centre and nearest neighbourhood/local centre for journeys to the free standing outlets. Presumably this behaviour is closely associated with mobility and social status. At Tycoch comparable findings to those at Treboeth result with the same inferences carrying equal, if not more, weight. The survey results suggest that the influence of pre-school children on behaviour results in an increased tendency for 'one stop shopping' at a free standing outlet. At Trallwn this factor does not apply and behavioural patterns are slightly modified in line with a 'gender constraint'. The sample respondents within the classification however are heavily orientated towards the predominantly high status, mobile respondents. Nevertheless, the results are interesting; there is some support for the motion of a "dual assignment role" for certain consumer

Table 4.11A: Shopping Centres Visited by Presence or Absence of Pre-School Children (% Respondents)

		SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn	Nil	23.6	51.8	10.0	6.4	2.7	3.6	-	110
Trallwn	One +	17.0	44.7	6.4	12.8	4.3	8.5	-	47
Treboeth	Nil	14.2	41.0		31.3	0.7	10.4	-	134
Treboeth	One +	8.3	29.2		25.0	-	33.3	-	24
Tycoch	Nil	37.4	-		35.8	8.9	16.3	-	123
Tycoch	One +	41.2	-		5.9	11.8	41.2	-	17

Table 4.11B: The Influence of Pre-School Children on Centre Choice by Designated Soical Status (% Respondents)

		SCC	STC	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn High Status								
	Nil	20.8	70.8	2.1	2.1	2.1	2.1	48
	One	13.8	51.7	17.2	-	10.3	6.9	29
Trallwn Low Status								
	Nil	25.8	54.8	9.7	3.2	4.8	1.6	62
	One	22.2	50.0	5.6	11.1	5.6	5.6	18
Treboeth High Status								
	Nil	17.5	46.0	14.3	1.6	17.5	3.2	63
	One	12.5	37.5	6.3	-	43.8	-	16
Treboeth Low Status								
	Nil	11.3	36.6	46.5	-	4.2	1.4	71
	One	-	12.5	62.5	-	12.5	12.5	8
Tycoch High Status								
	Nil	34.5	3.6	29.1	5.5	23.6	3.6	55
	One	33.3	-	6.7	13.3	46.7	-	15
Tycoch Low Status								
	Nil	39.7	-	41.2	11.8	7.4	-	68
	One	100.0	-	-	-	-	-	2

groups, but overall, the influence of spatial differences are particularly evident. Further control for the associated influence of designated social status is illustrated in Table 4.11b. At the Trallwn site, the influence of pre-school children on centre choice for high status respondents is to increase the proportion of visits to the nearest centre and to the free standing outlets. Despite this trait trips to small town centres still predominate. The Trallwn low status group with pre-school children only slightly modify their behaviour with more visits to district centres. Differences in overt spatial behaviour are still very clear between the designated social status groups. At Treboeth the trend observed for the total sample is broadly mirrored by both social groups. A decline in the use of the city centre, small town centres and increased visits to the free standing outlets characterised respondents with pre-school children irrespective of social status. The magnitude of these changes however, does vary, with the high status group in particular increasing visits to the free standing outlets. A difference between the contrasting social groups concerns visits to the nearest centre. High status Treboeth respondents with pre-school children make fewer visits to the nearest centre. This latter finding is important, for a social status influence on behaviour is significant within the effect of a 'gender constraint' on behaviour. The high status respondents at Treboeth with pre-school children make use of their increased mobility to travel to a free standing outlet. This result is corroborated by the evidence at Tycoch where high status shoppers with pre-school dependents increasingly visit the free standing outlet.

As observed previously, the influence of pre-school children on spatial shopping behaviour is clearly apparent. The effect however varies socially between the groups and furthermore spatially. This latter observation can clearly be seen at Trallwn.

The total number of children present in the household produced further evidence of the influence of consumer sub-groups on spatial patterns of shopping behaviour. As Table 4.12A shows, there is a differential impact between the three sample areas regarding the influence of the total number of children resident in the household. At Trallwn the effect is slight with two interesting tendencies.

Table 4.12A: The Influence of Number of Children Present in the Household in Centre Choice (% Households)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	NO.OF CASES
Trallwn							
No Child	21.7	58.7	6.5	8.7	2.2	2.2	46
1 "	33.3	33.0	6.4	15.2	3.0	3.0	33
2 "	10.4	56.0	12.8	6.3	2.1	4.2	48
3 "	26.7	43.3	10.0	3.3	3.3	13.3	30
Treboeth							
No Child	7.3	46.3		34.1	-	7.3	41
1 "	17.5	32.5		35.0	-	12.5	40
2 "	14.0	42.1		24.6	-	19.3	57
3 "	15.0	30.0		30.0	5.0	15.0	20
Tycoch							
No Child	42.4	3.4		37.3	8.5	8.5	59
1 "	40.9	-		27.3	9.0	22.7	22
2 "	34.3	-		25.7	11.5	28.6	35
3 "	29.2	-		33.3	8.3	29.1	24

Table 4.12B: Selected Statistics of Centre Visited by Number of Children Present in the Household by Designated Social Status (% Households)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn HS Nil	27.3	63.6		4.5	4.5	-	-	22
3 Child	-	66.7		11.1	11.1	11.1	-	9
Trallwn LS Nil	16.7	66.7		12.5	4.2	-	-	24
3 Child	38.1	47.6		-	-	14.3	-	21
Treboeth HS Nil	15.8	42.1		15.8	-	15.8	10.5	19
2 Child	12.1	51.5		9.1	-	27.3	-	33
3 "	10.0	30.0		30.0	10.0	20.0	-	10
Treboeth LS Nil	-	50.0		50.0	-	-	-	22
2 Child	16.7	29.2		45.8	-	8.3	-	24
3 "	20.0	30.0		30.0	-	10.0	10.0	10
Tycoch HS Nil	40.0	10.0		40.0	-	10.0	-	20
3 Child	31.3	-		12.5	12.5	31.3	12.5	16
Tycoch LS Nil	43.6	-		35.9	12.8	7.7	-	39
3 Child	25.0	-		75.0	-	-	-	8

Those households devoid of children increasingly visit the nearest small town shopping centre for major grocery purchases (58.7% of all trips by this group are to this type of centre). In contrast, households with at least three children present make fewer visits to the nearest small town centre at the expense of travelling to the city centre and free standing outlets. This latter location implies an aspect of 'bulk buying' from the free standing outlets. At Treboeth the impact of children on behaviour is more apparent. Childless households make fewer trips to the city centre and free standing outlets, balanced by increased shopping from small town centres and the nearest neighbourhood/local facility. Again, more households with large numbers of children visit the free standing outlets (19.3% of all two child household trips and 15.0% of three child household trips). Further evidence of this characteristic is clearly seen at Tycoch, where greater numbers of children present in the household increased the importance of the free standing outlets as a major grocery location. Additionally, trips to the city centre vary within the Tycoch group, with 42.4% of childless, and contrasting this 29.2% of three child household respondents visiting the city centre. Furthermore, the use of the nearest neighbourhood/local centre increases for childless groups.

Overall, the results are interesting. Obviously, with regard to the childless household groups an intervening element of the 'old age' constraint upon behaviour is apparent and the results are generally in line with those previously presented. More significantly is the trend for the orientation of main grocery trips towards free standing outlets by households with more children. This suggests an element of bulk buying and contrasts with the findings of at least one author (Potter, 1977) who demonstrated that size of family was effective in restricting the spatial behaviour of large groups. This latter characteristic will be explicitly presented in a further hypothesis, where the influence of family/household size on shopping behaviour is tested.

The influence of the total number of children present in the household produces further variability in the patterns of overt spatial behaviour of the Swansea sample. The impact fluctuates between the three survey areas and accordingly, (as the impact is most directly manifested

through the use of free standing outlets) simultaneous geographical differentiation is important. Further analysis controlling for the additional influence of designated social status is illustrated in Table 4.12B. At Trallwn, the tendency for households devoid of children to increasingly visit the nearest small town centre for major grocery purchases is a low status trait. Similarly, the tendency for households with at least three children to travel to the city centre is a low status characteristic. The high status Trallwn group, with over three children present, increasingly travel to district centres and free standing outlets. This latter centre also accounts for more visits by three plus children households in the low status group. The influence of the total number of children present on spatial behaviour is apparent in the Trallwn sample. The influence, however, differs between the high and low status groups. Despite this, a small number of centres still dominate the patterns of behaviour.

At the Treboeth site the tendency for childless households to make fewer city centre trips is a low status characteristic, but both social groups reduce the proportion of trips to free standing outlets. The proportional increase in trips to small town centres by Treboeth childless shoppers, is also a characteristic of the low status group. The remaining characteristics illustrated in Table 4.12B indicate a varying influence of the number of children upon the patterns of overt behaviour by the two social groups at Treboeth. This can be interpreted with a view to alternative influences. The results at Tycoch illustrate the social status influence on the changing patterns of behaviour for households with a large number of children. Similarly, the childless high status also rely less on the free standing outlets for major grocery shopping.

The results provide further evidence of the importance of both geographical and social status differences in shopping behaviour. Controlling for the influence of total number of children present in the household provides only a partial explanation of what appears to be quite variable patterns of behaviour.

The series of demographic based variables, which have been used to classify consumer groups resulted in a variety of interesting patterns of overt spatial behaviour. The influence of respondent age, in particular

old age, did appear to restrict spatial mobility across the geographical and social sample boundaries. The classification by family life cycle both supported these facts, and provided further evidence of the influence of geographical location on behaviour.

The influence of pre-school children upon spatial choice provided evidence that varied socially and spatially between the groups. The behaviour of high status respondents was not characteristic of a constraint upon spatial mobility. The total number of children present in the household however, did not substantially add to the array of previous findings. Clearly, variation was apparent, and the classification of consumers now moves towards additional characteristics of the household.

(iv) The Influence of Household Characteristics

A further influence on consumer choice behaviour can be identified with reference to the characteristics of the household shopping unit. A variety of indices could be formulated, and certain of those already presented from a demographic base (family life cycle and pre-school children) are clearly related to this discussion. Of importance however, is the consideration of household and family size. Primarily viewed from a demand viewpoint, the definitions of 'family' and household are not debated in this discussion. Chapter two has defined these terms and presented the sample characterised in relation to household size. Potter (1977) in a study of Stockport illustrated the effectiveness of family size on shopping behaviour, with spatially restricted moves being made by consumers with large families. Similarly it is interesting to note that the Family Expenditure Survey (1980) provides a breakdown by the influence of size characteristics of households. The discussion presents the influence of household size on centre choice. As Table 4.13A illustrates, the overall effect of household size varies between the three sample areas. At Trallwn there is a regular pattern, although the behaviour of respondents shopping for large household units (5 persons plus) is notably spatially unrestricted. The geographical influence is dominant throughout with respect to centre choice, however, the increased use of free standing outlets, and other small town centres by Trallwn 'five person household' respondents, is indicative of spatial choice

Table 4.13A: The Influence of Household Size on Centre Choice
(% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn								
<2 persons	21.2	57.4	4.3	12.8	2.1	2.1	-	47
3 "	30.3	41.6	9.9	6.1	3.0	3.0	-	33
4 "	15.6	53.3	11.1	8.9	2.2	4.4	-	45
5 + "	21.9	40.6	12.5	3.1	6.3	12.5	-	32
Treboeth								
<2 persons	7.3	43.9		39.0	2.4	7.3	-	41
3 "	21.4	33.3		31.0	-	9.5	-	42
4 "	12.7	40.0		23.6	-	23.6	-	55
5 "	10.0	40.0		30.0	5.0	10.0	5.0	20
Tycoch								
<2 persons	41.0	3.3		36.1	8.2	11.5	-	61
3 "	40.0	-		30.0	15.0	15.0	-	20
4 "	31.3	-		28.1	9.4	31.3	-	32
5 + "	37.3	-		29.6	7.4	18.5	-	27

Table 4.13B: Selected Statistics from Table 4.13A (% Respondents)

Trallwn								
HS 5 person	-	63.6		9.1	9.1	9.1	9.1	11
LS 5 person	33.3	47.6		-	4.8	14.3	-	21
Treboeth								
HS 4 person	9.1	48.5		9.1	-	33.3	-	33
LS 4 "	18.2	27.3		45.5	-	9.1	-	22
HS 2 "	18.8	37.5		18.8	-	18.8	6.3	16
LS 2 "	-	48.0		52.0	-	-	-	25
Tycoch								
HS 4 person	29.2	-		20.8	8.3	41.7	-	24
LS 4 "	37.5	-		50.0	12.5	-	-	8
HS 5 "	35.3	-		11.8	11.8	29.4	11.8	17
LS 5 "	40.0	-		60.0	-	-	-	10

in behaviour. Further analysis of the behaviour of large household respondents, controlling for the influence of social status, clarifies this picture. Large high status Trallwn households do not visit the city centre, but use small town centres and increase the proportion of visits to the nearest centre and free standing outlets. The low status consumers from large Trallwn households differ appreciably from this behaviour and also from the average for the low status group. Increased visits are made to the city centre and free standing outlets at the expense of local shopping and visits to the small town centres. At Trallwn, social status variation in the behaviour of large household consumers is apparent.

At Treboeth the most noticeable characteristic is the proportion (23.6%) of visits to the free standing outlets by four person households, in place of small town and neighbourhood/local shopping centres. Similarly, the two person household respondents increasingly favour small town and nearest neighbourhood/local centres. In addition to these characteristics, the use of locations is mixed, giving an indication of possible intervening influences on behaviour. Further controls for designated social status (Table 4.13B) illustrate that these trends are not consistent across the two social groups. Four person high status households increasingly visit free standing outlets (33% of all four person high status trips) at the expense of the city centre and nearest centre, whilst the low status group increase their use of the city centre (and free standing outlets). With respect to two person households the influence of this variable is constant for both social status groups. The results from Treboeth thus provide further variable evidence of the influence of household size on centre choice. Geographical variations in the retail opportunity set still remain significant with the combination of social status and household size producing further variability.

The Tycoch sample illustrate a similar pattern to the Treboeth respondents, in that the larger households tend to visit the free standing outlets with the two person household respondents shopping nearer home. The additional disaggregation, with respect to designated social status, clearly shows (within the reservations of cell size) the use of free standing outlets by the high status larger household respondents.

In summary therefore, the influence of household size on patterns of spatial choice behaviour tends to produce an increased use of free standing outlets by respondents from larger households and more constrained behaviour by those from small households. Within the dominance of the geography of the available opportunities, this fact is consistent for all three sites. An important social status interdependence is, however, discernible; the impact of free standing outlets is greater for the high status large household respondents. These findings tend to detract from those of Potter (1977) previously detailed. Many consumers from larger households do appear to travel further to more distant shopping centres. Their behaviour is far from restricted, but is closely related to status and mobility.

Further evidence has thus been provided of the influence of socio-spatial differences on the use of various shopping centres. Geographical and social status variables still determine behaviour albeit with a minor degree of variance for the intervening influence of additional variables.

(v) The Influence of "Time Availability"

The restrictions upon behaviour as a result of limitation in time budgets have been extensively documented in many geographical studies (for example, Cullen and Godson, 1977). The importance of space-time budgets to the study of consumer behaviour is the ability to relate shopping activities to all other activities in an unified fashion. Warnes and Daniels (1980) quote statistics derived from a study of time budgets in Reading (from Bullock et al, 1974) whereby time spent on shopping activities varied between working and non working housewives. This distinction can be extended into a wider study of overt spatial behaviour and act as an ideal surrogate measure of time availability. Daws and Bruce (1971), in their study of 'Shopping in Watford', disaggregated a variety of behavioural characteristics by respondent work status. Their classification of non working, part-time and full-time working respondents did not prove to effect the average distance to source of food stuffs, but had a large influence on the time of day at which they shopped. Furthermore, the authors, in concluding that marked variations in shopper behaviour and attitude were related to housewives circumstances, identified the "sizeable contribution" that the working

status of housewives made to this variation. It is interesting to note further, that both age and location were of comparable importance but all less so than mobility, affluence (social status) and family cycle.

This study views the working status of the principal shopper in a household as a time constraint upon behavioural choice. Accordingly, a classification of respondents by such a measure (described in chapter two) is viewed as an additional possible influence on behaviour. The discussion will centre around the differences in overt spatial choice behaviour between working and non working respondents within the geographical sample frame. The restriction of sample size prohibits any sophisticated analysis to simultaneously negate the influence of social status on behaviour. Table 4.14A details the influence of respondent work status on the centre visited for major grocery purchases.

At Trallwn the influence of work status of the respondent is seen in the increased use, by all working respondents, of the city centre and, to a lesser extent, the free standing outlets at the expense of the nearest neighbourhood/local shopping centre. This trend is clarified by further sub-division into full and part-time workers. The full time working respondents at Trallwn increasingly visit the city centre area for grocery purchases and correspondingly, reduce their reliance on visits to the nearest small town centre. Part-time working respondents at Trallwn increasingly favour the sub regional city centre for grocery shopping. Variation is therefore quite evident between the behaviour of working and non working respondents at Trallwn. Table 4.14B controls for the additional influence of designated social status on these patterns. Working respondents from both groups increasingly use the sub-regional city centre at the expense of the nearest neighbourhood/local shopping centre. There does not appear to be a differential effect of respondent work status on centre choice between contrasting social groups at Trallwn.

The Treboeth respondents illustrate further variation in trip destinations between working and non working respondents. Again, all working respondents proportionally increase the number of trips to the city centre. This increase is greater for those respondents in full-time employment. The variation is generated at the expense of visits to the

Table 4.14A: Shopping Centres Visited by Work Status of Respondent
(% Respondent)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn								
Full-Time	32.1	39.3	10.7	7.1	3.6	7.1	-	28
Part-Time	21.3	55.2	8.6	2.1	2.1	6.4	4.3	47
Others	19.0	50.4	7.6	12.7	3.8	3.8	3.7	82
(All Workers	25.3	47.5	9.3	4.0	2.7	6.7	2.7	75)
Treboeth								
Full-Time	28.6	45.7	5.7	2.9	14.3	2.9	35	
Part-Time	8.9	33.3	37.8	-	17.8	2.2	45	
Others	9.0	39.7	37.2	-	11.5	2.6	78	
(All Workers	17.5	38.8	23.8	1.3	16.3	2.5	80)	
Tycoch								
Full-Time	53.8	7.7	7.7	3.8	26.9	-	26	
Part-Time	24.3	-	40.5	13.5	21.6	-	37	
Others	39.0	-	36.4	9.1	15.6	-	77	
(All Workers	36.5	3.2	27.0	9.5	23.8	-	63)	

Table 4.14B: Selected Statistics from Table 4.14A (% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn								
High Status Workers	22.0	63.4	2.4	2.4	7.3	2.4	41	
Others	21.7	54.3	10.9	6.5	4.3	2.2	36	
Trallwn								
Low Status Workers	29.4	52.9	5.9	2.9	5.9	2.9	34	
Others	13.9	63.9	13.9	-	2.8	5.6	46	
Treboeth								
High Status Workers	17.0	40.4	14.9	2.1	23.4	2.1	47	
Others	15.6	50.0	9.4	-	21.9	3.1	32	
Treboeth								
Low Status Workers	18.2	36.4	36.4	-	6.1	3.0	33	
Others	4.3	32.6	56.5	-	4.3	2.2	46	
Tycoch								
High Status Workers	39.4	6.1	9.1	9.1	30.3	6.1	33	
Others	29.7	-	37.8	5.4	27.0	-	37	
Tycoch								
Low Status Workers	33.3	-	46.7	10.0	10.0	-	30	
Others	47.5	-	35.0	12.5	5.0	-	40	

nearest neighbourhood/local facility. Furthermore, increased use is made of the free standing outlets by all working respondents. Non workers increasingly rely on the nearest centre for major grocery shopping. Notwithstanding these patterns, small town centres are still important in the patterns of centre choice for Treboeth respondents. The sub-division controlling for designated social status at Treboeth illustrates further variation. For the high status group the influence of respondent work status is not important, whilst the low status (and hence, accounting for the findings above) working respondents increasingly visit the city centre at the expense of shopping in the nearest neighbourhood/local facility. Respondents work status induces variability into the shopping behaviour of Treboeth low status respondents only. At the Tycoch sample site this influence is seen in the considerable use made of the city centre by full time working respondents (over half of all trips made by this group). Furthermore, work status results in the additional use of the free standing outlets at the expense of nearest centre shopping. Part-time working respondents interestingly differ slightly with increased visits to the nearest centre.

Additional control for the influence of social status highlights a number of characteristics. The work status of respondents in the Tycoch high status group results in the increased use of the city centre instead of the nearest centre, which contrasts to the low status, who slightly favour the nearest neighbourhood/local centre at the expense of the sub regional city centre.

Throughout all three sample sites working respondents illustrate different behavioural patterns to their non working counterparts. These variations differ between full and part-time workers but more significantly, both geographically between the three areas, and within each between the social groups. In general, respondents at work tend to favour a centre of considerable hierarchical status (the city centre, small town centres or free standing outlets) although the Tycoch residents do tend to contradict this statement. Interestingly, these results could be explained in that respondent work status is providing an economic function which enhances consumer choice rather than solely impinging on time budgets. Further detailed research is needed to clarify the influence of respondent work status on consumer spatial

behaviour and should occur within a geographical and social sample frame equivalent to that outlined in this study.

The discussion so far has investigated the influence of a number of alternative classifications of consumer sub-groups on patterns of spatial choice. The analysis has occurred within a geographical framework and where possible within a simultaneous social status framework. A number of results have been identified. These will be detailed in a forthcoming section, which will present an interim conclusion into consumer spatial behaviour. Prior to that commentary, the discussion considers the aspects of supplementary choice behaviour for groceries and tests further, certain of the influences identified.

1.2 Supplementary Centre Choice

The previous section has extensively discussed the variability in major centre choice by the sample of consumers selected. Different sub-groups of respondents visited different major centres. Geographical and a variety of social and economic phenomena differentiated these overt behavioural patterns. The discussion, therefore, proceeds to examine the supplementary locations visited by respondents for grocery purchases. Consequently, the analysis will be subjected to the same principles as the previous section. Behavioural comparisons were made between spatially and socially different consumer groups. Only those influences which have provided significant differences in behaviour will be presented in this discussion. This section therefore aims to extend the previous conclusions by investigating the extent to which the same types of locations are being visited. The subsequent results add to the value of the main analysis with respect to the implication for the development of predictive models. Each respondent was requested to provide information on 'where else they visited for supplementary grocery purchases?'. A variety of information was collected and as chapter three, (Table 3.13) has demonstrated, the majority of respondents visited two centres for grocery shopping, albeit with some variation between the six sample groups. Perhaps more significantly, however, allegiance to the major centre was strong (Table 3.14). The type of first supplementary centre visited is discussed with reference to the same retail typology previously presented.

(i) The First Choice Supplementary Centre Visited

The types of locations visited for supplementary grocery shopping are illustrated in Tables 4.15 and 4.16 which respectively detail the influence of geographical area and geographical and social status site.

Almost 36% of all the Trallwn respondents visit their nearest neighbourhood/local centre for supplementary grocery purchases. A further 24.2% visit the city centre and only 15.3% visit the nearest small town centre; 3.2% make use of a free standing outlet for supplementary grocery purchases. Essentially, these results are quite different from the findings of major centre choice at Trallwn. Similar types of centres are visited, but for supplementary purposes the nearest centre and city centre are the most important. A similar trend occurs at Treboeth where the nearest centre again dominates supplementary purchases (41.8% of all Treboeth shoppers) along with the city centre and small town centres. Compared to ^{the previous results for} major centre choice the reliance on small town centres has moved towards the nearest facility. Supplementary purchases from the free standing outlets similarly decline. At the Tycoch sample area the free standing outlets again do not account for supplementary purchases and a greater proportion of trips are made to the district centres.

Disaggregation for the influence of designated social status clarifies the results and enables a more accurate comparison with the analysis of major centre choice. As can be seen in Table 4.16 social status does distinguish these patterns. The Trallwn high status make appreciably less use of the nearest neighbourhood/local centre than their low status counterparts and instead travel to the city centre and nearest small town centre for supplementary grocery purchases. The essential difference between high status supplementary behaviour and major centre choice is in the increased use of the city centre and nearest centre in place of the small town centres. The reliance of Trallwn low status respondents on the nearest centre, distinguishes Table 4.16 from major centre choice. Supplementary centre choice is different for the two social status sub-groups at Trallwn, with low status shoppers making many more short distance trips to the nearest centre. This observation is equally applicable to the Treboeth low status sample, where almost 51% of

Table 4.15: Centre Choice for Supplementary Grocery Purchases by Geographical Sample Area (% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER *	NO.OF CASES
Trallwn	24.2	15.3	5.1	35.7	1.3	3.2	15.3	157
Treboeth	20.9	19.0		41.8	3.2	5.7	9.5	158
Tycoch	30.7	1.4		32.9	13.6	2.9	18.6	140

Chi Square 56.36, 10 d.f. significant at 0.0001.

*Includes non users of supplementary locations: 24 or 15% at Trallwn; 15 or 10% at Treboeth and 25 or 19% at Tycoch.

Table 4.16: Centre Choice for Supplementary Grocery Purchases by Geographical and Social Status Group (% Respondents)

	SCC	STC N	STC O	NBH/LC N	DC	FSO	OTHER *	NO.OF CASES
Trallwn HS	28.6	19.5	7.8	23.4	1.3	2.6	16.9	77
Trallwn LS	20.0	11.3	2.5	47.5	1.3	3.8	13.8	80
Treboeth HS	27.8	19.0		32.9	5.1	3.8	11.4	79
Treboeth LS	13.9	19.0		50.6	1.3	7.6	7.6	79
Tycoch HS	30.0	2.9		31.4	14.3	4.3	17.1	70
Tycoch LS	31.4	-		34.3	12.9	1.4	20.0	70

*Includes non users of supplementary locations:
 13 or 17% @ Trallwn high status and 11 or 14% at low status.
 9 or 11% @ Treboeth high status and 6 or 8% at low status.
 11 or 16% @ Tycoch high status and 14 or 20% at low status.

respondents travel to the nearest neighbourhood/local centre for supplementary grocery purchases. Equally as important, however, is the decline in visits to small town centres for supplementary purchases by the low status group. The city centre accounted for almost 14% of all supplementary grocery destinations. These results contrast slightly with the behaviour of the Treboeth high status, where the city centre accounts for 27.8% of all trips and the nearest centre ^{for} almost 33% of all trips. Again, compared to major centre choice, the small town centres are less attractive for supplementary grocery purchases. Differences do occur between the Treboeth social groups but interestingly, for each respective group there is less difference between Treboeth and the geographical area of Trallwn. From this early analysis it would appear that there is less geographical variation in supplementary centre choice than in major grocery centre behaviour. The results at Tycoch are relatively similar for the two status groups. The nearest neighbourhood/ local centre and the city centre account for the majority of supplementary purchases, although there is an increased proportion of visits to the district centres by high status consumers. Throughout the whole sample, free standing outlets do not attract many respondents when supplementing grocery purchases. This factor does corroborate the disaggregated analysis of major centre choice, where larger households and respondents with pre-school children together with the mobile groups, illustrated behaviour characteristic of bulk buying from the free standing outlets. Respondents do not appear willing to travel the greater distances involved to a free standing centre for minor purchases.

Overall, the results presented illustrate the increased importance of nearest centre shopping trips for supplementary grocery purchases, together with movements towards the city centre. The small town centres lose their importance as locations for supplementary grocery shopping. Within this overview there does exist a social status and geographical variation, albeit of lesser overall significance than previously identified. The pre-eminence of nearest centre shopping for supplementary purchases would appear to reduce the variation between alternative groups of consumers. These results are illustrated in Figures 4.3 and 4.4. Nevertheless, some variation is apparent, and the discussion moves on to investigate the influence of selected consumer groups on supplementary grocery locations. Three alternative groupings

FIGURE 4.3: SUPPLEMENTARY GROCERY TRIPS: HIGH STATUS

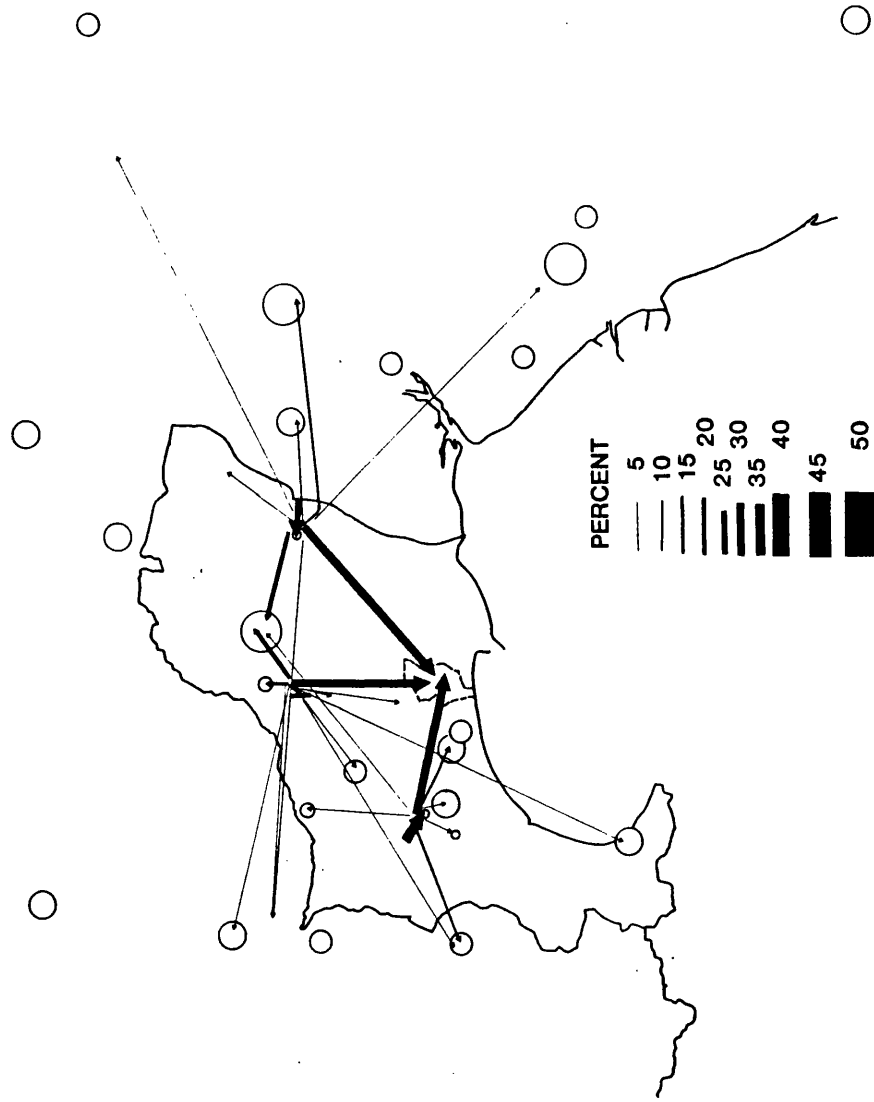
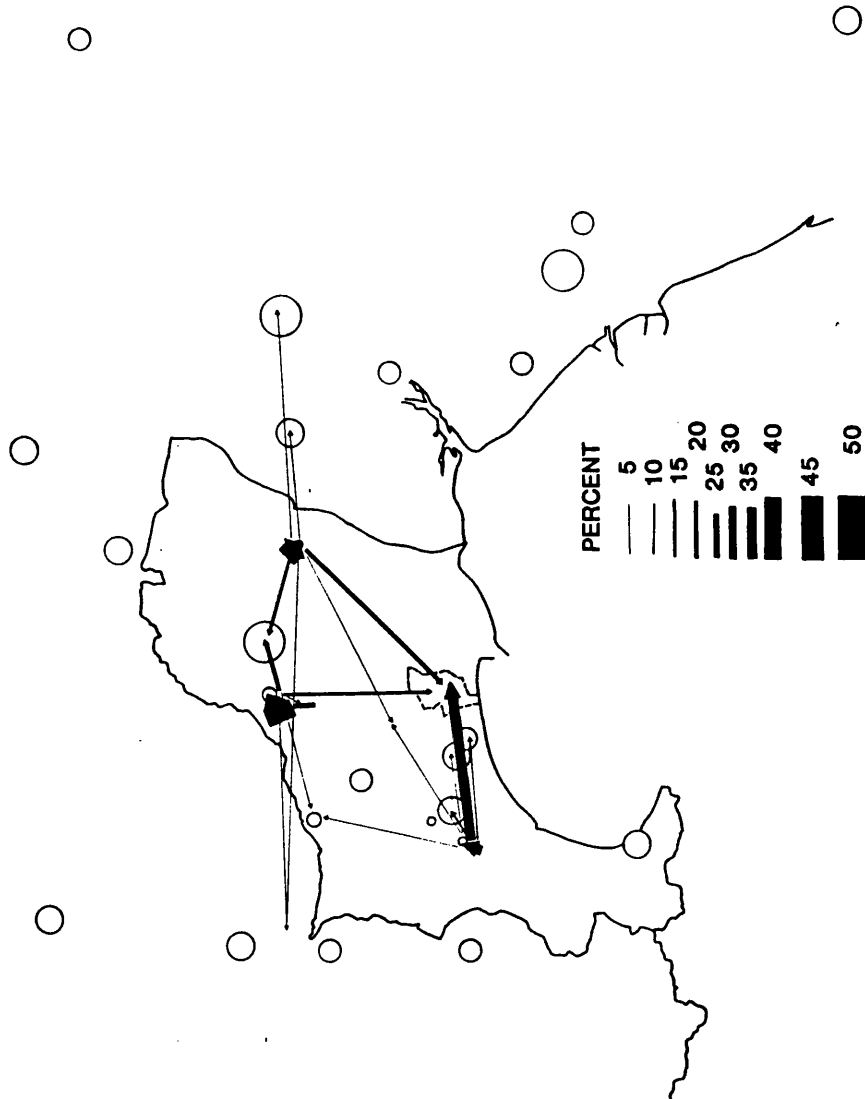


FIGURE 4.4 : SUPPLEMENTARY GROCERY TRIPS: LOW STATUS



of consumers are presented; the influence of personal mobility, the 'gender' constraint of pre-school children and the role of time availability through the work status of the respondent. These factors influence overt spatial behaviour towards major grocery centre choice, and the previous reservations regarding the structure of each table still remain.

The influence of an index of personal mobility is illustrated in Table 4.17. At Trallwn the totally mobile group increasingly visit the small town centres and free standing outlets for supplementary grocery purchases in place of the nearest centre. Despite this, the nearest neighbourhood/local centre still remains an important destination for these trips. The immobile respondents at Trallwn conversely increase their reliance on visits to the nearest centre. Mobility does influence the use of the sub regional city centre for supplementary grocery purchases by Trallwn respondents. Similarly, this finding is characteristic of Treboeth shoppers, where the influence of personal mobility reduces the use of small town centres in favour of nearest centre and, to a small degree, district centres. For all classifications of mobility at Treboeth the nearest centre is the most important for supplementary grocery shopping. The results at Tycoch illustrate further variation. Increasing mobility results in an increased usage of the city centre in particular. District centres are more important for supplementary purchases by the immobile Tycoch shoppers. Despite this latter result the influence of personal mobility on supplementary grocery shopping is less significant than previously identified. There is on the whole, only minor variation between the mobility groups, and furthermore only a minor difference geographically. The proximity of Trallwn and Treboeth to a small town centre secures a number of visits to that centre, whilst Tycoch shoppers increasingly favour district centres. Overriding these patterns is the use of the nearest centre for supplementary grocery purchases.

The influence of pre-school children (Table 4.18) on supplementary centre choice differs between the geographical areas. At Trallwn 'constrained' consumers increasingly visit the nearest centre (and to a lesser extent the free standing outlets) at the expense of the city centre. This is a finding consistent with the analysis of major centre

Table 4.17: The Influence of a Personal Mobility Index on Supplementary Centre Choice (% Respondents)

	SCC	STC	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn							
Immobile	25.0	17.9	39.3	-	-	17.9	28
Partial Mobility	26.7	16.7	43.3	1.7	-	11.7	60
Total Mobility	21.7	24.6	27.5	1.4	7.2	17.4	69
Treboeth							
Immobile	21.9	25.0	46.9	-	-	6.3	32
Partial Mobility	20.7	25.9	32.8	1.7	8.6	10.3	58
Total Mobility	20.9	10.4	47.8	6.0	6.0	9.0	67
Tycoch							
Immobile	16.7	-	33.3	20.0	3.3	26.7	30
Partial Mobility	30.4	-	35.7	12.5	-	21.4	56
Total Mobility	38.9	3.7	29.6	11.1	5.6	11.1	54

choice. At Treboeth, the contrasting view is apparent, with consumers constrained by the presence of a pre-school child increasingly visiting the city centre and small town centres at the expense of nearest centre shopping. The free standing outlets are of minor importance. This trend is at variance with the findings for major centre choice. The Tycoch sample group 'constrained' by this gender role decrease visits to the city centre, instead shopping at the free standing outlets, district centres and particularly, the nearest neighbourhood/local centre. Again these results are at variance with the previous findings.

The influence of pre-school children on supplementary grocery behaviour varies between the three areas. Undoubtedly the presence of a pre-school child results in differential behaviour, albeit varied between the groups. The geographical influence of the retail opportunity set is still apparent despite the predominant use of nearest centres. Small town centres are important outlets for Trallwn and Treboeth shoppers whilst the distribution of district centres provides for Tycoch consumers.

The final disaggregation investigates the locations visited by the respondent's work status. The previous comments regarding this classification remain, but the results illustrated in Table 4.19 are interesting. At Trallwn the difference between working and non working respondents is minimal, with the nearest centre, followed by the city centre and small town centres, dominating behaviour. At Treboeth some differences are apparent, notably in the increased proportion of visits directed towards the nearest centre by non working respondents. At Tycoch however, differences are apparent with the 'workers' increasingly visiting the city centre at the expense of the district centres.

Again, it would appear that behavioural differences in major centre choice between the consumer groups defined are less significant with respect to supplementary grocery behaviour. All three additional classifications of consumers did not enhance the magnitude of the variation previously identified. Supplementary shopping behaviour is much less varied, with the nearest centre accounting for many excursions. Over and above this, the city centre area attracts a reasonable proportion of shopping trips (15 - 30%) with a slight geographical bias in favour of the Tycoch residents. The remaining behaviour is directed to a variety of centres, albeit with a distinct

Table 4.18: Influence of Pre-School Children on Supplementary Grocery

Location (% Respondents)

	SCC	STC	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn							
Nil	27.3	20.0	33.6	1.8	0.9	16.4	110
One +	17.0	21.3	40.4	-	8.5	12.8	47
Treboeth							
Nil	19.4	17.9	44.0	2.2	6.0	10.4	134
One +	29.2	25.0	29.2	8.3	4.2	4.2	24
Tycoch							
Nil	33.3	1.6	31.7	11.4	0.8	21.1	123
One +	11.8	-	41.2	29.4	17.6	-	17

Table 4.19: The Influence of Respondents Work Status on Supplementary

Grocery Location (% Respondents)

	SCC	STC	NBH/LC N	DC	FSO	OTHER	NO.OF CASES
Trallwn							
Workers	21.3	21.3	32.0	1.3	2.7	21.3	75
Others	26.8	19.5	39.0	1.2	3.7	9.8	82
Treboeth							
Workers	22.5	21.3	35.0	3.8	5.0	12.5	80
Others	19.2	16.7	48.7	2.6	6.4	6.4	78
Tycoch							
Workers	36.5	-	33.3	7.9	3.2	19.0	63
Others	26.0	2.6	32.5	18.2	2.6	18.2	77

geographical bias; respondents from the eastern and northern district of Swansea gravitate towards a small town centre, while western residents (lacking such a centre) visit district centres. With the exception of the Tycoch group constrained by a gender role, free standing outlets are not at all important for supplementary shopping. Distances are on the whole minimised when visiting alternative centres. These results tend to support the type of explanation embodied in Warnes and Daniels (1978) argument that urban shoppers will visit the nearest centre offering the desired type, quality and combination of goods and services. For supplementary purchases the nearest neighbourhood/local centre would appear for many consumers to fulfill such needs. Behavioural variation over and above this, can be seen in terms of the influence of the overall spatial configuration of the shopping opportunity set. These aspects will be discussed further in the interim conclusions encompassing the spatial behaviour for grocery (major and supplementary) purchases.

1.3 Interim Conclusion

The discussion so far has analysed the influence of a range of consumer sub-groups on, initially major centre choice for grocery products and secondly, supplementary centre choice. A range of findings are apparent and differ between the two categories of behaviour. The influence of the social, economic, geographic and demographic variables presented are more significant for major centre choice. The nature of supplementary grocery shopping behaviour would appear to relate more closely to the argument of Warnes and Daniels (1978), in that urban shoppers will visit the nearest centre offering the products and services required. Nevertheless, a variety of interesting results are clearly evident. With respect to major centre choice, spatial behaviour was disaggregated for the influence of a wide range of indices. All the information presented related to the fundamental hypothesis of the influence of geographical and designated social status. The initial results identified a significant geographical influence on spatial behaviour. This reflects the available opportunity set and does naturally encompass additional sub-group variability. The influence of designated social status was mixed. The simultaneous geographical effect was still apparent between the areas, despite a broad tendency for high status consumers to generally overcome the consideration of distance and travel to a greater variety of outlets. Variation, therefore, was

apparent in accordance with the differences in social status of the consumer groups. The disaggregation by sample social class enhanced the differences, indicating a certain degree of variability, with the higher social classes visiting different centres to their lower class counterparts. Again this varied geographically. Car ownership levels slightly clarified these results, with the ownership of a vehicle increasing the variability of low status centre choice. Nevertheless, differences still exist between comparative social and geographical groups. This result tends to support the findings of Thomas (1974) in that social class differences accounted for a greater level of explanation than car ownership. The extension of the analysis towards a more composite index of personal mobility produced a more definite pattern of results. Differences in mobility resulted in differences in centre choice. Increased mobility reduced the consumer's reliance on the nearest centre for the majority of social and geographical based groups, resulting in an increased willingness to travel to centres of a larger hierarchical status. Notwithstanding this result, the variation in behaviour still reflects the geographical influence of shopping opportunities and within a particular area, slight social status differences in behaviour. Personal mobility is a highly important influence on behaviour, but the results indicate that its effect is relative, firstly to geographical location (in relation to the available opportunity set), and secondly, to a lesser degree social status. Again the earlier results of Thomas (1974) can be supported by this finding.

The relative influence of respondent age on behaviour was in evident in the disaggregation by age and family life cycle. From the findings presented, old age did appear to be a leveller of spatial mobility that significantly stretched across both social status and geographical borders. These results are very much in line with previous findings both related to consumer behaviour (Raybould, 1973; Thomas, 1974 and Potter, 1977) and studies of the elderly in a urban environment (Peace, 1977). The influence across geographical and social boundaries, however, is significant and has a multitude of implications for modelling spatial behaviour. The results categorically support the need for a disaggregated consumer sub-group approach to modelling behaviour.

The influence of pre-school children on behaviour was previously viewed as comparable to that of old age. The results of this survey

clarified this aspect, with the finding, that for certain geographical and low status groups the behaviour of respondents with pre-school dependents was constrained. For the increasingly affluent, high status, mobile respondent the influence of pre-school children resulted in behaviour towards a centre (or retail outlet) that offered the facilities of bulk shopping and convenience, in a non central location. This social variation was also combined with a geographical variation. The disincentive of distance was apparent for the Trallwn shoppers *who are* increasingly remote from a free standing outlet.

The effect of classifying consumers by the total number of children present in the household, provided only a partial explanation of behaviour. It was clear that geographical and social status influences were of greater significance. Similarly for household size, where the geographical and social status variables determined behaviour, albeit with a minor degree of variance for the intervening influence of household size. This finding in particular tended to detract from the results of Potter (1977) for rather than as he *found* consumers from large households appeared to travel further to retail centres. Their behaviour was far from restricted, but was closely related to status and mobility.

The final influence on major grocery centre choice was provided by the analysis of respondent work status as a surrogate measure of time availability (space-time budgets). In a previous study, Daws and Bruce (1971) had recognised the intervening importance of respondent work status after consideration of mobility, social status and family cycle. The results presented in this research introduced a further element of variability into the previous findings. Behaviour was not so much constrained by work status but enhanced by an economic relationship to the index applied. Respondent's work status did effect centre choice, with generally an increase in the proportion of trips to the sub regional city centre. This finding tended not to vary so much geographically or socially, although this latter effect was inconsistent between the three sample areas. The variety of findings presented, identified a number of implications for future studies. As a consequence of further analysis, the final conclusion to chapter four will attempt to gauge the relative importance (as opposed to statistical significance) of one influence against another. Any opinions that are forwarded are inferential, for

the adopted method of data analysis did not permit the use of sophisticated statistical techniques.

The analysis of supplementary behaviour only partially clarified the previous results. A geographical and social status difference in behaviour was apparent, albeit of much less significance than previously detailed. This can be attributed to the pre-eminence of nearest centre behaviour for supplementary purchases by many consumers. Further behavioural variation took a geographical orientation. Tycoch respondents gravitated towards the city and district centres; Trallwn and Treboeth respondents towards the small town centres. Free standing outlets were of minor importance for a single geographical and social group; those Tycoch respondents with pre-school dependents (predominantly high status). Distances for supplementary grocery purchases are generally minimised. The consumers' purchase demands would appear to be met by the nearest centres of a low hierarchical status. Behavioural variation over and above this, can be viewed in terms of the available opportunity set with minor social differences. The previous findings in chapter three, with respect to the characteristics of shopper behaviour and the trend for consumers to make one major trip plus a supplementary trip each week, would appear to subsume a distinct geographical path. Major trips are to a variety of centres and differ according to place of residence, social status and a variety of intervening variables (personal mobility, car ownership, old age, the presence of pre-school children, working respondents and the size of the household unit). Supplementary grocery trips are increasingly to the nearest centre. Consumer decision making clearly varies according to the purpose of the shopping trip made.

The discussion will proceed to develop these results by concentrating on the disaggregated analysis of two additional product groups from the nomenclature in chapter three. Initially, meat behaviour will be analysed on the basis of its broad similarity to grocery behaviour and secondly, bread behaviour which appeared to be different with respect to main centre visited.

2. Spatial Patterns of Meat Behaviour

The previous discussion has thoroughly considered the overt patterns of spatial behaviour for grocery products for a sample of consumers from the city of Swansea. A number of conclusions were presented and will be corroborated in this section. Chapter three included a discussion orientated towards a nomenclature of convenience goods shopping. The analysis identified a continuum of essential product types which could support the results of grocery spatial behaviour. One of these, meat goods (including offals) will be discussed in an attempt to lend further support to the concluding remarks on grocery behaviour. The information presented will only essentially relate to the results of major grocery centre behaviour (Tables 4.1 and 4.2 in particular). The variation in behaviour for the two products will be assessed, together with any major anomalies in behaviour.

The questionnaire survey provided a considerable amount of information on the purchase of meat. Respondents were asked the same series of questions as outlined previously in the discussion of grocery behaviour. The research design adopted, similarly allowed the information to be disaggregated for the influence of a variety of socio-economic, geographical and demographic indices. This discussion will only present information on the major centre visited for meat purchases. This is justified in that the inclusion of this section is essentially to clarify the results of the grocery behaviour.

All the sample areas studied are characterised by the same consideration as previously identified. (chapter four, section 1.1).

The results presented in Table 4.20 illustrate that a variety of centres are visited for major meat purchases. At Trallwn, the city centre dominates behaviour with over 40% of all trips (this represents quite an increase compared to major grocery visits), followed by the use of the nearest small town centre. The nearest centre accounts for only 9% of major meat purchases. The results of meat behaviour at Trallwn are different to the findings for groceries. Less use is made of the nearest small town centres in favour of the city centre. Additionally, a variety of "other" outlets are increasingly important for meat purchases.

Table 4.20: Centre Choice for Major Meat Purchases by Geographical Sample Area (% Respondents)

	Sub	Small Town		Neighbour-	District	Free	
	Regional	Centre	Other	hood/Local	Centre	Standing	Other
	City	Near		Centre	Centre	Outlet	
	Centre			Nearest			
Trallwn	40.8	23.0	7.6	8.9	2.5	6.4	10.2
Treboeth	32.0	21.0		28.0	2.0	9.5	7.5
Tycoch	36.0	-		40.0	13.0	3.5	8.0
Chi Square	96.133, 10 d.f, significant at 0.0001						

Table 4.21: Centre Choice for Major Meat Purchases by Geographical and Social Status Groups (% Respondents)

	Sub	Small Town		Neighbour-	District	Free	
	Regional	Centre	Other	hood/Local	Centre	Standing	Other
	City	Near		Centre	Centre	Outlet	
	Centre			Nearest			
Trallwn HS	39	20	13	9	2.5	4	13
Trallwn LS	43	26	3	9	2.5	9	9
Treboeth HS	38	20		14	3	11	14
Treboeth LS	25	22		42	1	8	2
Tycoch HS	27	-		43	15	6	8
Tycoch LS	44	-		37	10	1	7

A similar tendency can be seen in the results for Treboeth. The city centre (32%), nearest neighbourhood/local centre (28%) and small town centres (21%) dominate consumer choice. Compared to the earlier grocery results, the changing emphasis towards the city centre is particularly significant at the expense of small town centres and, albeit on a smaller scale, free standing outlets. This last observation is important with respect to the Tycoch group. The use of free standing outlets for meat purchases is much less than grocery (3.5% of all trips compared to 19.1% respectively). Additionally Tycoch shoppers increasingly visit the nearest centre for meat (40% of all trips) and, again to a lesser degree, district centres. The Swansea city centre is still an important outlet for meat purchases by Tycoch respondents.

These early results produce some interesting observations. Firstly, meat behaviour differs from grocery behaviour in that the city centre area is much more important for all groups. Consequently, less geographical variation is apparent, although still in existence. The configuration of the retail opportunity set is still very apparent in the use of small town centres. The nearest centre available however, has also become increasingly important for Tycoch residents. This latter characteristic could be interpreted by the local existence of a 'high quality' butchers shop within 400 metres of the Tycoch Square shopping centre. It will be interesting to identify this location in the forthcoming disaggregated analysis of meat purchases. Finally, for all three locations the free standing outlets do not figure significantly as locations for major meat purchases.

Accounting for the influence of designated social status within this framework slightly alters the situation (Table 4.21). At the Trallwaf site, the differences between the designated high and low status groups are minimal. The high status rely less on the city centre and nearest small town centre, increasingly favouring other small town centres and a variety of "other" locations. The trend for the Trallwaf high status to make a greater use of other small town centres is identical to that previously identified in the grocery behaviour, and can be interpreted in line with mobility rates. Apart from this, the differences compared to grocery behaviour are consistent for both groups; increased use of the city centre and "other" centres at the expense of the nearest small town centre. In summary, there is very little difference in the patterns of

overt spatial behaviour for meat between the two social status groups at Trallwn. This, therefore, is quite at variance with the previous finding for groceries.

The results from the analysis of the Treboeth sample highlight differences between the social status groups. The high status increasingly visit the city centre, with the low status consumers relying more on the nearest neighbourhood/local facility. The free standing outlets, and a variety of "other" outlets, additionally account for slightly more of the high status groups meat purchases. As well as these sub-group differences, the patterns observed vary when compared to grocery behaviour. Both social groups increasingly visit the city centre for meat at the expense of the small town centres. The low status group rely less on the nearest centre for meat than previously for groceries, whilst the high status reduce their allegiance to the free standing outlets. The trend to increased visits to the sub-regional city centre and decreased visits to small town centres is very similar to that found at Trallwn. Outside of these two centres the social and geographical variations are clear, with the Treboeth low status group especially, visiting the nearest neighbourhood/local centre for meat (42% of all low status trips).

The Tycoch results introduce an additional element of variation. Previously for grocery trips, the city centre was more important for Tycoch respondents than for either of the Trallwn or Treboeth respondents. The city centre is still important for meat purchases, but for the high status is declining and for the Tycoch low status group only marginally more important. This factor highlights the difference between the two status groups at Tycoch. The nearest centre is important for both groups (43% for the high status; 37% for the low status), which reflects a particular increase in the number of high status trips, whilst the free standing outlets do not attract much attention. Again this reflects variation when compared with overt grocery behaviour (especially for the high status). District centres account for an increased amount of meat purchases than previously for grocery trips, with a slight bias in favour of high status respondents. Essentially, the spatial patterns of behaviour remain different for the two social status groups at Tycoch. The different patterns, however, are by no means as clear as previously identified (grocery). This can be explained by the reduction

in the use of free standing outlets and the transfer of high status allegiance to the nearest centre. This latter characteristic does appear to indicate the attraction of a "high quality" butchers shop very near to the Tycoch high status site. These patterns are illustrated in Figures 4.5 and 4.6.

The spatial patterns of meat behaviour produce less geographical and social status variation than the corresponding findings for groceries. A number of factors account for this observation. The sub regional city centre attracts shoppers for meat purchases on a consistent basis, irrespective of location. The local situation regarding Swansea city centre can possibly offer a reasonable explanation of this, in the attraction of the centre with its traditional market hall. For many shoppers (at Treboeth and Trallwn) this significant attractiveness factor overrides previous restriction on distance. Behaviour is thus consistent with the intra-urban formulation of the gravity model. The remaining choice behaviour illustrates a strong geographical bias, and to a limited extent a social status influence. Small town centres, when easily available and nearby, still account for a large proportion of shopping trips (albeit less than previously for grocery). At Trallwn, the high status, more mobile, group travel to another small town centre; the consistency of the results supports the notion that meat and groceries are purchased on the same trip (a similarity of purchase). At Treboeth, the low status group constrain their patterns of meat behaviour to the nearest centre. The high status group differ appreciably from this, indicating a simultaneous social status variation on behaviour. At the Tycoch site, the geographical influence is clearly evident with increased trips to the nearest centre by high status consumers. District centres are increasingly important for meat purchases than previously for groceries.

The limited analysis presented has, despite certain variations, highlighted social and spatial differences in the use of shopping facilities. Broadly this substantiates the previous grocery findings. The move to a different product type, however, with consequently different consumer demands, has slightly altered the patterns of overt behaviour. It would appear that the Warnes and Daniels (1978) argument that shoppers will travel to centres offering the desired type, quality and combination of goods is again well founded. With respect to meat, shoppers

FIGURE 4.5: MAJOR MEAT: TRIPS: HIGH STATUS

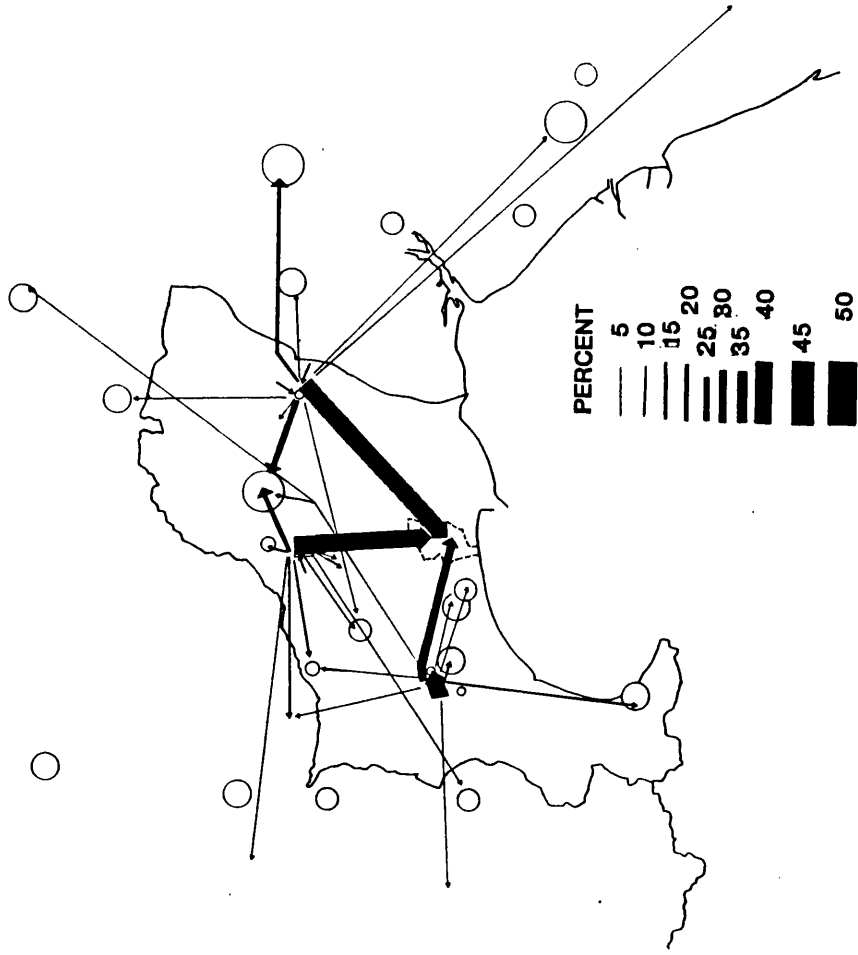
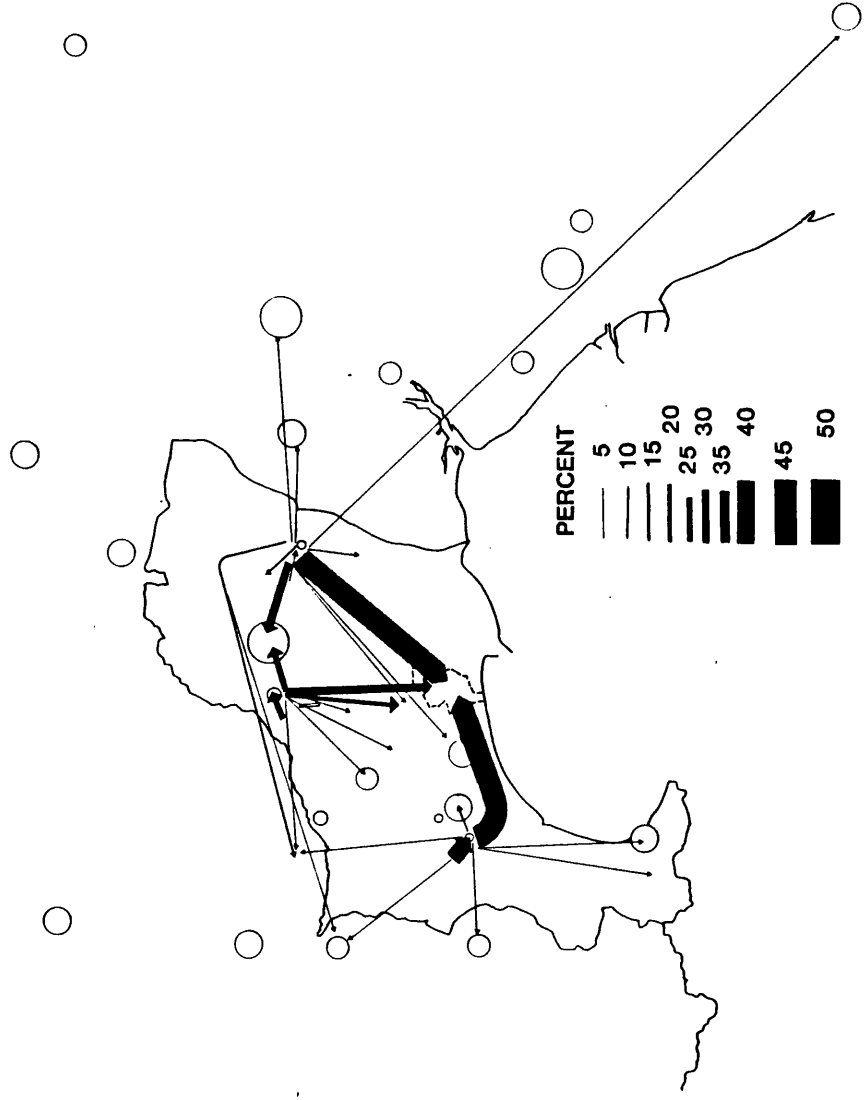


FIGURE 4.6: MAJOR MEAT TRIPS: LOW STATUS



requirements may be quite different and hence, differences in behaviour will result. For many respondents, however, meat is purchased alongside groceries and the same centres visited. It might therefore be postulated that a modified 'dual assignment' type rule is applicable, whereby if a consumer is forced to travel to a preferred centre for meat (offering the type, quality, combination required) distance factors are overcome. These findings are applicable for certain groups and consequently, a comparable research approach to that adopted here would appear to be a fundamental requirement for future analysis.

In a further attempt to clarify these conclusions, the spatial patterns of meat behaviour will be disaggregated in accordance with grouping consumers in terms of personal mobility and pre-school children. The information is presented in order to add to the previous explanation and consequently will avoid unnecessary detail.

Table 4.22 illustrates the influence of an index of personal mobility on major centre choice for meat purchases. The results at Trallwn do not significantly differ from the previous patterns of meat behaviour. Increased mobility only influences centre choice in a slight increase in the use of free standing outlets. At Treboeth, the groups of immobile respondents rely heavily on the nearest centre at the expense of city centre and small town centre trips. Mobility is therefore an important determinant of meat behaviour for the Treboeth group. The totally mobile Treboeth shoppers increase slightly their use of small town centres and, although, only accounting for just over 13% of all trips, use free standing outlets and various "other" locations. At Tycoch the figures are evenly distributed throughout the groups. Personal mobility does not have a great impact on centre choice for meat purchases at Tycoch.

Generally, different mobility levels do not result in a wide variety of behavioural patterns for meat. With the exception of the Treboeth immobile group, the characteristics of meat behaviour previously noted remain consistent. The influence of immobility on spatial behaviour noted at Treboeth is similar to the trend previously seen in overt grocery spatial behaviour. The index of personal mobility enhances the explanation of meat behaviour, and with the results at Treboeth, illustrates the influences of mobility on that behaviour.

Table 4.22: Centre Choice for Major Meat Purchases: The Influence of Personal Mobility (% Respondents)

	SCC	STC	N NBH/ LC	DC	FSO	OTHER	NO.OF CASES
Trallwn							
Immobile	42.9	28.6	10.7	3.6	-	14.2	28
Partial Mobility	45.0	30.0	8.3	3.4	5.0	8.4	60
Total Mobility	36.2	31.9	8.7	1.4	10.1	11.6	69
Treboeth							
Immobile	15.6	12.5	68.8	-	-	3.1	32
Partial Mobility	46.6	15.5	22.4	-	10.3	5.1	58
Total Mobility	26.9	29.9	12.0	4.5	13.4	13.5	67
Tycoch							
Immobile	30.0	-	46.7	20.0	-	3.3	30
Partial Mobility	37.5	-	41.1	10.8	1.8	8.9	56
Total Mobility	37.0	-	35.2	11.1	7.4	9.3	54

Table 4.23: Centre Choice for Major Meat Purchases: The Influence of Pre-School Children (% Respondents)

Trallwn							
Nil	43.6	32.7	7.3	3.6	8.1	4.5	110
One +	34.0	25.5	12.8	-	21.3	6.4	47
Treboeth							
Nil	32.1	23.9	26.8	1.5	11.2	4.5	134
One +	29.2	4.2	33.4	4.2	20.8	8.3	24
Tycoch							
Nil	36.6	-	39.8	13.1	8.1	2.4	123
One +	29.4	-	41.2	11.8	17.6	-	17

The influence of pre-school children on grocery behaviour has been extensively discussed. The results have illustrated the variety of patterns that occur within a geographical and social framework. Table 4.23 extends this analysis to take account of meat behaviour. Again, the results fail to illustrate significant differentiation at Trallwn. The presence of pre-school children does, however, result in an increased proportion of visits to the free standing outlets. Such results indicate, for mobile respondents, that pre-school children do not necessarily constrain behaviour to short distances, but relate to the ease or convenience of 'one stop' shopping that a free standing outlet implies. The overall trend is similar to that seen in the grocery analysis, with consumers, supposedly constrained by a gender role, decreasing their use of the city centre, with a compensating rise in the proportion of visits to the nearest neighbourhood/local centre and free standing outlets. At Treboeth, the results highlight the influence. Comparable (29-32%) proportions of consumers visit the city centre, but there is an appreciable difference in the use of the small town centres (4-24%) and free standing outlets (21-11%). As seen at Trallwn, consumers with pre-school children prefer to travel to a free standing outlet for meat purchases. This finding is also applicable to the Tycoch sample group, where 17.6% of all meat trips are to these stores. The nearest centre however, still dominates the behaviour of gender 'constrained' respondents at Tycoch. The sub regional city centre accounts for a consistent proportion of Tycoch shoppers meat behaviour.

Clearly the results indicate a variation in meat purchasing behaviour between respondents with or without pre-school children. The variation differs geographically, although the use of free standing outlets, previously seen as unimportant for meat purchases, is consistent (17.6 - 21.3% respondents). The geographical variation reflects the shopping opportunity set and is clearly evident in the use of small town centres and district centres. The city centre area accounts for a high proportion of trips irrespective of location. The earlier statements regarding this centre would appear to be correct.

The early results of the analysis of overt spatial behaviour for meat broadly corroborated the grocery findings, in that social and spatial differences in the use of shopping centres were identified. The move to

a different product type did slightly alter the overt patterns. Furthermore, the influence of a personal mobility index and pre-school children produced differing results. Personal mobility, with the exception of one geographical area, did not significantly result in differential behaviour. The influence of pre-school children, however, did indicate variation. It appears that overall, the analysis of meat supports the need for a methodology that both moves towards a classification of convenience goods shopping and disaggregates behaviour with respect to consumer characteristics.

The inter-relationship between major centre choice for meat and groceries is illustrated in Table 4.24. This provides an indication, disaggregated by the six sample sites, of the role of the type of shopping centre in determining meat behaviour. Of the Trallwn high status samples, respondents visiting the city centre for groceries tended also to buy meat from that centre (78.6% of respondents at Trallwn high status were characterised by such behaviour). Respondents visiting a small town centre for main grocery purchases are likely to buy meat from a small town centre or the city centre area. A similar overall result is evident for the Trallwn low status group. It would appear that respondents willing to travel to the sub-regional city centre, purchase a number of different product types. At Treboeth, the high status group who similarly visit the city centre purchase meat and groceries. Of those consumers ^{who} prefer a small town centre for groceries, 46% also purchase meat from that centre, with 28.6% travelling to the city centre, amongst a variety of alternative locations. The meat purchasing behaviour of those respondents who prefer the free standing outlets for groceries is interesting; only 39% also buy meat from the same outlet, 33.3% also travel to the city centre with the remaining respondents visiting a variety of centres. The Treboeth low status group illustrate again the similarity between meat and grocery behaviour. Respondents visiting the nearest centre for groceries are likely to buy meat from this centre (74%) or the city centre (18%). The results of the Tycoch high status sample group confirm the earlier findings that for many shoppers (particularly those visiting the free standing outlets and nearest centre for groceries) the nearest centre provides for meat purchases. 50% of consumers who travel to the city centre for groceries also indicated the same centre as their major meat location. 29.2% of

Table 4.24: The Interrelationship Between Major Centre Choice for Groceries and Meat by Geographical and Social Sample Site

MAIN GROCERY CENTRE	SCC	Main Meat Centre				OTHER	DC	NO.OF CASES
		STC	N NBH/LC	FSO				
Trallwn HS								
S.C.C.	78.6	-	7.1	-	14.3			14
S.T.C.	34.7	51.0	2.0	-	12.2			49
Other	14.3	-	35.7	21.4	28.6			14
Trallwn LS								
S.C.C.	95.0	-	-	-	5.0			20
S.T.C.	25.6	53.5	-	9.3	11.6			43
Other	23.5	-	41.2	17.6	17.6			17
Treboeth HS								
S.C.C.	69.2	-	15.4	-	15.4			13
S.T.C.	28.6	45.7	5.7	5.7	14.3			35
F.S.O.	33.3	-	5.6	38.9	22.2			18
Other	38.5	-	46.2	-	15.4			13
Treboeth LS								
S.T.C.	18.5	63.0	11.1	3.7	3.7			27
NNBH/LC	18.4	-	73.7	2.6	5.2			38
Other	57.1	-	14.3	28.6	-			14
Tycoch HS								
S.C.C.	50.0	-	29.2	-	12.5	8.3		24
NNBH/LC	11.8	-	52.9	-	5.9	29.4		17
F.S.O.	25.0	-	50.0	15.0	-	10.0		20
Other	-	-	44.4	11.2	22.2	22.2		9
Tycoch LS								
S.C.C.	72.4	-	13.8	-	3.5	10.3		29
NNBH/LC	25.0	-	50.0	3.6	17.3	7.1		28
Other	23.1	-	61.5	-	-	15.4		13

this group purchased meat from the nearest centre. A particularly 'high quality' local or near shop provides an extremely attractive location for respondents when buying a specialist product like meat. Additionally, a number of Tycoch high status respondents transfer allegiance from their main grocery centre, to a district centre when purchasing meat.

The results from the Tycoch low status sample follow the trend of the other low status sites although it is interesting to note that 25% of shoppers who buy groceries from their nearest centre purchase meat from the city centre.

These results could theoretically be disaggregated further to test the influence of additional variables, although they do indicate the significance of grocery centre choice on the spatial patterns of meat purchases. For the majority of respondents (the Tycoch high status are atypical in this respect) a journey to the city centre for groceries results in the purchase of meat from that centre (presumably, on the same trip). Of the respondents travelling to a small town centre for groceries many purchase meat from the town centre but also exhibit a tendency to journey elsewhere. Those respondents who purchase groceries from the nearest neighbourhood/local centre also tend to purchase meat from the same centre; a further indication of a constraint on centre choice.

There is therefore a certain inter-relationship between the patterns of overt spatial behaviour for meat and grocery products. Certainly, the results illustrate the influence of geographical location, expressed through the available opportunity set, on behaviour. Apart from this influence the designated social status differences in grocery behaviour are less clear throughout, but still important in certain areas (the sites of Treboeth and Tycoch, in particular). Consequently, alternative influences on behaviour are less significant, although the effect of pre-school children on meat behaviour is as important as previously identified for groceries. The city centre shopping area is an important location for meat purchases for many shoppers at all three survey locations. A possible reason for this tendency has been provided by the existence of a well established, and extremely popular, food market hall in central Swansea.

The small town centres still figure as important outlets for behaviour where they are geographically easily available. The nearest centre is still important for certain of the low status groups, but on account of a specialist outlet, more important for the Tycoch high status group than previously identified in the analysis of grocery behaviour. Finally the free standing outlets do not figure significantly for the majority of shoppers, although mobile respondents with a pre-school child are obviously visiting these outlets for bulk or 'one stop' shopping and hence, purchasing meat and groceries from the same location.

The analysis of centre choice for meat purchases has added to the previous conclusions. The results corroborate only certain of the findings (in particular the geographical opportunity set influence), but nevertheless, do support an important issue, in that developments in the understanding of consumer spatial behaviour require the disaggregation of both the dependent, or shopping variable, and the socio-economic and geographical determinants of behaviour. Future research should recognise these characteristics and firstly, constrain shopping behaviour to reflect reality and *secondly*, account for the variety of social and spatial differences in behaviour. The preceding results offer some support for the view of Warnes and Daniels (1978) in that consumers will travel to the *nearest* centre offering the desired goods. This contention is relevant to certain consumer sub-groups in the spatial behaviour for meat.

The discussion subsequently moves on to examine the behavioural variation towards a product type previously identified (chapter three) as distinct from grocery behaviour, that of bread.

3. Spatial Patterns of Bread Behaviour

The discussion has illustrated the use of a different product type to corroborate the findings of grocery spatial behaviour. In the original analysis towards a nomenclature of convenience goods shopping, grocery and meat ^{purchases} were identified as similar; the relationship between grocery and bread, however, appeared quite discrete. This section will present the analysis of the spatial patterns of bread behaviour in a further attempt to qualify the results to date. The resultant patterns are expected to detract from the findings of grocery behaviour and the analysis will only essentially identify these differences. Previous studies with regard to the spatial behaviour of bread are illustrated in the findings of Fingleton (1975), where on the basis of a preliminary data analysis he indicated that younger consumers, and those owning cars, were less likely to purchase bread at their nearest centre. This analysis was later qualified (Upton and Fingleton, 1979) and only car ownership had a direct influence, whilst age was related to behaviour via an association with mobility.

The questionnaire survey provided a comparable amount of information on bread purchases to the other categories already outlined. The research design consequently allowed for the information to be disaggregated to account for a variety of influences. The discussion will again only present information on major centre choice for bread purchases given the aim to essentially clarify grocery spatial behaviour.

Bread purchasing behaviour differs to that of groceries. On average between 1 - 4 % of all respondents did not identify a major bread location. The frequency of purchase of bread is illustrated in Table 4.25. On average, bread is purchased daily by 28 - 35% of respondents and several times a week by 39 - 43% of respondents. These figures differ significantly between the status groups, with the low status respondents purchasing bread at much more frequent intervals.

The type of major shopping centre visited for bread purchases is illustrated in Tables 4.26 and 4.27. For each of the three sample areas the nearest neighbourhood/local centre dominates centre choice. The importance of this single type of centre varies between the locations.

Table 4.25: Frequency of Bread Purchase (% Respondents)

	DAILY	SEVERAL TIMES A WEEK	WEEKLY +	NO.OF CASES	MISSING
Trallwn HS	17.6	50.0	32.4	74	3
Trallwn LS	39.2	36.7	24.1	79	1
(All Trallwn)	28.8	43.1	28.1	153	(4)
Treboeth HS	28.9	35.5	35.5	76	3
Treboeth LS	33.8	42.9	23.4	77	2
(ALL Treboeth)	31.4	39.2	29.4	153	(5)
Tycoch HS	17.4	39.1	43.5	69	1
Tycoch LS	52.2	41.8	6.0	67	3
(ALL Tycoch)	34.6	40.4	25.0	136	(4)

Table 4.26: Centre Choice for Major Bread Purchases by Geographical Sample Area (% Respondents)

	Sub Regional City Centre	Small Town Centre	Neighbour- hood/Local Centre	District Centre	Free Standing Outlet	Other	N/A
Trallwn	12.7	16.6	53.5	1.3	1.9	11.1	2.9
Treboeth	11.4	16.5	60.1	1.3	5.1	2.8	2.9
Tycoch	17.9	2.1	63.6	7.9	5.7	-	2.9

Chi Square 49.339, 10 d.f., significant at 0.0001

Table 4.27: Centre Choice for Major Bread Purchases by Geographical and Social Status Site (% Respondents)

	Sub Regional City Centre	Small Town Centre	Neighbour- hood/Local Centre	District Centre	Free Standing Outlet	Other	N/A
Trallwn HS	15.6	18.2	45.5	1.3	1.3	14.0	4.0
Trallwn LS	10.0	15.0	61.3	1.3	2.5	9.0	1.0
Treboeth HS	16.5	19.0	48.1	2.5	6.3	5.0	3.0
Treboeth LS	6.3	13.9	72.2	-	3.8	1.0	3.0
Tycoch HS	24.3	4.3	51.4	8.6	10.0	-	1.4
Tycoch LS	11.4	-	75.7	7.1	1.4	-	4.3

(Other includes door step delivery)

(N/A non purchase of bread)

54% of all Trallwn trips are to the nearest centre compared to 60% at Treboeth and 64% at Tycoch. Other centres visited vary geographically with the use of small town centres and district centres at the respective locations. The city centre accounts for fewer major bread purchases than for other product groups (11 - 18%) and the free standing outlets are insignificant. Differentiation of these figures, on account of designated social status influences, produces considerable variation in the results. At Trallwn, the low status group increasingly rely on the nearest centre for bread purchases (61%), with only 15% of trips to the small town centre. Of the high status group at Trallwn many respondents (46%) still rely on the nearest centre, but increasing proportions buy the majority of their bread from small town centres (18%), the city centre (16%) and a variety of "other" centres (14%). These figures, whilst not as extreme as grocery behaviour, do provide some interesting observations. The same overall trend is apparent at Treboeth, albeit with more extreme values. The high status consumers rely less on the nearest centre than their low status counterparts. At Tycoch, the difference in the opportunity set effects the overall trend. The nearest centre is increasingly important for the low status, whilst the high status group increasingly visit the city centre for bread (24% of all high status trips). District centres account for 7 - 9% of all Tycoch bread purchases and the free standing outlets are of minor importance only for the high status group (10% of all trips). Social status variation in the spatial behaviour for bread is quite apparent. The geographical differences in the opportunity set can still be seen, albeit with less significance than previous. The nearest centre dominates low status centre choice and is the most important single centre for the high status.

These results naturally differ from those observed with respect to grocery behaviour. Bread purchases increase the significance of the nearest centre hypothesis for all shoppers, but especially for the low status. High status shoppers still indicate variability in consumer choice and the geographical influence of available opportunities is still evident. The city centre reduces its' attraction as a location for main bread purchases.

These results detract from the findings of grocery spatial behaviour. Bread is a specialist product that is readily available from small centres nearest to the place of residence. Figures 4.7 and 4.8 illustrate these results. The results clearly illustrate that for a specialist product such as bread, the nearest centre hypothesis is reasonably accurate. Some variation does occur and can be seen in the influence of social status and geographical location. Additional influences have been suggested by other authors specifically analysing bread behaviour and consequently, can be presented within the discussion. Two influences are detailed; the effect of personal mobility and of pre-school children. For the purpose of comparison appendix 6 includes the detailed tables of the influence of respondent age group on bread behaviour. The influence of an index of personal mobility (Table 4.28) provides a number of significant results. Increasing mobility produces a consistent reduction in the proportion of bread shopping trips to the nearest centre. At Trallwn, the totally mobile group decreasingly use the nearest centre and instead travel to the sub regional city centre. At Treboeth, the decline in visits to the nearest centre is compensated by an increase in the proportional use of small town centres. At Tycoch, the decline is balanced by increased visits to the sub regional city centre. The trend for mobility to reduce the significance of the nearest centre hypothesis is consistent, although it needs to be stated that for all groups, irrespective of mobility or location, the nearest centre is still the single most important destination for bread purchases. Nevertheless, the existence of the influence of mobility on centre choice for bread is consistent with previous findings for groceries.

Table 4.29 illustrates the influence of pre-school children on spatial choice behaviour for bread. Overall, no consistent relationship emerges. At Trallwn only minor differences exist between the two groups. At Treboeth those respondents with a pre-school child increasingly visit the nearest centre in place of the city centre and small town centre for bread purchases. At Tycoch, the results are reversed, with the influence of pre-school children resulting in a decline in the use of the nearest neighbourhood/ local centre and increased visits to the city centre. These inconsistencies suggest that alternative influences may be of importance.

FIGURE 4.7: MAJOR BREAD TRIPS: HIGH STATUS

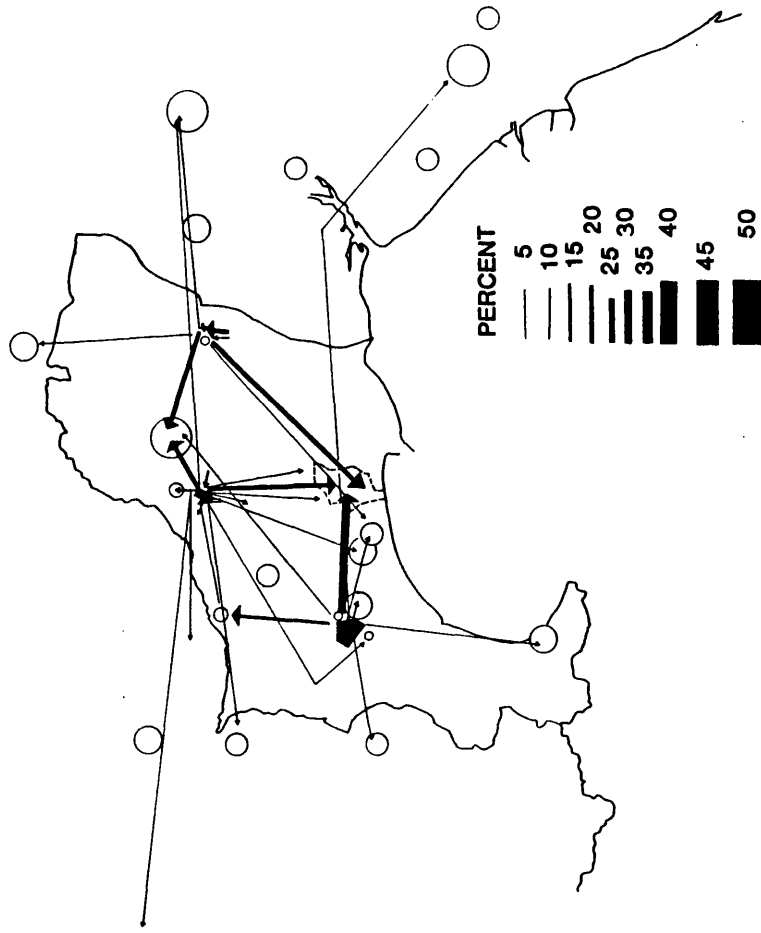


FIGURE 4.8: MAJOR BREAD TRIPS: LOW STATUS

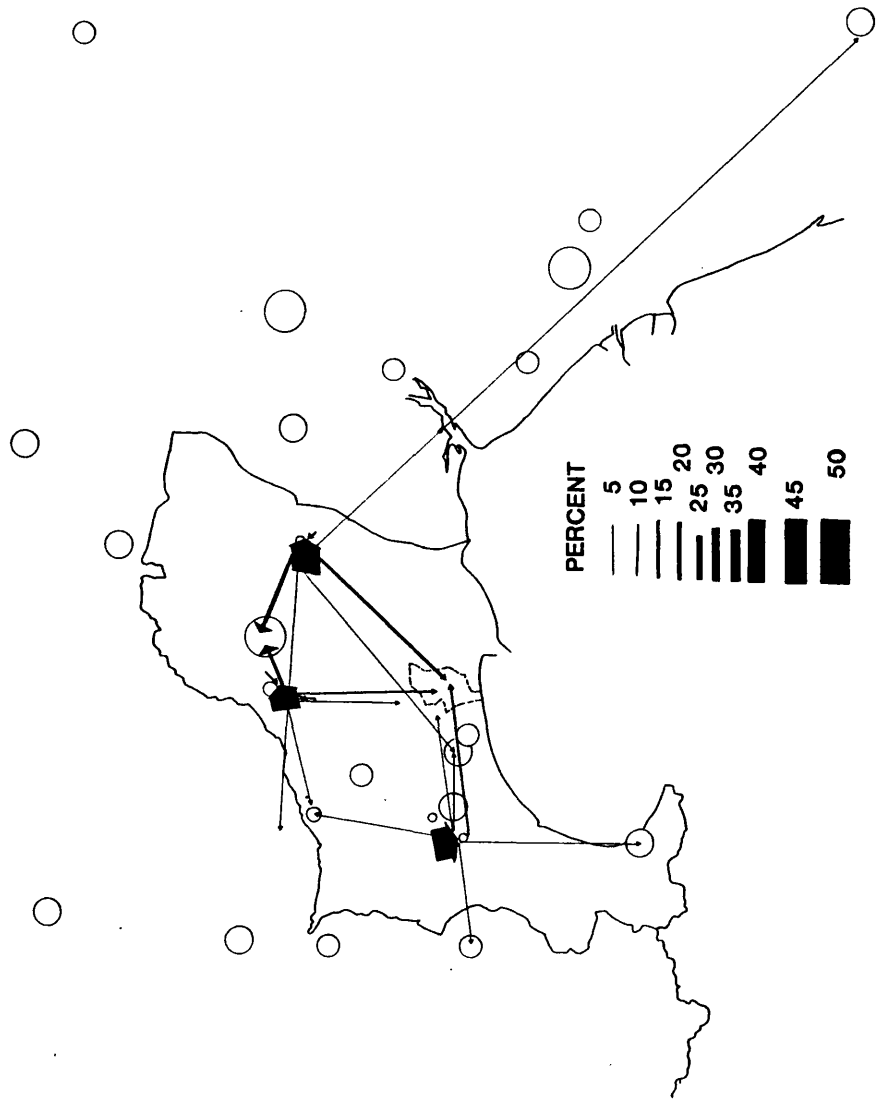


Table 4.28: The Influence of An Index of Personal Mobility on Major Bread Centre ^{Choice} (% Respondents)

	Sub Regional City Centre	Small Town Centre	Neighbourhood/Local Centre	District Centre	Free Standing Outlet	Other	No.Of Cases
Trallwn							
Immobile	7.1	17.9	67.9	3.6	-	3.6	28
Partial Mobility	10.0	20.0	56.7	-	-	13.3	60
Total Mobility	17.4	13.0	44.9	1.4	4.3	18.8	69
Treboeth							
Immobile	-	6.3	87.5	-	-	6.3	32
Partial Mobility	17.2	12.1	56.9	-	8.6	5.2	58
Total Mobility	11.9	25.4	49.3	3.0	4.5	6.0	67
Tycoch							
Immobile	10.0	-	80.0	6.7	-	3.3	30
Partial Mobility	16.1	3.6	66.1	8.9	1.8	3.6	56
Total Mobility	24.1	1.9	51.9	7.4	13.0	1.9	54

Table 4.29: The Influence of Pre-School Children on Major Bread Centre ^{Choice} (% Respondents)

Trallwn							
Nil	14.5	16.4	52.7	0.9	0.9	14.5	110
One +	8.5	17.0	55.3	2.1	4.3	12.8	47
Treboeth							
Nil	12.7	18.7	56.7	0.7	4.5	6.7	134
One +	4.2	4.2	79.3	4.2	8.3	-	24
Tycoch							
Nil	14.6	2.4	65.9	8.9	5.7	2.4	123
One +	41.2	-	47.1	-	5.9	5.9	17

Notwithstanding these comments, the dominance of the nearest centre for bread purchases characterises the majority of behavioural patterns. As a consequence, the results generally detract from those previously forwarded with respect to grocery purchases and also to meat purchases. The findings however, support the contention for a refined degree of shopping trip disaggregation (Mottershaw, 1968; also Thomas, 1976, and Shepherd and Thomas, 1980) in that different product types produce a different detailed pattern of overt spatial behaviour.

The interrelationship between main centre choice for groceries and bread for each of the sample sites is provided in Table 4.30. Within a variety of results, it is interesting to note from this table, that the purchase of bread from the same main centre as groceries is related to the original centre type. More shoppers visiting the city centre for grocery purchases identified that same centre for bread than for any other interaction. Furthermore, this differed socially between the designated status groups (50% of Trallwn high status shoppers buying groceries at the city centre also indicated this as their main centre for bread, compared to 30% of Trallwn low status, 61.5% Treboeth high status, 54.2 Tycoch high status and 20.7% Tycoch low status).

There is, therefore, a degree of interaction between major grocery and bread centre that could, if required, possibly be used to substantiate the previous conclusions.

Bread spatial behaviour is dominated by trips to the nearest available centre. Consequently, the results are much different to those previously identified in that neither a geographical or social status influence on behaviour is especially obvious. Nevertheless, differences do occur between certain groups both socially and geographically. The majority of consumers purchase bread from one type of main centre (the nearest centre) ^{but} over and above this trait, geographical and social variation occurs.

Table 4.30: The Interrelationship Between Major Centre Choice for Groceries and Bread by Geographical and Social Sample Site

Main Grocery	Sub Regional City Centre	Main Bread Centre				Free Standing Outlet	Other	No.Of Cases
		Small Town Centre	Neighbourhood/Local Centre	District Centre				
Trallwn HS								
S.C.C.	50.0	-	28.6	7.1	-	14.2	14	
S.T.C.	10.2	28.6	38.8	-	2.0	20.4	49	
Other	-	-	85.7	-	-	14.3	14	
Trallwn LS								
S.C.C.	30.0	-	65.0	-	-	5.0	20	
S.T.C.	4.7	27.9	55.8	-	-	11.6	43	
Other	-	-	70.0	5.9	11.8	11.8	17	
Treboeth HS								
S.C.C.	61.5	7.7	23.1	-	-	7.7	13	
S.T.C.	8.6	40.0	42.9	2.9	2.9	2.9	35	
FSO	11.1	-	61.1	-	22.2	5.6	18	
Other	-	-	69.2	7.7	-	23.1	13	
Treboeth LS								
S.T.C.	-	37.0	63.0	-	-	-	27	
NNBH/LC	5.3	-	86.8	-	-	7.9	38	
Other	21.4	7.1	50.0	-	21.4	-	14	
Tycoch HS								
S.C.C	54.2	-	37.5	8.3	-	-	24	
NNBH/LC	-	5.9	88.2	5.9	-	-	17	
FSO	20.0	-	45.0	-	35.0	-	20	
Other	21.4	22.2	33.3	33.3	-	11.1	9	
Tycoch LS								
S.C.C	20.7	-	72.4	6.9	-	-	29	
NNBH/LC	-	-	89.3	-	-	10.7	28	
Other	15.4	-	53.8	23.1	7.7	-	13	

4. Conclusion

Chapter four has presented a considerable amount of information on the nature of overt spatial behaviour for convenience shopping products. The investigation commenced with a thorough analysis of grocery spatial behaviour. An array of consumer sub-group influences were developed in an attempt to explain fully the determinants of the overt patterns. This led to an interim conclusion from the investigation of both major and supplementary centre choice. No attempt was made at that stage to gauge the relative importance of each of the respective influences on behaviour. This section will, however, aim to present such considerations. Following the grocery analysis, and with reference to the research objectives presented in chapter one, the investigation continued with two alternative product types; meat and bread. Both products had been previously identified as possibilities for corroboration and detractor of grocery behaviour, respectively. The results presented illustrated a number of interesting findings which clarify many of the earlier conclusions.

The spatial patterns of grocery shopping behaviour differed between the groups of consumers presented. Fundamentally, behaviour varied between the three geographical areas in relationship to the differing retail opportunities available. This result was very much a characteristic of both major and supplementary grocery behaviour. Further to this variation, centre choice differed with respect to designated social status of the respondent. High status shoppers tended to travel further afield to an increased variety of retail centres. Further disaggregation of the results clarified the explanatory significance of social status variation. Firstly, car ownership and secondly, the composite index of mobility influenced the behavioural patterns and produced additional variation. The relative importance of mobility, however, should not be understated, but the detail of the analysis tends to place the influence behind social status. Mobility is highly important, but as has been illustrated, its impact varies not only geographically but slightly socially between the designated status groups. These three variables undoubtedly explain much of the variation in behaviour. In addition, however, the investigation illustrated the simultaneous influence of additional variables. Respondent age, especially old age, accounted for a certain proportion of shopping trips

and significantly did not vary socially or geographically. The influence of pre-school children similarly was hypothesised in terms of a constraint upon behaviour. For those respondents from a high status and mobile background, pre-school dependents did not constrain behaviour geographically but accounted for many trips to a free standing outlet offering convenient bulk shopping. Further variability within the geographical and social boundaries was apparent with the influence of respondent work status. Generally, working respondents tended to visit centres of a larger hierarchical status. Less significant variation was apparent from the classification of consumers with respect to household size and total number of children present. Both of these influences produced comparative results and a similar conclusion; that geographical and social variations were a more important influence on behaviour albeit with a minor degree of variation for the intervening effect of these variables.

The analysis of supplementary grocery behaviour supports the geographical and social differences to a certain extent. The nature of supplementary shopping trips resulted in consumers illustrating less variation than for major centre trips, with the nearest centre providing a service for many respondents. The predominance of nearest centre shopping for supplementary purchases appears to reduce the variation between alternative groups of consumers. The influence of personal mobility for example was less significant than previously identified. The argument of Warnes and Daniels (1980) has been referred to in relationship to this behaviour and would appear appropriate.

The analysis of meat behaviour fulfilled its corroborative aims, in that a certain interrelationship was apparent between meat and grocery centre choice. The results certainly supported the influence of geography and the distribution of shopping opportunities, although the effect of designated social status was less clear. Meat as a product type produces different shopper requirements, as is clearly evident in the relative dominance of one centre for meat purchases. The sub regional city centre accounted for many meat purchases from all three survey areas. The variability over and above this accounted for the geographical influences. Alternative sub-group influences on meat behaviour produced inconsistent results, notably with respect to mobility

and pre-school children. With the exception of a single survey area (Tycoch) personal mobility did not materially influence overt meat behaviour. The results did illustrate a variation in behaviour between respondents with or without pre-school dependents. The variation was diffused geographically, but did support the previous major grocery centre findings. Furthermore, the influence of personal mobility in relationship to social status is clarified by meat centre choice. The results clearly relegate the explanatory significance of mobility behind social status. Meat centre choice behaviour did corroborate certain of the findings of grocery behaviour but, perhaps more important, supports the contention that future developments in the understanding of consumer spatial behaviour require the disaggregation of both the behavioural and explanatory variables. Trip types need to be rigorously defined, in relationship to products sought, to increase the level of future knowledge.

The analysis of bread spatial behaviour produced overt patterns that conform to the nearest centre hypothesis. Notwithstanding this, however, minor differences in centre choice were apparent and can be explained both in terms of geographical and social variables. These influences were enhanced by controlling for mobility but not for pre-school dependents. Increased mobility decreased the shoppers use of the nearest centre for bread. These results were consistent for the social groups, and the compensating outlets visited differed geographically (Trallwn and Tycoch mobile shoppers increasingly visited the city centre; the Treboeth respondents visited the small town centre). Nevertheless, this variation was secondary but still adds to the discussion presented.

Convenience goods shopping behaviour varies, both for different products and between different consumer groups. A number of consistent results were apparent and relate to some of the major theories of consumer behaviour. Grocery behaviour varies considerably. A geographical and social status influence is apparent, with further simultaneous effects related to mobility and minor variables. This latter group included respondent age, household size, pre-school children, respondent work status and number of children in the household. These findings have implications for the application of gravity models in the intra-urban context. It strongly appears that

behavioural patterns need to be disaggregated for geographical location, social status and even within the broad status categories, for personal mobility. In addition, particular attention needs to be paid to the effect of a range of contextual variables reflecting the imbalance of age structure of the population (especially old age), the presence of young children, household size and the associated demand profiles, plus the consideration of working respondents. Furthermore, the three product types analysed comprehensively support the additional need for the application of such models to constrain the behavioural variation. Mottershaw (1968) called for a refinement of trip types in such models, the results ^{of the study} present ^{conclusively} support this contention. Bread behaviour for example is relatively easily explained by the nearest centre hypothesis. Meat behaviour has implications for the argument of Warnes and Daniels (1980) in relationship to the 'type' of products or services required. Further evidence from both meat and grocery behaviour suggested a modified 'dual assignment' role for certain consumer groups. It is thus clear, that developments in the understanding of consumer behaviour need to account for consumer sub-groups. Geographical and/or social status control at least, must be imposed on future studies if any resultant overt patterns are not to simply reflect the inbuilt sample bias.

Notwithstanding these conclusions a number of perceptual determinants could be forwarded as an additional method of enhancing this explanation. The research proceeds towards a cognitive component of consumer behaviour.

CHAPTER 5: CONSUMER MOTIVATION

Introduction

In the previous chapters, the analysis of socio-economic and demographic determinants of behaviour has omitted the consideration of a number of perceptual influences. The study of shopper trip motivations presents an initial step to overcome this situation. The approach utilises concepts developed from both perceptual and empirical studies of consumer behaviour and closely relates to the work of Davies (1973). He considered that 'trip motivations' might provide additional information into the determinants of shopping behaviour and thus have some relevance for the future development of theory and model building. The details of the methodology and a summary of the results produced by previous studies is provided in chapter two. It is sufficient to state here that the results have produced a number of consistent factors (Shepherd and Thomas, 1980).

The study is clearly moving towards a cognitive approach to consumer behaviour. Consequently, it suffers from the inherent difficulty of the approach in isolating whether an individual's perception of alternative shopping opportunities determines his/her behaviour, or whether it is a result of behaviour caused partly by intervening stimuli (Downs, 1970). Shepherd and Thomas (1980) view the relationship as 'interactive' and state that recent research has been less than ambitious in attempting to only illustrate the relationship. This problem is not unique. In the social psychology literature many authors have written extensively on the relationship between attitude (a comparable perceptual dimension, and one to be explicitly explored in a subsequent chapter) and behaviour (Tittle and Hill, 1967 and Sample and Warland, 1973). The nature of the attitude behaviour consistency was reviewed by Gross and Niman (1975) who asserted that generally researchers have reported a poor relationship between attitude and behaviour. Nevertheless, as Tittle and Hill (1967, p.201) observe; "attitude measures should be most predictive of behaviour in situations which occur repetitively within the common behavioural context of the individual". Shopping behaviour can clearly be viewed as a familiar and repetitious event that occurs under usual social circumstances. Consequently, the research expects a relatively clear and consistent relationship between the cognitive measures presented (motives and attitudes) and behaviour.

Chapter five therefore reflects the research aims previously detailed. A unified approach to the study of consumer behaviour is undertaken and thus offers an addition to Potter's contention(1982, p.167) that "few studies have examined simultaneously, aspects of consumer behaviour and cognition". The ensuing discussion falls into two parts. Initially the study of shopping trip motivations is presented, and any possible variations examined between consumer groups, before proceeding to present the relationship between motives and overt spatial behaviour.

1. Consumer Motivation Research

The reasons which motivate shoppers food behaviour are wide ranging and naturally, varied between different consumers. The adopted methodology applied a five-point rating scale, ranging from strongly important to strongly unimportant, in which each respondent considered a range of seventeen statements. These statements were assembled from a review of previous approaches and personal hypotheses, and enabled the major food motivational determinants of consumer behaviour to be identified. The array of studies reproduced in chapter two, encompass both trip motivation and attitudinal research into the perception of shopping centers. The study of 'trip motivations' undertaken by Davies (1973) provided evidence of the importance of accessibility in conjunction with the competing or qualitative service attributes of alternative centres. The precise nature of these dimensions varied in accordance with overt behaviour, as accessibility was important for convenience goods shopping, whilst centre characteristics were more relevant to higher order shopping trips. Similarly, these attributes varied by social status. Other supporting evidence has been provided by many researchers including Wagner (1975), Pacione (1975), Mackay and Olshavsky (1975) and Parker (1976). Table 2.8 reproduces a summary of the relative importance of each of the attributes as a prerequisite for the design of the technique applied in this study. The approach taken by Parker (1976) was similar to that of Davies (1973), and twelve pre-selected motivating factors were identified and tested in a study in Dublin. For his total sample the most important factors were accessibility, cleanliness and range and price of goods. Futhermore, Parker (op.cit) demonstrated the relationship between motivation and social status and car ownership. The statements used in this study are reproduced in Table 5.1 and the background design and methodology to the approach described in chapter two. The concentration on convenience goods behaviour, and hence on food motivations, is a direct reflection of Dawson's call (1980) for limiting studies to shopping behaviour (see also the research aims presented in chapter one) and practical research application. The methodology stuck rigidly to the constraints imposed by the research design. A low score, on a rating scale of 1 through 5, indicated the consideration of a single statement or factor as an extremely important influence upon overt behaviour. Table 5.2

Table 5.1: Food Motivation Statements

(in order as on the questionnaire and in the subsequent analysis)

1. Actual distance between shops and home.
2. Ease of access to the shops by car.
3. Ease of access to the shops by bus.
4. Ease of access to the shops on foot.
5. Convenience of Car Parking.
6. Convenience of Bus Facilities.
7. Variety of shops in the centre.
8. Reputation of the shops in the centre.
9. Availability of a supermarket.
10. Choice of products sold by the shops.
11. Quality of goods sold by the shops.
12. Price of goods sold by the shops.
13. Service received from store staff.
14. Ability to combine food shopping and another activity.
15. Availability of specialist food shops.
16. Routine/habit - always shop there!
17. Familiarity with the centre.

Table 5.2: Response to all Statements by Geographical and Social Status Sample Site (% Respondents)

	Extremely Important	Important	Don't Know	Not Important	Not At All Important
Trallwn High Status	19.8	40.8	6.6	16.4	16.4
Trallwn Low Status	14.3	44.5	11.5	19.6	10.1
Treboeth High Status	21.4	37.4	3.7	17.9	19.6
Treboeth Low Status	20.6	37.1	4.8	16.2	21.3
Tycoch High Status	21.6	36.4	5.5	20.8	15.8
Tycoch Low Status	24.6	38.4	4.7	17.6	14.7

illustrates for each of the designated survey sites the aggregate pattern of response over all seventeen statements.

Across all sites, at least 57% of respondents considered the statements an important influence on their choice of food shopping location. Generally, the mid point category of 'don't know' was avoided, with a maximum of 11.5% of Trallwn low status respondents concentrating on a neutral response. The quality of the information collected, therefore, is sufficiently high enough to perform a detailed analysis, and consequently a thorough appreciation, of consumer motivations for food goods. Each motivation statement will be considered in detail and subjected to a disaggregated analysis. The analysis presented in chapter five will initially describe the average motivation scores before analysing the proportionate breakdown of each response category. The discussion will then proceed to group the seventeen statements by the application of a factor analysis technique as a categorised basis to the details of the relationships between consumer motives and overt spatial behaviour.

2. Characteristics of Consumer Motivations

The list of seventeen statements administered to the sample of respondents, provided a considerable amount of information which enables the identification of the main characteristics of consumer motivations towards food products. The analysis of an average score on each of the statements provides an initial insight into the dimensions held as important by the consumer groups. Table 5.3 presents an average score for each of the statements by the designated social status groups, which have been utilised to produce the mean score motivation profiles in Figure 5.1.

The results immediately illustrate the variability by which different motivational statements are held by different groups. Overall, statements 11 and 12 respectively pertaining to the quality and price of the merchandise sold by the shops, illustrate the strongest importance in determining food shopping behaviour. Quality is seen as important by all groups, albeit much more so by the Tychoch low status group, and of lesser

Table 5.3: Average Scores on 17 Motivational Statements by Sample Site

Statement:	TRALLWN		TREBOETH		TYCOCH	
	HS	LS	HS	LS	HS	LS
1.	2.8	2.7	2.7	2.1	2.9	2.3
2.	2.2	2.9	2.2	3.4	2.4	3.4
3.	3.7	3.0	4.1	3.6	3.9	3.0
4.	3.1	3.1	3.7	2.2	3.0	2.6
5.	2.3	3.1	2.3	3.6	2.1	3.2
6.	3.7	2.9	4.2	3.7	3.9	2.7
7.	3.0	2.7	2.8	2.9	2.7	2.5
8.	2.8	2.7	2.5	2.8	2.4	2.5
9.	1.8	2.2	2.3	2.3	2.4	2.3
10.	1.9	2.3	1.9	2.2	1.7	1.8
11.	1.8	2.1	1.6	1.9	1.6	1.5
12.	1.9	1.8	1.9	1.9	1.9	1.9
13.	3.3	3.1	2.8	3.1	2.7	2.5
14.	2.9	3.1	3.2	3.5	3.5	3.3
15.	3.7	3.3	3.8	3.9	3.7	4.0
16.	2.6	2.3	2.6	2.6	3.0	2.0
17.	2.3	2.2	2.3	2.0	2.5	2.4

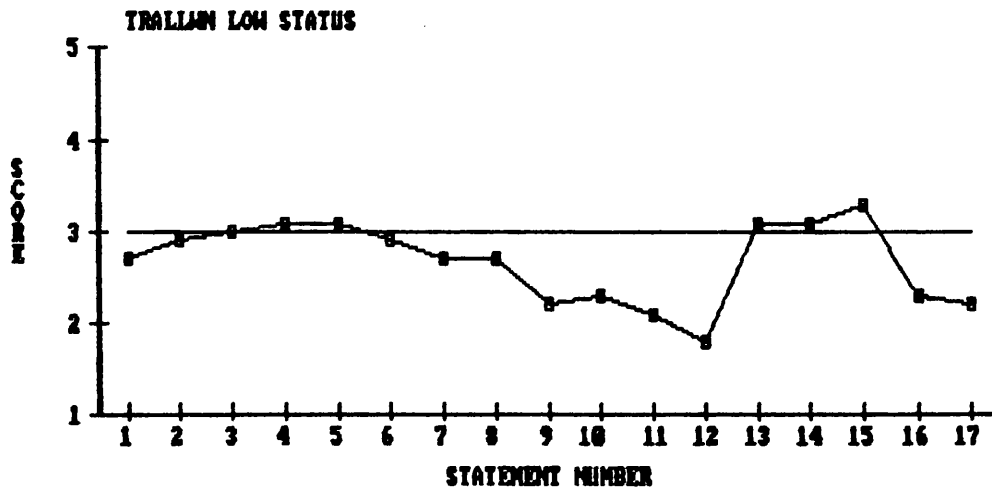
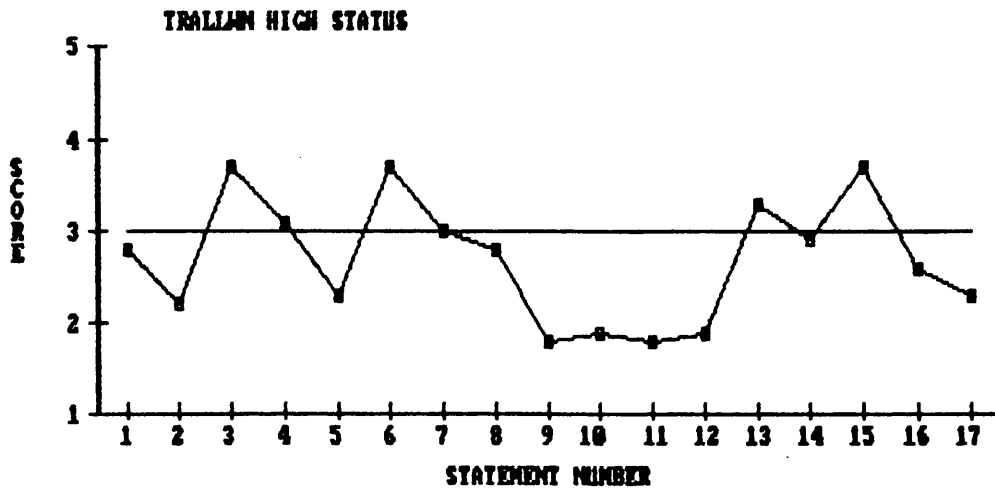
A low score indicates an "extremely important" response

importance by the Trallwn low status group. Statement 12, 'price of goods sold by the shops' is consistent throughout all of the six sites. Statement 1, reflecting geographical distance, is generally held to be of greater importance by the designated low status groups. These groups, as has been illustrated, have lower personal mobility characteristics and tend to rely on public transport. The values for statements 2, 3 and 4 reflect this. Car access is obviously of importance for the car owner, hence a lower score for the high status groups. Bus access is generally more important for the low status shoppers, whilst ease of access on foot is of greater significance for the Treboeth low status site, who, as has been illustrated, tend to make more walk based trips to the nearest local or neighbourhood shopping centre.

Statements 5 and 6, reflecting convenience of car parks and bus facilities, show a clear variation between the social status groups. Reflecting the available mix of shops in the respective centre and the characteristics of the merchandise offered, statements 7 to 13 illustrate a range of response. The variety of shops and the reputation of these is generally of importance to all groups. The choice of available goods is a slightly more important high status motivation, whilst price and quality, as has been demonstrated, are important to all shoppers. Statement 14, reflecting the ability to combine food shopping with other activities, was, like statement 15, of less importance than other dimensions. The final statements, 16 and 17, reflect motivations of routine, habit and familiarity with shopping centres. These statements were clearly of importance as motives, and showed a slight tendency to be held in greater value by the lower status respondents.

Figure 5.1A: Mean Score on 17 Motivational Statements:

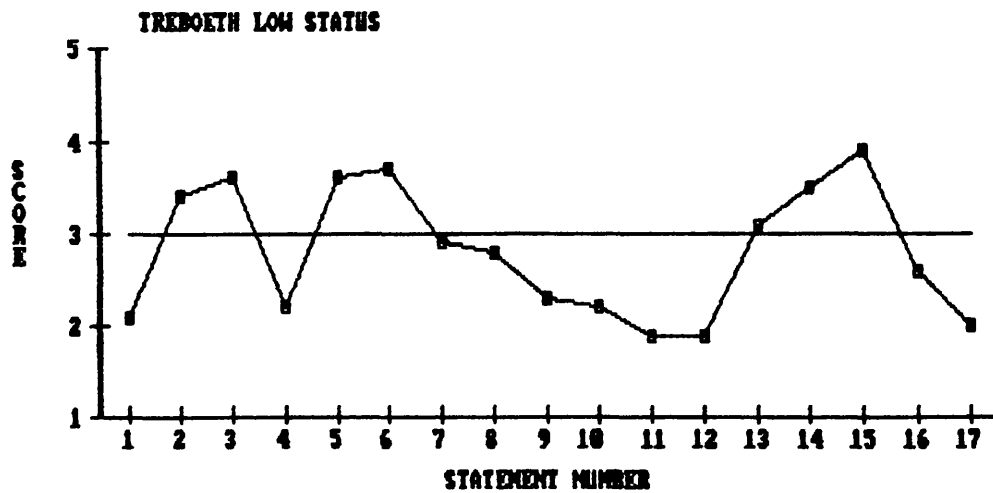
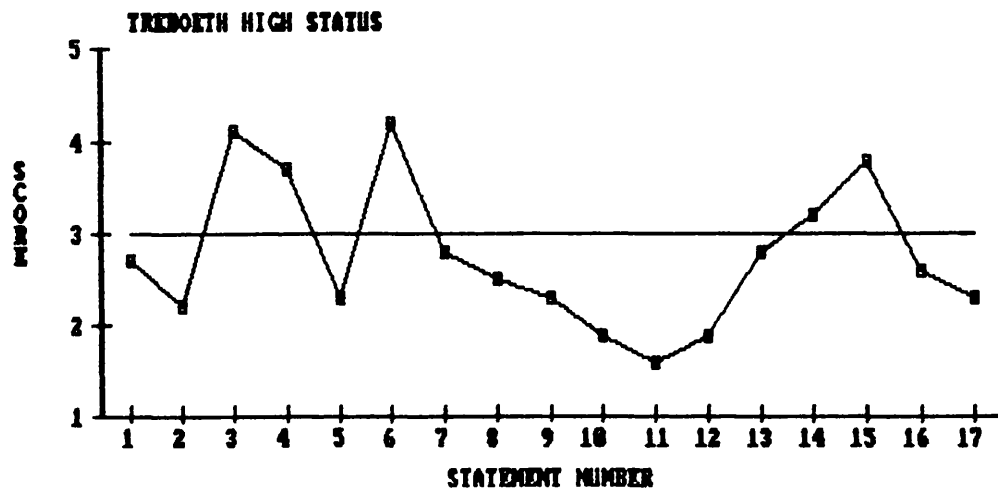
Trallwn



A LOW SCORE EQUALS AN IMPORTANT RATING

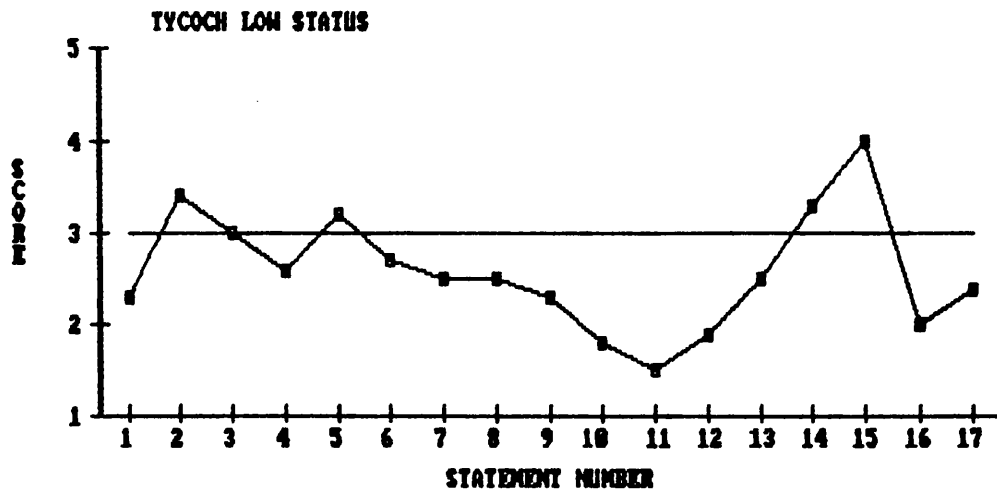
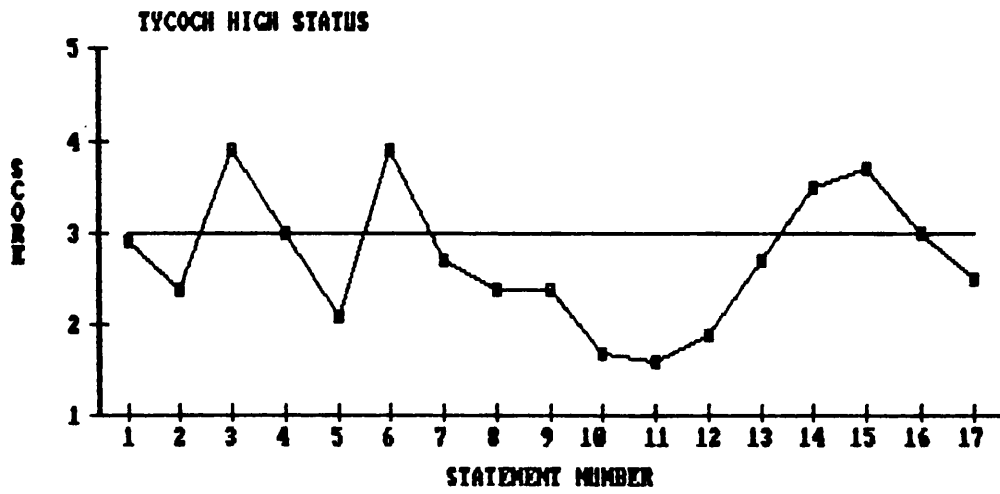
Figure 5.1B: Mean Score on 17 Motivational Statements:

Treboeth



A LOW SCORE EQUALS AN IMPORTANT RATING

**Figure 5.1C: Mean Score on 17 Motivational Statements:
Tycoch**



A LOW SCORE EQUALS AN IMPORTANT RATING

Overall, a variable response to each of the motivational statements can be seen, and slight differences in the patterns do occur between the designated social and geographical groups. The trends in Figure 5.1 clearly illustrates certain differences in consumer motivation for the consumer sub-groups presented. The profiles suggest a dimension of motivation as a determinant of behaviour. Chapter four has identified the different patterns of spatial behaviour and the information presented in this chapter appears, at a first interpretation, to be most instrumental. The profiles at the Trallwn sample are different. The trends are similar at Treboeth and Tycoch but the detail and magnitude of importance varies.

The information on average scores can disguise the detail of the proportionate breakdown of response to each statement. Tables 5.4A - 5.4F detail the results of analysis by each category of response for the six predesignated survey sites. Tables 5.4G and H present the results of a chi square test of statistical significance on each statement. A definite pattern of results indicating differential motivating influences is emerging. For the purpose of comparability the results will be discussed in the order presented to the respondent.

The first statement examines the geographical distance to shop and produced a continuum of response from each of six designated survey sites. At Trallwn this statement was considered important by equal numbers of high and low status shoppers. At Treboeth more of the low status respondents (72.2%) viewed distance as an important determinant than of the high status (57%). Finally at the Tycoch survey site this social status difference was further pronounced, with a greater proportion of low status respondents (65.7%) considering the statement important than the designated high status (47.2%). The motivational determinant of geographical distance thus varies between the geographical groups and, for two of the survey areas, also socially. This social status difference was expected and can clearly be related to mobility levels. The geographical variation is a factor of the differential retail opportunities available throughout the city.

Table 5.4A: Response to 17 Motivational Statements (% Respondents)

TRALLWN HIGH STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	28.6	23.4	2.6	31.2	14.3
2.	18.2	64.9	2.6	6.5	7.8
3.	9.1	19.5	15.6	7.8	48.1
4.	10.4	33.8	14.3	20.8	20.8
5.	32.5	41.6	1.3	11.7	13.0
6.	3.9	26.0	14.3	7.8	48.1
7.	9.1	39.0	10.4	26.0	15.6
8.	10.4	46.8	6.5	29.9	6.5
9.	40.3	49.4	2.6	0	7.8
10.	29.9	63.6	0	3.9	2.6
11.	37.7	51.9	2.6	7.8	0
12.	51.9	28.6	2.6	15.6	1.3
13.	7.8	33.8	7.8	20.8	29.9
14.	22.1	27.3	2.6	29.9	18.2
15.	6.5	15.6	7.8	39.0	31.2
16.	5.2	61.0	13.0	6.5	14.3
17.	13.0	67.5	5.2	6.5	7.8

Table 5.4B: Response to 17 Motivational Statements (% Respondents)

TRALLWN LOW STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	28.7	26.2	1.2	35.0	8.7
2.	5.0	41.2	23.7	17.5	12.5
3.	5.0	42.5	20.0	13.7	18.8
4.	5.0	37.5	15.0	25.0	17.5
5.	15.0	16.2	31.3	15.0	22.5
6.	7.5	41.2	18.8	16.2	16.2
7.	7.5	55.0	1.2	28.7	7.5
8.	7.5	50.0	12.5	25.0	5.0
9.	20.0	60.0	3.7	13.7	2.5
10.	15.0	61.2	5.0	17.5	7.2
11.	18.8	66.2	7.5	6.3	1.2
12.	56.3	26.2	3.7	13.7	0
13.	6.3	37.5	15.0	25.0	16.2
14.	15.0	26.2	15.0	23.7	20.0
15.	3.7	32.5	13.7	33.7	16.2
16.	8.7	71.2	6.3	12.5	1.2
17.	17.5	65.0	2.5	11.2	3.7

Table 5.4C: Response to 17 Motivational Statements (% Respondents)

TREBOETH HIGH STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	22.8	34.2	0	34.2	8.9
2.	38.0	38.0	3.8	11.4	8.9
3.	2.5	19.0	2.5	16.5	59.5
4.	7.6	24.1	2.5	17.7	48.1
5.	45.6	24.1	1.3	15.2	13.9
6.	1.3	17.7	0	17.7	63.3
7.	10.1	48.1	1.3	27.8	12.7
8.	17.7	51.9	3.8	16.5	10.1
9.	22.8	49.4	7.6	16.5	3.8
10.	34.2	53.2	5.1	6.3	1.3
11.	43.0	54.4	0	2.5	0
12.	51.9	24.1	6.3	16.5	1.3
13.	16.5	38.0	6.3	22.8	16.5
14.	15.2	31.6	2.5	21.5	29.1
15.	1.3	22.8	5.1	32.9	38.0
16.	11.4	49.4	12.7	16.5	10.1
17.	21.5	55.7	2.5	12.7	7.6

Table 5.4D: Response to 17 Motivational Statements (% Respondents)

TREBOETH LOW STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	51.9	20.3	0	24.1	3.8
2.	13.9	27.8	3.8	12.7	41.8
3.	2.5	31.6	8.9	21.5	35.4
4.	40.5	32.9	2.5	15.2	8.9
5.	13.9	22.8	2.5	11.4	49.4
6.	5.1	26.6	7.6	13.9	46.8
7.	11.4	44.3	6.3	21.5	16.5
8.	8.9	46.8	7.6	26.6	10.1
9.	21.5	51.9	3.8	19.0	3.8
10.	21.5	59.5	5.1	10.1	3.8
11.	41.8	45.6	1.3	5.1	6.3
12.	51.9	24.1	5.1	16.5	2.5
13.	6.3	44.3	3.8	20.3	25.3
14.	11.4	25.3	3.8	22.8	36.7
15.	3.8	17.7	10.1	20.3	48.1
16.	12.7	55.7	3.8	12.7	15.2
17.	31.6	53.2	6.3	1.3	7.6

Table 5.4E: Response to 17 Motivational Statements (% Respondents)

TYCOCH HIGH STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	18.6	28.6	4.3	41.4	7.1
2.	31.4	38.6	1.4	18.6	10.0
3.	8.6	11.4	10.0	18.6	51.4
4.	17.1	32.9	4.3	22.9	22.9
5.	45.9	31.4	1.4	10.0	1.4
6.	8.6	12.9	8.6	18.6	51.4
7.	14.3	41.4	11.4	27.1	5.7
8.	14.3	57.1	7.1	17.1	4.3
9.	18.6	50.0	7.1	20.0	4.3
10.	40.0	55.7	1.4	2.9	0
11.	47.1	47.1	2.9	2.9	0
12.	42.9	37.1	7.1	11.4	1.4
13.	22.9	35.7	2.9	21.4	17.1
14.	7.1	21.4	5.7	41.4	24.3
15.	0	27.1	8.6	35.7	28.6
16.	10.0	42.9	5.7	22.9	18.6
17.	20.0	47.1	2.9	20.0	10.0

Table 5.4F: Response to 17 Motivational Statements (% Respondents)

TYCOCH LOW STATUS SITE

Statement No:	EXTREMELY IMPORTANT	IMPORTANT	DON'T KNOW	NOT IMPORTANT	NOT AT ALL IMPORTANT
1.	44.3	21.4	0	25.7	8.6
2.	11.4	32.9	1.4	17.1	37.1
3.	18.6	31.4	7.1	18.6	24.3
4.	14.3	50.0	7.1	14.3	14.3
5.	21.4	21.4	5.7	14.3	37.1
6.	24.3	34.3	7.1	15.7	18.6
7.	17.1	47.1	5.7	25.7	4.3
8.	20.0	47.1	2.9	20.0	10.0
9.	18.6	57.1	2.9	21.4	0
10.	35.7	51.4	5.7	7.1	0
11.	57.1	38.6	0	4.3	0
12.	51.4	25.7	5.7	17.1	0
13.	15.7	47.1	14.3	12.9	10.0
14.	14.3	30.0	1.4	20.0	34.3
15.	0	21.4	4.3	27.1	47.1
16.	24.3	61.4	2.9	8.6	2.9
17.	30.0	34.3	5.7	28.6	1.4

Table 5.4G: Chi Square Values of the Differences in Response to the Motivational Statements by Geographical Area

TRALLWN/TREBOETH/TYCOCH

1.	8.46	
2.	50.05	***
3.	34.95	***
4.	39.14	***
5.	36.47	***
6.	50.03	***
7.	13.52	
8.	11.53	
9.	12.59	
10.	15.12	
11.	30.95	***
12.	5.62	
13.	18.87	*
14.	17.56	*
15.	21.43	**
16.	17.24	*
17.	34.98	***

8 degrees of freedom

Significance

26.12	0.001	***
20.09	0.01	**
18.17	0.02	
15.51	0.05	*
13.36	0.1	

Table 5.4H: Chi Square Values of the Difference in Response to the Motivational Statements between the Designated Social Status Groups

Statement	TRALLWN	TREBOETH	TYCOCH
	HS/LS	HS/LS	HS/LS
1.	1.73	14.77 **	13.74 **
2.	28.02 ***	27.00 ***	17.83 **
3.	19.49 ***	10.62 *	16.26 **
4.	2.18	40.39 ***	5.93
5.	37.41 ***	29.77 ***	19.33 ***
6.	18.85 ***	11.50 *	23.13 ***
7.	10.33 *	3.88	1.94
8.	2.43	5.42	4.38
9.	9.57 *	1.22	4.65
10.	14.86 **	4.25	3.38
11.	9.31	7.30	3.47
12.	1.50	0.44	3.91
13.	5.54	6.04	10.18 *
14.	8.46	1.91	10.89 *
15.	10.50 *	6.16	5.48
16.	13.39 **	5.31	19.76 ***
17.	3.42	10.22 *	9.05

4 degrees of freedom

Significance.

18.46	0.001	***
13.28	0.01	**
11.67	0.02	
9.49	0.05	*
7.78	0.1	

Statements 2, 3 and 4 reflect the determinants of transport mode when food shopping and examine the ease of access by car, bus and foot respectively. The importance of ease of car access varies considerably between the social status groups at each of the three survey areas. Consistently more of the high status respondents considered this statement as an important, or very important, motive than their low status counterparts.

Conversely, ease of access by bus was a low status determinant, with the Tycoch low status group especially, citing the importance of the statement. These results clearly highlight further the social status differences in mobility levels found in the sample of consumers. Ease of access on foot produces a more varying response from the consumers. At Treboeth the social status differences were again very evident. The high status respondents did not appreciably view access on foot as an important reason for centre choice. The low status shoppers considered this extremely important. The social status differences are also apparent in the Tycoch sample, albeit in a much reduced scale than at Treboeth. 50% of the Tycoch high status group identified such a reason important. At the Trallwn site broadly comparable findings were experienced between the two social status groups. The low status tendency at Treboeth can be closely related to the use of the nearest centre for grocery purchases. Of the high status groups, the greater importance assigned to ease of foot access by the Tycoch respondents again can be related to behaviour, with their particular characteristic of meat purchases from the nearest centre. If this relationship is proven further, then the previous conclusions with regard to the need to disaggregate behaviour by product types are well founded. The results from the analysis of grocery spatial behaviour alone would not identify a behavioural tendency for the Tycoch high status to visit the nearest centre.

Statements 5 and 6 relate to the convenience of car parking and bus facilities respectively. Again, car parking was a more important determinant for the high status than the low status consumer. Similarly the contrasting results for bus facilities were applicable. Clearly the trip motivations relating to ease of access by various transport modes, and the convenience of transport related facilities, has a distinct

social status bias. Whether these differences cause different behaviour or are a result of that behaviour is still unclear.

Three statements (numbers 7, 8 and 9) reflect the influence of the composition of shopping centres in terms of the variety of shops, reputation of shops and the availability of a supermarket respectively. A number of interesting results are apparent. Variety of shops was considered an important reason for centre choice by all consumer groups. Reputation, similarly, formed an important determinant of decision making for all consumer groups (over 57% of respondents from all groups identified statement 8 as an important or extremely important reason for centre choice). Furthermore, these results apply to the 'availability of a supermarket', although the Tycoch based consumers (both high and low status) in particular, did not rate this dimension as extremely important. Nevertheless, it would appear that factors relating to the retail composition of a shopping centre are an important (and for many an extremely important) determinant of behaviour, irrespective of social status. This result tends to lend support to the explanation of overt spatial behaviour with respect to the structure of the available shopping opportunities. Furthermore, it is interesting to note that consumers perceive variety, reputation and availability of specific shops as an influence on their behaviour, irrespective of centre choice. As a consequence, it would appear that either respondents perceive the centres visited in the terms outlined above, or that all respondents would (and perhaps ideally) seek shopping opportunities of variety, reputation and availability. This latter consideration would tend to support the weak nature of the relationship between motivation and behaviour.

Statements 10, 11 and 12 extend the notion of centre attractiveness to the specific products sold by the retail outlets. Three general attributes were presented; the choice, quality and price of goods sold by the stores. The choice of goods sold (statement 10) was a more important reason for centre choice for the high status shopper as opposed to the low status. Consistently, at each site, a greater proportion of high status consumers identified 'choice' as an extremely important dimension. Additionally, the Tycoch based residents attributed a greater overall status to this dimension. The 'quality of products sold by the shops' was, with the exception of the Trallwn low status group,

identified as an extremely important influence on centre choice by the majority of respondents. Similarly, 'price of goods sold by the shops' was a consistent reason for all consumers.

Statement 13 relates to the 'service received from store staff'. Overall this statement does not form a major reason for behaviour.

The 'ability to combine food shopping with another activity' was considered as an important, or extremely important, reason for centre choice by a number of consumer groups. The results were inconsistent, with at Trallwn and Treboeth a bias in favour of the high status and at Tycoch the reverse trend. These results are interesting in that the statement implies a close relationship with behaviour. Further analysis will seek to identify this relationship.

The availability of a specialist food shop (statement 15) was not identified as an important influence on decision making by the sample of consumers.

The final two statements relate to aspects of routine, habit and familiarity with a shopping centre. Respondents were asked to consider these dimensions as a reason for overt behaviour. Routine and habit were significantly more important to the low status groups, although also viewed as an important reason by high status shoppers. Similarly, familiarity was an important, or extremely important, determinant of centre choice by all shoppers, irrespective of location or status. It does appear that these latter two statements are significant determinants of consumer choice.

The simple descriptive statistics utilised to identify the characteristics of consumer motivations have provided an initial insight into the perceptual elements of consumer choice. From this limited information, it is possible to summarise the motivational influences that are apparent at this stage. The simple profiles developed from the average score on each statement illustrated dimensions of motivation determinants. It would appear that the most important dimensions influencing centre choice are the three statements (number 10, 11 and 12) relating to the attributes of the products available in terms of choice, quality and price of goods. The importance of these attributes is

relatively consistent across geographical and social boundaries. The quality of goods sold by shops is viewed as extremely important by many consumers and receives the lowest average score in five of the six areas. 'Availability of a supermarket' (statement 9) similarly, is relatively consistent in importance for all six consumer sub-groups, as is routine or habit and familiarity with the centre (numbers 16 and 17). The reputation of shops in the centre is an important determinant for many shoppers and is consistent across geographical and social boundaries. The actual distance between shops and place of residence produced an expected social variation in its relative importance for high and low status consumers. Distance considerations are more important for low status shoppers than their high status counterparts. Ease of access to the shops by car also produced a variety of response between the social groups; being considerably more important for the high status shoppers. The remaining eight motivation statements produced a lesser important response from shoppers as possible determinants of behaviour. The analysis however, has illustrated the need to categorise these dimensions further. A principal components analysis of the information will therefore be presented in order to group these statements prior to a detailed investigation of motivation and behaviour.

3. The Principal Components Analysis of 17 Motivational Statements

The study of shoppers perception of the attractions of a specific shopping centre by Downs (1970) and the study of 'trip motivations' by Davies (1973) both employed the multivariate analyses methods of data reduction known as principal components and factor analysis. The technique has previously been applied to the design of a multi-staged sampling frame, and a discussion of the methodology has been provided in chapter two. Accepting the subjectivity of the approach, the technique permits the data reduction of seventeen individual motivational statements. Naturally, a number of individual statements are interrelated and as such demand a technique to group them. The result will be a grouping of prespecified factors, which are labelled or named by a subjective process.

Principal component analysis was performed on the seventeen statements to reduce them into a number of major components or factors

(the terms component or factor are used synonymously in this discussion, although statistically they are quite different). A varimax rotation was applied and only the results of this will be presented here. Varimax is viewed as a method which enhances the precise interpretation of the analysis. The raw scores collected on the seventeen motivational statements formed the input for a principal components analysis of 455 cases. Table 5.5 illustrates the leading components identified. The first six components, with an eigenvalue greater than unity account for a total of 58.6% of the variance.

Table 5.6 illustrates the components loadings matrix which allows the components to be identified.

Table 5.5: Principal Components Analysis of Consumer Motivations:

% Variation Explained

Component	Eigenvalue	Percentage	Cumulative Percentage
I	2.607	15.3	15.3
II	2.360	13.9	29.2
III	1.407	8.3	37.5
IV	1.353	8.0	45.5
V	1.183	6.9	52.4
VI	1.046	6.2	58.6

Table 5.6: Principal Components Analysis of Consumer Motivations:

Varimax Rotated Component Solution

Variable	I	II	III	IV	V	VI	Communality
1	0.07	0.02	0.02	-0.12	0.80	0.15	0.69
2	-0.13	0.90	0.04	0.11	-0.10	-0.05	0.85
3	0.88	-0.16	0.13	0.02	0.10	-0.03	0.82
4	0.16	-0.23	0.14	-0.13	0.65	-0.01	0.54
5	-0.16	0.87	0.10	0.11	-0.10	-0.10	0.82
6	0.88	-0.17	0.13	0.07	0.09	0.04	0.83
7	0.21	0.10	0.60	0.03	0.04	0.17	0.44
8	0.01	0.05	0.50	0.24	0.09	-0.08	0.33
9	0.13	0.23	-0.32	0.43	0.10	0.24	0.42
10	-0.05	0.09	0.16	0.69	-0.10	0.05	0.53
11	0.02	-0.02	0.34	0.69	-0.05	-0.16	0.62
12	0.33	0.22	-0.02	0.46	-0.15	0.09	0.40
13	-0.10	-0.08	0.53	0.24	0.33	0.01	0.46
14	0.17	0.04	0.39	-0.27	-0.41	0.27	0.50
15	0.11	0.03	0.63	0.01	-0.08	-0.06	0.42
16	0.10	-0.02	-0.09	-0.11	-0.06	0.79	0.66
17	-0.12	-0.14	0.10	0.20	0.21	0.70	0.62

Component I loads positively on statements 3 and 6 reflecting access to shop by bus facilities. There are no significant negative values. Component I therefore is highly suggestive of a public transport reason for spatial decision making. Component II loads positively on statements 2 and 5 reflecting car access and parking facilities. Component II is clearly related to car or vehicle access as a motivational reason for behaviour. Component III is similarly straightforward, loading positively on the statements representing the variety of shops available in the shopping centre and the availability of a specialist food shop. There are no high negative values. This component can be described in terms of the retail composition of the shopping centre. Component IV loads positively towards characteristics of the products sold by the shops. Statements 10 and 11, reflecting the choice and quality of goods sold have relatively high positive loadings. Component IV can be labelled in terms of the attributes of products sought by the consumer. Component V loads highly positively on statements 1 and 4 reflecting the actual distance between the shops and place of residence, and the ease of access on foot to shops. Clearly, such a component relates to a motivational reason reflecting the use of nearest shopping centres. Such a component could be described as a geographical distance reason for decision making. Finally, Component VI loads distinctly on statements 16 and 17 relating to the use of particular shopping centres because of routine, habit or familiarity with that shopping centre.

The analysis of the rotated motivational component scores permits the influence of consumer sub-groups on each of the factors to be identified and the relationship between spatial patterns of behaviour and motivation to be determined.

4. The Influence of Consumer Sub-groups on Food Motivations

Categorising the component score coefficients, on each of the six motivational factors, allows the influence of various consumer sub-groups to be determined. The forthcoming analysis will only concern itself with presenting the influence of the predesignated sample groups, plus certain of the additional classifications detailed previously.

The component score coefficients were reclassified into six groups. Negative 2.0 and above provides the equivalent score on a motivational factor as an extremely important determinant of food behaviour; -1.9 to -1.0; -0.9 to 0; 0 to +1.0; +1.1 to 2.0 and finally positive 2.0 and above indicating the motivational component as an unimportant determinant of behaviour. A positive score coefficient indicates a high score on the factor which refers to an unimportant reason or determinant of behaviour.

(i) The Influence of Designated Social Status and Geographical Location

Table 5.7 illustrates the proportional breakdown of the component scores on motivational component I, which loaded positively on bus facilities. Clearly a distinction can be made between the designated high and low status groups in terms of the importance of bus facilities as a determinant of food behaviour. In all three sites, a greater proportion of low status respondents exhibit component scores above negative 1, compared to their high status counterparts. The previous findings, indicative of a social status difference in centre choice and travel characteristics, would appear to be related to such a consumer motivation.

Table 5.8 shows the breakdown of component scores on the second component; 'car facilities'. The overall trend again highlights a social status distinction in the degree of importance attached to car access and parking in determining choice of food location. Many more high status respondents view such a dimension of greater significance than their low status counterparts throughout all of the three geographical survey areas.

Component III loaded positively on the variety of shops and supermarket availability at a particular centre. Such characteristics of a shopping centre are an important determinant for the majority of the Treboeth high status group and the majority of all Tycoch respondents (Table 5.9). No discernible social status differences are apparent, although interestingly both the social groups at the geographical site of Tycoch favour such a determinant. The characteristics of a shopping centre differ significantly throughout the retail hierarchy, and the relationship between centre choice and this motivational dimension should provide some interesting findings.

Table 5.7: Scores on Motivational Component I: 'Bus Facilities'
(% Respondents)

	>-2.0	-1.9: -1	-0.9: 0	0.1: +1	1.1: 2.0	>2.0
Trallwn HS	2.6	16.9	27.3	37.7	15.6	-
Trallwn LS	-	30.0	42.5	22.5	5.0	-
	Chi Square Value	11.67	3df Significance = 0.0086			
Treboeth HS	1.3	8.9	12.7	46.8	27.8	2.5
Treboeth LS	-	20.3	24.1	36.7	19.0	-
	Chi Square Value	8.51	3df Significance = 0.037			
Tycoch HS	2.9	7.1	22.9	38.6	28.6	-
Tycoch LS	2.9	27.1	37.1	21.4	11.4	-
	Chi Square Value	17.95	3df Significance = 0.0005			

Table 5.8: Scores on Motivational Component II: 'Car Facilities'
(% Respondents)

	>-2.0	-1.9: -1.0	-0.9: 0	+0.1: 1.0	1.1: 2.0	>2.0
Trallwn HS	-	15.6	59.7	18.2	6.5	-
Trallwn LS	-	8.7	40.0	31.3	20.0	-
	Chi Square Value	12.64	3df	Significance = 0.0055		
Treboeth HS	-	29.1	40.5	17.7	8.9	3.8
Treboeth LS	-	8.9	31.6	16.5	40.5	2.5
	Chi Square Value	22.52	3df	Significance = 0.0001		
Tycoch HS	1.4	20.0	48.6	14.3	15.7	-
Tycoch LS	-	10.0	32.9	20.0	32.9	4.3
	Chi Square Value	11.78	3df	Significance = 0.008		

Table 5.9: Scores on Motivational Component III: 'Centre Characteristics/Shop Availability' (% Respondents)

	>-2.0	-1.9: -1.0	-0.9: 0	+0.1: 1.0	1.1: 2.0	>2.0
Trallwn HS	2.6	9.1	32.5	33.8	18.2	3.9
Trallwn LS	1.2	18.8	38.7	21.2	18.8	1.2
	Chi Square Value 4.46 3df Significance = 0.2					
Treboeth HS	2.5	16.5	40.5	27.8	10.1	2.5
Treboeth LS	2.5	7.6	38.0	26.6	21.5	3.8
	Chi Square Value 5.55 3df Significance = 0.1356					
Tycoch HS	1.4	15.7	41.4	32.9	8.6	-
Tycoch LS	2.9	10.0	40.0	32.9	11.4	2.9
	Chi Square Value 1.45 3df Significance = 0.69					

Table 5.10: Scores on Motivational Component IV: 'Product Characteristics' (% Respondents)

	>-2.0	-1.9: -1.0	-0.9: 0	+0.1: 1.0	2.1: 2.0	>2.0
Trallwn HS	-	13.0	48.1	26.0	7.8	5.2
Trallwn LS	-	7.5	33.7	33.7	16.2	8.7
	Chi Square Value 6.88 3df Significance = 0.076					
Treboeth HS	1.3	7.6	50.6	29.1	8.9	2.5
Treboeth LS	-	17.7	34.2	24.1	13.9	10.1
	Chi Square Value 8.81 3df Significance = 0.032					
Tycoch HS	-	15.7	48.6	31.4	1.4	2.9
Tycoch LS	2.9	15.7	40.0	32.9	7.1	1.4
	Chi Square Value 1.77 3df Significance = 0.62					

Table 5.11: Scores on Motivational Component V: 'Distance & Walk to Shops' (% Respondents)

	>-2.0	-1.9: -1.0	-0.9: 0	+0.1: 1.0	1.1: 2.0	>2.0
Trallwn HS	-	16.9	27.3	31.2	22.1	2.6
Trallwn LS	1.2	5.0	41.2	31.3	18.8	2.5
Chi Square Value 6.30 3df Significance = 0.098						
Treboeth HS	1.3	10.1	25.3	36.7	24.1	2.5
Treboeth LS	-	36.7	30.4	24.1	8.9	-
Chi Square Value 19.97 3df Significance = 0.0002						
Tycoch HS	-	17.1	34.3	31.4	17.1	-
Tycoch LS	-	21.4	40.0	20.0	17.1	1.4
Chi Square Value 2.46 3df Significance = 0.48						

Table 5.12: Scores on Motivational Component VI: 'Routine/Familiarity' (% Respondents)

	>-2.0	-1.9: -1.0	-0.9: 0	+0.1: 1.0	1.1: 2.0	>2.0
Trallwn HS	-	11.7	53.2	20.8	10.4	3.9
Trallwn LS	-	12.5	58.7	18.8	7.5	2.5
Chi Square Value 0.91 3df Significance = 0.82						
Treboeth HS	-	16.5	34.2	34.2	12.7	2.5
Treboeth LS	1.3	15.2	45.6	20.3	11.4	6.3
Chi Square Value 4.25 3df Significance = 0.24						
Tycoch HS	-	10.0	28.6	32.9	17.1	11.4
Tycoch LS	-	18.6	42.9	25.7	12.9	-
Chi Square Value 8.58 3df Significance = 0.035						

Motivational component IV loaded positively on product characteristics such as the quality and choice of goods sold. Table 5.10 illustrates the breakdown of the coefficient scores by each of the sample sites. Again, no obvious distinctions can be made between the socially different groups.

Motivational component V loaded positively towards the variables of geographical distance and ease of access on foot to the shops. Table 5.11 illustrates the proportional breakdown of the sample sites with respect to this dimension. At both the Trallwn and Treboeth site a clear social status difference can be seen. Many more of the low status respondents view such a dimension of greater importance in determining their food shopping behavior. Of the Tycoch sample respondents, almost equal proportions of consumers in the two status groups stated such a dimension as an important determinant. This again reflects the earlier observation, that the Tycoch high status view short distances as important and inferentially this can be related to the behavioural patterns for meat described in chapter four.

The sixth motivational component of 'routine, habit and familiarity' is illustrated in Table 5.12. At Trallwn there is no difference between the designated consumer groups with respect to the importance of this dimension. At Treboeth and Tycoch, however, more of the low status groups acknowledge the importance of routine and familiarity as a determinant of food behaviour.

Overall, the influence of the designated social groups on food motivational components is most apparent in the two dimensions reflecting transport modes to shop. Components I and II are related and consequently illustrate these distinctions.

(ii) The Influence of Personal Mobility

Further disaggregation of the analysis to identify the influence of an index of personal mobility is presented in Tables 5.13-A - F. The tables have been compressed which is justifiable given the small proportions of response in the extremities of the previous codings used.

Table 5.13A: Index of Personal Mobility and Motivational Component I:

'Bus Facilities' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	46.4	42.9	7.1	3.6
Part Mobility	30.0	36.7	25.0	8.3
Total Mobility	11.6	30.4	43.5	14.5
Chi Square Value	23.96	6df	Significance = 0.0005	
TREBOETH				
Immobile	15.6	25.0	34.4	25.0
Part Mobility	22.4	27.6	36.2	13.8
Total Mobility	9.0	6.0	50.7	34.3
Chi Square Value	20.39	6df	Significance = 0.0024	
TYCOCH				
Immobile	16.7	43.3	13.3	26.7
Part Mobility	39.3	33.9	19.6	7.1
Total Mobility	1.9	18.5	50.0	29.6
Chi Square Value	43.69	6df	Significance = 0.0001	

Table 5.13B: Index of Personal Mobility and Motivational Component II:

'Car Facilities' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	3.6	28.6	32.1	35.7
Part Mobility	10.0	40.0	33.3	16.7
Total Mobility	17.4	66.7	14.5	1.4
Chi Square Value	34.73	6df	Significance = 0.0001	
TREBOETH				
Immobile	3.1	9.4	12.5	75.0
Part Mobility	15.5	43.1	24.1	17.2
Total Mobility	29.9	43.3	13.4	13.4
Chi Square Value	52.76	6df	Significance = 0.0001	
TYCOCH				
Immobile	3.3	13.3	6.7	76.7
Part Mobility	3.6	42.9	28.6	25.0
Total Mobility	35.2	53.7	11.1	-
Chi Square Value	79.33	6df	Significance = 0.0001	

Table 5.13C: Index of Personal Mobility and Motivational Component III:
'Centre Characteristics/Shop Availability' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	17.9	50.0	14.3	17.9
Part Mobility	20.0	36.7	28.3	15.0
Total Mobility	11.6	29.0	31.9	27.5
Chi Square Value	8.84	6df	Significance = 0.1826	
TREBOETH				
Immobile	6.3	40.6	21.9	31.3
Part Mobility	19.0	39.7	27.6	13.8
Total Mobility	14.9	38.8	29.9	16.4
Chi Square Value	6.47	6df	Significance = 0.372	
TYCOCH				
Immobile	16.7	50.0	30.0	3.3
Part Mobility	10.7	42.9	33.9	12.5
Total Mobility	18.5	33.3	33.3	14.8
Chi Square Value	5.02	6df	Significance = 0.54	

Table 5.13D: Index of Personal Mobility and Motivational Component IV:
'Product Characteristics' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	3.6	28.6	39.3	28.6
Part Mobility	8.3	40.0	31.7	20.0
Total Mobility	14.5	46.4	24.6	14.5
Chi Square Value	7.85	6df	Significance = 0.249	
TREBOETH				
Immobile	12.5	37.5	18.8	31.3
Part Mobility	13.8	41.4	25.9	19.0
Total Mobility	11.9	46.3	31.3	10.4
Chi Square Value	7.14	6df	Not Significant	
TYCOCH				
Immobile	23.3	43.3	23.3	10.0
Part Mobility	12.5	48.2	33.9	5.4
Total Mobility	18.5	40.7	35.2	5.6
Chi Square Value	3.48	6df	Not Significant	

Table 5.13E: Index of Personal Mobility and Motivational Component V:

'Distance and Walk to the Shops' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	10.7	50.0	21.4	17.9
Part Mobility	13.3	41.7	26.7	18.3
Total Mobility	10.1	21.7	39.1	29.0
Chi Square Value	11.03	6df	Significance = 0.087	
TREBOETH				
Immobile	59.4	28.1	6.3	6.3
Part Mobility	19.0	25.9	36.2	19.0
Total Mobility	10.4	29.9	37.3	22.4
Chi Square Value	34.02	6df	Significance = 0.0001	
TYCOCH				
Immobile	43.3	40.0	6.7	10.0
Part Mobility	19.6	33.9	26.8	19.6
Total Mobility	5.6	38.9	35.2	20.4
Chi Square Value	22.01	6df	Significance = 0.001	

Table 5.13F: Index of Personal Mobility and Motivational Component VI:

'Routine/Familiarity' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Immobile	7.1	64.3	14.3	14.3
Part Mobility	10.0	58.3	20.0	11.7
Full Mobility	15.9	50.7	21.7	11.6
Chi Square Value	3.07	6df	Significance = 0.8	
TREBOETH				
Immobile	21.9	43.8	15.6	18.8
Part Mobility	19.0	36.2	29.3	15.5
Full Mobility	11.9	40.3	31.3	16.4
Chi Square Value	4.14	6df	Significance = 0.66	
TYCOCH				
Immobile	26.7	46.7	20.0	6.7
Part Mobility	8.9	37.5	32.1	21.4
Full Mobility	13.0	27.8	31.5	27.8
Chi Square Value	11.72	6df	Significance = 0.069	

Scores in excess of 1.0 (both positive and negative) are grouped together and similarly interpreted in terms of the extremities of consumer motivation. A positive score is still representative of an unimportant determinant of behaviour.

The index of personal mobility has previously differentiated the spatial patterns of centre choice (chapter four). Tables 5.13 A - F present the relationship between mobility and the six components of consumer motivation identified. At the Trallwn survey area the defined immobile respondents considered component I as a more important reason for centre choice than either of the partial or totally mobile consumers. At Treboeth and Tycoch the situation is not as clear. The totally mobile groups do not rate 'bus facilities' important but increasingly, this determinant is considered important by the partially mobile consumer. A similar relationship between personal mobility and component II, albeit in the opposite direction, is apparent in Table 5.13B. Increased mobility results in an increase in the relative significance of 'car facilities' as a motivational determinant. The strength of this relationship varies between the geographical areas and undoubtedly is related to behaviour. The motivational component reflecting the journey to shop is illustrated in Table 5.13E. At the Trallwn sample area, the results are broadly comparable for all mobility groups. At Treboeth and Tycoch an increased proportion of immobile consumers rate component V as an important determinant of centre choice. Increased mobility results in a reduction of the significance attached to 'distance and walk to shops' as a behavioural determinant.

Personal mobility clearly influences consumer trip motivations related to accessibility and the journey to shop. The previous results identified from the analysis of the influence of designated social status have been enhanced by this discussion. The three alternative motivational components (number III, IV and VI) did not produce any distinctive variations in the previous social status consumer group based discussion. Tables 5.13C, D and F illustrate the influence of personal mobility on motivations relating to 'centre characteristics', 'product characteristics' and 'routine or familiarity' respectively. The importance of 'centre characteristics' as a food motive does not appreciably differ for the three mobility groups at Trallwn, Treboeth or

Tycoch. Minor differences in the relative proportional response to each can be seen, but do not follow any distinctive and explanatory pattern. The importance of component IV; 'product characteristics' is again mixed between the mobility groups. At Trallwn the more mobile groups view this of greater importance. At Treboeth all mobile groups illustrate a similar pattern, whilst at Tycoch more of the immobile group view 'product characteristics' as an important determinant.

Clearly, with respect to food motivations relating to both the product and centre characteristics, ^{the influence of personal} mobility (and with its relationship to social status, also seen in isolation previously) is consistent.

The final motivational component VI; 'familiarity and routine' is illustrated in 5.13F. Again, no consistent mobility influence is apparent, with varying proportions of each of the mobility groups viewing 'familiarity' as an important consideration. Consumer motivation towards familiarity falls into the same category as components III and IV, in that they reflect a more composite decision to shop, which is not obviously related to the characteristics of personal mobility.

The influence of personal mobility on the six determinants of consumer motivation is varied. Motivations reflecting distance, mobility and journey to shop (I, II and V) have a clear relationship to mobility definitions. Alternative reasons for centre choice do not produce such a consistent relationship. Further influences are presumably applicable to these trip motivations and the discussion will continue with the analysis of the influence of pre-school dependents.

(iii) The Influence of Pre-School Children

The influence of pre-school children upon overt spatial behaviour is detailed in chapter four. The influence of this consumer sub-group on consumer food motivations is illustrated in the series of Tables 5.14A - F. The influence of pre-school children on motivations relating to 'bus facilities' (component I; table 5.14A) is insignificant at Trallwn, of minor importance at Treboeth, but stronger (and more obvious) at Tycoch.

5.14A: The Influence of Pre-School Children on Motivational Component

I: 'Bus Facilities' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	25.5	35.5	29.1	10.0
One +	23.4	34.0	31.9	10.6
Chi Square Value	0.175	3df	Not significant	

TREBOETH

Nil	16.4	17.9	41.8	23.9
One +	8.3	20.8	41.7	29.2
Chi Square Value	1.20	3df	Not significant	

TYCOCH

Nil	22.8	30.9	25.2	21.1
One +	-	23.5	64.7	11.8
Chi Square Value	12.56	3df	Significance = 0.0057	

5.14B: The Influence of Pre-School Children on Motivational Component

II: 'Car Facilities' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	10.9	50.0	25.5	13.6
One +	14.9	48.9	23.4	12.8
Chi Square Value	0.51	3df	Not significant	

TREBOETH

Nil	16.4	35.8	17.2	30.6
One +	33.3	37.5	16.7	12.5
Chi Square Value	5.48	3df	Not significant	

TYCOCH

Nil	12.2	39.8	17.9	30.1
One +	41.2	47.1	11.8	-
Chi Square Value	13.61	3df	Significance = 0.0035	

5.14C: The Influence of Pre-School Children on Motivational Component
III; 'Centre Characteristics/Shop Availability' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	18.2	37.3	24.5	20.0
One +	10.6	31.9	34.0	23.4
Chi Square Value	2.71	3df	Not significant	

TREBOETH				
Nil	13.4	40.3	28.4	17.9
One +	20.8	33.3	20.8	25.0
Chi Square Value	1.98	3df	Not significant	

TYCOCH				
Nil	15.4	43.9	30.1	10.6
One +	11.8	17.6	52.9	17.6
Chi Square Value	5.69	3df	Significance = 0.1275	

5.14D: The Influence of Pre-School Children on Motivational Component
IV: 'Product Characteristics' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	8.2	36.4	36.4	19.1
One +	14.9	51.1	14.9	19.1
Chi Square Value	8.27	3df	Significance = 0.041	

TREBOETH				
Nil	11.9	43.3	26.9	17.9
One +	20.8	37.5	25.0	16.7
Chi Square Value	1.42	3df	Not significant	

TYCOCH				
Nil	16.3	46.3	30.9	6.5
One +	23.5	29.4	41.2	5.9
Chi Square Value	1.93	3df	Not significant	

5.14E: The Influence of Pre-School Children on Motivational Component

V: 'Distance and Walk to the Shops' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	10.0	35.5	30.0	24.5
One +	14.9	31.9	34.0	19.1
Chi Square Value	1.40	3df	Not Significant	

TREBOETH

Nil	22.4	26.1	33.6	17.9
One +	33.3	37.5	12.5	16.7
Chi Square Value	4.96	3df	Not Significant	

TYCOCH

Nil	21.1	35.0	26.8	17.1
One +	5.9	52.9	17.6	23.5
Chi Square Value	3.94	3df	Not Significant	

5.14F: The Influence of Pre-School Children on Motivational Component

VI: 'Routine/Familiarity' (% Respondents)

	>-1.0	-0.9: 0	+0.1: 1.0	>1.0
TRALLWN				
Nil	11.8	58.2	19.1	10.9
One +	12.8	51.1	21.3	14.9
Chi Square Value	0.83	3df	Not Significant	

TREBOETH

Nil	17.9	38.1	28.4	15.7
One +	8.3	50.0	20.8	20.8
Chi Square Value	2.62	3df	Not Significant	

TYCOCH

Nil	15.4	38.2	25.2	21.1
One +	5.9	17.6	58.8	17.6
Chi Square Value	8.58	3df	Significance = 0.0355	

This latter sample area produces no respondents with pre-school children evaluating 'bus facilities' as a determinant of behaviour, compared to 23% of those consumers without children. This relationship is interesting, and can be possibly explained in two ways; firstly, in association with social status, and mobility as seen previously, and secondly, with respect to the behavioural difficulties associated with young children on public transport. Further detailed analysis would be needed to clarify these explanations, but is not feasible within the confines of this current discussion.

With respect to motivation component II; 'car facilities', the presence of pre-school children increases the importance attached to this determinant of behaviour. At Trallwn the relationship is the weakest, but very obvious at both Treboeth and Tycoch (Table 5.14B).

Motivational component V relates to the third dimension under the generic term 'access and journey to shop'. The results illustrate a variable relationship with the presence of pre-school dependents (Table 5.14E) and clearly additional dimensions are associated with this component. It is interesting to note the relationship between the motives of respondents with pre-school children in respect of bus and car facilities, and the overt spatial behaviour of this group. Chapter four highlighted the use of free standing outlets by respondents with young children. Clearly an inference can be made between the individual statements loading on component II (ease of car parking and access) and the locational characteristics of such shopping outlets.

The relationship between the group of consumers with pre-school children, and motivation relating to 'shopping centre characteristics' (Table 5.14C) is not especially apparent. The majority of respondents with young children at Trallwn and Tycoch do not rate this motive important. At Treboeth the distinction is similar for both groups. There is no significant evidence to support the influence of this variable on such motives. Motivational component IV; 'product characteristics', does show (Table 5.14D) certain distinctive patterns supporting the influence of pre-school children on consumer motivation.

At all three sites more respondents with pre-school dependents view such a dimension as important compared to respondents without children. At Trallwn 15% of respondents with pre-school children hold component IV as important (compared to 8% for households with no child less than 5 years of age), at Treboeth this figure increases to 20.8% (compared to the respective 11.9%) and Tycoch 23.5% (compared to 16.3%). Component IV loaded positively on the choice and quality of goods available, and again it is interesting to note the overt behaviour of respondents with young children towards free standing outlets and the choice and quality of goods sold by these stores. The influence of pre-school children on motivations relating to 'familiarity and routine' (Table 5.14F) produces no overall distinct difference between the defined groups. Only at Tycoch is there any difference in the importance attached to this dimension of motivation by the two groups. The influence of pre-school children upon consumer food motivations is varied. With respect to 'accessibility' type motives, a relationship is apparent and can be seen in the overt behaviour of the particular consumer sub-group. Similarly, in terms of product characteristics, a comparable relationship exists. Over and above these motives, the influence of pre-school children is not clear.

This section has briefly identified the possible influence that selected groupings of consumers have on different motivations. The research aim for disaggregation has been accomplished, although the results were not totally conclusive. The greatest degree of explanation can be seen in the relationship between the motivations relating to accessibility, and the consumer sub-groups that are defined in terms of social status and mobility. A weaker relationship was also illustrated with respect to grouping consumers with pre-school dependents. The dimensions of consumer motivations outlined are related to aspects other than socio-economic and demographic characteristics of the shopper household. This is particularly evident with regard to non accessibility type dimensions. Furthermore, it highlights the need to account for such perceptual elements in the study of shopping behaviour. Whereas a relatively close consistency was identified between overt behaviour and consumer characteristics, the relationship between these sub-groups and the determinants of behaviour is weaker. The structure of motivational

determinants are related to alternative dimensions. A level of inference has been suggested between motivation and overt behaviour. The question of the cause and effect of this relationship is still far from resolved. The consistency of the limited information presented is encouraging and will be explained in further detail.

5. The Relationship Between Overt Spatial Behaviour and Consumer Motivation

An extension of the categorisation of the individual motivational scores, is to cross-tabulate the results with the patterns of overt spatial grocery behaviour discussed in chapter four. This will enable a comment on the relationship between consumer motivation and overt spatial behaviour to be made. Furthermore, in recognition of the preceding discussion on the influence of consumer sub-groups, inferences will be possible between motivation, behaviour, socio-economic and demographic variables and the spatial location of shopping centres. Tables 5.15 to 5.20 illustrate the proportionate response by each category for the three sample survey areas. The categories of nearest and other small town shopping centres presented in chapter four have been amalgamated to facilitate the discussion. The information is presented for each motive respectively, commencing with the three accessibility dimensions of consumer motivation. As previously, a high negative score is the equivalent of an important rating of the motive.

The relationship between consumer motives relating to 'bus facilities' can be seen in Table 5.15. At Trallwn, respondents identifying motivational component I as an important determinant of choice are increasingly likely to visit the small town centres or the sub regional city centre. Both these types of centres are on direct bus routes to the survey site. Respondents motivated by the available 'bus facilities' do not visit the free standing outlets, a centre which does in fact account for nearly 19% of those respondents who do not consider 'bus facilities' important. This association is illustrated further at the Treboeth site, where respondents who identified 'bus facilities' as a motive are increasingly likely to visit the city centre. Consumers not identifying with this motive are more likely to shop in the small town centres. Again, the focus of public transport facilities towards the

Table 5.15: The Relationship Between Motive I: 'Bus Facilities' and Centre Choice (% Respondents)

	SCC	STC	N Nbh/LC	DC	FSO	OTHER	NO OF CASES
TRALLWN							
>-1.0	30.8	61.5	5.1	2.6	-	-	39
-0.9:0	16.4	63.6	9.1	1.8	3.6	5.5	55
+0.1:1.0	21.3	55.3	8.5	4.3	6.4	4.3	47
>1.0	18.8	43.8	12.5	6.3	18.8	-	16
(ALL TRALLWN)	21.7	58.6	8.3	3.2	5.1	3.2	(157)
TREBOETH							
>-1.0	25.0	33.3	33.3	-	8.3	-	24
-0.9:0	10.3	37.9	34.5	-	13.8	3.4	29
+0.1:1.0	13.6	36.4	25.8	-	19.7	4.5	66
>1.0	7.7	48.7	33.3	2.6	7.7	-	39
(ALL TREBOETH)	13.3	39.2	30.4	0.6	13.9	2.5	(158)
TYCOCH							
>-1.0	42.9	-	39.3	7.1	10.7	-	28
-0.9:0	38.1	4.8	23.8	11.9	21.4	-	42
+0.1: 1.0	45.2	-	31.0	7.1	16.7	-	42
>1.0	21.4	-	39.3	10.7	21.4	7.1	28
(ALL TYCOCH)	37.9	1.4	32.1	9.3	17.9	1.4	(140)

city centre would appear relevant in this case. At Tycoch, respondents identifying the 'bus' motive, are increasingly likely to visit the city centre at the expense of journeying to free standing outlets. This latter centre, together with the nearest centre and a variety of 'other' locations, are the destinations for respondents not identifying the motivational dimension of 'bus facilities'. Given the previous relationship between social status and mobility, it is possible to infer the simultaneous differences that these variables would produce. The unfortunate restrictions on sample size preclude any detailed analysis at this stage.

Consumers who are motivated by 'bus facilities' increasingly visit the city centre for grocery purchases. The association with public transport routes is illustrated by this component and also by the proportion of Trallwn respondents travelling to a small town centre. The centre in question is on a direct bus route to the survey site. Consequently, the geography of the available opportunity set is again seen to be influencing behaviour. The results enhance the previous findings on spatial choice behaviour but do not indicate the direction of the relationship between motivation and behaviour.

Consumer motivational component II; 'car facilities', is related to the spatial behaviour for grocery purchases in Table 5.16. At Trallwn respondents viewing motivation II as important make more visits to the small town centres and free standing outlets, and fewer to the sub regional city centre. Trallwn respondents motivated by 'car facilities' do not make visits to the nearest neighbourhood or local shopping centres. Respondents who consider this factor as "not important" are likely to visit the sub regional city centre. The association can be seen further at Treboeth. Respondents who identified motive II as an important reason for centre choice make slightly more visits to the sub regional city centre (16.7%) and many more (over 33%) visits to a free standing superstore. At Tycoch a similar result is apparent, with an increase in the proportion of visits to a free standing outlet (36.4% in total) at the expense of city centre trips and visits to the nearest centre, by respondents identifying 'car facilities' as a motive for overt behaviour.

Table 5.16: The Relationship Between Motive II: 'Car Facilities' and Centre Choice (% Respondents)

	SCC	STC	N Nbh/LC	DC	FSO	OTHER	NO.OF CASES
TRALLWN							
> -1.0	15.8	68.4	-	-	10.5	5.3	19
-0.9:0	14.1	66.7	7.7	1.3	6.4	3.8	78
+0.1:1.0	28.2	48.7	10.3	7.7	2.6	2.6	39
> 1.0	42.9	38.1	14.3	4.8	-	-	21
TREBOETH							
> -1.0	16.7	30.0	13.3	-	33.3	6.7	30
-0.9:0	7.0	61.4	10.5	1.8	17.5	1.8	57
+0.1:1.0	18.5	25.9	48.1	-	3.7	3.7	27
> 1.0	15.9	25.0	56.8	-	2.3	-	44
TYCOCH							
> -1.0	31.8	-	22.7	9.1	36.4	-	22
-0.9:0	35.1	-	24.6	10.5	26.3	3.5	57
+0.1:1.0	50.0	8.3	33.3	-	8.3	-	24
> 1.0	37.8	-	48.6	13.5	-	-	37

These results corroborate previous findings. Respondents who regard 'car facilities' as a motivation for behaviour are increasingly likely to travel further to a free standing outlet at the expense of nearest centre trips, and with a single exception, city centre trips. Outside of the free standing outlets, which primarily function for car borne shopping, there is a differential relationship between type of centre visited and motivation on this dimension. These differences can be related to the spatial location of the available opportunity set and are clearly seen in the transfer of allegiance between centres by respondents at Treboeth and Trallwn.

The previous inferences between overt spatial behaviour and social status and mobility, with respect to the use of free standing outlets, are supported by the evidence presented here. Shoppers would appear to visit these centres because of the considerations of car access and parking facilities. Still, however, the direction of this motivation and behaviour relationship is unclear. Do consumers visit free standing outlets because of the reasons related to 'car facilities', or is their opinion, with regard to such dimensions, a function of their overt behaviour? Hopefully the remaining discussion will illustrate a further congruence of motivation and behaviour and enable an additional comment.

The third and final accessibility based motivation is component V; 'distance and walk to shop'. Table 5.17 illustrates the relationship between this dimension and overt spatial grocery behaviour. Respondents at Trallwn, who consider motive V a determinant of behaviour, increasingly visit the small town centres and, to a lesser extent, the nearest centre, than other respondents. Consumers who do not rate such a dimension important journey to the city centre (47.2%), free standing outlets and small town centre. Respondents who consider distance related components an important motive are less likely to travel longer distances to centres like the city centre. At Treboeth, respondents who rate distance as a motive are increasingly likely to favour the nearest neighbourhood/local centre in place of trips to alternative locations: 76.3% of respondents motivated by this component visit the nearest centre, compared to the site average of 30.4% and 3.6% for the contrasting group of shoppers. Respondents who do not evaluate this

Table 5.17: The Relationship Between Motive V: 'Distance' and Centre Choice (% Respondents)

	N						NO.OF CASES
	SCC	STC	Nbh/LC	DC	FSO	OTHER	
TRALLWN							
>-1.0	5.6	77.8	16.7	-	-	-	18
-0.9:0	9.3	64.8	16.7	3.7	1.9	3.7	54
+0.1:1.0	22.4	63.3	2.0	4.1	6.1	2.0	49
>1.0	47.2	33.3	-	2.8	11.1	5.6	36
TREBOETH							
>-1.0	-	18.4	76.3	-	5.3	-	38
-0.9:0	6.8	52.3	29.5	-	9.1	2.3	44
+0.1:1.0	18.8	43.8	10.4	-	25.0	2.1	48
>1.0	32.1	39.3	3.6	3.6	14.3	7.1	28
TYCOCH							
>-1.0	3.7	7.4	77.8	7.4	3.7	-	27
-0.9:0	25.0	-	36.5	9.6	25.0	3.8	52
+0.1:1.0	52.8	-	11.1	13.9	22.2	-	36
>1.0	80.0	-	4.0	4.0	12.0	-	25

component as important are likely to make more visits to the city centre. Of the Tycoch group, respondents who identified component V as a motive make more visits to the nearest centre and less visits to both the city centre and free standing outlets. Nearly 78% visit the nearest centre, compared to a site average of 32% and 4% for those respondents with an opposite view. This group, who did not rate distance important, predominantly visit the sub regional city centre.

Further evidence is provided of the consistency between accessibility related motivations and the patterns of spatial behaviour of respondents from the three survey areas. The relationship appears to be consistent within the geographical framework of the research. The spatial location of shopping opportunities can be identified within the results presented.

Motivation III relates to the 'characteristics of the shopping centre' in terms of hierarchical status (hence, the available floorspace) and availability of a certain type of retail outlet, notably a supermarket. Table 5.18 illustrates the relationship between this component and overt spatial behaviour. At Trallwn respondents rating centre characteristics important journey to different centres than their respective counterparts. They are more likely to visit the city centre (44%) and interestingly, the nearest neighbourhood/local centre (20%). The city centre destination can clearly be viewed objectively within the inherent measures of the component, the nearest neighbourhood/local centre however, is simply a single parade of a very limited range of shops (see chapter two). Presumably, respondents perceive this nearest centre to the same levels and characteristics of other centres. Trallwn consumers who do not rate centre characteristics important predominantly visit the small town centres (78.8%). Of the Treboeth sample the identification of component III as of great importance, results in more shoppers visiting the free standing outlets and sub regional city centre with the reduction in the use of the small town centres. Contrasting this, of those respondents who do not recognise component III at all important, 36.7% visit the small town centre, 43.3% the nearest neighbourhood or local centre and only 3.3% the city centre. At Treboeth, it does appear that consideration of centre characteristics as important increases the likelihood of using the sub regional city centre or free standing superstore outlets.

Table 5.18: The Relationship Between Motive III: 'Centre Characteristics/Shop Availability' and Centre Choice
(% Respondents)

	N						NO.OF CASES
	SCC	STC	Nbh/LC	DC	FSO	OTHER	
TRALLWN							
> -1.0	44.0	32.0	20.0	-	4.0	-	25
-0.9:0	23.2	57.1	10.7	3.6	-	5.4	56
+0.1:1.0	14.0	60.5	4.7	4.7	11.6	4.7	43
> 1.0	12.1	78.8	-	3.0	6.1	-	33
TREBOETH							
> -1.0	21.7	30.4	30.4	-	17.4	-	23
-0.9:0	19.4	40.3	25.8	-	12.9	1.6	62
+0.1:1.0	7.0	44.2	27.9	2.3	14.0	4.7	43
> 1.0	3.3	36.7	43.3	-	13.3	3.3	30
TYCOCH							
> -1.0	28.6	-	38.1	9.5	23.8	-	21
-0.9:0	36.8	3.5	38.6	7.0	10.5	3.5	57
+0.1:1.0	45.7	-	21.7	8.7	23.9	-	46
> 1.0	31.3	-	31.3	18.8	18.8	-	16

The findings at Tycoch are less definite. Of those respondents identifying motive III as important, 38.1% visit the nearest neighbourhood or local centre, 28.6% the sub regional city centre and 23.8% the free standing outlets. The respective figures for the group considering component III as unimportant are 31.3%, 31.3% and 18.8%. The difference in the patterns of overt grocery behaviour between those respondents motivated by centre characteristics and those not, at Tycoch is minimal. This is the first example of where the contrasting motivational dimension is not related to differing spatial behaviour. It would appear that other aspects are influential at Tycoch. Nevertheless, the results of the other two survey areas are indicative of a further consistency in the motivation/behaviour relationship. Respondents who cited centre characteristics as a reason for centre choice are more likely to travel to a centre of larger hierarchical status, in particular the city centre. An interesting exception to this, is

the proportion of Trallwn shoppers who presumably perceive their nearest centre in equivalent terms.

The relationship between 'product characteristics' (motivation IV) and overt spatial grocery behaviour is illustrated in Table 5.19. At Trallwn, the consideration of such a motivation as important results in fewer visits to the small town centres (44%), slightly less visits to the city centre (19%) but a considerable increase in the patronage of free standing outlets (19%). Those Trallwn respondents not motivated by this dimension visit the nearest centre (13.3%), district centres (10%) as well as the small town and city centres. The increased tendency to visit small centres (local and district in status), by respondents who do not rate product characteristics highly, is an interesting association, although it accounts for only 23% of all behaviour by that group. At Treboeth, respondents who considered 'product characteristics' important were increasingly likely to visit a free standing outlet (24%) and small town centre (38%). Those shoppers with the opposite view, predominantly visit the nearest centre (50%), small town centre (25%) and city centre (14%). It would appear from these results that there is an association between motivation, relating to product and centre choice, and spatial behaviour. The Tycoch respondents who rated component IV as important are less likely to visit the nearest neighbourhood/local centre (42% compared to 56% for the contrasting group of respondents) and city centre (17% and 44.4% respectively), but increasingly likely to visit the free standing outlets (29.2% and zero). Again a degree of inconsistency is apparent, in that respondents motivated by product are more likely to visit a free standing outlet but not the city centre. Similar opportunities are available from these two centres and it would appear that either perceptions of the two centres are quite different or that alternative circumstances modify the results.

The association between product motives and spatial behaviour is varied for the respondent groups. Nevertheless, throughout the results the tendency is for respondents who do not rate product characteristics as important to increasingly orientate their shopping trips to the nearest centre or other 'smaller' centre.

The relationship between behaviour and consumer motive VI; 'routine and familiarity' can be seen in Table 5.20.

Table 5.19: The Relationship Between Motive IV: 'Product Characteristics' and Centre Choice (% Respondents)

	N						NO OF CASES
	SCC	STC	Nbh/LC	DC	FSO	OTHER	
TRALLWN							
>-1.0	18.8	43.8	6.3	6.3	18.8	6.3	16
-0.9:0	17.2	68.8	4.7	1.6	4.7	3.1	64
+0.1:1.0	29.8	57.4	10.6	-	-	2.1	47
>1.0	20.0	46.7	13.3	10.0	6.7	3.3	30
TREBOETH							
>-1.0	9.5	38.1	28.6	-	23.8	-	21
-0.9:0	10.4	44.8	22.4	1.5	14.9	6.0	67
+0.1:1.0	19.0	40.5	31.0	-	9.5	-	42
>1.0	14.3	25.0	50.0	-	10.7	-	28
TYCOCH							
>-1.0	16.7	-	41.7	12.5	29.2	-	24
-0.9:0	35.5	3.2	35.5	11.3	11.3	3.2	62
+0.1:1.0	51.1	-	17.8	6.7	24.4	-	45
>1.0	44.4	-	55.6	-	-	-	9

At Trallwn, the two groups who contrast in the degree of importance assigned to motive VI differ in their use of small town centres (79% of important; 47.4% unimportant), nearest neighbourhood or local centre (0 and 10.5%) and free standing outlets (0 and 10.5%). Trallwn respondents who cite 'routine and familiarity' as a reason for centre choice almost exclusively visit one centre. The inference between routine and familiarity and such behaviour is clear.

At Treboeth, further differences occur between those consumers who considered component VI important and those who did not, albeit differently to that at Trallwn. Of those respondents who recognise the motivational importance of 'routine and familiarity', more journeys are made to the small town centre (46%) and fewer to the nearest centre (27%). The variation at Treboeth is not as pronounced as that at Trallwn but is still tantamount to a traditional pattern of behaviour that the motive infers. At Tycoch, respondents who identified component VI make fewer visits to the city centre, more to the nearest centre and district centres, and fewer to the free standing outlets. This latter observation is interesting, as the consideration of 'routine and familiarity' as a reason for centre choice could deter shoppers from a modified form of search learning when a new, modern type of outlet is opened.

Across all the three survey sites there is a discernible trend for 'routine and familiarity' to be an important motivational dimension, which is related to an increased reliance on a single centre. For example at Trallwn the use of small town centres, at Treboeth the increased use of small town centres and at Tycoch the increased use of the nearest neighbourhood/local centre.

Throughout the discussion the relationship between overt spatial behaviour and consumer motivations appears to be relatively consistent. The accessibility based motives produce a congruence of motivation and behaviour at all sites. Motivation based on 'centre characteristics' produces a similar overall trend at Trallwn and Treboeth, with respondents who cite such a reason for centre choice likely to visit a centre of a greater hierarchical status. The motivational determinant

Table 5.20: The Relationship Between Motive VI: 'Routine and Familiarity' and Centre Choice (% Respondents)

	N						NO OF
	SCC	STC	Nbh/LC	DC	FSO	OTHER	CASES
TRALLWN							
>-1.0	15.8	78.9	-	5.3	-	-	19
-0.9:0	25.0	54.5	10.2	1.1	4.5	4.5	88
+0.1:1.0	19.4	64.5	6.5	3.2	6.5	-	31
>1.0	15.8	47.4	10.5	10.5	10.5	5.3	19
TREBOETH							
>-1.0	7.7	46.2	26.9	-	19.2	-	26
-0.9:0	14.3	34.9	34.9	1.6	11.1	3.2	63
+0.1:1.0	18.6	41.9	23.3	-	11.6	4.7	43
>1.0	7.7	38.5	34.6	-	19.2	-	26
TYCOCH							
>-1.0	35.0	-	45.0	15.0	5.0	-	20
-0.9:0	40.0	-	34.0	12.0	14.0	-	50
+0.1:1.0	34.1	-	29.3	7.3	24.4	4.9	41
>1.0	41.4	6.9	24.1	3.4	24.1	-	29

related to the characteristics of the product produced a varied response but nevertheless, provided evidence of the tendency for shoppers not motivated by such dimensions to visit smaller shopping centres. 'Routine and familiarity' can be seen to be associated with the reliance of a group of shoppers on a single centre.

The information provided has demonstrated a number of factors that corroborate many of the spatial patterns identified in chapter four. An attempt to conclude the relevance of 'trip motivations' to the study of shopping behaviour in Greater Swansea will be made.

6. Conclusion

The analysis of consumer trip motivations for convenience goods produced a variety of interesting results. These were achieved through the use of a number of analytical techniques ranging from simple averages to construct general motivational profiles, through the statistical significance of the detailed proportional breakdown of response to each statement and finally, via the application of the data reduction technique of principal components analysis. This latter analysis permitted the seventeen statements to be reduced to a more manageable form of six components.

The initial simple profiles illustrated the broad differences in the determinants of shopper behaviour between the six consumer groups. The profiles suggest dimensions of the determinants of motivation and the detailed analysis revealed that nine of the statements were of greater importance to the majority of the shoppers. Those motives concerned with the choice, price and quality of individual products were rated as important determinants of behaviour. Similarly, the availability of a supermarket and the reputation of the shops produced a consistently high rating as a reason for spatial choice behaviour by most respondents. Familiarity with a shopping centre and the factors of routine and habit were additionally important determinants of behaviour identified by respondents. Finally, the actual distance between the shops and place of residence produced a response that varied between the social status groups in each sample area. Distance considerations were more important for low status consumers. Easy access to a centre by car was a more

important determinant for the high status group. Although based on a simple indicator (mean score and proportional response), the determinants of spatial decision identified as important, were corroborated by further detailed analysis.

Six principal components were identified from the original seventeen statements. These related to the geographical aspects of public transport or bus facilities, car facilities, a distance consideration, the variety of shops available in a centre, and the characteristics of the products themselves. The final component identified routine or habit as a determinant of decision making. These determinants of behaviour are interesting for they have implications for centre choice. Consumers are making decisions on shopping centre choice by a trade off of centre attractiveness, measured in terms of shop choice and product characteristics, against the disincentive of distance phenomena like ease of bus or car accessibility and distance. These components obviously formed a significant part of the pre-specified list of possible determinants presented to each respondent. Additionally, the consideration of routine or habitual behaviour is interesting. For many respondents it would appear that centre choice is based on a legacy of previous patterns of behaviour rather than a conscious decision.

These determinants of behaviour varied between different groups of consumers. By far the greatest variation is seen in the dimensions relating to geographical aspects. The analysis illustrated that ease of access by different transport modes varied between the social status groups. The differing levels of mobility experienced by the sample groups are closely related to the importance of individual determinants. For immobile respondents, public transport and distance considerations are an important influence on centre choice. The greatest influence of different consumer groups on the six components of motivation, is seen in the relationship between accessibility components and the definition of social status related to differing mobility levels. A weaker relationship between respondents with pre-school dependents and motivation was also presented. Non accessibility based components and individual statements are related to factors other than socio-economic or

demographic characteristics of the respondent household. The factors influencing consumer decision making, therefore, vary between individuals. As previously seen, shoppers are not a uniform and undifferentiated group, they vary according to a variety of indices, but within certain groups hold relatively consistent reasons for centre choice. These results broadly compare with previous studies. The choice of seventeen statements was deliberately based on the results of similar, previous approaches. Non economic factors relating to the composition of shopping centre, are as important as the economic and non economic characteristics of the products. Accessibility considerations were important determinants for many groups, as was the consideration of routine or habit.

The variability in trip motivations for different consumer groups was carried over to the relationship between motivation and overt spatial behaviour. The determinants relating to car and bus facilities produced a close relationship with centre choice. Patterns of behaviour directed towards the free standing outlets produced a clear association with motivation. The locational criteria of these centres, and the emphasis on car borne shopping, is clearly seen in the relationship to respondents motivated by car facilities. The direction of this relationship is however, unclear. Undoubtedly it is interactive. A relationship between motivation and behaviour outside of trips to free standing centres is also apparent. Respondents motivated by bus facilities increasingly visit the city centre, and in the case of Trallwn, the nearest small town centre. The routing of bus facilities is clearly important to this relationship. Similarly, respondents motivated by the component of walking and distance increasingly visit their nearest centre. The congruence of accessibility based motivations and spatial behaviour is clear. Motivations relating to centre characteristics similarly, for two of the three geographically located groups of respondents, produced a consistent relationship, with behaviour towards a larger hierarchical centre (in particular the sub regional city centre). The association between product motives and spatial behaviour was less definite and varied between the respondent groups. Shoppers who cited routine or habit as a determinant of behaviour consistently visit a single type of shopping centre within the confines of the geographical framework of the opportunities available. Trallwn and Treboeth shoppers visit small town

centres and the Tycoch groups the nearest centre, again providing further evidence of the association between motivation and behaviour. The choice of Trallwn and Treboeth shoppers to use small town centres is indicative of a well established pattern of behaviour. This implies that the relationship between motivation and behaviour is generated by behaviour, in that a long established pattern leads to familiarity or habit.

Overall the results are generally consistent; an association between motivation and behaviour has been demonstrated. These factors corroborate many of the spatial patterns of behaviour identified in chapter four. The previous conclusions between the variety of centre choice for convenience goods and different characteristics of shoppers are enhanced by this analysis. Trip motivation takes a variety of forms, some of which have an obvious link to the circumstantial characteristics of individual consumer groups. The determinants of motivation, however, are consistently related to overt spatial behaviour. The previous inferences, centred around the interrelationship between behaviour and socio-economic and demographic characteristics of shoppers, are emphasised further by the motivating determinants outlined. The association between behaviour, motivation and socio-economic/geographical indices is close. Motivation and behaviour is undoubtedly an interactive relationship that varies significantly for different groups of consumers.

The technique of trip motivation presented in this chapter relies on a simple rating scale of seventeen possible reasons for centre choice. This method lies between the empirical and cognitive approaches to the study of urban consumer behaviour. The cognitive approach includes many different techniques. The technique presented in this case is relatively simple and whilst it has demonstrated some consistent findings, it is not as sophisticated a technique as could ideally be expected. The discussion will therefore proceed to chapter six whereby a sophisticated cognitive approach, analysing consumer attitudes is proposed.

CHAPTER 6: CONSUMER ATTITUDES

Introduction

Chapter five has presented an approach which has clearly moved towards the study of the cognitive determinants of overt spatial behaviour. The study of shopper trip motivations represented an initial step whereby the perceptual elements of spatial consumer behaviour could be demonstrated. A further method of identifying these elements is through the increasingly sophisticated approach of attitude research. As Williams (1981, p.145) points out; "it seems logical to assume that an individual's attitudes or predispositions, will have some effect on how he or she subsequently behaves". As such it could be advanced that a consumer's choice would in part be determined by his goals, attitudes and motivations with respect to that phenomena. However, as has been stated in the previous chapter, it is perhaps more pertinent to view the relationship between cognition and overt behaviour as interactive. Potter (1982, p.169) argues that; "it hardly seems necessary to debate whether cognition influences behaviour or vice versa, for there is patently a reciprocal and cumulative link between the two". Nevertheless, Williams (1981) in his study concluded that the activity of convenience goods shopping for example, was sufficiently repetitive and habitual to deny the doubts over the nature of the attitude behaviour consistency. Despite both these, and many other views (see the introduction to chapter five for a brief commentary of the debate found in the social psychology literature), this research initially views the relationship as interactive and will aim to comment further on this aspect.

The study of consumer attitudes presents an attempt to explain the spatial aspects of consumer behaviour from a cognitive behavioural viewpoint. Cognition represents a general state of knowledge and refers to the total of anticipated stimuli. Consequently, information about a shoppers attitude may give some indication of likely behaviour in terms of centre choice and the nature and origin of these shopping trips. This information can be related to the patterns of overt behaviour previously identified, and contribute further to the overall understanding of consumer spatial behaviour. An integrated approach of this type will facilitate the simultaneous analysis of the influence of cognitive and contextual variables on overt behaviour.

Attitudes vary considerably, and a thorough research technique is required to quantify the exact dimension of consumer attitudes. To undertake an examination of 'attitudes' to shop types, locations and economic, geographical and social attributes of shopping, a section was included during the questionnaire interview, the contents of which are fully described in chapter two. The research sought a response to thirty two stimulus-statements on the basis of a five point Likert scale, ranging from strong agreement to strong disagreement. A detailed discussion of the Likert technique and the final battery of statements selected is provided in chapter two. The results from this section were initially examined to determine the 'reliability' of the attitudinal data collected. The first section of this chapter details the methodology and results of the reliability exercise. Subsequently the 'reliable' information was used to construct suitably descriptive attitudinal profiles for each of the sample groups. This exploration of the characteristics of consumer attitudes is based on a continuum of analysis using average, or mean scores and the proportional response to each statement. The average attitudinal profiles were constructed from mean response scores calculated for each of the six survey sites, and are presented as complete profiles across all statements rather than for individual statements. The discussion considers each survey area separately under five headings. These sub headings represent the apriori groupings of statements developed during the design stages and are titled; shop types, city centre shopping, economic attributes, geographical attributes and social attributes to shopping. The average profiles represent a summary of the response for the survey sites and conveniently compress the attitude variation for the initial analysis. It is well known however, that the mean is a descriptive measure that disguises much variation within the distribution. Rather than burden the presentation with an array of standard deviation and median values, the proportional response to each statement is presented. This information also permits the statistical analysis of significance between the contrasting social groups at each survey area. The chi square test of independence is calculated for this purpose. The information presented therefore relies heavily on descriptive statistics. Certain previous studies of consumer attitudes have favoured statistical methods of data reduction, like cluster, factor and principal components analysis or multi-dimensional scaling, to facilitate their presentation (Williams,

1981 and Spencer, 1980). The inherent characteristics of the former two of these techniques involves interpretation and naming of factors/components or clusters and generally a prespecification of the items by the researcher. The result of data reduction is not a definitive list of attitude types but a confirmation that the items pre-selected for the analysis were statistically valid.

Therefore, when Williams (1981) notes the parallel between his concluding four types of attitudes (economics, convenience, localised or personal and social) and the work of Stone (1954), he is only confirming the four basic (or apriori) groups of statements initially selected for his analysis. Had a similar technique been presented in this discussion the expected results would be in line with three or four of the apriori group headings presented. This research is justified in avoiding the presentation of multivariate analysis techniques on this basis and on the initial results identified. An exploratory principal components analysis of the 26 statements was in fact performed, as a possible method of data reduction to facilitate the analysis of attitude and behaviour. The results are presented in appendix 8.

The presentation includes the influence of social and spatial differences in consumer attitudes. Before summarising the characteristics of attitudes, the discussion will explore further any differences in attitude between selected consumer groups. The characteristics of consumers identified in previous chapters will be examined; sample social class, personal mobility and the demographic based variable of pre-school children.

Having identified the characteristics of attitudes, the chapter will proceed to directly relate these traits to the patterns of overt spatial behavior identified in chapter four. Consideration will be given to the previously identified association between motivation and behaviour (chapter five) within this discussion. The conclusion to chapter six will attempt to evaluate the contribution of this approach to consumer attitudes. No attempt will be made to comprehensively comment on the contribution of the two cognitive approaches presented in chapter five and six. This will be considered in the overall conclusion to the research.

1. The Reliability of the Attitude Scale

The standard research design in assembling a Likert scale is to compile a large item pool (a series of attitude statements) and administer this to a sample of people similar to those whose attitudes are to be measured. In the design stage of this research a relatively small pilot exercise was carried out and the item pool subjected to a brief analysis. The restrictions of personal time and resource on the size of the pilot exercise did not enable a detailed item analysis to occur. As Nunally (1978) points out, unless there are at least five times as many persons as items, the results may be highly misleading. It was impossible to pilot in excess of 180 households and hence, the research is justified in omitting this analysis of the pilot sample.

As a check on the information collected and the proposed Likert scale, a reliability analysis was attempted on the total scale data collected. The purpose of this exercise was to check on the scoring of the statements and to test the reliability of the information collected. The principle of item analysis (and hence, reliability) involves the elimination of poor items (statements) from the scale by examining the consistency of the response. In the original selection procedure developed by Likert, the correlations between item ratings and the overall score were examined. Items that did not correlate closely with the overall score were omitted. The need to measure reliability is based on an inherent characteristic of social attitude data, that correlations between statements tend to be low. Since it is not always clear as to whether the low correlation is a result of measurement error or whether it reflects a weak relationship, it is important to measure the reliability of the proposed scale. Reliability tests are usually based on the internal consistency of the information. On an item scale the overall score on half the items can be correlated with the overall score on the other half. This exercise is carried out repeatedly, dividing the items into different groups. The average of the correlation coefficients is known as the alpha coefficient. As Mckennel (1977) illustrates, coefficient alpha can be easily estimated from a formula based on knowledge of the number of items and the average inter correlations between them. Coefficient alpha enables an upper limit to be set for the reliability of the test constructed. If the coefficient is too low then

either the test is too short or the items have very little in common. Clearly, the importance of this value to the current study cannot be under-estimated. The research aimed to improve the levels of understanding of urban consumer behaviour. The association between spatial shopping behaviour and a dimension of cognition is crucial to this aim. The need therefore, to examine cognitive behaviour demands a data base of quality and reliability.

Nunally (1978) refers to an example of a coefficient alpha of 0.30 for a 40 item test as the critical value for the researcher to consider the problem. The test has a wide range of considerations and no references will be made to these in this discussion. The extensive literature on the subject should be referred to as required, and Nunally (op.cit) in particular provides much detail and justifies the use of the technique in stating (ibid p.230); "coefficient alpha provides a good estimate of reliability in most situations". The check on the scoring of the statements is provided within the calculation of coefficient alpha by correlating the score on each item with the total score. If a correlation coefficient for an individual statement is negative then the coding is wrong and should be reversed, i.e. the individual statement is inversely related to the overall scale. Similarly if the correlation coefficient for an individual statement is near zero then the statement fails to contribute to the overall attitude scale and can be excluded.

This research applied the RELIABILITY sub routine program of S.P.S.S.₁ Version 8, to 32 attitudinal statements for 455 respondents from the sample survey. Seven combinations were subjected to the analysis, resulting in the deletion of a number of statements to produce a 26 reliable item solution. (The final list of statements is produced in Table 6.1). Table 6.2 provides a summary of the statistics for the scale.

•

The exercise proved successful, producing a reliability coefficient alpha of 0.53876 for a 26 item scale. As such the data discussed in the forthcoming analysis has a determinable scale. The conclusions drawn are made with regard to definite parameters and as such a rigid adherence to the principle of ^{a strict} social science research design.

Footnote 1: S.P.S.S. "Statistical Package for the Social Sciences".

Table 6.1:

LIST OF ATTITUDE STATEMENTS
26 RELIABLE STATEMENTS (numbered as they appear
in the discussion and analysis

Shop Types

1. I think that the small, specialist food shop (like a butcher, greengrocer etc.) still offers a lot to the careful shopper.

City Centre Shopping

2. I like to buy my food shopping from the city centre.
3. I think that Swansea City Centre provides quite a well balanced choice of shops: something for everyone.
4. I often like to have a day out in the city centre just looking, not specifically to buy anything.
5. I usually like to go shopping in the city centre on my own.
6. I look on city centre shopping trips more as a social outing.
7. I like to go into the city centre just to shop in the market for fresh produce.

Economic Attributes

8. I rarely like to compare prices between a number of shops before buying food.
9. I like to look for special offers and bargains when buying food.
10. I like to buy the best quality of food goods, irrespective of the price.
11. I always like to look for nice fresh items of perishable type foods.
12. I always like to buy the cheapest make of food goods I want.
13. I think that getting value for money is the most important thing about food shopping

Geographical Attributes

14. I would not like to shop for food at the nearest shop to my home.
15. I am willing to travel as far as is necessary to get to a better shopping area, where I can get all the food that I need.
16. I think what the shops are like is more important than how far they are away from my home.
17. I think that my local/nearest shops are as good as could possibly be expected.
18. I think that I would be willing to travel further to a shopping area by car, if a large convenient car park was available.
19. I like to use my local/nearest shops for the occasional "odds and ends" when and if I need them.

Social Attributes

20. I think that food shopping is generally an enjoyable activity.
21. I do not find food shopping is particularly tiring.
22. Food shopping is very much a chore as far as I am concerned.
23. I just like to go shopping, anywhere, to make a break from the housework.
24. When I get home after shopping for food, I feel a sense of relief.
25. I think that I prefer to do my bulk food shopping alone.
26. I like to make a shopping list for food, planning what I am going to buy and where I am going to buy it from.

Table 6.2: Summary of Reliability Statistics

Scale Statistics	Mean	Variance	Standard Deviation	Number of Variables	
	80.79	78.89	8.88	26	
Scale Statistics	Mean	Min	Max	Range	Variance
Item means	3.11	1.90	4.37	2.47	0.39
Item variances	1.46	0.32	2.3	2.0	0.28
Inter item correlation	0.04	-0.20	0.63	0.82	0.14

Coefficient alpha = 0.53879

Standardised Item alpha = 0.51922

2. The Characteristics of Consumer Attitudes

The characteristics of consumer attitudes will be presented in six sections. The initial five sub headings will refer to the groupings of individual attitude statements, and the final section will summarise and reappraise the influence of consumer sub-groups on attitude. The twenty six statements which formed the 'reliable' attitude scale have been presented in Table 6.1

(i) Consumer Attitudes to Shop Types

The questionnaire study

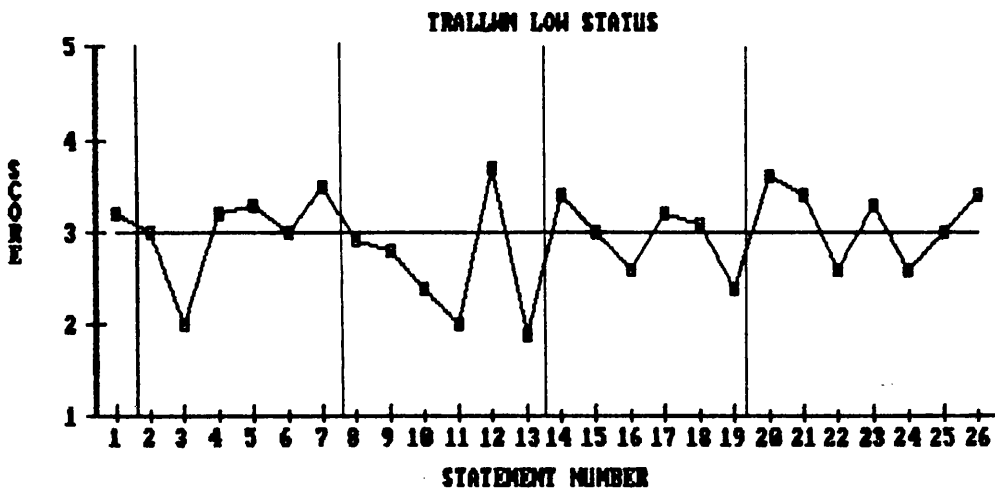
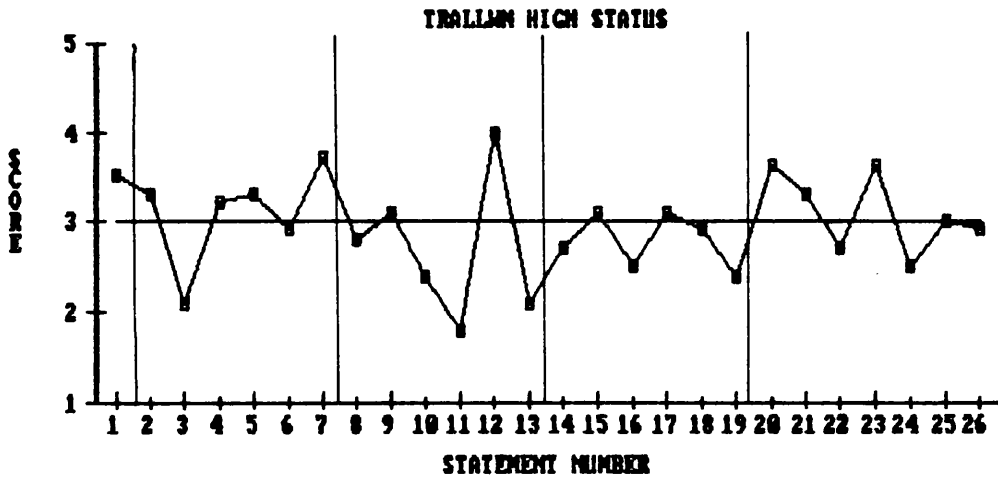
of Consumer attitudes to different shop types aims to elicit the respondents opinion to two types of retail outlet; notably the small shop as opposed to a larger supermarket. The reliability exercise removed three of the original stimulus statements from this group of items, which in itself is an indication that the response was inconsistent with other attitude statements within the total scale. The information presented is therefore limited, nevertheless a single statement remained which measures response to the attraction of small shops. The mean attitude response (Table 6.3; Figures 6.1A-C) illustrates a certain variation between the social groups at Trallwn and Tycoch but none at Treboeth. Overall, respondents tended to disagree with the statement but, as the significance value in Table 6.5 illustrates, their opinion differed between the three survey areas. The detailed proportional breakdown (Table 6.4) indicates the trend for the low status respondents to agree with the statements more than the high status. This simple fact is broadly in line with the behavioural trait for the low status to increasingly favour small, near centres.

Table 6.3: Mean Attitudinal Response to the Stimulus Statements (All Respondents)

Group	Statement Number	6.3C ECONOMIC ATTRIBUTES												
		6.3A SHOP TYPES	6.3B CITY CENTRE SHOPPING						6.3C ECONOMIC ATTRIBUTES					
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Trallwn High Status	3.5	3.3	2.1	3.2	3.3	2.9	3.7	2.8	3.1	2.4	1.8	4.0	2.1	
Trallwn Low Status	3.2	3.0	2.0	3.2	3.3	3.0	3.5	2.9	2.8	2.4	2.0	3.7	1.9	
Treboeth High Status	3.5	2.9	1.9	3.4	3.1	3.4	3.9	2.8	3.3	2.1	1.4	4.4	2.0	
Treboeth Low Status	3.5	3.5	2.0	3.6	3.3	2.9	3.7	3.1	2.3	2.5	1.7	4.0	1.6	
Tycoch High Status	3.8	3.0	2.0	3.6	2.8	3.6	3.7	2.9	3.1	2.1	1.6	4.0	1.9	
Tycoch Low Status	3.3	2.6	1.6	3.4	2.9	3.2	3.2	3.1	2.7	1.9	1.4	4.3	1.9	

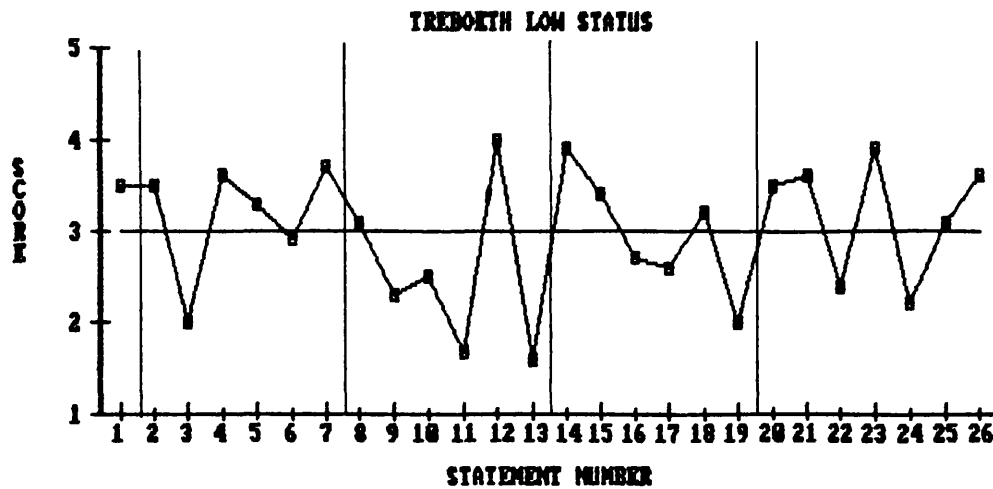
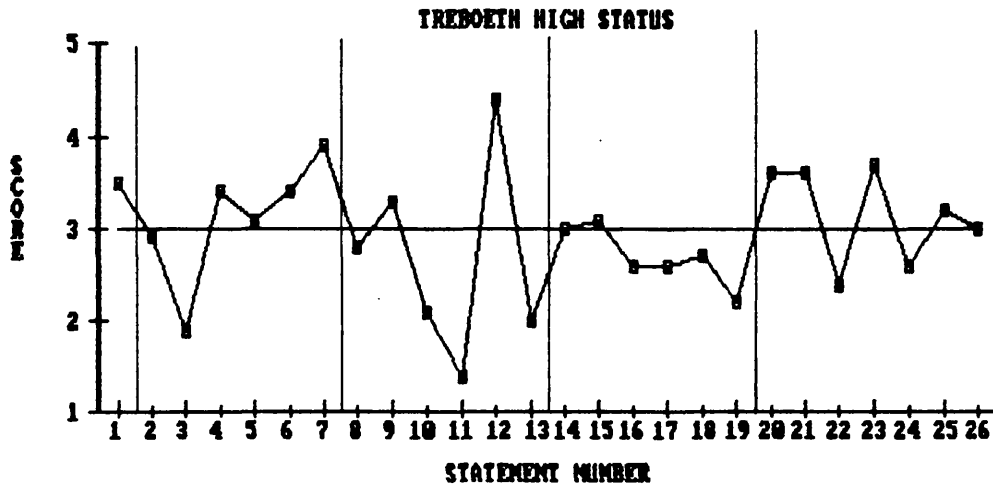
N.B A LOW SCORE INDICATES A FAVOURABLE RESPONSE ON EVERY STATEMENT

Figure 6.1A: Attitude Profiles-Mean Score: Trallwn



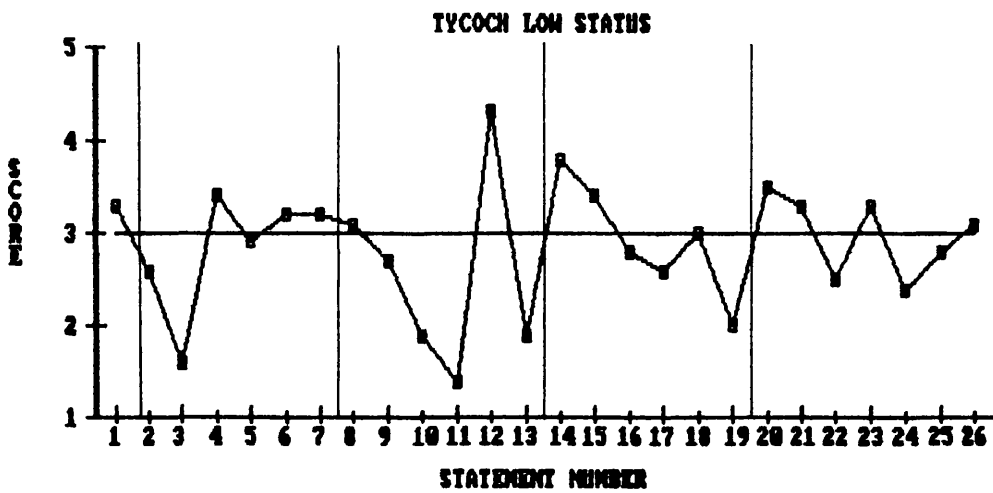
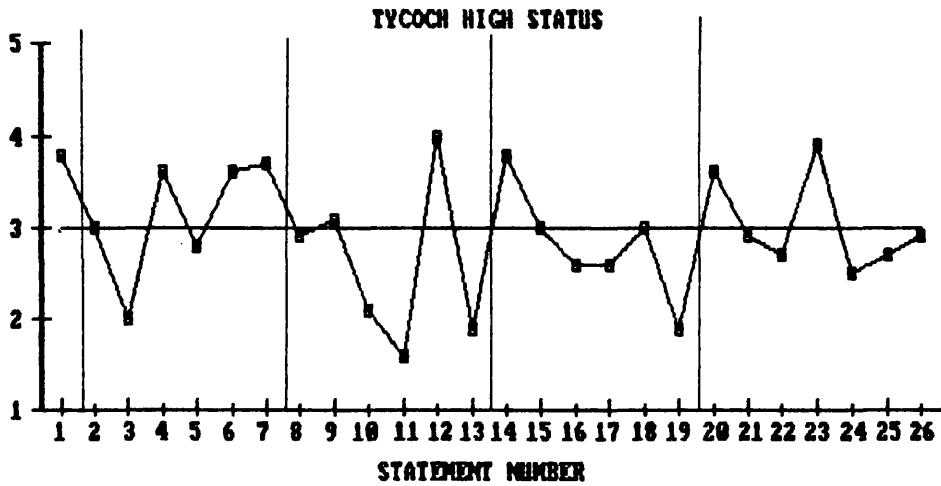
A LOW SCORE EQUALS A FAVOURABLE RESPONSE

Figure 6.1B: Attitude Profiles—Mean Score: Treboeth



A LOW SCORE EQUALS A FAVOURABLE RESPONSE

Figure 6.1C: Attitude Profiles-Mean Score: Tycoch



A LOW SCORE EQUALS A FAVOURABLE RESPONSE

Table 6.4: Proportional Response to the Attitude Stimulus Statements

Group	Statement Number	6.4C ECONOMIC ATTRIBUTES												
		6.4A SHOP TYPES	6.4B CITY CENTRE SHOPPING						6.4C ECONOMIC ATTRIBUTES					
		1	2	3	4	5	6	7	8	9	10	11	12	13
TRALLWN HIGH STATUS	Strongly Agree	3.9	10.4	15.6	7.8	6.5	3.9	5.2	27.3	5.2	15.6	31.2	1.3	19.5
	Agree	13.0	26.0	71.4	33.8	33.8	49.4	18.2	23.4	40.3	49.4	63.6	7.8	62.3
	Don't Know	19.5	14.3	2.6	10.4	6.5	7.8	6.5	3.9	3.9	14.3	1.3	6.5	9.1
	Disagree	53.2	23.4	9.1	24.7	32.5	26.0	45.5	31.2	39.0	18.2	3.9	61.0	6.5
	Strongly Disagree	10.4	26.0	1.3	23.4	20.8	13.0	24.7	14.3	11.7	2.6	-	23.4	2.6
TRALLWN LOW STATUS	Strongly Agree	5.0	7.5	11.2	7.5	2.5	8.7	3.7	18.8	7.5	15.0	17.5	2.5	27.5
	Agree	22.5	41.2	81.3	36.2	38.7	42.5	30.0	33.7	46.2	51.2	72.5	18.8	63.7
	Don't Know	21.2	12.5	5.0	6.3	10.0	6.3	6.3	3.7	8.7	12.5	7.5	8.7	3.7
	Disagree	50.0	22.5	-	28.7	22.5	26.2	36.2	28.7	30.0	17.5	2.5	50.0	5.0
	Strongly Disagree	1.2	16.2	2.5	21.2	26.2	16.2	23.7	15.0	7.5	3.7	-	20.0	-
TREBOETH HIGH STATUS	Strongly Agree	2.5	7.6	22.8	8.9	10.1	7.6	5.1	34.2	11.4	35.4	65.8	-	29.1
	Agree	21.5	38.0	69.6	26.6	35.4	32.9	16.5	17.7	26.6	39.2	31.6	1.3	54.4
	Don't Know	19.0	20.3	1.3	11.4	10.1	3.8	3.8	3.8	5.1	7.6	1.3	5.1	5.1
	Disagree	35.4	20.3	6.3	22.8	21.5	25.3	35.4	22.8	32.9	16.5	1.3	41.8	10.1
	Strongly Disagree	21.5	13.9	-	30.4	22.8	30.4	39.2	21.5	24.1	1.3	-	51.9	1.3
TREBOETH LOW STATUS	Strongly Agree	-	6.3	21.5	10.1	10.1	20.3	5.1	24.1	30.4	19.0	32.9	3.8	54.4
	Agree	21.5	22.8	67.1	22.8	31.6	36.7	21.5	24.1	39.2	44.3	64.6	7.6	38.0
	Don't Know	15.2	17.7	6.3	5.1	8.9	1.3	3.8	1.3	7.6	11.4	1.3	2.5	2.5
	Disagree	50.6	16.5	3.8	16.5	16.5	13.9	32.9	17.7	17.7	19.0	1.3	53.2	3.8
	Strongly Disagree	12.7	36.7	1.3	45.6	32.9	27.8	36.7	32.9	5.1	6.3	-	32.9	1.3
TYCOCH HIGH STATUS	Strongly Agree	2.9	2.9	17.1	5.7	10.0	5.7	4.3	14.3	7.1	28.6	42.9	-	31.4
	Agree	17.1	45.7	74.3	22.9	41.4	17.1	20.0	40.0	41.4	48.6	57.1	17.1	58.6
	Don't Know	4.3	15.7	-	4.3	12.9	7.1	2.9	4.3	2.9	4.3	-	2.9	-
	Disagree	51.4	24.3	8.6	40.0	25.7	47.1	42.9	25.7	31.4	18.6	-	47.1	10.0
	Strongly Disagree	24.3	11.4	-	27.1	10.0	22.9	30.0	15.7	17.1	-	-	32.9	-
TYCOCH LOW STATUS	Strongly Agree	7.1	12.9	38.6	8.6	10.0	12.9	12.9	18.6	30.0	44.3	64.3	2.9	41.4
	Agree	27.1	52.9	58.6	34.3	45.7	35.7	34.3	34.3	27.1	34.3	32.9	-	38.6
	Don't Know	7.1	10.0	2.9	1.4	7.1	2.9	1.4	-	1.4	7.1	2.9	4.3	7.1
	Disagree	42.9	11.4	-	18.6	14.3	15.7	20.0	17.1	30.0	14.3	-	48.6	10.0
	Strongly Disagree	15.7	12.9	-	37.1	22.9	32.9	31.4	30.0	11.4	-	-	44.3	2.9

Table 6.5: Chi Square Values of Differences Within and Between the Sites Response to the Stimulus Statements

Group	6.5A SHOP TYPES			6.5B CITY CENTRE SHOPPING			6.5C ECONOMIC ATTRIBUTES						
	1	2	3	4	5	6	7	8	9	10	11	12	13
Statement Number	1	2	3	4	5	6	7	8	9	10	11	12	13
TRALLWN													
H.S./L.S.	I	4.95	I	1.21	4.18	2.72	I	2.81	3.74	0.3	I	5.15	I
TREBOETH													
H.S./L.S.	6.27	11.63	I	5.43	2.22	8.41	I	5.53	22.52	7.58	I	I	I
TYCOCH		*						***					
H.S./L.S.	I	9.00	I	9.58	7.10	20.03	11.81	8.02	13.09	5.0	9.60	I	I
TRALLWN/				*		***	*	*			*		
TREBOETH/	29.59	18.57	13.97	17.23	13.56	28.23	14.65	22.42	22.67	24.27	36.42	22.88	16.53
TYCOCH	***	*		*		***	*	**	**	**	***	**	*
8 degrees of freedom	26.12	20.09	18.17	15.51	13.36	0.001	0.01	0.02	0.05	0.10	18.46	13.28	11.67
Significance	0.001	0.01	0.02	0.05	0.10	4 degrees of freedom	0.001	0.01	0.02	0.05	0.01	0.02	0.05
Significance	***	**		*		Significance	0.001	0.01	0.02	0.05	***	**	**
						I:	18.46	13.28	11.67	9.49	***	**	**
						Invalid ² test				*	Greater than 20%		
						of cells with					of cells with		
						E.F	7.78				E.F	5	

(ii) Consumer Attitudes to City Centre Shopping

In a previous study of shopping behaviour in Swansea, a significant proportion of convenience goods trips were orientated towards the city centre (Thomas, 1974). This behavioural trait is not uncommon in medium sized British cities, particularly with respect to higher order durable behaviour (Davies, 1969). All respondents could be expected to possess high levels of information with respect to shopping opportunities in the CBD. The series of six statements included in the survey, encompass aspects of convenience and durable shopping behaviour plus a statement representative of 'holistic' behaviour. The mean attitude response is presented in Table 6.3 and Figures 6.1A-C. From the previous discussion, it could be expected that Tychoch based respondents, who regularly visit the city centre for grocery shopping, would have a different attitude to the centre.

At Trallwn, attitudes were, on balance, in favour of the city centre as a shopping environment (statement 2) but less favourable to statement 3 with respect to food shopping in the centre. A median score was recorded for this statement by the low status, with the high status tending to disagree with the statement. The remaining items (statements 4, 5 and 6) produced a similar response for both status groups (neutral tending to disagree), although the item measuring consumers opinion to the specific dimension of the fresh food market was more disagreeable for both groups than other statements. Figure 6.1A illustrates graphically the similarities in attitudes to city centre shopping by the high and low status Trallwn shoppers. The detailed proportional response (Table 6.4) does not identify any additional variation, and the chi square test does not produce any statistically significant differences between the designated status groups at Trallwn (Table 6.5b).

The results at Treboeth highlight a number of differences between the two designated social status groups. On statement 2, the high status respondents have a higher opinion of food shopping in the city centre than the low status. The mean scores in Table 6.3 and Figure 6.1B and the detailed proportional response (37% of the Treboeth low status strongly disagreed) in Table 6.4, are supported by a statistically significant difference in attitude (Table 6.5). Overall attitude, by

Treboeth shoppers to the city centre is high (statement 3) and only minor differences are apparent between the status groups with respect to this statement. The direction of statements 4 and 5 was comparable for both groups (Figure 6.1B; Table 6.3) with a marginal tendency for the low status ^{groups} to be more disagreeable. The reverse is true of opinions to the fresh food market (statement 7). Statement 6 concerned the holistic view of city centre trips as a social outing. A difference between the social groups is apparent with a less favourable response from the high status group. This opinion could be based upon attitude to shopping in general or to the city centre. The former of these attitudes will be discussed subsequently. Consumer attitudes to the city centre generally produced a slight variation between the Treboeth high and low status groups. All respondents view the centre favourably as a wider service centre but with respect to food shopping hold quite different opinions. The Treboeth low status shoppers did not extensively travel to the city centre for grocery purchases (chapter four) and the inference could be made, in this initial analysis, of the similarity in attitude and behaviour from this result. Further analysis will hopefully establish this finding.

At the third survey area of Tycoch, consumers attitudes to the city centre appear quite different between the two contrasting social status groups. Both have a high opinion of the overall characteristics of the centre (statement 3, Table 6.3B), but differ with respect to other dimensions. Statement 5 produced a broadly neutral response from both groups but the remaining items are different. Attitudes to food shopping in the city centre and of the fresh food market are quite different (statements 2 and 7). Table 6.3 illustrates the mean scores for these attributes between the sites, with the low status respondent recording a more favourable response (a lower mean score). The detailed proportional response (Table 6.4) supports this finding with appreciably more low status respondents strongly agreeing to the statements. The statistical significance test supports this finding with respect to statement 7. The remaining statements in this group (4 and 6) represent a social dimension to city centre shopping. A different opinion is expressed by the two designated status groups at Tycoch. The high status are less favourable to the ^{statements} and this is supported by the results of the mean response (Table 6.3), the detailed proportional response (Table 6.4) and the statistical test of independence (Table 6.5). Significant differences

in respondents attitudes to these attributes of city centre shopping are found between the social status groups.

Figures 6.1A-C illustrate graphically these characteristics. The underlying trend between the social groups at each survey area is clear. The test of independence between the three survey areas produces significant differences in consumer attitudes on statements 2, 4 and 6. Attitudes to food shopping in the city centre, and the social attributes of these trips are quite different between the geographical locations. The former of these statements is interesting, because it further supports the previously inferred similarity in the relationship between attitude and behaviour. Attitudes to city centre shopping are on the whole less favourable, albeit with noticeable geographical and social status differences. Shoppers generally thought that the city centre provided a good choice of shops; something for everyone, but did not really like to purchase food goods in the city centre. Only at the Tycoch low status and, to a lesser extent, the Treboeth high status sites, did respondents view the city centre favourably with respect to this item. Opinions to the fresh food market were generally less favourable, although the low status groups consistently reported higher opinions of this aspect. Few respondents valued city centre shopping trips as a social occasion, with the tendency for respondents to disagree with the two stimuli statements. These aspects however, varied socially and geographically within and between the survey areas. The Tycoch sample group especially, differed with respect to their attitudes on these dimensions; the low status group were more favourable to the opinion of a social dimension to city centre shopping. This aspect is important in relationship to the differing patterns of overt spatial behaviour detailed previously. Use of the city centre for major grocery trips is a characteristic of behaviour most applicable to the Tycoch low status group. Similarly, fewer Treboeth low status respondents visit the city centre for groceries than other consumer groups. The attitudes of respondents both to social attributes of the city centre and a preference for food shopping accord with these findings. A relationship between city centre attitudes and the use of the city centre for grocery purchases would appear from this limited analysis to be quite appropriate. Further detailed discussion will extend this inference.

(iii) Consumer Attitudes to Economic Attributes of Shopping

Previous cognitive approaches to the study of urban consumer behaviour have identified a variety of factors that influence the decision making of consumers (for example Davies, 1973; Parker, 1976; and Potter, 1976, 1979) and the design elements of the previous approach, through the study of trip motivation, tabulated the results of typical examples of this work (chapter two). Inherent within these studies, has been the analysis of economic influences. The research design of this approach to consumer attitudes may differ from many previous studies, but the series of attributes examined does not. Economic attributes are an essential element in consumer decision making. In this study consumer attitudes to the price of goods, the quality of goods and overall value for money was examined by six stimulus statements (numbers 8 to 13).

Across all the survey areas the response varied geographically. The chi square test of significance identified a varying response between the three areas for each of the six economic statements. (Table 6.5C). An examination of the broad attitude profiles (Figures 6.1A-C) for this group of statements illustrates the pattern of mean score response between the six sites.

Appendix 7 provides a comparative graph of the relative high and low status profiles for the three areas taken from Figures 6.1A-C. The overall shape of the profiles for the three areas are basically similar with a greater tendency to agree to statements 10, 11 and 13 compared to 8, 9 and 12. This simply indicates a greater agreement with quality, fresh produce and value for money. The detailed characteristics of these profiles are discussed for each of the three geographical areas.

At Trallwm, the respondents tended to agree with statements 8, 10, 11 and 13, which are in line with the opinion that price of goods is not of overwhelming importance, but that quality, freshness and general 'value for money' are more important attributes of food shopping (Table 6.3C, Figure 6.1A). The differences between the high and low social status groups, in terms of mean attitude scores, are slight with respect to these attributes, although the low status do show, across a number of statements, a greater tendency to favour low price opinions at the

expense of freshness. The relative mean scores on statements 8, 9 and 11 support this statement. Nevertheless, the detailed proportion of response in each category (Table 6.4) varies slightly, but the overall trend for both high and low status Trallwn shoppers is similar. Attributes of quality, freshness and 'value for money' of products would appear to be favoured by respondents as opposed to low priced goods. The chi square test (Table 6.5) did not identify any significant differences in the attitude response between the high and low status groups at Trallwn.

The results at Treboeth highlight a number of differences in consumer attitude between the designated high and low status groups. Statements 8, 10, 11 and 13 relating to price, quality, freshness and 'value for money' indicate a similar overall trend to that observed for Trallwn, with the respondents opinion in favour with quality, freshness and 'value for money' as opposed to the price of goods (Table 6.3C, Figure 6.1B). The remaining two statements substantiate this with a disagreeable response to the items measuring low prices. These latter statements however, indicate quite clearly a difference between the status groups. The low status Treboeth respondent is more agreeable to items of low price (statement 12) and special offers (statement 9). The similar trend is visible in the previous four statements. The analysis of mean attitude response to the stimulus statements at Treboeth highlights the social status difference in consumer attitude in relationship to the price, as opposed to the quality or freshness of goods. All respondents demand a level of quality, freshness and 'value for money' but the low status group especially, view low prices more favourably. The detailed proportional response (Table 6.4) to this group of statements supports this finding, with statement 9, especially, highlighting the social group difference. "I like to look for special offers and bargains when buying food", produced an agreeable response from 69.6% of Treboeth low status shoppers (30.4% strongly agree) compared to 38% of the high status (11.4% strongly agree). The chi square test of independence illustrates a statistically significant difference in response to this statement.

At the third area of Tycoch, consumers' attitudes to the relative attributes of price and quality of goods, follow a similar overall pattern to those previously stated (Figure 6.1C and appendix 7).

Respondents view quality, freshness of perishable goods and 'value for money' more favourably than the statements related to price. The items measuring lowest prices and special offers or bargains for food are less favoured by the Tycoch respondents. Statement 12 relating to cheap goods, produces a high (and disagreeable) mean score (Table 6.3C). Certain differences in attitude are again apparent between the two social status groups. Broadly the low status are slightly more favourable to quality and freshness (statements 10 and 11 respectively) and at the same time more disagreeable with the dislike of price comparison (statement 8) and more agreeable to looking for special offers (statement 9). The low status similarly are less favourable to statement 12. The results of the mean score response to these statements is slightly contradictory and may be attributable to the properties of the average statistic. The detailed proportional breakdown is illustrated in Table 6.4C. Both groups agree, in comparable proportions, to the dislike of comparing prices (statement 8) although there is a small group of low status respondents (30.0%) who also strongly disagree with this item. Similarly for statement 9, the detailed breakdown highlights 30% of the low status strongly favouring special offers and bargains as opposed to only 7.1% of the high status. These figures illustrate the variation of price based opinions towards the low status, but then the contradictory opinion can be seen in the statement purely measuring quality (statement 10). The relative inconsistency of these results are related to additional factors other than social status, and it would appear that within the high and low status groups there are groups of consumers whose attitudes to these economic attributes are similar, and also groups whose attitudes are quite different. The statistical analysis (Table 6.5C) produces a significant difference between the two status groups with respect to statements 9 and 11 (special offers and freshness respectively).

It would appear that consumers attitudes to economic attributes of price, as opposed to quality, are varied between the three geographical areas, but lesser socially between the status groups within each area. The overall pattern, however, is broadly similar. Many respondents view quality, freshness and hence, 'value for money' more favourably than low prices or special offers (promotions). Few respondents agreed to the statement (number 12) measuring cheapest prices. The most favourable

response to special offers and bargains was seen from the Treboeth low status group. Interestingly this group rely more on the nearest centre than other consumer sub-groups (chapter four). If, (as it is generally assumed) small local shops charge higher prices for products then this tendency does not support a consistency between attitude and behaviour. The forthcoming section should clarify such aspects further. Despite certain variations (which are relatively minor) consumer attitudes to economic items are reasonably consistent.

(iv) Consumer Attitudes to Geographical Attributes of Shopping

This group of six items relates to a variety of attributes that are associated with many of the previous conceptual approaches to urban consumer behaviour. For example, statement 14 explicitly relates to the nearest centre hypothesis; statement 19 extends this notion in relationship to the type or purpose of the shopping trip. Similarly, statements 15, 16 and 18 relate to the trade off of centre attraction against the disincentive of travelling distances. Chapter four has illustrated the overt spatial behaviour of various groups of consumers. The research design explicitly tests the fundamental hypothesis of the geographical influence on behaviour. Consequently, consumer attitudes to these geographical attributes could be expected to both vary between groups of respondents and closely relate to overt behaviour.

At Trallwn, both groups of respondents broadly favour many items, with the exception of the statements related to the nearest centre *hypothesis* (numbers 14 and 17, respectively). These particular statements produced a relatively neutral average response, albeit with some social status group variation (Table 6.3D). The Trallwn low status disagree more with the negatively phrased statement "I would not like to shop for food at the nearest shop to my home" (statement 14). Any remaining differences in the mean score response to the statements between the designated social status groups are minor (Figure 6.1A and appendix 7). This initial analysis indicates that Trallwn respondents have a consistent attitude to the geographical attributes of the nearest centre and willingness to travel to a more attractive centre. The details of the proportional response by Trallwn respondents to these six items is produced in Table 6.4D, and the chi square values of difference between

Table 6.3 (continued): Mean Attitudinal Response to the Stimulus Statements (All Respondents)

Group	6.3D GEOGRAPHICAL ATTRIBUTES								6.3E: SOCIAL ATTRIBUTES							
	14	15	16	17	18	19	20	21	22	23	24	25	26			
Statement Number	14	15	16	17	18	19	20	21	22	23	24	25	26			
Trallwn High Status	2.7	3.1	2.5	3.1	2.9	2.4	3.6	3.3	2.7	3.6	2.5	3.0	2.9			
Trallwn Low Status	3.4	3.0	2.6	3.2	3.1	2.4	3.6	3.4	2.6	3.3	2.6	3.0	3.4			
Treboeth High Status	3.0	3.1	2.6	2.6	2.7	2.2	3.6	3.6	2.4	3.7	2.6	3.2	3.0			
Treboeth Low Status	3.9	3.4	2.7	2.6	3.2	2.0	3.5	3.6	2.4	3.9	2.2	3.1	3.6			
Tycoch High Status	3.8	3.0	2.6	2.6	3.0	1.9	3.6	2.9	2.7	3.9	2.5	2.7	2.9			
Tycoch Low Status	3.8	3.4	2.8	2.6	3.0	2.0	3.5	3.3	2.5	3.3	2.4	2.8	3.1			

Table 6.4: Proportional Response to the Attitude Stimulus Statements

Group	Statement Number	6.4D GEOGRAPHICAL ATTRIBUTES							6.4E SOCIAL ATTRIBUTES						
		14	15	16	17	18	19	20	21	22	23	24	25	26	
TRALLWN HIGH STATUS	Strongly Agree	18.2	6.5	10.4	3.9	7.8	6.5	5.2	5.2	22.1	2.6	14.3	11.7	16.9	
	Agree	35.1	35.1	50.6	31.2	45.5	72.7	19.5	39.0	27.3	28.6	53.2	33.8	33.8	
	Don't Know	10.4	14.3	18.2	20.8	7.8	3.9	14.3	7.8	15.6	7.8	5.2	9.1	9.1	
	Disagree	28.6	28.6	18.2	35.1	31.2	11.7	27.3	19.5	28.6	26.0	23.4	32.5	24.7	
	Strongly Disagree	7.8	15.6	2.6	9.1	7.8	5.2	33.8	28.6	6.5	35.1	3.9	13.0	15.6	
TRALLWN LOW STATUS	Strongly Agree	8.7	2.5	6.3	2.5	3.7	6.3	2.5	6.3	15.0	6.3	16.2	8.7	11.2	
	Agree	20.0	48.7	53.7	40.0	31.3	72.5	28.7	33.7	51.2	30.0	45.0	40.0	22.5	
	Don't Know	12.5	6.3	15.0	8.7	27.5	3.7	3.7	2.5	3.7	13.7	10.0	10.0	5.0	
	Disagree	45.0	32.5	21.2	33.7	26.2	8.7	38.7	28.7	23.7	27.5	22.5	23.7	40.0	
	Strongly Disagree	13.7	10.0	3.7	15.0	11.2	8.7	26.2	28.7	6.3	22.5	6.3	17.5	21.2	
TREBOETH HIGH STATUS	Strongly Agree	20.3	13.9	11.4	15.2	22.8	26.6	2.5	5.1	29.1	5.1	13.9	13.9	20.3	
	Agree	22.8	27.8	53.2	43.0	27.8	49.4	27.8	30.4	35.4	25.3	50.6	29.1	32.9	
	Don't Know	7.6	8.9	8.9	15.2	11.4	7.6	6.3	3.8	5.1	7.6	3.8	2.5	2.5	
	Disagree	34.2	32.9	21.5	20.3	30.4	10.1	30.4	21.5	25.3	19.0	25.3	27.8	13.9	
	Strongly Disagree	15.2	16.5	5.1	6.3	7.6	6.3	32.9	39.2	5.1	43.0	6.3	26.6	30.4	
TREBOETH LOW STATUS	Strongly Agree	7.6	5.1	13.9	15.2	5.1	32.9	8.9	3.8	31.6	-	25.3	15.2	8.9	
	Agree	13.9	31.6	44.3	48.1	29.1	51.9	26.6	35.4	34.2	24.1	49.4	26.6	22.8	
	Don't Know	3.8	6.3	6.3	6.3	26.6	5.1	1.3	2.5	5.1	5.1	10.1	8.9	7.6	
	Disagree	26.6	30.4	24.1	20.3	19.0	1.3	27.8	15.2	20.3	22.8	12.7	34.2	20.3	
	Strongly Disagree	48.1	26.6	11.4	10.1	20.3	8.9	35.4	43.0	8.9	48.1	2.5	15.2	40.5	
TYCOCH HIGH STATUS	Strongly Agree	2.9	-	1.4	20.0	11.4	24.3	2.9	1.4	8.6	1.4	11.4	5.7	14.3	
	Agree	17.1	45.7	64.3	41.4	30.0	68.6	22.9	54.3	51.4	17.1	54.3	58.6	38.6	
	Don't Know	4.3	15.7	10.0	4.3	12.9	1.4	5.7	4.3	2.9	11.4	8.6	7.1	4.3	
	Disagree	50.0	30.0	20.0	31.4	34.3	4.3	47.1	31.4	34.3	25.7	21.4	20.0	25.7	
	Strongly Disagree	25.7	8.6	4.3	2.9	11.4	1.4	21.4	8.6	2.9	44.3	4.3	8.6	17.1	
TYCOCH LOW STATUS	Strongly Agree	11.4	2.9	12.9	17.1	12.9	47.1	8.6	4.3	22.9	8.6	11.4	17.1	21.4	
	Agree	14.9	35.7	42.9	44.3	30.0	31.4	22.9	42.9	42.9	31.4	64.3	40.0	22.9	
	Don't Know	2.9	-	10.0	10.0	18.6	2.9	8.6	-	-	10.0	2.9	2.9	2.9	
	Disagree	25.7	40.0	20.0	22.9	21.4	8.6	31.4	28.6	31.4	20.0	20.0	25.7	30.0	
	Strongly Disagree	45.7	21.4	14.3	5.7	17.1	10.0	28.6	24.3	2.9	30.0	1.4	14.3	22.9	

Table 6.5: Chi Square Values of Differences Within and Between the Sites Response to the Stimulus Statements

Group	Statement Number	6.5D GEOGRAPHICAL ATTRIBUTES							6.5E SOCIAL ATTRIBUTES						
		14	15	16	17	18	19	20	21	22	23	24	25	26	
TRALLWN H.S./L.S.	10.17	6.8	1.47	6.13	12.56	I	9.32	3.92	12.88	4.68	2.27	2.37	7.61		
		*		*	*				*						
TREBOETH H.S./L.S.	21.51	5.75	3.20	3.80	20.35	6.76	I	I	1.36	4.92	9.52	5.88	9.05		
		***			***					*					
TYCOCH H.S./L.S.	13.35	18.72	13.17	3.43	3.66	I	5.31	I	I	9.00	I	9.23	4.82		
		**	***	*											
TRALLWN/ TREBOETH/ TYCOCH	38.82	18.42	14.18	33.41	10.81	45.90	8.94	28.15	25.81	11.67	6.91	19.16	21.62		
		***	*	***	***	***		***	**	**	*	*	**		

the social status groups in Table 6.5D. Again the response is similar for a number of statements, although numbers 14 and 18, relating to nearest centre shopping and travelling, produced a statistically significant difference in response. Attitudes to shopping at the nearest centre (statement 14) are different, in that more of the high status agree with the contention and the dislike of nearest centre shopping. Statement 18 measured the willingness to travel to a centre with a car park, and the response is in favour of the high status group. Attitudes to geographical attributes at Trallwn exhibit minor social status differences that relate to consumer opinions of nearest centre and the willingness to travel. The low status group view the nearest centre more favourably and are less agreeable with the desire to travel greater distances. These trends display an interesting relationship to the behavioural results in the broadest perspective of the greater observed distances travelled by the Trallwn high status group.

At the Treboeth survey area the analysis of mean response to the stimulus statements (Table 6.3D and Figure 6.1B) indicates a different profile to that at Trallwn, and one that is slightly more varied between the status groups. The greatest social status variation is seen in the statements referring to the nearest centre (statement 14), car borne travel to a shopping centre with car parking facilities (statement 18) and willingness to travel as far as is necessary (statement 15). The trend is for the low status group to elicit a more disagreeable response to all of these three statements, indicative of a low status favour to shopping at the nearest centre as opposed to travelling greater distances. The remaining three statements (numbers 16, 17 and 19) produced a similar more favourable result to the items measured. This initial analysis of mean attitudes score closely relates to the overt spatial grocery behaviour presented in chapter four. The low status Treboeth shoppers increasingly visited the nearest centre. The detailed proportional response, illustrated in Table 6.4D, will clarify this finding. With respect to statement 14, many more low status disagree (74.7%) with the statement, which refers to the dislike of nearest centre shopping, than the high status (49.4%). Similarly many more strongly disagree. Table 6.5D corroborates this result, with a high significant chi square difference in response to this item between the social status groups. The low status Treboeth shopper likes to shop for food at the

nearest centre. The similarity between this finding and spatial behaviour is apparent (chapter four). Statement 19 also related to the nearest centre, but additionally referred to a specific trip type or purpose; that of supplementary shopping behaviour ('odds and ends', when and if I need them). The slight differences in mean score previously identified are not supported by the detailed breakdown. Both high and low status shoppers are in favour of this ^{statement}. A response difference highlighted in Table 6.3D related to statement 18 ("I think that I would be willing to travel further to a shopping area by car, if a large convenient car park was available"). Table 6.4D shows the greater proportion of high status respondents strongly agreeing with the statement and hence, willing to travel greater distances. The chi square value on this statement (Table 6.5D) identifies a highly significant difference in the response. Again, an inference between attitude and spatial behaviour can be made. The high status Treboeth shoppers travel a far greater distance to shop (chapter four). Statements 15 and 16 in continuing this theme, requested respondents attitudes to the characteristics of the attractiveness of a shop as opposed to pure distance considerations. The detailed response was broadly similar for both groups. These results are interesting in that the results previously could have led the analysis to expect a difference in response to these items. We must presume that the low status Treboeth respondents are satisfied with their nearest centre and find that it provides for their needs.

At the third survey area of Tycoch, the analysis of mean attitude score (Table 6.3D, Figure 6.1C, appendix 7) produces an overall profile that illustrates minor differences between the social status groups. The three statements related to the nearest centre, produce a similar response from both status groups. A relatively high (and disagreeable) mean score is found on statement 14, which indicates that respondents would like to shop at the nearest centre. Similarly, consumers tended to agree that their nearest centre was "as good as could be expected" (statement 17) and that it provided for the occasional "odds and ends" (statement 19). The remaining three statements all related to consumer attitudes to travelling greater distances. The low status respondents show a less favoured attitude to the willingness to travel (number 15), shop characteristics as opposed to distance (statement 16) and a comparable neutral response to the incentive of a car park (statement 18).

The detailed proportional response is presented in Table 6.4D, with the chi square values of the differences between the social groups in Table 6.5. These figures illustrate the difference in the detailed response between the social status groups with respect to statements 14, 15 and 16. The former of these three items measures consumer response to the "dislike of nearest centre shopping". The detailed breakdown illustrates a high proportion of strong disagreement with the statement by the low status. This can be interpreted as a favourable attitude to local shopping. The statistical test produces a significant difference between the two status groups. Similarly, with statements 15 and 16, relating to travelling greater distances to a 'more attractive' centre. The designated high status group produced a more agreeable response to these attributes. The differences in the response are statistically significant (Table 6.5D). Consumer attitudes differ at Tycoch between the high and low status groups. The low status group increasingly favour nearest centre shopping, rather than travelling greater distances. The congruence of attitude and behaviour is again seen with respect to geographical attributes of attitude. The low status groups increasingly favour the stimulus statements relating to nearest centre shopping, and the behavioural results from chapter four illustrate a comparable tendency in overt behaviour. The inference between attitude and behaviour appears quite consistent for geographical dimensions of attitude.

The differences that are apparent within each survey area between the social groups, extend between the three survey areas. The shape of the attitude profiles (Figures 6.1A,B,C and appendix 7) illustrates these differences, as does Table 6.5D. Attitudes to shopping at the nearest centre (embodied in statements 14, 17 and 19) all produce a statistically significant difference between the three areas. Furthermore, consumers response to travelling as far as necessary to the centre chosen varies between the three geographical areas. There is therefore an interesting geographical pattern to the attitudes of consumers in the Swansea survey. This aspect is a clear vindication of a geographical approach to this type of phenomena and there appears to be a relationship between attitude and behaviour that demands further attention.

(v) Consumer Attitudes to Social Attributes of Shopping

This group of seven statements relates to a variety of items that are associated with a social attribute or dimension to the shopping activity. Similar items have been previously measured by many researchers (for example, Williams, 1975 and Madge, 1969) and a variety of results have been produced. The purpose of this group of statements is to elicit a response to a series of attributes that do not relate to the characteristics of the products sought, the type or location of shops visited or the journey to shop. The items relate to shopping activity as a whole and are grouped together under a common heading of 'social attributes'. The individual item statements measure the relative enjoyment of shopping, the physical effort of shopping and an item of planning shopping trips. The response is expected to be diverse and not necessarily related to overt behaviour. The discussion will follow the previous format, analysing mean score values and the detailed proportional breakdown.

At Trallwn, the mean response to the items is varied (Table 6.3E, Figure 6.1A). Certain statements are favoured by respondents, others are not. The differences between the two social status groups are slight. Statement 20; "I think that food shopping is generally an enjoyable activity", produces an unfavoured response from both the high and low status groups. Continuing the theme, this attitude to shopping is corroborated by statement 22, ("food shopping is a chore ...") and statement 24. Both social groups similarly agree that food shopping is not enjoyable, but a chore that once complete is 'a sense of relief'. Similarly, the results from statement 21, where both groups of respondents tend to disagree that food shopping is not tiring. These statements however produce a different mean score between the social groups. The low status consumers do not disagree as much as the high status to the statement that food shopping offers a break from other chores (statement 23), but hold a less favourable opinion to the contention of a planned shopping trip. The detailed proportional response (Table 6.4E) illustrates further these differences in attitude, especially with respect to statement 22. Food shopping is viewed as a chore by the designated high status group to the extent that a statistically significant difference in response is applicable (Table 6.5E). Trallwn shoppers on the whole do not consider shopping an

enjoyable activity, it is a chore that is a necessity, rather than something that respondents view as a chosen activity. The high status group hold a more extreme opinion of this statement.

At the Treboeth survey area the analysis of mean attitude response illustrates a similar pattern to that observed by the Trallwn group (Table 6.3E, Figure 6.1B, appendix 7). Both of the Treboeth status groups hold similar opinions to the majority of statements. Shopping activity is not viewed as an enjoyable task by Treboeth respondents (statement 20). They consider shopping a chore (number 22) that once complete produces "a sense of relief" (statement 24). This latter item produced a slightly different mean response for the two groups, with the low status holding a stronger opinion of the issue. Comparable opinions are held by both groups to the fatigue aspect of shopping (statement 21) and the preference to shop alone (number 25). The desire to plan a shopping trip (statement 26) produced a more disagreeable response from the low status group. The detailed proportional response (Table 6.4E) broadly supports these findings. Additionally, statement number 24, relating to the sense of relief upon the completion of a shopping trip, produced a more favourable response from the low status group. The difference is sufficient to produce a statistically significant result (Table 6.5E). Attitudes to social dimensions of shopping are basically similar for the two social groups at Treboeth. As previously found, respondents do not view shopping as an enjoyable activity.

The results from the third survey area of Tycoch are presented in Table 6.3E and Figure 6.1C. The response to the seven statements differs slightly from those previously presented and also within the site, between the two social status groups (appendix 7). Mean attitudinal response values indicate a disagreement with the enjoyable nature of shopping by both groups and provide supporting evidence that shopping is a chore (statement 22) and the sense of relief upon completion (statement 24). These results are similar for both social status groups and comparable to the response from consumers in the other areas of Swansea. The variation in mean score response for the two groups is seen in three statements. As previously, the low status are less favourable to planning a shopping trip (statement 28) than their high status counterparts. The opinion that shopping is a tiring activity is

more pronounced for the low status group (statement 21 is a negative statement and the low status mean score is greater and hence, indicative of a wider disagreement). Similarly, the high status group is less favourable to the contention that shopping provides a break from other household duties (statement 23). These responses indicate a difference in attitude between the low and high status groups on certain items. The overall view that shopping is not an enjoyable activity is shared by both groups. The detailed proportional response, in Table 6.4 supports this view for both groups. The variation in mean attitude response on certain statements (numbers 21, 23 and 26) is still apparent, especially in the items related to the fatigue element in food shopping (statement 21) and the view of shopping as a break from other activities (statement 23). The differences between the social status sub-groups however are not sufficient to produce a statistically significant value (Table 6.5E).

Consumer attitudes to social attributes of shopping appear relatively consistent in relationship to the view that food shopping is not an enjoyable activity. The supporting items relating to the nature of food shopping as a chore (statement 22) and the sense of relief of completing food shopping (statement 24) produced a varying response. Respondents consistently agreed that completing food shopping was a relief, but produced an inconsistent response to the view that shopping was a chore. This latter statement produced a statistically significant difference in the response between the sites (Table 6.5E; statement 22). The degree of variation is a characteristic primarily of the Trallwn group and is a more extreme view (ie. the group agrees more strongly with the statement). Further differences between the three areas are evident in the attitude to the tiring nature of food shopping (the Tycoch high status group are more favourable to statement 21); the preference for bulk shopping alone (Tycoch respondents are more favourable to this view) and finally, the planned nature of a shopping trip. The chi square values for the differences in the responses are produced in Table 6.5E.

It is difficult to infer from these results any association between attitude and behaviour. The social attributes of consumer attitude do not necessarily refer to spatial components of behaviour. Consequently no interpretations have been offered at this stage.

(vi) Summary : The Characteristics of Consumer Attitudes

The characteristics of consumer attitudes have been analysed under the five group headings from which the attitude scale was constructed. A variety of consumer attitudes are apparent; they vary geographically, socially and appear to be associated with overt spatial behaviour. The attitudes have been presented in terms of the mean score to each statement, an overall profile and the detailed proportional breakdown of response, which was subsequently tested for significance (chi square test).

Consumers broadly disagreed with the view that the small shop still offered a lot to the careful shopper, although the low status groups were relatively more favourable to this single item of shop types. Attitudes to city centre shopping are on the whole less favourable, despite a geographical and social bias. Respondents generally thought that the city centre provided a good choice of shops, but did not really like to purchase food in the city centre. Only the Tycoch low status, and to a lesser extent, the Treboeth high status groups viewed this item favourably. Some respondents disagreed with the contention that city centre shopping trips were a social outing; the Tycoch low status however favoured this dimension. An association between attitude and behaviour is evident in this case, with the Tycoch low status group orientating their convenience goods behaviour towards the city centre. Consumer attitudes to economic attributes of shopping produced a variety of response geographically between the three areas, and to a lesser extent socially within each. Many respondents view the quality, freshness and overall 'value for money' of products more favourably than simply low prices or special offers. The group whose attitudes were the strongest with respect to price was the Treboeth low status. Overall, the trends in consumer attitude to the economic attributes were reasonably consistent. Six items constituting geographical attributes were considered by the respondents. The results illustrated a differing response geographically and socially, that vindicates the research design adopted in this study. Low status consumers were broadly more in favour with their nearest centre than the high status, who were more agreeable to travel greater distances to larger shopping centres. The majority of respondents were satisfied with the quality of their nearest centre. The geographical variation in the attitudinal response to this group of

statements did not so much concern the direction of opinion, as to its magnitude. The geographical dimensions of consumer attitude produced a number of interesting characteristics that require further attention with respect to overt behaviour. Consumer attitudes to the final group of social attributes produced a relatively consistent view of the nature of food shopping as an activity. For the majority of respondents food shopping is very much an onerous task that produces a feeling of satisfaction or relief once completed. Consequently, many respondents (the Trallwn groups were the exception to this) agreed that shopping was a chore. The dimension measuring the shoppers intention to 'plan' a trip produced a socially biased result, with the high status groups favouring the statement. No inferences were made between social attributes and behaviour.

These results are interesting, for the geographical and social variations in consumer attitudes tend to support the need for an additional disaggregated analysis. Williams (1981) concluded (in parallel to Stone's 1954 categorisation of shopper attitudes) that four basic attitude types were present in his Birmingham sample. These he termed economic, convenience (shopping as an onerous chore), localised (nearest centre) and social (an enjoyable activity). This analysis does not seek to apply multivariate techniques like cluster analysis and factor or principal components analysis to reduce the information presented. The characteristics of consumer attitudes presented are relatively clear, the application of such techniques will only confirm the prespecified items.

The need for an additional disaggregation of the characteristics of attitudes proved to be difficult. The research design accounted for the fundamental influence of geographical and or designated social status which has been presented in relationship to consumer attitudes. Further analysis, with respect to the consumer sub-groups identified in previous chapters, cannot be performed for each individual survey area or site as applicable. The sample size prohibits this analysis. Consequently, it is only possible to comment briefly on the influence of alternative consumer groups on attitudes. The discussion will examine the influence of sample social class, pre-school children, car ownership and mobility rates on consumer attitudes for the sample as a whole.

Table 6.6 represents a summary of chi square significance levels resulting from cross tabulating the numbers of respondents in each Likert scale category for each attitude statement on each of the definitions presented. No difficulties were experienced with respect to expected cell frequencies as a result of analysing the sample as a whole. Consequently, with such a large sample it is relatively easy to establish statistical significance ^{for a weak relationship. The table must be viewed} with this in mind. The evidence is interesting and adds to the previous conclusions. Sample social class definitions of consumers produces significant differences in response to nine of the attitude statements. Social class thus shows a tendency to influence city centre attributes favouring food shopping in the city centre; just looking (not specifically buying) around the city centre; viewing city centre trips as a social outing and a preference to visit the fresh food market. Social class influences consumer attitudes to statement 9 and the view to seek out special offers or bargains within the group of economic attributes. The willingness to travel to a shopping centre with good car parking facilities (number 18) produces a significant difference in response between the class groups, as does the trade off of shop characteristics against distance (statement 16) and the dislike of the nearest centre. Preference to buy bulk food shopping alone is the final item producing a different response from the class groups. The influence of pre-school dependents present in the household on consumers attitude produces relatively few significant differences in response. The opinion towards statement 18 is interesting, in that respondents with pre-school children tended to visit the free standing outlets (chapter four) which relate closely to the implications of that item. Car ownership levels influence a variety of economic attributes, in particular those items measuring price (special offers), quality and value for money. The previous social status results appear to be corroborated from this evidence. Similarly, car ownership is related to the geographical attributes measuring the nearest centre hypothesis and the trade off of distance against centre attractiveness (statement 15 and 18, in particular). Personal mobility classification of consumers produces a number of highly significant differences with the group of geographical attributes. It would appear that consumer attitudes to distance and the nearest centre are strongly influenced by the classification of personal mobility forwarded. This evidence is important, as it both supports the approach and the need for a sensitive classification of mobility.

Certain of the characteristics of consumer attitudes presented clearly vary between the social and geographical consumer groups.

This variability extends further into associated definitions, especially mobility. The difference of opinion with respect to the geographical aspect of attitudes clearly supports the adopted approach.

Future developments in the cognitive behavioural approach should take account of the implications of these results. The fundamental influence of geographical location on consumers' attitudes has been clearly demonstrated.

The discussion now proceeds to examine the relationship between consumers' attitudes and overt spatial behaviour in detail.

3. The Relationship Between Consumer Attitudes and Overt Spatial Behaviour

The previous analysis of consumer trip motivations identified a relationship between motivation and behaviour with respect to major grocery centres visited. This chapter has concentrated on an attitudinal research approach and consideration will be given to the relationship between consumer attitudes and overt spatial behaviour. Previous approaches to the study of urban consumer behaviour adopting a similar objective, include the work of Williams (1975, 1981). As previously identified, Williams illustrated the significant relationship between an array of attitude statements and overt shopping behaviour. His aggregate analysis produced the greatest relationship between attitude statements relating to the nearest centre (or local shops), supermarkets and self-service^{shopping}, a social dimension of shopping and willingness to travel ^{greater} distances to reach 'better' shops. His collection of six overt behavioural variables measured trip frequency, mode of travel, number of centres visited, trip characteristics, size of first choice centre and use of the nearest centre. The variables measuring travel mode and nearest centre produced the greatest number of significant relationships. Williams' approach (op.cit) is characterised by the problems associated with the group of aggregate type studies to consumer behaviour identified in chapter one, but nevertheless produced some encouraging results.

This discussion will take two forms. Initially, a brief comment will be made on the relationship between spatial behaviour and attitude, in aggregation across all geographical and social sample sites. This analysis is unfortunately characterised by the inherent problems of the aggregate approach and is included only as a simple comment in recognition of the problems of the information collected. Cross tabulation of individual attitude statements against behaviour for each of the sample sites produces problems of observed cell frequencies. Data reduction techniques like factor, principal components or cluster analysis could be used to reduce the number of items in the attitude scale. Such an analysis would only subjectively reflect a prespecification of the original items, but would reduce the attitude scale. An exploratory principal components analysis was performed on the

data and resulted in nine components accounting for 58.4% of the original variance, with an eigenvalue greater than unity. Information on this analysis is presented in appendix 8. The discussion does not proceed further with this multivariate analysis to reduce the information, on account of the relative unsatisfactory nature of the result; too many components individually accounted for too little variance. The second form of presentation, disaggregates attitudes and overt spatial behaviour for each of the three survey areas. The previously identified characteristics of behaviour illustrated the geographical influence on geographical attributes of attitude. The relationship between residential location, attitude and behaviour will be demonstrated by this approach. Cross tabulating each attitude statement (controlled to exclude the neutral value) with overt spatial behaviour (constrained to reflect centre choice) allows the production of chi square significance values. These will be presented in the discussion.

Table 6.7 provides a summary of chi square values of the relationship between individual attitude items and three characteristics of overt convenience goods behaviour; major grocery centre choice, type of supplementary grocery centre choice and total number of centres visited.

Major centre choice is significantly related to eleven of the twenty six attitude statements. The majority of these items measure centre location in some form. Statement 1 relating to shop types, together with the series of city centre attributes, imply location criteria and statements 14 to 19 directly relate to geographical attributes of shopping. The aggregated analysis identifies the overriding feature of a relationship between geographical or locational orientated attitudes and behaviour. This clearly supports the approach adopted and the relationship between geographical based attitudes and geographical based behaviour. Supplementary centre choice generally supports this finding with the additional relationship between the economic based attributes of value for money and freshness (statements 13 and 11 respectively). The total number of centres visited for grocery purchases similarly show statistically significant relationships with geographical or locational attributes of consumer attitude.

Table 6.7: Summary of Chi Square Significance Values on 26 Attitudinal Statements and Characteristics of Overt Spatial Behaviour

Statement No.	I	II	III	Significance Levels
1	**	***	***	
2	***		*	0.0001 ****
3	*	*		0.01 ***
4				0.02 **
5				0.05 *
6	****			
7	**			
8				
9				
10				
11		*		
12				
13		*		
14	****	****	****	
15	****		***	
16	****	**	*	
17	****			
18	****			
19	****	***	****	
20				
21				
22				
23				
24				
25				
26				

Behavioural Characteristics:

- I Major Grocery Centre Choice
- II Type of Supplementary Grocery Centre
- III Total Number of Centres Visited

An attempt to control the inherent geographical influence on this relationship by disaggregating the analysis further, in line with the research aims, is provided in Table 6.8. The geographical distribution of the shopping opportunity set is controlled in this series of summary statistics. At the Trallwn site, this element of control only produces two statistically significant relationships between shoppers attitudes and behaviour. The individual items relating to a preference to shop in the city centre (statement 2) and the dislike of nearest centre shopping (statement 14) are significantly related to major grocery centre choice.

At the Treboeth sample area a total of five items are statistically related to overt spatial behaviour. The opinion that city centre shopping is a social outing (statement 6), the dislike of nearest centre shopping (statement 14) and three statements relating to the trade off of distance against aspects of centre attractiveness (numbers 15, 16 and 18), all produce a significant relationship with behaviour. The willingness to travel greater distances, as opposed to the nearest centre is undoubtedly related to overt spatial behaviour.

Further supportive evidence is provided in the Tycoch sample. Shopper attitudes to the attraction of small shops (statement 1) and the three items of geographical attitude previously detailed (statements 14, 15 and 18) are significantly related to major centre choice. The results are clear, controlling for the geographical distribution of the shopping opportunity set identifies a close relationship between geographical or locational orientated attitudes and spatial choice behaviour. The previous statements regarding the approach are justified further by these results, and the similarity of the relationship between attitude and behaviour demonstrated. This approach has responded to the call for further research towards a more sophisticated attitude measuring technique by Williams (1981). It adds to the previous findings by supporting the approach to the problem. Future studies related to urban consumer behaviour should disaggregate behaviour and control for the fundamental influence of geographical location.

Table 6.8: Chi Square Values of the Relationship Between Attitude and Overt Spatial Behaviour by Geographical Area

Group Statement Number	6.8A: Shop Types			6.8B: City Centre Shopping			6.8C: Economic Attributes						
	1	2	3	4	5	6	7	8	9	10	11	12	13
TRALLWN (6 df)	I	27.3 ***	I	2.37	8.03	11.8	9.47	3.68	11.66	3.25	2.16	I	I
TREBOETH (9 df)	12.81	I	I	14.52	12.28	25.58 **	6.48	5.79	12.13	8.52	8.54	I	I
TYCOCH (9 df)	19.79 *	I	I	13.64	I	12.49	19.34	15.89	13.81	7.66	0.80	I	I

	Significance		Significance
6 df	0.001 ***	22.46	9 df
	0.01	**	16.81
	0.02	15.03	
	0.05 *	12.59	
			Significance
			0.001 ***
			0.01 **
			0.02
			0.05 *

I refers to the inadequacies of the data for chi square analysis

3 df

Classification of Major Grocery Centre Choice for Table 6.8

Behaviour is constrained to the following categories;

Trallwn	Sub Regional City Centre	21.7%	
	Small Town Centre	58.6%	
	Other	19.7%	Total 100%
Treboeth	Nearest Neighbourhood Centre	30.4	
	Small Town Centre	39.2	
	Free Standing Outlet	13.9	
	Sub Regional City Centre	13.3	Total 96.9%
Tycoch	Sub Regional City Centre	37.9	
	Nearest Neighbourhood Centre	32.1	
	Free Standing Outlet	17.9	
	Other	12.1	Total 100%

4. Conclusion

The analysis of consumer attitudes in chapter six towards five main dimensions of shopping behaviour produced a number of interesting results. The characteristics of consumer attitudes were shown to vary between the consumer sub groups. The variation appeared to relate to spatial choice behaviour and, as was subsequently demonstrated, the similarity of the relationship between attitude and behaviour was close. All the information presented was enhanced by the adoption of an item reliability exercise, akin to a 'data quality control' procedure.

Consumer attitudes to the single dimension of shop types was generally less favourable to shopping at small stores, albeit with a minor degree of variation between the social status groups. The low status respondents were more agreeable to visiting small shops. Attitudes to the city centre varied between the three geographical areas and also slightly socially within each area. The majority of consumers thought that the city centre provided a good choice of shops but did not relish the prospect of food shopping in the centre. Only the Tycoch low status, and to a lesser extent the Treboeth high status groups, favoured food shopping in the Swansea city centre. The similarity between their attitudes and behaviour was identified in the discussion, and substantiated in the latter section relating attitude to behaviour for Trallwn based shoppers. The limited statistical information available appeared to support the relationship between city centre attitudes and city centre behaviour. Economic based attitudes produced a series of responses that varied in detail between the geographical survey areas. The social status variation anticipated was apparent, but of less importance than the geographical difference. Respondents generally viewed quality, freshness and overall 'value for money' more favourably than simply low prices. Nevertheless, certain low status groups held more favourable price attitudes (e.g. Treboeth low status respondents). Economic attributes only produced a weak relationship with spatial behaviour. The series of geographical items produced a variety of responses between the three areas, and within each between the social status groups. The attributes explicitly measured consumer opinions to characteristics of the nearest centre hypothesis and the modified postulates of gravity theory. Attitude to the nearest centre varied. High status respondents increasingly favoured travelling greater

distances to centres of greater attraction. Local shops were thought to be as good as could be expected, by Tycoch and Treboeth respondents, in particular. The geographical differences in attitudes were carried over into the patterns of overt spatial behaviour. Major grocery centre choice was clearly related to shoppers attitude to the nearest centre or to the attraction of alternative centres at greater distances. These results in particular, both support the approach adopted and the broad congruence of geographical dimensions of attitude and spatial choice behaviour. The discussion has referred to the need for future studies to account for this important relationship. Shopper's attitudes to a variety of social attributes were relatively consistent. Shopping was not an enjoyable activity for many of the respondents, with the high status especially holding more extreme views. Interestingly, the low status shoppers held a less favourable attitude to planning a shopping trip. No significant relationships were identified between social attitudes and behaviour.

Overall, the adopted approach to the study of consumer's attitudes has demonstrated the association between spatial choice behaviour and consumer's attitudes on related issues: Opinions to the attitude statements measuring shop types, location and the geographical implications of travelling are quite definite. They differ between groups of consumers, particularly with respect to place of residence and its association with the available shopping opportunities, and also between different social status groups. The former of these variations produced a statistically significant relationship with behaviour. Unfortunately, the research techniques did not permit an exhaustive statistical analysis of the designated social status differences. The research objectives have been accomplished. The characteristics of consumer attitudes have been detailed and shown to vary. The relationship with overt spatial behaviour has been demonstrated. Clearly the geographical approach adopted to this type of phenomena has been vindicated. The consequence of geographical based attitudes and geographical based behaviour is clear. However, although the direction of this relationship has not been identified, the results are consistent, and perhaps it is still more pertinent to view the relationship as interactive.

CHAPTER 7: SPATIAL PATTERNS OF HIGHER ORDER GOODS BEHAVIOUR

Introduction

The patterns of shopping behaviour for higher order goods have been empirically shown to differ from those of convenience goods (Thomas, 1974 and Davies, 1973). Consumers were generally prepared to undertake longer, and less frequent, trips to purchase higher order durable products, but the overall dominance of the CBD was apparent irrespective of socio-economic characteristics. Furthermore, durable goods often form an element in combined purpose or multi-purpose shopping. The study by Daws et al (1974) in Watford clarifies a variety of these aspects. The role of higher order shopping behaviour in relationship to convenience purchases is thus important. As such, the linkages are tantamount to "holistic consumption". This discussion therefore, briefly examines the geographical pattern of overt behaviour for a series of higher order durable goods in the sample of Swansea consumers. The discussion is deliberately shortened, reflecting the nature of such behaviour as a supplement to explaining the overt behavioural patterns for convenience goods. Initially, a single product group will be identified as a surrogate measure of durable goods shopping. Survey information was available for three product groups; clothing, hardware and electrical goods. The elementary analysis of similarity between trips for these goods identifies the dominant product. Patterns of overt behaviour for this product are then disaggregated in accordance with the research aims. A general profile of shopping behaviour is described before the detailed discussion on the geographical characteristics of that behaviour. The discussion proceeds to consider the nature of shopping trips to Swansea city centre. In respect of grocery behaviour; 21.7%, 13.3% and 37.9% of consumers living at Trallwn, Treboeth and Tycoch visited the CBD as their main grocery shopping location. Information is presented from a number of specific questions on trip frequency, allegiance and travel mode to the city centre area. Finally, a series of consumers' ratings of the city centre are discussed.

1. Durable Nomenclature

Table 7.1 illustrates the similarity between locations visited by the sample respondents for the three groups of durable products. Across the three sample areas, clothing is more likely to be purchased with either

Table 7.1: Percentage Index of the Similarity between Major Centre
Choice for Durable Products

	Clothing and Electrical	Clothing and Hardware	Hardware and Electrical
Trallwn High Status	59.7	31.2	31.2
Trallwn Low Status	41.3	45.0	37.5
(All Trallwn)	(50.3)	(38.2)	(34.4)
Treboeth High Status	75.9	69.6	63.3
Treboeth Low Status	55.7	41.8	50.6
(All Treboeth)	(65.8)	(55.7)	(57.0)
Tycoch High Status	85.7	62.9	70.0
Tycoch Low Status	74.3	80.0	64.3
(All Tycoch)	(80.0)	(71.5)	(67.2)
<hr/>			
All Respondents	64.8	63.3	51.0

hardware or electrical goods. There is however, a strong geographical and social variation in the likelihood of combined purchases. Hardware purchases at Trallwn, for example, are rarely bought with either of the other two products. Undoubtedly an influence upon this behaviour is the existence of a free standing discount hardware warehouse within a mile of the Trallwn site. Social status variation in this similarity index is illustrated by the Treboeth group in their combination of clothing and electrical purchases, and clothing and hardware purchases. Nevertheless, of the three product categories, clothing does appear to be the most universal durable product purchased.

2. Patterns of Overt Behaviour - Clothing

(i) General Profile

Clothing is purchased at varying intervals by each of the different consumer groups (Table 7.2). Of the Trallwn sample, 44% of the designated high status group make clothing purchases every 1 - 3 months. A further 19.5% purchase clothes at least every month. There is a sizeable proportion of Trallwn high status respondents who rarely purchase clothes (almost 21% less frequently than every 6 months). Of the Trallwn low status group, 11% buy every month, plus a further 31% every 1 - 3 months. Generally, it can be stated that at Trallwn, high status respondents purchase clothing at more frequent intervals than their low status counterparts. This general finding is repeated in the Treboeth sample. A total of 64.6% of the high status group buy at least once every 3 months, compared to only 34% of the Treboeth low status group. Nearly 40% of Treboeth low status respondents only bought clothes every 6 months. At Tycoch the differences between the social groups are less clear, on account of 37% of the low status respondents either not being able to clearly state frequency of purchase or not admitting to purchasing clothing. Despite this, less of the Tycoch high status group purchase clothing as frequently as the other two geographical groups. There may be an element of demographic bias in this finding; with (as chapter 2 has illustrated) a marginal tendency for more elderly respondents in the composition of the Tycoch site. It is interesting to note Table 7.3, which indicates the importance of a specific journey for clothing shopping. Generally, the results were varied. At Trallwn the

Table 7.2: Frequency of Clothing Purchases (% Respondents)

	Less Than Once a Month	Every 1 - 3 months	Every 3 - 6 months	Every 6 months	Other
Trallwn HS	19.5	44.2	11.7	20.8	3.9
Trallwn LS	11.2	31.3	15.0	28.7	13.7
Treboeth HS	20.3	44.3	10.1	15.2	10.2
Treboeth LS	5.0	29.1	12.7	39.3	14.0
Tycoch HS	20.0	22.9	24.3	18.6	14.3
Tycoch LS	8.6	30.0	10.0	14.3	37.1

Table 7.3: Special Journeys for Clothing Purchases (% Respondents)

	YES	NO	'Other'
Trallwn HS	58.4	40.3	1.3
Trallwn LS	57.5	36.2	3.8
Treboeth HS	43.0	51.9	5.1
Treboeth LS	58.2	36.7	5.1
Tycoch HS	51.4	45.7	2.8
Tycoch LS	44.3	48.6	7.1

majority of both groups indicated making such journeys. At Treboeth 58% of the low status group make specific journeys, compared to only 43% of the high status group, whilst at Tycoch 51% of high status and 44% of low status shoppers undertook a specific journey.

With respect to the allegiance that consumers have to one centre for clothing purchases, Table 7.4 shows that for all groups, the majority (70% plus) of clothes are purchased from a single centre. Social and geographical differences are minimal, with a range from 69.9% of the Trallwn low status to 91.4% of the Tycoch low status indicating a strong allegiance to a particular centre.

Table 7.4: Allegiance to Major Clothing Centre (% Respondents)

	Less Than 50%	50 - 70%	70 - 90%	90%+	NA
Trallwn HS	3.9	14.3	29.9	51.9	-
Trallwn LS	6.3	17.4	18.7	51.2	6.2
Treboeth HS	2.5	11.4	16.5	69.6	-
Treboeth LS	1.3	14.0	34.2	49.4	1.3
Tycoch HS	1.4	7.2	28.6	61.4	1.4
Tycoch LS	-	8.6	11.4	80.0	-

(ii) Patterns of Overt Spatial Behaviour

The spatial patterns of clothing behaviour are illustrated in Table 7.5. The dominance of the sub-regional city centre as the main location is clear. A range of 81% at Trallwn to 94% of Tycoch shoppers use the CBD for main clothing purchases. Accounting for the influence of the designated social status groups highlights a slight difference for the Trallwn and Treboeth low status respondents. At Trallwn slightly less use is made of the city centre by the low status group, with a corresponding marginal increase in journeys to small town centres and purchases through mail order. At Treboeth the low status group increasingly make use of mail order facilities for clothing (15% of all 'trips').

The distance travelled by respondents to these centres is simply a reflection of the relative geographical locations of the survey areas and is consequently omitted.

The dominance of a single centre for clothing purchasing overrides further socio-economic variation in the behavioural patterns. The influences on grocery behaviour, such as sample social class and pre-school children, do not differentiate overt clothing patterns. Mobility measures however, do illustrate some minor variations for the low status groups. At Trallwn the low status non car owning group increasingly visit small town centres for clothing purchases (Table 7.6). The results from the Treboeth low status group however, are inconsistent with this, with more of the low status owners favouring mail order facilities. Nevertheless, the variation is minor. The index of personal mobility (Table 7.7) again is inconclusive, with the Tycoch immobile group indicating less use of the city centre, but producing inconsistent findings for the Trallwn or Treboeth sample.

Travel mode used for clothing purchases does, as could be expected, vary between the social status groups in each site. This variation, however, has little or no effect on overt behaviour. The city centre area is dominant for major clothing purchases.

Table 7.5: Major Centre Choice for Clothing Purchases by Geographical Area and Social Status Site (% Respondents)

	Sub-Regional City Centre	Small Town Centre	Mail Order	Others	NA
Trallwn	80.9	7.0	7.6	2.5	1.9
Treboeth	82.8	5.1	9.5	2.0	0.7
Tycoch	93.6	0.7	2.9	2.2	0.7

	Sub-Regional City Centre	Small Town Centre	Mail Order	Others	NA
Trallwn HS	85.7	5.2	6.5	1.3	1.3
Trallwn LS	76.2	8.7	8.7	3.7	2.5
Treboeth HS	91.1	3.8	3.8	1.3	-
Treboeth LS	74.7	6.3	15.2	2.6	1.3
Tycoch HS	94.3	1.4	1.4	1.4	1.4
Tycoch LS	92.9	-	4.3	2.9	-

Table 7.6: The Influence of Car Ownership on Major Clothing Location
(% Respondents)

	Sub-Regional City Centre	Small Town Centre	Mail Order	Others	No.Of Cases
Trallwn HS					
Owners	79.2	5.2	4.2	1.7	72
Trallwn LS					
Non Owners	67.6	16.2	8.1	8.1	37
Owners	83.7	2.3	9.3	4.7	43
Treboeth HS					
Owners	90.5	4.1	4.1	1.4	74
Treboeth LS					
Non Owners	76.3	5.3	10.5	7.9	38
Owners	73.2	7.3	19.5	-	41
Tycoch HS					
Owners	96.9	-	1.5	1.5	65
Tycoch LS					
Owners	84.6	-	7.7	7.7	26
Non Owners	97.7	-	2.3	-	44

Table 7.7: The Influence of An Index of Personal Mobility on Major Clothing Location (% Respondents)

	Sub-Regional City Centre	Small Town Centre	Mail Order	Others	No.Of Cases
Trallwn					
Immobile	85.7	3.6	7.1	3.6	28
Part Mobility	71.7	10.0	8.3	10.0	60
Total Mobility	87.0	5.8	7.2	-	69
Treboeth					
Immobile	84.4	-	12.5	3.1	32
Part Mobility	87.9	6.9	3.4	1.7	58
Total Mobility	77.6	9.0	10.4	3.0	67
Tycoch					
Immobile	76.7	3.3	10.0	10.0	30
Part Mobility	98.2	-	1.8	-	56
Total Mobility	98.1	-	-	1.9	54

The usage and type of alternative centres visited for clothing purchases provides an additional insight into characteristics of higher order goods behaviour. Table 7.8 indicates the percentage use made of an alternative centre for clothing purchases. At both Trallwn and Tycoch the low status group make less use of alternative centres. At Treboeth the reverse trend is apparent. The number of alternative centres used, is for many respondents just one other location; between 30 and 45.5% of respondents use a single alternative centre. The hierarchical classification of type of alternative centre visited reveals a geographical and social variation (Table 7.9). Including only those respondents who make use of an alternative centre, the Trallwn sample group illustrate this variation. The Trallwn high status respondents use small town centres and mail order facilities, as alternative locations for clothing purchases (in total almost 69% of all supplementary purchases are from these centres), and whilst this trend is discernible amongst the low status, it is on a reduced scale (58%). Swansea city centre accounts for over 26% of Trallwn low status supplementary clothing trips. In the Treboeth sample, the essential difference between the two status groups is seen in the high status use of a regional centre (19%) for alternative clothing purchases. No low status respondents travel to such a centre type. More use is made of the city centre and mail order facilities by Treboeth low status respondents. At Tycoch the differences are obvious. Half the low status supplementary clothing trips are purchased via mail order facilities, while almost 38% of high status trips are to a regional centre. Low status respondents do appear to increasingly favour mail order facilities for alternative clothing purchases whilst, especially for two of the survey areas, the high status respondents are prepared to travel to a regional shopping centre. The nearest regional centre to Swansea is Cardiff, a distance of 40 miles.

3. Shopping Trips to the Sub-Regional City Centre

The importance of the sub-regional city centre for durable shopping has been highlighted. As an outlet for convenience goods behaviour it provides an important shopping opportunity for a number of consumer groups. All respondents were asked a brief series of questions regarding shopping visits to the CBD. Tables 7.10 A and B illustrate the results of respondent trip frequencies to the city centre for all products, and specifically, food goods.

Table 7.8: Use of Supplementary Clothing Centres (% Respondents)

	Nil	1	2+	NA
Trallwn HS	37.7	45.5	15.6	1.3
Trallwn LS	51.2	30.0	17.4	1.2
Treboeth HS	54.4	32.9	12.7	-
Treboeth LS	43.0	44.3	11.4	1.3
Tycoch HS	45.7	38.6	14.3	1.4
Tycoch LS	62.9	34.3	-	2.9

Table 7.9 Type of Supplementary Clothing Centre (% Users Only)

	Sub-Regional City Centre	Small Town Centre	Mail Order	Regional Centre	Others
Trallwn HS	14.6	41.7	27.1	10.4	6.3
Trallwn LS	26.3	36.8	21.1	7.9	7.9
Treboeth HS	16.7	36.1	25.0	19.4	2.8
Treboeth LS	29.5	31.8	36.4	-	2.3
Tycoch HS	5.4	10.8	21.6	37.8	14.3
Tycoch LS	11.5	-	50.0	7.7	30.7

Table 7.10A: Frequency of Visits to Swansea City Centre (% Respondents)

	Several times a week	Weekly	Greater than Weekly	Rarely/ Never
Trallwn HS	14.3	32.5	46.8	6.5
Trallwn LS	7.5	33.7	39.9	18.7
Treboeth HS	21.5	54.4	19.0	5.1
Treboeth LS	7.6	32.9	41.8	17.8
Tycoch HS	22.6	45.7	27.2	4.3
Tycoch LS	24.3	40.0	27.2	8.6

Table 7.10B: Frequency of Food Shopping in Swansea City Centre (% Respondents)

	Several times a week	Weekly	Greater than Weekly	Rarely/ Never
Trallwn HS	14.3	27.3	16.9	41.6
Trallwn LS	3.7	33.7	19.9	42.5
Treboeth HS	16.4	44.3	10.1	29.1
Treboeth LS	6.4	24.4	18.0	51.3
Tycoch HS	15.7	42.9	17.1	24.3
Tycoch LS	12.9	48.6	15.7	22.8

Table 7.11: Allegiance to Swansea City Centre for Food Shopping (% Respondents)

	Less Than 10%	11 - 50%	51 - 90%	91%+
Trallwn HS	53.2	27.3	10.4	9.1
Trallwn LS	58.7	11.2	11.2	18.8
Treboeth HS	44.3	34.2	11.4	10.1
Treboeth LS	66.7	23.0	3.9	6.4
Tycoch HS	38.6	28.6	17.1	15.7
Tycoch LS	32.9	25.7	25.7	15.7

A geographical bias is apparent in these figures. Tycoch respondents are increasingly likely to visit the city centre area for all goods and specifically for food shopping at least once a week. 70% of Treboeth high status respondents similarly undertake at least weekly visits to the CBD for all products, with 50% making weekly visits for foodstuffs. Over 40% of both the Trallwn high and low status respondents rarely or never visit the city centre for food shopping. These results support those previously identified in chapter 4, where the influence of geographical location on overt spatial behaviour for convenience goods was illustrated.

With respect to allegiance to the city centre (Table 7.11), few respondents indicated buying 50% of their food shopping from this location. 41% of the Tycoch low status group and 33% of the high status group however, did indicate a relatively strong (50%+) allegiance to the Swansea city centre. There is a slight geographical bias in food shopping allegiance to the Swansea city centre. Travel mode for trips to the city centre area varied between weekday and weekend trips. Geographical and social differences were apparent but for all groups weekend trips were increasingly likely to be car borne. This trend supports the earlier mobility discussion.

When asked to consider the merits of the city centre area as a shopping area for varying purchases, respondents generally rated the shopping opportunities highly. Figures 7.1 - 7.4 illustrate the overall trends. Tycoch low status respondents rated the city centre for food shopping higher than other groups. There is no consistent social or geographical relationship to the ratings. As a shopping area for durable purchases, all respondents rated the area higher than they did for food opportunities. For electrical goods, hardware and clothing the trend between each of the designated consumer groups is similar. The majority of respondents view Swansea city centre highly as a location for higher order durable shopping.

Figure 7.1: Rating of Swansea City Centre for Food Shopping

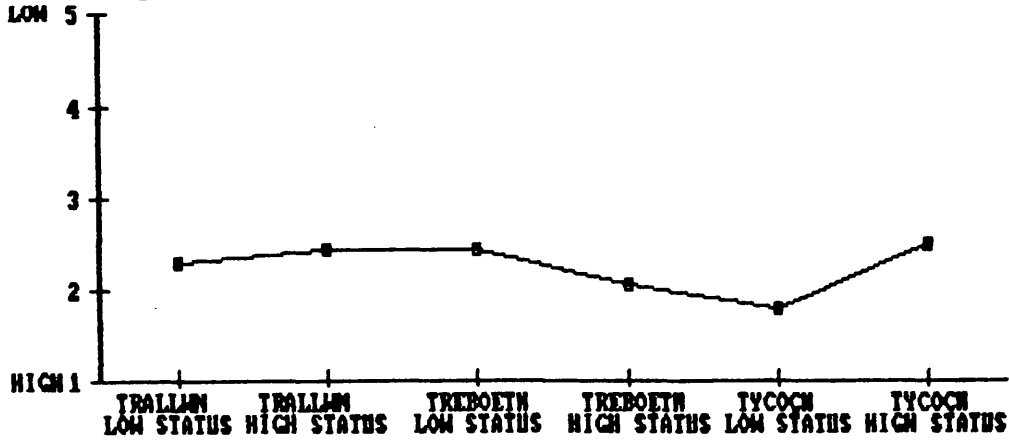


Figure 7.2: Rating of Swansea City Centre for Clothing Purchases

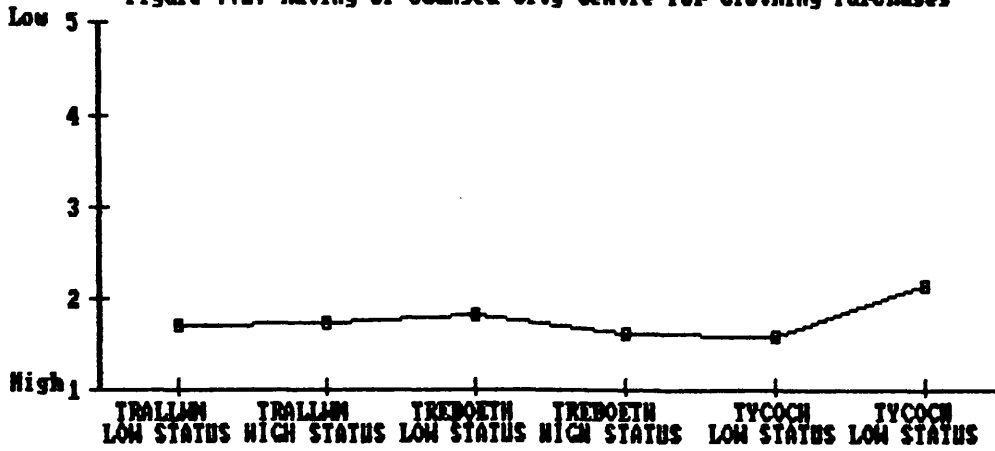


Figure 7.3: Rating of Swansea City for Hardware Purchases

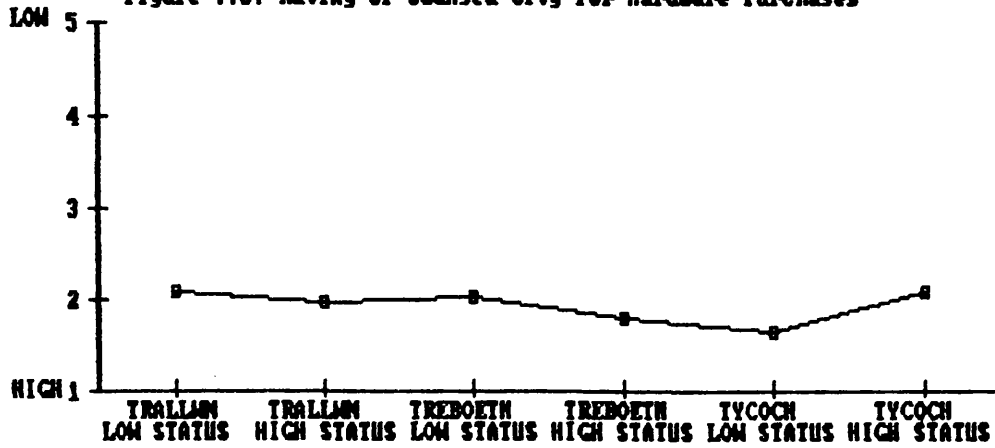
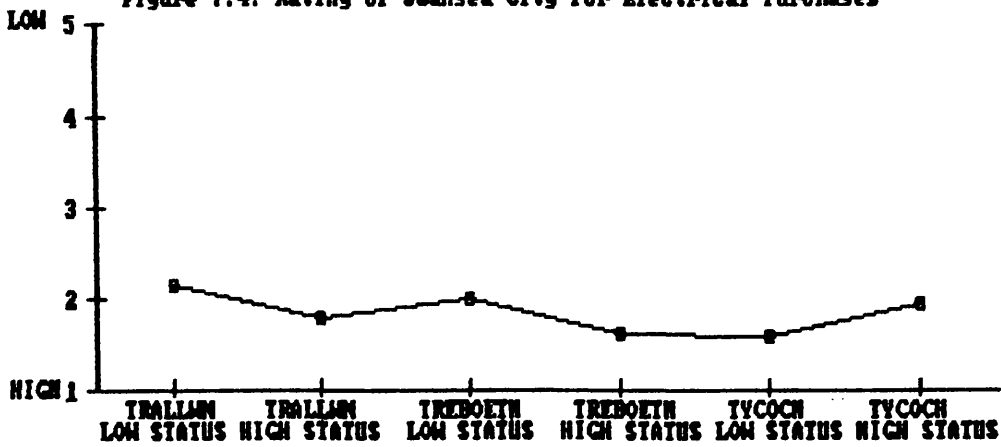


Figure 7.4: Rating of Swansea City for Electrical Purchases



4. Conclusion

The analysis of higher order shopping behaviour has illustrated the dominance of the city centre area for durable goods shopping. Minor variations are apparent in the locations visited for main shopping trips, and supplementary centres visited vary between geographical and social consumer sub groups. The variations in major centre choice are seen in the reduction in trips to the city centre by Trallwn and Treboeth low status respondents. The influence of car ownership, however, is significant in that low^{status} respondents, without a car at Trallwn and Tycoch increasingly visit small town centres and the city centre (examples of both are on direct bus routes). Supplementary centre choice varies between the designated social status groups, with the high status respondents increasing visits to a regional centre and the low status visiting the city centre. The characteristics of durable behaviour are different to those for convenience goods shopping. All respondents were asked to rate the city centre as a location for durable and convenience goods shopping. Respondents generally rated the CBD higher for durable goods.

The status of the city centre for higher order shopping is unquestionable. As a potential location for convenience purchases it does provide an opportunity for certain consumer groups, particularly those based at the Tycoch sites.

The notion that a combination of trip purpose does occur can be seen in Table 7.12.

Table 7.12: The Relationship Between Convenience and Durable Purchases -
The Frequency of Combined Food/Clothing Purchases
 (% Respondents)

	Never	Rarely	Some- times	Often	Always
Trallwn HS	32.5	35.1	14.3	7.8	10.4
Trallwn LS	33.8	18.8	16.3	11.3	20.0
Treboeth HS	34.2	19.0	16.5	10.1	20.3
Treboeth LS	40.5	17.7	15.2	10.1	16.5
Tycoch HS	35.7	15.7	20.0	14.3	14.3
Tycoch LS	21.4	14.3	18.6	12.9	32.9

Respondents were asked; "How often do you combine convenience and durable purchases?" Given the overall importance of the city centre for durable shopping, and the use of the CBD for convenience purchases by certain groups, it is reasonable to expect some incidence of combined purchases. 68% of Trallwn high status respondents never or rarely combined convenience and durable purchases, compared to 52% of their low status counterparts. Nevertheless, 20% of low status and 10% of high status respondents always combined shopping trips. Similarly, whilst at Treboeth a high proportion of both status groups never or rarely combined purchases, a number of respondents (20% of high status; 16.5% of low status) always combined shopping trips. At Tycoch, the low status group in particular purchased convenience and durable goods on a single trip. Almost 33% of Tycoch low status respondents always combined shopping trips, compared to 14% of the high status group.

There does appear to be an element of combined purpose shopping for certain groups of respondents. Convenience goods and durable goods are purchased together, at varying frequencies, during the same shopping trip. A simple cross tabulation of those respondents who visit the sub regional city centre area for clothes with major and first choice supplementary grocery centre, reveals a distinct geographical bias

towards combined purchases from the CBD area. Table 7.13 shows that the proportion of respondents using the CBD, for both major clothing and grocery purchases, is higher from the Tycoch sample area. The result is still apparent when comparing major clothing purchases from the CBD and the use of that area as a location for supplementary grocery purchases, albeit to a lesser degree. Notably both the Trallwn and Treboeth high status groups favour combined purchases from the city centre along with both of the Tycoch sample groups. Treboeth low status respondents in particular, do not indicate comparable results. Aggregation of the two tables indicates those respondents buying groceries and major clothing from the CBD (Table 7.13, iii). Again, a noticeable geographical and a lesser social bias is apparent from the results. Certain respondent groups do, therefore, make combined purchases of clothing and groceries from the city centre area. These sub-groups are geographically orientated towards the Tycoch area, and socially biased towards the higher status groups in the other two sites.

Table 7.13: The Relationship Between Convenience and Durable Purchases -
Centre Choice (% Respondents)

(i) Of those respondents who visit the sub-regional city centre for major clothing purchases.

	NO.OF CASES
19.7% at Trallwn HS also visit the city centre for major groceries	(66)
21.3% at Trallwn LS "	(61)
16.7% at Treboeth HS "	(72)
10.2% at Treboeth LS "	(59)
34.8% at Tycoch HS "	(66)
41.5% at Tycoch LS "	(65)

(ii) Of those respondents who visit the sub-regional city centre for major clothing purchases

31.8% of Trallwn HS also visit as 1st choice alternative for groceries	(66)
24.6% of Trallwn LS "	(61)
30.6% of Treboeth HS "	(72)
13.6% of Treboeth LS "	(59)
30.3% of Tycoch HS "	(66)
32.3% of Tycoch LS "	(65)

(iii) Total % of respondents buying some grocery and major clothing in the city centre

51.5% of Trallwn HS	(66)
45.9% of Trallwn LS	(61)
47.3% of Treboeth HS	(72)
23.8% of Treboeth LS	(59)
65.1% of Tycoch HS	(66)
73.8% of Tycoch LS	(65)

CONCLUSIONS

CONCLUSIONS

The formative stages of this research recognised the vast array of academic literature relevant to the study of consumer spatial behaviour. Despite the detailed coverage of the work to date, a number of gaps in the existing levels of knowledge were apparent. As a result of this situation some form of synthesis was seen as essential to advance the levels of understanding of the subject. Many of the previous approaches are disparate and a number of issues were identified as a prerequisite towards an integrated approach. The ten issues detailed (chapter one, p.37 and p.38) represented the considerations necessary to further the knowledge of consumer spatial behaviour. These issues encompass the deficiencies recognised by a number of authors (especially Thomas, 1976; Shepherd and Thomas, 1980 and Potter, 1982) and had not previously been combined into a single comprehensive approach.

The adopted methodology concentrated on the overt spatial behaviour of selected consumer sub-groups of the population. The fundamental aim of this work was to clarify many of the behavioural aspects of the existing theoretical and conceptual disagreements surrounding the subject. This disaggregated analysis would enable the precise determinants of behaviour to be identified and consequently, influence the development of descriptive and predictive models of consumer behaviour. The approach sought to determine the effect of both social and spatial segregation in order to maximise research effort and ultimately advance the development of theory. This closely resembled the contention of Thomas (1976, p.59). Similarly, the research reflected the desire to narrow down the objectives of consumer behaviour studies to shopping behaviour.

The use of a rigorous research design whereby the selected survey areas had access to a similar shopping environment and, as far as was possible, only differed with respect to the factors being investigated, enabled the emerging information to explain fully the determinants of behaviour.

This summary of conclusions will attempt to evaluate the extent to which the original research objectives were fulfilled. The discussion will relate to the structure of the thesis, prior to evaluating the overall contribution of the approach and relate the results to some of the multitude of previous studies.

The discussion commenced with the analysis of a general profile of convenience goods shopping behaviour. Three aspects were examined. The general characteristics of shopper behaviour identified that shopping habits consisted of one major trip plus an occasional supplementary excursion. Consumer sub-group variations resulted in, either a single trip or two shopping trips. These visits were orientated towards the week-end period, although for high status respondents a Wednesday or Thursday was preferred. Generally, the morning period dominated the timing of shopping trips and many respondents received assistance from additional members of the household group. A minority relationship was suggested with respect to combined or multi-purpose shopping behaviour. The majority of respondents considered their spatial behaviour stable. Following this general profile, the research proceeded towards a nomenclature of convenience goods behaviour. The detailed spatial choice behaviour for six food products formed the input into a similarity of centre choice index, which identified, on the basis of the primary status of grocery behaviour, the interaction with other products. The results illustrated early evidence of a social and geographical difference in centre choice, and provided a continuum of product types for analysis that were initially similar, and subsequently different to grocery behaviour. The analysis concluded that overt behaviour for meat and bread purchases, would respectively corroborate and detract from the grocery analysis. This classification fulfilled the aim for a detailed analysis of shopper trip types reflecting the realities of behaviour. The explanation of grocery centre choice would be substantiated by the results from these additional product groups. The number of different centres visited for major purchases of the original six products, varied geographically and socially between the consumer sub-groups. The Treboeth low status group visited on average 1.82 centres compared to their high status counterparts, who visited an average 2.39 centres for the six types of product.

The characteristics of grocery spatial behaviour provided preliminary evidence that groceries were purchased from varying numbers of centres by different consumer sub-groups. Nevertheless, a large proportion (55% plus) of shoppers purchased over 80% of their groceries from a single centre. The Treboeth low status group notably differed in this respect, illustrating lower levels of allegiance to a single centre for grocery purchases. This same group shopped at more frequent intervals than other consumer sub-groups. The dominant characteristic was for weekly grocery trips to the major centre cited by respondents. The results in this section provided an introduction to the detailed spatial analysis. In particular, the nomenclature of product purchases identified the importance of grocery shopping and the supporting information that could be obtained from the analysis of meat and bread purchases.

The initial patterns of centre choice for major grocery purchases illustrated a distinct geographical and social pattern. The influence of geographical location in association with the available retail opportunity set was significant throughout, and social status variation was apparent with a tendency for the high status consumers to travel greater distances to an increased variety of centres. Nevertheless, not all high status respondents travel to high levels of the retail hierarchy, with Tycoch high status respondents especially, making use of the nearest centre. The influence of the retail opportunity set was obvious in behaviour directed towards small town centres and free standing outlets. Similarly, the sub-regional city centre was increasingly important for Tycoch respondents. An attempt to explain these patterns was undertaken via the analysis of the influence of a range of social and economic characteristics on spatial behaviour. In particular, the effects of sample social class, personal mobility (car ownership/availability and an index of mobility), demographic variables, household characteristics and time availability were investigated.

The influence of sample social class confirmed the dominance of the retail structure in determining overt spatial behaviour, with a certain explanation accounted by social class differences. The higher social classes did visit different centres to their lower social class counterparts. Personal mobility influenced behaviour over and above these basic patterns. Firstly, simple car ownership/availability rates

among the low status groups increased the proportion of trips towards the free standing outlets (Trallwn and Tycoch low status) and small town and sub regional city centres (Treboeth). The relative significance of car ownership rates was ^{less than} that of geographical location and social status; a result that supported the findings of Thomas (1974). Secondly, the index of personal mobility reduced the reliance on the nearest centre for the increasingly mobile groups. Nevertheless, the Tycoch low status mobile group still relied on the nearest centre. Immobile respondents throughout, were restricted to nearest centre shopping. Partial mobility resulted in an increased proportion of trips to the city centre, except at Trallwn where the associated geographical influence, conditioned visits towards the small town centres. Personal mobility has an important influence on behaviour, but one that has a distinct geographical and a lesser social status impact. The development of a refined index of personal mobility, other than simple car ownership/availability rates, had proved highly successful and enhanced the discussion. Additionally the information illustrated how public transport facilities substitute for private transport facilities and enabled the immobile respondents to travel to a higher order centre. This trait was clearly evident at Trallwn.

A range of demographic variables identified additional influences on behaviour. Firstly, the age of the respondents highlighted that for elderly persons, social and geographical influences were negated by the constrained behaviour of this group. Old age appeared to be a distinct leveller of spatial mobility across social and geographical boundaries. Age variations also provided an input into a classification of family life cycle, in an attempt to elicit additional explanation. The index was not especially successful but did substantiate the previous statements with respect to old age. The influence of pre-school children was apriori hypothesised as a constraint upon spatial behaviour. For those respondents from a high status, mobile background (at Treboeth and Tycoch) the presence of a pre-school dependent resulted in an increased usage of the free standing outlets and 'one stop', bulk shopping. However, for the low status groups, with lower mobility levels, the presence of a pre-school dependent did not, especially at Trallwn, influence grocery centre choice. This again suggests the primary importance of location, social status and mobility influences on

behaviour. The effect of the total number of children present in the household was minimal; clearly the fundamental influences highlighted were of greater significance.

The influence of household characteristics produced a further intervening influence on behaviour. Respondents from larger households were increasingly likely to visit the free standing outlets, with those from the smallest units constrained to visiting the nearest centre. Again, social status was influential, with the effect of this variable more pronounced for the high status group. Clearly a number of intervening influences were also apparent.

Time available for shopping resulted in working respondents illustrating different patterns to their non working counterparts. These varied further between full time and part time workers, but more significantly between the geographical and social groups. The influence is therefore secondary, but does result in working respondents increasing visits to larger hierarchical centres (the city centre, small town centre and free standing outlets)

The analysis of supplementary centre choice for groceries supported these social and spatial differences in behaviour. The nature and type of these purchases resulted in less overall variation, with nearest centres becoming an increasingly important destination and the city centre accounting for many trips. At Tycoch the previously unimportant district centres feature as a significant destination for supplementary grocery trips. Personal mobility levels did not appreciably add to this explanation. The influence of pre-school dependents produced a diffuse impact on supplementary behaviour, with at Trallwn a further increase in visits to the nearest centre, at Treboeth an increase in visits to the small town centres and city centre, and at Tycoch an increase in the use of the nearest centre, free standing outlets and district centres. The relative inconsistency of these results are suggestive of additional influences. Distances are on the whole minimised for supplementary grocery purchases. A geographical and social pattern to behaviour is discernible, albeit of a lesser significance than previously identified for major grocery centre choice. The contention of Warnes and Daniels (1978) would appear to be relevant here. Urban shoppers would appear to

visit the nearest centre offering the desired type, quality and combination of goods; supplementary purchases are less demanding than those of major centre choice and as such the nearest centre provides for many consumers' needs.

The analysis of grocery spatial behaviour identified for major grocery trips a variety of centre choice. These centres vary according to place of residence, social status, personal mobility and a variety of intervening variables. The significance of each of these influences are tempered by the primary effect of location, social status and mobility. For some respondents, especially the elderly, the relative importance of each of these influences changes. Supplementary centre choice is increasingly orientated towards the nearest (neighbourhood or local) centre. Consumer decision making varies according to the purpose of the shopping trip.

These conclusions were tested further by the analysis of spatial behaviour for meat products. The corroborative aims of this section were generally fulfilled. The results supported the influence of geographical location and the available shopping opportunity set, although the effect of social and economic characteristics was less clear. Meat purchases were orientated towards the city centre with additional variations related to local opportunities. The attraction of a fresh food market in the city centre was forwarded as a possible explanation for this behaviour. The geographical bias of Treboeth and Trallwn shoppers towards a small town centre was apparent, as was the use of district centres by Tycoch respondents. Social status variation was of less significance, but discernible at Trallwn (the high status mobile groups travel to other small town centres) and Treboeth (the low status increasingly visit the nearest centre). Alternative groupings of consumers, notably by personal mobility and pre-school children, produced a series of inconsistent results. Only at the Tycoch site did personal mobility levels materially influence meat centre choice. The effect of pre-school children supported the previous grocery conclusions, with respect to visits to the free standing outlets. Generally, the free standing outlets were not identified as a major centre choice for meat; for respondents with pre-school children, however, it's importance increased and substantiated the previous conclusions regarding this

influence. Similarly, the results from the analysis of meat behaviour clarified the relative position of the effect of personal mobility on convenience goods behaviour - the influence of personal mobility was secondary to that of social status. Consumer demands for meat differ and result in different patterns of overt spatial behaviour. This supports the contention that further developments in the understanding of consumer spatial behaviour require the disaggregation of shopping trip types in relation to a product nomenclature.

The analysis of bread spatial behaviour detracted from the grocery results and conformed to the nearest centre hypothesis. Nevertheless, minor differences in centre choice were apparent and can be explained by the geographical and social variables. Increased personal mobility resulted in declining use of the nearest centre for bread purchases irrespective of social status. The compensating outlets visited varied by geographical location; at Trallwn and Tycoch the trips were orientated towards the city centre and at Treboeth towards the small town centres. These results add further to the contention that a product nomenclature of behaviour is a prerequisite for further studies.

Convenience goods shopping behaviour varies in accordance with products sought and between different consumer sub-groups. A number of consistent results enable the relative explanatory significance of the determinants of behaviour to be suggested. Geographical location and its relationship to the available shopping opportunity set is of primary importance. Similarly, social status influences are apparent and are simultaneously related to differing mobility levels. Social status was identified as of greater importance than mobility. Further influences of a specific nature were demonstrated with respect to respondent age (especially old age), pre-school children, household size and respondent work status. These results support a number of conceptual postulates; but notably have implications for the application of refined gravity models in the intra-urban context. Behavioural patterns need to be disaggregated for the influence of location, social status and mobility and within these categories for the minority effect of additional variables. Furthermore, the nomenclature of product types supports the need for the application of such models to constrain the behavioural variation.

Within these overall comments the applicability of the nearest centre hypothesis has been demonstrated, a modified 'dual assignment' role for certain consumer groups forwarded and the argument embodied by Warnes and Daniels (1978), in relationship to the type of product demanded, supported.

These findings, however, do not consider any perceptual or cognitive elements of behaviour. The move from the empirical approach towards such dimensions occurred, initially in the section devoted to consumer trip motivations. This aspect of the research attempted to investigate the reasons for, or the perceptual determinants of, centre choice for food goods. Seventeen statements were assembled and represented the integrated approach sought. The research aimed to identify the significance of these determinants in accordance with the previously defined consumer groups and explore the possible relationship between motivation and overt behaviour. A variety of analytical techniques were applied to identify the dominant characteristics of food motivation. Motives concerned with product characterisation, such as price, choice and quality; shopping centre composition (available shops and the reputation of these outlets); an element of routine or familiarity with a centre and a number of geographical dimensions, were identified. The previously noted differences in transport mode to a particular shopping centre were extended into motivation related to ease of car access. This motive was a more important high status determinant, whilst the low status groups were motivated by the available bus facilities and distance considerations. A close relationship between the levels of personal mobility experienced by the different social status groups and the importance of individual determinants was suggested. For the immobile respondent, public transport facilities and distance consideration were clearly important determinants of centre choice. Non accessibility motives were related to factors other than those contextual characteristics of the consumer. The results however, confirmed the importance of qualitative factors of shopping centres, such as the retail composition and product characteristics, to the consumer decision making process. An element of routine and familiarity provided a final determinant of centre choice. This appeared to relate to the use of a single type of centre by the consumer groups and was viewed as an aspect of traditional behaviour. Motivations related to car and bus facilities

and distance components were closely associated with centre choice. Car motivations account for many respondents visiting the free standing outlets. Respondents motivated by bus facilities increasingly visit the city centre, or in the case of Trallwn respondents, the nearest small town centre. The routing of bus facilities was clearly relevant to this relationship. Consumers motivated by distance considerations increasingly shopped at the nearest (neighbourhood/local) centre. The congruence of accessibility based motives and spatial behaviour was clear. Similarly, motivations related to shopping centre characteristics produced, for two of the three sample areas, a consistent association with shopping trips towards a large centre (especially the city centre). The relationship between product motives and behaviour was less clear, although respondents not identifying this motivation orientated their behaviour towards the nearest centre or an alternative 'small' centre.

The motivational determinants of behaviour are consistently related to overt spatial behaviour, ^{and} the previous conclusions in relationship to the influence of consumer sub-groups on behaviour are well supported by these findings. There does appear to be a consistent relationship between behaviour, motivation and the socio-economic and geographical correlates of behaviour. The relationship between motivation and behaviour is undoubtedly interactive and varies in accordance with an individual dimension. The research aims were fully achieved by this approach.

The next section of the thesis examined consumer attitudes to five apriori dimensions of shopping behaviour. These measured the type of stores available, city centre shopping trips, economic attributes of the products bought, geographical attributes and distances to various shopping centres and social attributes to the shopping activity in general. A reliability exercise was performed on the data set, enabling the resultant conclusions to be made from a methodology rigidly adhering to the principles of social science research.

Attitudes to a single statement of shop types were less favourable to small stores, albeit with a minor consumer sub-group variation in favour of the low status respondents at Trallwn and Tycoch. Attitudes to the city centre varied geographically and to a lesser extent socially,

between the designated consumer groups. Many consumers had a high opinion of the city centre but did not like to shop for food in the CBD. Only the Tycoch low status, and to a lesser extent the Treboeth high status, favoured food shopping from the city centre. The analysis highlighted further differences in attitude to the city centre between the geographical groups. Attitudes towards a social attribute to city centre shopping produced a varied response. Opinions with respect to the fresh food market were generally unfavourable, although biased socially, with the low status holding a higher opinion of this aspect. A similarity between city centre attitudes and behaviour was supported by the evidence presented. Tycoch low status respondents held a higher opinion of the city centre for food shopping, the same group make the greatest proportional number of trips to the city centre.

Consumer attitudes to economic attributes of shopping produced a slight variation in response that differed more between the three geographical areas, than socially within each. Respondents generally viewed quality, freshness and overall 'value for money' more favourably than low prices or special offers. Only the Treboeth low status group held a more favourable attitude to prices. The relative consistency in response between the sub-groups consequently only produced a weak association with overt spatial behaviour.

Attitudes to geographical attributes of shopping produced a varied response between the different sample locations and within each between the social status groups. This vindicates the adopted approach, in that a clear geographical association was apparent between geographical attitudes and the location of respondents. This association extends into overt behaviour. The low status respondents were overall more favourable towards their nearest centre than the high status groups, who were willing to travel further distance to larger, 'more attractive' shopping centres. Similarly, the differences in attitudes extended between the three geographical areas. Opinions with regard to the desire to shop at, and the quality of, the nearest centre differed for each of the survey areas. Trallwn based respondents did not like shopping at the nearest centre and considered their nearest centre of lower quality than the Treboeth or Tycoch groups. Tycoch based respondents especially liked to

shop at their nearest centre. These differences in geographical attitudes are carried across into the patterns of overt spatial behaviour. Major grocery centre choice is clearly related to attitudes to the nearest centre or to the attraction of a different centre at greater distances. At all three sample locations a congruence of geographical based attitudes and geographical choice behaviour is illustrated. This is important and has a consequence for further research in that the recognition of the importance of residential location, in association with the available shopping opportunities, is fundamental to the understanding of consumer spatial behaviour. Research must control for this influence, as well as the effect of the additional intervening variables identified. The analysis of consumer attitudes did not disaggregate the effect of social status. The previous results would tend to support the need for similar control in this variable.

A less favourable overall attitude was expressed with statements relating to social attributes of shopping. A consistent view of the onerous nature of shopping activity, that once completed produces a definite feeling of satisfaction or relief was expressed by many shoppers. The high status groups held more extreme (less favourable) opinions of these aspects. The only group who held a slightly more favourable opinion that shopping was not a chore, was the Trallwn low status group. A social status variation was apparent in attitudes to the respondents' 'planning' of a shopping trip - the high status groups increasingly favoured this aspect. No significant relationships were identified between social attitudes and behaviour.

Overall, the section on consumer attitudes fulfilled its objectives. The characteristics of attitudes were identified, discussed with reference to the sample frame and related to overt spatial behaviour. Attitudes to shop types, location and the geographical implications of travelling are definite. They vary between consumers, especially between different residential locations (and retail opportunities) and between different social groups. A consistent relationship between geographical attitudes and spatial behaviour was identified. The direction of this relationship however was not clarified; the nature of the results could be suggestive of the direction but it is perhaps more pertinent to view

the attitude-behaviour consistency in interactive terms.

The final section of the thesis returned to an empirical analysis of higher order shopping behaviour. The approach adopted, mirrored that previously followed for convenience behaviour. The section aimed to comment on the relationship between convenience and higher order goods behaviour, in order to extend the levels of knowledge on combined or multi-purpose shopping. Clothing goods were identified from a durable nomenclature as the primary product purchased by consumers. Purchasing behaviour for clothes was less frequent and invariably formed a 'special journey', than for food goods. Consumer sub-group variations were apparent in this finding, with the high status groups purchasing clothes at more frequent intervals than the low status. Many respondents indicated a strong allegiance to one centre for clothing purchases. Major centre choice was dominated by the CBD. A slight geographical and social status variation was apparent, with the Trallwn low status group, especially, increasing the number of visits to the small town centres, and the Treboeth low status group relying on mail order facilities. Personal mobility introduced an element of additional variation into this pattern, but without any degree of consistency. Supplementary centre choice for durable goods varied between the social status groups, with the high status increasingly visiting regional centres, and the low status the city centre. The dominance of the CBD for durable purchases is in line with previous studies (e.g. Thomas, 1974 and Davies, 1973) and was anticipated. The research also collected information on shopper trips to the sub-regional city centre. The results indicated an overall favourable opinion of the CBD for higher order shopping, and clarified its' use for convenience shopping. The previous findings with respect to the Tycoch area were corroborated.

The inter-relationship between convenience and durable goods shopping in the CBD identified an element of combined purpose shopping for certain sub-groups. The percentage of respondents using the CBD for both major clothing and grocery purchases is greatest in the Tycoch area, especially amongst the low status. There is therefore an element of 'holistic' consumption within the results presented. The geographical and social

status variations in overt spatial behaviour are carried over into this relationship.

This research has therefore contributed to the overall knowledge in the way consumer sub-groups visit various centres for different goods and their reasons for decision making and attitudes to shopping. The influence of a range of social and spatial indices helped to explain the determinants of behaviour. Different reasons for centre choice were identified and related to the contextual variables of the consumer and associated with behaviour. A close parallel between motivation and behaviour was demonstrated. Different consumer attitudes to shop types, the city centre and geographical attributes were found. A consistent view of economic and social attributes of shopping was identified. Finally, the nature of higher order goods shopping was examined and the dominance of the CBD for many shoppers illustrated. Clearly the research fulfilled its aims and has enhanced the levels of knowledge of consumer spatial behaviour.

The research design adopted appeared to be adequate, in that geographical and social status variation was controlled. Information was provided that can contribute to the further development of a theory of consumer spatial behaviour. In retrospect, a number of additional controls would ideally have been imposed on the research design. Controlling for the influence of pre-school children and a more robust index of family life cycle would have been an advantage. Similarly, a larger sample in each site would have enabled more detailed and sophisticated analysis. In practice, such consideration would have proved near impossible for a single researcher. Nevertheless, these aspects should be considered for future studies which may not have to rely on the time and resources of the individual researcher. The areal sampling frame adopted, whereby a standardised service environment was maintained for detailed study, must be a prerequisite for future research into consumer behaviour. Such an approach clearly permits the determinants of behaviour to be identified. Further research into the shopping behaviour of specifically defined consumer groups must recognise this type of design. Segmentation over and above geographical location will achieve definite results. The opinion of Thomas (1976), reproduced

in Shepherd and Thomas (1980, p.55) would, on the basis of this research, appear well founded. Perhaps this contention should be put more strongly in that advances in the understanding of intra-urban consumer behaviour must disaggregate behavioural patterns with respect to socio-spatial differentiation in the city. The results presented conclusively support this view.

Finally, in summary the overall findings of the research can be very briefly related to aspects of the original literature review. The research demonstrated that convenience shopping goods behaviour needs to be disaggregated to reflect the demands of different products. Controlling the dependent or shopping variable in this way requires not only a move from durable to convenience goods, but towards a nomenclature of convenience products. Overt spatial behaviour for these goods, as represented by centre choice, varies by geographical location, social status and, within these categories, by mobility levels. Additionally, the effect of age structure, especially old age, the presence of pre-school children, household size and the associated demand profiles and the working respondents on centre choice must be accounted for.

The research also demonstrated the close association between these contextual variables, behaviour and consumer motivation. Geographical based motivation (including transport facilities and distance of journey to shop) are associated with these aspects. A similar parallel can be made between consumer attitudes, behaviour and contextual variables. Attitudes related to shop type, the city centre or specific geographic attributes demonstrated this consistent relationship further. Attitudes with less of a geographical bias did not illustrate such conclusive evidence.

The implications of these results for previous studies are interesting. Behaviour for certain goods (Bread) and for certain consumer groups (e.g. the elderly and some low status) resembles the nearest centre hypothesis. A refined version of the gravity model disaggregated for the dynamics of behaviour and related to specific consumer groups appears a possible fruitful exercise. Centre attractiveness, especially measured in perceptual/cognitive terms, does appear to be traded off against distance by many consumers, especially

the high status, mobile groups. Similarly, the implications for a 'dual assignment' within the intra-urban context are clear. Certain consumers are undoubtedly prepared to travel and by-pass smaller shopping centres. Behaviour would appear to relate to the 'type' of goods or services required (Warner and Daniels, 1978). The implications of these brief statements for future studies are clear. Further disaggregation of the patterns of intra-urban shopping behaviour should occur, but must account for aspects of socio-spatial differentiation in the city. The link between residential location and service provision cannot be underestimated in such a view.

APPENDICES

APPENDIX 1: QUESTIONNAIRE

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a) Are you the principal shopper in the household?

If YES, proceed with the interview.

If NO, ask: Is it possible to speak with the main shopper now?

If YES, proceed with the interview.

If NO, enquire into the possibilities of arranging for another time/day or for self completion.

(In the final resort abort the interview and record as Non Response).

To begin with, I'm going to ask you a few questions about yourself and your family. These are only needed to classify you within a larger group of shoppers. I assure you of the utmost CONFIDENTIALITY.

1) HOUSEHOLD DETAILS

Household Membership	Sex M/F	Age Group 1, 8	Relationship to Respondent	Work Status	Job Description
1. RESPONDENT					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					

Coding:

Age Group: 1. Less 5 years 2. 6-16 3. 17-25 4. 26-35
5. 46-55 7. 56-65 8. 66+

Relationship: 1. Spouse 2. Offspring (18 years)
3. Other Adult

Work Status: 1. Full time 2. Part time
3. Retired 4. Unemployed 5. F.T.E. 6. Housewife
7. Not applicable

Job Description: As specific as possible.

Note if self employed. Note job type. Note previous employment
of person retired.

2. HOUSING INFORMATION (filled in by interviewer)

	Detached	Semi	Terraced	Flat	Bungalow
Pre 1918	1	2	3	4	5
Interwar Private	6	7	8	9	10
" Council	11	12	13	14	15
Postwar Private	16	17	18	19	20
" Council	21	22	23	24	25

3. RESIDENTIAL OCCUPANCE

a) How long have you lived here?

1. Less 12 months 2. 1-2 years 3. 2-3 years 4. >3 years

b) Previous residence if less than 3 years
.

General Shopping Behaviour

4. How often do you go shopping for FOODSTUFFS?
1. Daily
 2. Several times/week
 3. Weekly
 4. Twice weekly
 5. Over twice weekly
5. Indicate from the list, that which best describes your FOOD shopping habits.
1. One main shopping trip for ALL foodstuffs
 2. One main shopping trip PLUS a number of supplementary trips
 3. Two main shopping trips
 4. Two main shopping trips PLUS a number of supplementary trips
 5. No major shopping trip BUT a number of minor shopping trips
6. a) Which is the most important day for you to go FOOD shopping?
b) What other days do you ever use?
c) Why do you shop on this particular day (6a)?
Any Reason / Please be specific
.
.
7. In general, what time of the day do you normally do the bulk of your food shopping?
1. Morning before 12.00
 2. Lunchtime 12-2.00 p.m.
 3. Afternoon 2-5 p.m.
 4. Evening after 5.00 p.m.
 5. Varies
8. How many persons do the food shopping in your household?
1. One shopper only
 2. Housewife and 'some' help
 3. Housewife & 'fair' help
 4. Two usually
 5. Three usually
 6. All the household
9. What proportion of the total food shopping do you, (as the principal shopper) do?
1. 30-50%
 2. 51-60%
 3. 61-70%
 4. 71-80%
 5. 81-90%
 6. 91%+

10. What amount of food shopping does your spouse do?

- 1. Less than 10%
- 2. 11-25%
- 3. 26-50%
- 4. 51-75%
- 5. 76-100%
- 6. Only helps
- 7. Nil
- 8. N/A

11. What form does this take?

- 1. Helps generally
- 2. Choose goods inside store
- 3. Transport/Carriage only
- 4. Nil
- 5. N/A

Shopping Locations for Selected Commodity Groups

12. a) WHERE Do you usually obtain the bulk of your general GROCERY shopping?

Name/Location

.

b) What proportion of your total grocery purchases does this location account for?

- 1. Less than 30%
- 2. 30-50%
- 3. 51-60%
- 4. 61-70%
- 5. 71-80%
- 6. 81-90%
- 7. 91%+

c) How long does this journey take you?

- 1. Less than 10 mins
- 2. 11-20 mins
- 3. 21-30 mins
- 4. 31-45 mins
- 5. Over 45 mins

d) How do you normally travel there?

- 1. Car
- 2. Bus
- 3. Train
- 4. Walk
- 5. Motor Bike
- 6. Bicycle

e) How often do you shop for groceries at location? (12a)

- 1. Daily
- 2. Several times/week
- 3. Weekly
- 4. 2 weekly
- 5. 2-4 weeks
- 6. Over 4 weeks

f) What other centre(s) do you occasionally use for Groceries?

Name/Location

- a)
- b)
- c)

13. a) Where do you usually obtain the bulk of your MEAT purchases?

Name/Location
.

b) How do you normally travel there?

1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

c) How long does this journey take you?

1. Less than 10 mins 2. 11-20 mins 3. 21-30 mins 4. 31-45 mins
5. Over 45 mins

d) How often do you buy meat at location? (13a)

1. Daily 2. Several times/week 3. Weekly 4. Every 2 weeks
5. 2-4 weeks 6. Over 4 weeks

e) What other centre(s) do you occasionally use for meat?

Name/Location

a)
b)
c)

14. a) Where do you usually obtain the bulk of your FISH purchases?

Name/Location
.

b) How do you normally travel there?

1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

c) How long does this journey take you?

1. Less than 10 mins 2. 11-20 mins 3. 21-30 mins 4. 31-45 mins
5. Over 45 mins

d) How often do you buy fish from this source? (14a)

1. Daily 2. Several times/week 3. Weekly 4. Every 2 weeks
5. 2-4 weeks 6. Over 4 weeks

e) What other centre(s) do you occasionally use for fish purchases?

Name/Location

- a)
- b)
- c)

15. a) WHERE do you usually obtain the bulk of your BREAD purchases?

Name/Location

b) How do you normally travel there?

- 1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

c) How long does this journey take you?

- 1. Less than 10 mins 2. 11-20 mins 3. 21-30 mins 4. 31-45 mins
- 5. Over 45 mins

d) How often do you buy bread from this source?

- 1. Daily 2. Several times/week 3. Weekly 4. Every 2 weeks
- 5. 2-4 weeks 6. Over 4 weeks

e) What other centre(s) do you occasionally use for bread purchases?

Name/Location

- a)
- b)
- c)

16. a) WHERE do you usually obtain the bulk of your CAKE purchases?

Name/Location
.

b) How do you normally travel there?

- 1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

c) How long does this journey take you?

- 1. Less than 10 mins 2. 11-20 mins 3. 21-30 mins 4. 31-45 mins
- 5. Over 45 mins

- d) How often do you buy cakes from this source? (16a)?
1. Daily
 2. Several times/week
 3. Weekly
 4. Every 2 weeks
 5. 2-4 weeks
 6. Over 4 weeks

e) What other centre(s) do you occasionally use for cake purchases?

- Name/Location
- a)
 - b)
 - c)

17. a) WHERE do you usually obtain the bulk of your FROZEN FOODS?

Name/Location

b) How do you normally travel there?

1. Car
2. Bus
3. Train
4. Walk
5. Motor Bike
6. Bicycle

c) How long does this journey take you?

1. Less than 10 mins
2. 11-20 mins
3. 21-30 mins
4. 31-45 mins
5. Over 45 mins

d) How often do you buy frozen foods from this location? (17a)?

1. Several times/week
2. Weekly
3. Every 2 weeks
4. 2-4 weeks
5. 1-3 months
6. Over 3 months

e) What other centre(s) do you occasionally use for frozen foods?

- Name/Location
- a)
 - b)
 - c)

18. Are there any other shops/shopping areas that you visit regularly for food purchases?

- Name/Location
- a)
 - b)
 - c)

19. a) How often do you combine a food shopping trip with some other form/type of activity?

- 1. Never 2. Rarely 3. Sometimes 4. Often 5. Very Often 6. Always

b) What form/with what other type of activity does this occur?

Please be as specific as possible
.
.

20. a) How far would you agree that your food shopping behaviour remains stable in the sense of the location and type of shops visited regularly?

- 1. Definitely stable: Use same shops regularly
2. Reasonably stable: Occasionally alter but not greatly
3. Tend to vary from place to place occasionally
4. Highly variable - no definite pattern
5. Unable to state

b) Has your food shopping behaviour changed at all?

Over the last six months? YES/NO
Over the last two years? YES/NO

c) Type of change
.

c) Reason for changes/not changing? (delete as necessary)

.
.
.

Food Motivations

21. a) To what extent on the scale do you consider the following as important reasons for your choice of shopping area for FOOD GOODS

- 1. Extremely Important
- 2. Important
- 3. Don't Know
- 4. Not Important
- 5. Not at all Important

	1	2	3	4	5
	Ext. Imp	Imp	D/K	Not Imp	Not at all Imp

- 1. Actual distance between shops and home
- 2. Ease of access to the shops by CAR
- 3. Ease of access to the shops by BUS
- 4. Ease of access to the shops on FOOT
- 5. Convenience of car parking
- 6. Convenience of bus facilities
- 7. Variety of shops in the centre
- 8. Reputation of shops in the centre
- 9. Availability of a supermarket
- 10. Choice of products sold by the shops
- 11. Quality of goods sold by the shops
- 12. Price of goods sold by the shops
- 13. Service received from store staff
- 14. Ability to combine shopping and another activity
- 15. Availability of specialist food shops
- 16. Routine/habit - always shop there
- 17. Familiarity with the centre

b) Is there any other reason why you choose your shopping area for food (Please be as specific as possible)

- a)
- b)
- c)

Shopping Behaviour for types of Durable and Specialist goods

22. a) How often do you buy CLOTHING goods for YOURSELF?
1. Several times/week 2. Weekly 3. Every 2 weeks 4. 2-4 weeks
5. 1-3 months 6. 3-12 months 7. Not often/rarely 8. Never
- b) Where do you do MOST of your clothing shopping?
Name/Location
.
- c) What proportion of your total clothing shopping do you buy at
. (22b)?
1. 30-50% 2. 51-60% 3. 61-70% 4. 71-80% 5. 81-90% 6. 91%+
- d) How do you normally travel to? (22b)
1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle
- e) Do these journeys tend to take the form of special outings?
YES/NO
- f) Are there any other centre(s) that you occasionally use for clothing goods?
a) Name/Location
b)
c)
- g) How often do you combine a visit to a shopping area for CLOTHING with a trip for FOOD shopping?
1. Never 2. Rarely 3. Sometimes 4. Often 5. Very Often
6. Always

23. a) How often do you buy HOUSEHOLD HARDWARE goods? (Includes china, glass, DIY, wallpaper, paint, ironmongery, utensils, etc.)
 1. Several times/week 2. Weekly 3. Every 2 weeks 4. 2-4 weeks
 5. 1-3 months 6. 3-12 months 7. Not often/rarely 8. Never

b) Where do you buy MOST of your hardware goods?
 Name/Location

c) What proportion of your total hardware purchases do you buy at
 (23b)?
 1. 30-50% 2. 51-60% 3. 61-70% 4. 71-80% 5. 81-90% 6. 91%+

d) How do you normally travel to? (23b)
 1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

e) Do these journeys tend to take the form of special outings?
 YES/NO

f) Are there any other centre(s) that you occasionally visit for hardware purchases?
 a) Name/Location
 b)
 c)

g) How often do you combine a visit to a shopping area for HARDWARE goods with a trip for FOOD shopping?
 1. Never 2. Rarely 3. Sometimes 4. Often 5. Very often
 6. Always

24. a) How often do you buy HOUSEHOLD ELECTRICAL ITEMS? (Including accessories)
 1. Several times/week 2. Weekly 3. Every 2 weeks 4. 2-4 weeks
 5. 1-3 months 6. 3-6 months 7. Not often/rarely 8. Never

- b) Where do you buy MOST of your electrical items?
 Name/Location

- c) What proportion of your total electrical purchases do you buy at? (24b)
 1. 30-50% 2. 51-60% 3. 61-70% 4. 71-80% 5. 81-90% 6. 91%+
- d) How do you normally travel to? (24b)
 1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle
- e) Do these journeys tend to take the form of special outings?
 YES/NO
- f) Are there any other centre(s) that you occasionally visit for electrical goods?
 a) Name/Location
 b)
 c)
- g) How often do you combine a visit to a shopping area for ELECTRICAL items with a trip for FOOD shopping?
 1. Never 2. Rarely 3. Sometimes 4. Often 5. Very Often
 6. Always

City Centre Shopping Trips

25. How often do you shop in Swansea City Centre for ALL types of goods?
 1. Daily 2. Several times/week 3. Weekly 4. 2 weekly 5. 2-4 weeks
 6. 1-3 months 7. Not often/rarely 8. Never
26. How often do you shop in Swansea City Centre for FOOD goods?
 1. Daily 2. Several times/week 3. Weekly 4. 2 weekly 5. 2-4 weeks
 6. 1-3 months 7. Not often/rarely 8. Never

27. What proportion of your TOTAL FOOD SHOPPING do you do in the City Centre?

1. Less 10% 2. 11-25% 3. 26-50% 4. 51-75% 5. 76-90% 6. 91%+

28. How do you normally travel to the City Centre?

a) On Weekdays?

1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

b) On Weekends?

1. Car 2. Bus 3. Train 4. Walk 5. Motor Bike 6. Bicycle

29. How would you RATE Swansea City Centre?

- | | | | | | |
|---------------------------|---|---|---|---|---|
| a) For food shopping | 1 | 2 | 3 | 4 | 5 |
| b) For clothing shopping | 1 | 2 | 3 | 4 | 5 |
| c) For hardware purchases | 1 | 2 | 3 | 4 | 5 |
| d) For electrical items | 1 | 2 | 3 | 4 | 5 |

1. Very good 2. Good 3. Indifferent 4. No good 5. Useless

30. How convenient do you find the City Centre to get to?

1. Very good 2. Good 3. Indifferent 4. No good 5. Useless

Attitudes

31. Consider the following statements and indicate the extent to which you agree or disagree with each.

Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1	2	3	4	5

Statements as produced in Table 2.10.

Personal Mobility

32. a) How many cars/vans are owned by the household?

- 0 1 2 3 4

b) Do you, (the respondent) hold a current, full Driving Licence?
YES/NO

If YES

If NO

c) Do you have access to a vehicle? e) How often do you get a lift vehicle when food shopping?

1. At ALL times, for most purposes
2. Restricted access during the day
3. Restricted access during the evening
4. Never normally available to me
5. Varied access
6. N/A

1. Never
2. Rarely
3. Sometimes
4. Frequently
5. Always
6. N/A

If c) is 2,3,4, or 5 ask e)

d) How often do you use this vehicle alone when food shopping?

1. Never
2. Rarely
3. Sometimes
4. Frequently
5. Always
6. N/A

f) Who gives you this lift?

1. Spouse only
2. Family (other than spouse)
3. Family (including spouse)
4. Friends
5. N/A

If d) is 1,2,3 or 4 ask e)

g) What period of the day is this lift normally available

1. Morning only
2. Lunchtime (12-2.00 p.m.)
3. Afternoon (2-5.00 p.m.)
4. Evening (after 5.00 p.m.)
5. Anytime
6. N/A

h) What type of food shopping trip(s) do you do when either -
using the vehicle alone? or
Getting this lift? (Delete as necessary)

1. All food shopping trips
2. Bulky items only
3. Topping up/
supplementary
4. Never use for food
5. Varied
6. N/A

33. Do you own a refridgerator? YES/NO

34. Do you own a Deep Freeze? YES/NO

THANK YOU FOR YOUR HELP. IT ONLY LEAVES ME TO ENSURE YOU OF THE
CONFIDENTIAL NATURE OF THIS SURVEY AND TO ANSWER ANY QUESTIONS THAT
YOU MAY WANT TO ASK.

APPENDIX 2: Extended Family Life Cycle Classification (% Households)

	Single Young Couple			Middle Aged			Elderly			U/C
	Person			Couple			Couple			
	H/Hold	0	Child 1	0	Child 1	0	Child 1	0	Child 1	
Trallwn High Status	2	10	41	9	28	7	1	3		
Trallwn Low Status	4	4	27	5	31	16	9	6		
(All Trallwn)	(3.2)	(7.0)	(33.1)	(7.0)	(28.7)	(11.5)	(5.1)	(4.5)		
Treboeth High Status	6	8	18	8	49	3	5	4		
Treboeth Low Status	5	1	14	5	21	14	24	17		
(All Treboeth)	(5.5)	(4.5)	(16)	(6.5)	(35)	(8.5)	(14.5)	(10.5)		
Tycoch High Status	6	6	19	-	52	13	1	4		
Tycoch Low Status	11	-	4	10	23	33	11	7		
(All Tycoch)	(8.5)	(3)	(11.5)	(5)	(37.5)	(23)	(6)	(5.5)		

APPENDIX 3: Household Composition (% Households)

	One Adult			Min. 2 Adults				N
	No Child	1+ Child	No Child	1 Child	2 Child	3 Child		
Trallwn High Status	2.6	3.9	26.0	23.4	32.5	11.7	77	
Trallwn Low Status	3.8	7.5	26.3	13.8	23.8	25.0	80	
(All Trallwn)	(3.2)	(5.7)	(26.1)	(18.5)	(28.0)	(18.5)	(157)	
Treboeth High Status	6.3	3.8	17.7	21.5	39.2	11.4	79	
Treboeth Low Status	6.3	12.7	20.3	24.1	25.3	11.4	79	
(All Treboeth)	(6.3)	(8.2)	(19.0)	(22.8)	(32.3)	(11.4)	(158)	
Tycoch High Status	5.7	-	22.9	12.9	34.3	22.9	70	
Tycoch Low Status	11.4	4.3	44.3	14.3	14.3	11.4	70	
All Tycoch	(8.6)	(2.2)	(33.6)	(13.6)	(24.3)	(17.2)	(140)	

APPENDIX 4: Deep Freeze Ownership Levels (% Households)

	Owners	Non Owners	N
Trallwn High Status	68.8	31.2	77
Trallwn Low Status	48.8	51.3	80
(All Trallwn)	(58.6)	(41.4)	(157)
Treboeth High Status	75.9	24.1	79
Treboeth Low Status	41.8	58.2	79
(All Treboeth)	(58.9)	(41.1)	(158)
Tycoch High Status	75.7	24.3	70
Tycoch Low Status	55.7	44.3	70
(All Tycoch)	(65.7)	(34.3)	(140)

APPENDIX 5: Statistical Note on the Chi Squared Test

The analysis of social research data studying differences between groups of respondents, requires a statistical technique that will determine whether the variation observed in the data signifies differences among the groups, or whether they are merely the chance variations that can be expected among random samples.

A commonly adopted procedure for testing the statistical significance of these differences is the chi square test (Siegel, 1956; Cohen and Holliday, 1982).

Chi square (χ^2) is a widely used technique (e.g. Williams, 1981) that has attracted much discussion and consequently will only receive a cautionary note here. Simply, the technique tests a null hypothesis of no difference between the sample groups by the application of a formula:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where O_{ij} = observed number of cases categorised in the i th row of j th column.

E_{ij} = number of cases expected under H_0 to be categorised in i th row of j th column.

$$\sum_{i=1}^r \sum_{j=1}^k$$

directs one to sum overall (r) rows and all (k) columns: sum the cells

from Siegel (1956) p.104, 105 and 175.

Under the assumption of a null hypothesis the sample distribution of chi square calculated (from the above formula) can be shown to be approximated, by a χ^2 distribution with 'degrees of freedom'. These reflect the number of observations that are free to vary after certain restrictions have been placed on the data and are determined by the organisation of that data. They are calculated by:

$$(\text{number of columns} - 1) \times (\text{number of rows} - 1)$$

They are presented in the text as n d.f.

If the calculated (or observed) value of χ^2 is equal to, or larger than that given in a theoretical distribution table (see Table C, p.249 of Siegel, 1956) for a particular level of significance and for the degrees of freedom, then the null hypothesis is rejected at that level of significance. The level of significance is the probability level at which the decision to reject the Null Hypothesis is made and is detailed α . Commonly $\alpha = 0.05$ or 5%.

The method briefly described is fraught with problems. The test requires that the expected frequencies in each cell should not be too small. Typically contingency table data is collected from sample surveys and may result in small cell frequencies. If this requirement is violated then the results of the test are meaningless.

Experts differ somewhat on how small the number in contingency tables may be for the χ^2 test to yield an acceptable result. Cochran (1954) and widely quoted, recommended that for χ^2 tests with d.f. greater than 1, fewer than 20% of the cells should have an expected frequency of less than 5 and that no cell should have an expected frequency of less than 1. If these requirements are not met by the form of the original data then the researcher can combine adjacent categories. This however, must be interpretable. When the values in a table are fairly small a 'correction for continuity' devised by Yates (1934) can be applied. There is no definite rule for applying Yates' correction factor but its effect is always to reduce the value of χ^2 .

Percentages and proportions are not normally used in the application of χ^2 tests. The tables in this thesis are presented in these forms, the chi square values, however, were calculated on the raw data.

In this thesis, the χ^2 test has been applied as far as possible in accordance with the required values of the expected frequencies. Certain tables report the percentage of cells with an expected frequency of less than 5, other tables did not meet the required criteria and consequently no significance values are reported. Any interpretation of the data must remember, that even with chi square values, the test only indicates whether a significant relationship exists. It does not tell us how strongly the variables are related. If the requirements for cell size have not been met and the derived χ^2 values reported, it is appreciated that the result may not be as meaningful as the significance levels attached to them would otherwise imply.

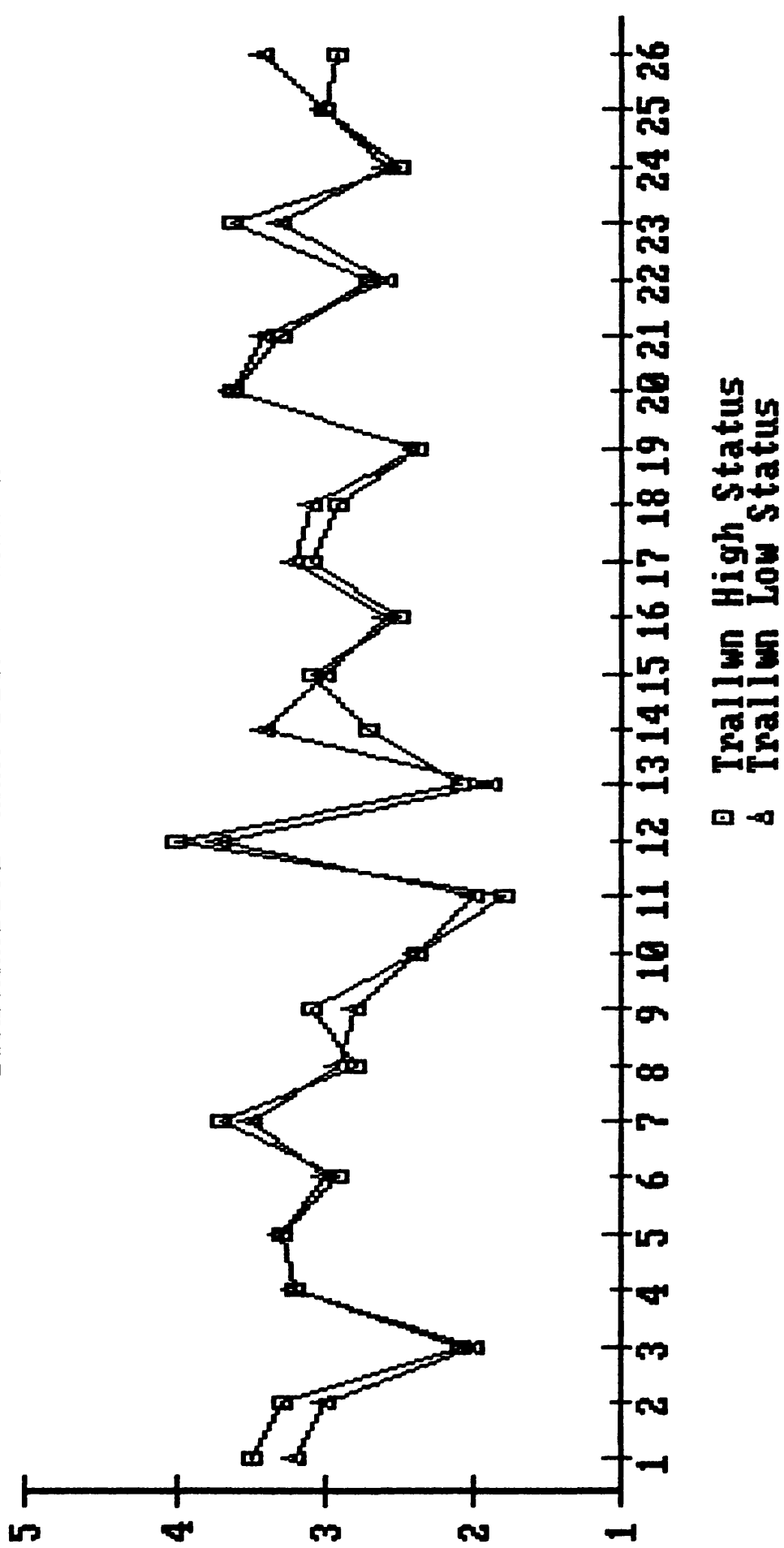
Having accepted all these caveats the conclusions of Silk (1979, p.61) are applicable; "as long as the underlying assumptions of chi square are borne in mind, it is a very useful technique".

APPENDIX 6: The Influence of Age of the Respondent on Major Bread Centre
(% Respondents)

	SCC	STC	NNBH/LC	DC	FSO	OTHER	NO OF CASES
TRALLWN							
Less 35	15.6	16.9	50.6	1.3	2.6	13.0	77
36/45	16.2	10.8	54.1	-	2.7	16.2	37
46/65	2.6	21.1	57.9	2.6	-	15.8	38
66+	20.0	20.0	60.0	-	-	-	5
TREBOETH							
Less 35	13.3	8.9	62.2	2.2	11.1	2.2	45
36/45	17.1	19.5	51.2	2.4	2.4	7.3	41
46/65	7.8	20.3	60.9	-	3.1	7.8	64
66+	-	12.5	87.5	-	-	-	8
TYCOCH							
Less 35	25.9	7.4	55.6	3.7	3.7	3.7	27
36/45	25.0	-	50.0	15.0	10.0	-	40
46/65	9.3	1.9	72.2	5.6	5.6	5.6	54
66+	15.8	-	78.9	5.3	-	-	19

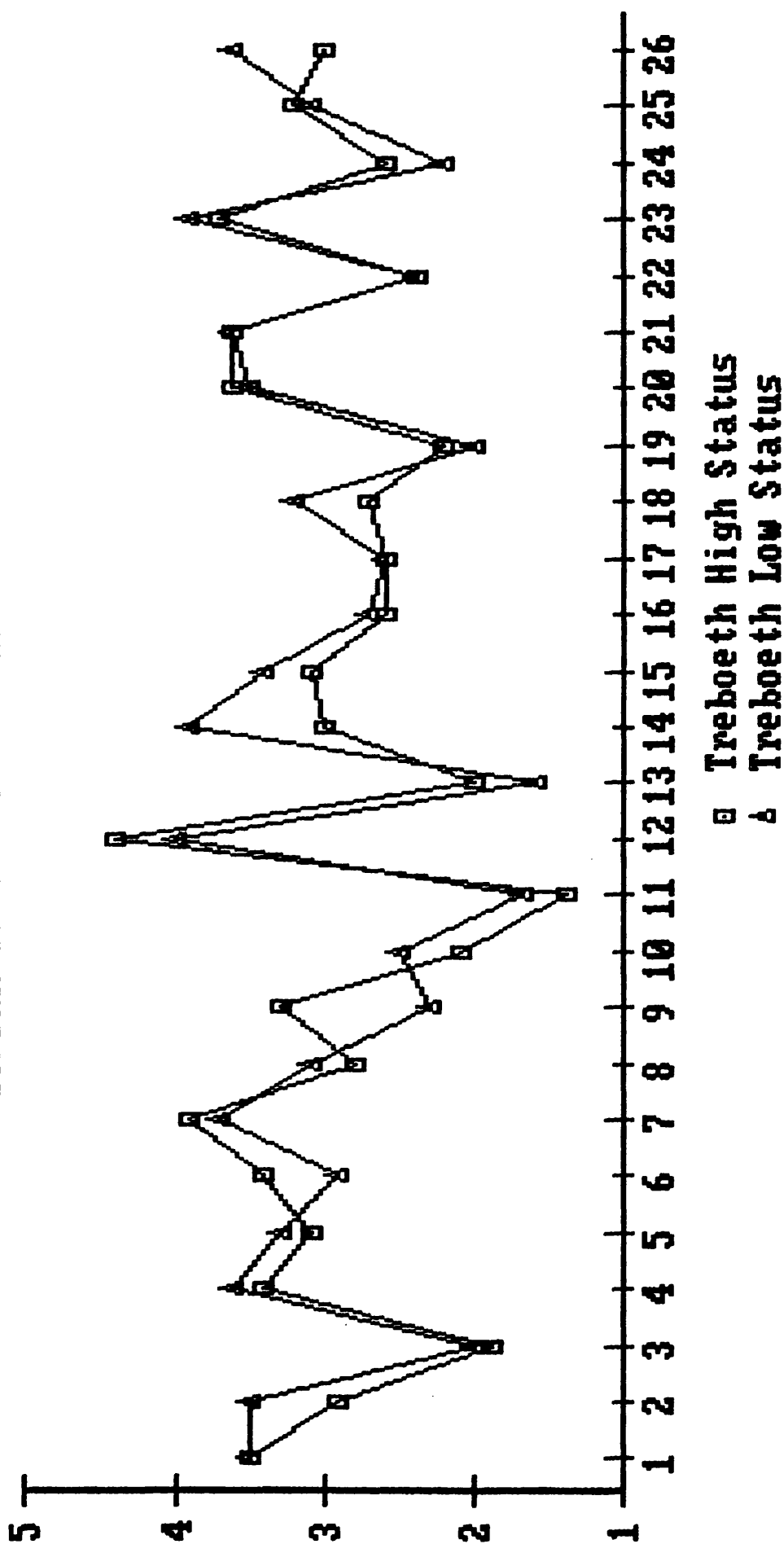
Appendix 7: Attitude Statements

COMPARATIVE MEAN SCORE: TRALLWN



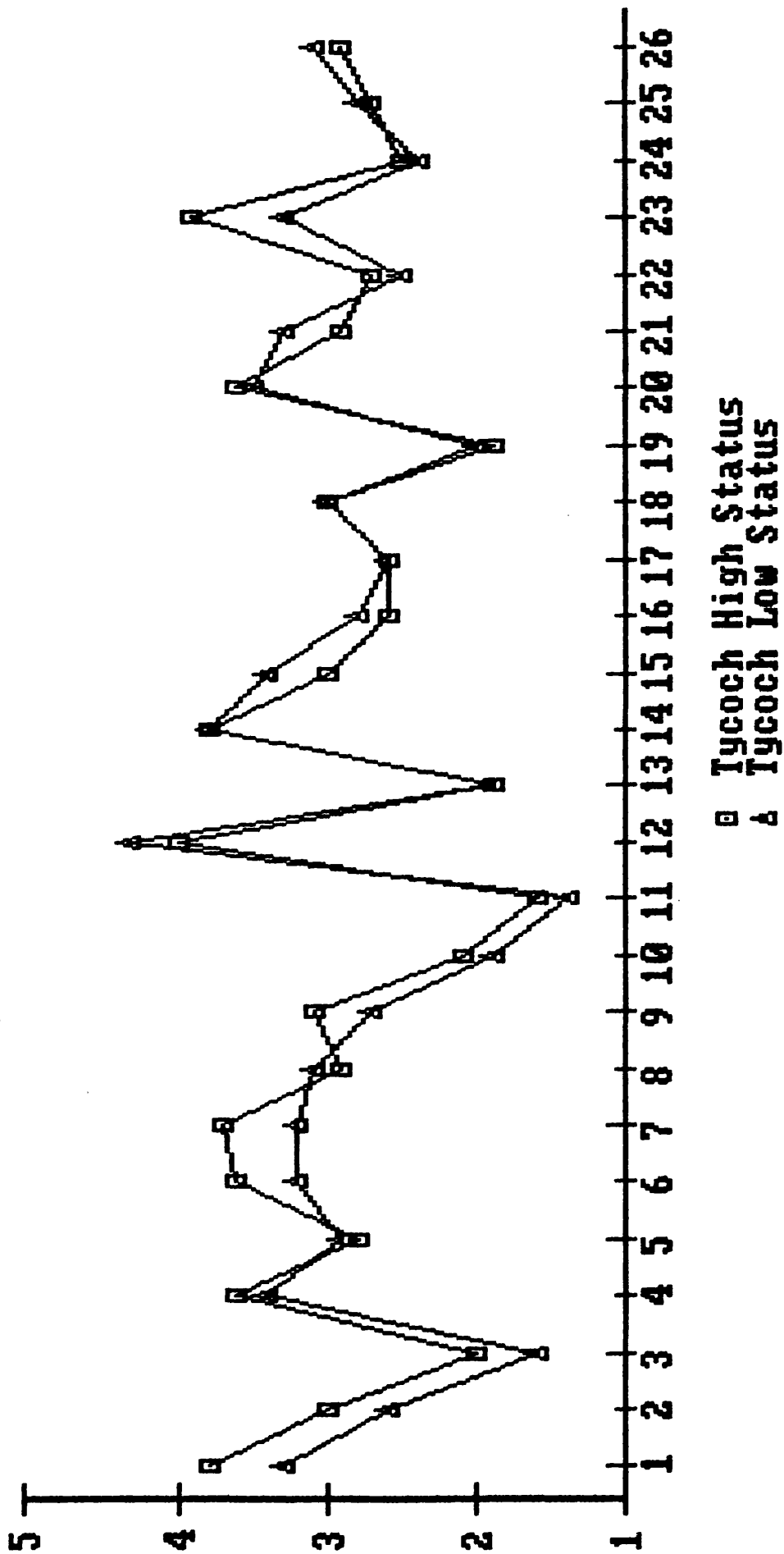
Appendix 7: Attitude Statements

COMPARATIVE MEAN SCORES: TREBOETH



Appendix 7: Attitude Statements

COMPARATIVE MEAN SCORES: TYCOCH



APPENDIX 8: Principal Components Analysis of the 26 Attitude Statements

Unrotated Component Solution	Eigenvalue	Percentage of Explained Variance Percent of Variance	Cumulative
Component 1	2.63	10.1	10.1
2	2.28	8.8	18.9
3	2.10	8.1	27.0
4	1.71	6.6	33.5
5	1.51	5.8	39.3
6	1.46	5.6	45.0
7	1.33	5.1	50.1
8	1.21	4.3	54.4
9	1.04	4.0	58.4

Loadings Matrix: Unrotated Component Solution

Statement/Variable	Component				
	1	2	3	4	5
1.	.13	-.09	-.25	-.22	-.01
2.	.34	-.13	.80	.40	-.30
3.	-.01	-.01	.41	.03	.02
4.	.50	.32	-.05	.12	.47
5.	.21	.18	.23	.56	-.35
6.	.49	.26	.05	-.13	.49
7.	.30	.13	-.03	.46	-.18
8.	-.12	-.53	-.15	.21	.28
9.	.03	.64	.16	-.35	-.17
10.	.11	-.55	.33	.22	.20
11.	-.06	-.32	.42	.04	.19
12.	-.06	.54	-.33	-.04	-.18
13.	.02	.34	.14	-.30	.04
14.	.05	-.29	-.49	-.09	-.17
15.	.37	.05	-.48	.26	.02
16.	.40	-.02	-.39	.18	-.04
17.	-.06	.19	.50	.13	.16
18.	.15	.09	-.31	.04	.25
19.	.04	.19	.40	.11	.23
20.	.67	-.17	.30	-.24	-.22
21.	.48	-.19	.11	-.22	-.13
22.	-.64	.22	-.18	.37	.18
23.	.52	.30	-.02	.17	.27
24.	-.38	.27	-.01	.21	.29
25.	-.07	.30	.19	.39	-.32
26.	-.06	.08	.22	-.17	-.25

Statement/Variable	Component				Communality
	6	7	8	9	
1.	-.10	.44	.38	.05	.49
2.	-.02	.36	-.34	-.04	.64
3.	.03	.30	-.13	.26	.35
4.	-.11	.12	.13	.08	.64
5.	.02	-.05	.43	-.04	.75
6.	-.18	.06	.17	.19	.67
7.	-.21	.18	-.19	-.41	.64
8.	-.29	-.18	.05	.24	.61
9.	.25	.12	.06	-.06	.67
10.	.25	.07	.05	.09	.60
11.	.34	.16	.14	-.31	.57
12.	-.26	-.24	-.20	.08	.61
13.	.21	.31	.04	-.18	.40
14.	.07	.33	.19	-.04	.52
15.	.41	-.10	-.08	.14	.64
16.	.49	-.04	-.21	.21	.67
17.	-.05	-.10	.34	.25	.52
18.	.48	-.35	.11	-.20	.59
19.	.17	-.32	.04	-.33	.51
20.	.01	-.03	-.06	.17	.70
21.	-.18	-.21	.27	-.12	.51
22.	.06	.31	.11	.01	.77
23.	-.19	.22	-.02	-.03	.54
24.	.12	.19	.05	.14	.41
25.	-.05	-.21	.45	.28	.71
26.	.40	.09	.06	.37	.46

BIBLIOGRAPHY

- Allport, G.W. 1935 "Attitudes" in Thomas, K. (Ed)
"Attitudes and Behaviour",
(Penguin, London)
- Ambrose, P.J. 1967 "An Analysis of Intra-Urban
Shopping Patterns", Town
Planning Review, 38, 327-334
- Applebaum, W. 1965 "Measuring Retail Market Penetration
For a Discount Food Supermarket:
A Case Study", Journal of Retailing,
41, 1-15
- Applebaum, W. 1968 "Store Characteristics and Operating
Performance", Ch. 10; "Advanced Methods
For Measuring Store Trade Areas and
Market Penetration", Ch. 24; "The
Analogue Method of Estimating
Potential Store Sales", Ch. 27; in
C. Kornblau (ed.), "Guide to Store
Location Research" (Supermarket
Institute, Chicago)
- Atkinson, J. 1967 "A Handbook for Interviewers",
Office of Population Censuses and
Surveys, M136 (HMSO, London)
- Bacon, R.W. 1971 "An Approach to the Theory of Consumer
Shopping Behaviour", Urban Studies, 8, 55-64
- Balchin, W.G.V. (Ed) 1971 "Swansea and Its Regions",
(British Association for the
Advancement of Science, Swansea)
- Banister, D. 1977 "Car Availability and Usage:
A Modal Split Based on These
Concepts", (University of
Reading, Geographical Papers, 58)
- Bartos, R. 1977 "The Moving Target: The Impact of
Women's Employment on Consumer
Behaviour", Journal of Marketing,
July, 31-37
- Batty, M. 1976 "Urban Modelling", (Cambridge University
Press, London)
- Batty, M. 1978 "Reilly's Challenge: New Laws of Retail
Gravitation which Define Systems of
Central Place", Environment and
Planning, 10, 185-220
- Beavon, K.S.O. 1977 "Central Place Theory: A Reinterpretation",
(Longman, London)
- Bechofer, F. 1969 "Occupations" Ch. 4, in Stacey, M. (Ed)
"Comparability in Social Research",
(Heinemann, London)

- Bennison,D.J. and
Davies,R.L. 1977 "The Movement of Shoppers within
the Central Area of Newcastle
upon-Tyne", (University of Newcastle
upon-Tyne, Seminar Paper, 34)
- Bentley,C.A., Bruce,A.
and Jones,D.R. 1977 "Intra-Urban Journeys and Activity
Linkages", (Building Research
Establishment, Current Paper, 36/77)
- Berry,B.J.L. 1967 "Geography of Market Centers and
Retail Distribution", (Prentice Hall)
- Berry,B.J.L.(Ed) 1971 "Comparative Factorial Ecology",
Economic Geography, 47, part 2
- Berry,B.J.L. and
Garrison,W.L. 1958 "Recent Developments of Central
Place Theory", Papers and
Proceedings of the Regional
Science Association, 4, 107-120
- Berry,B.J.L., Tarrant,R.J.,
Garner,B.J. and
Simmons,J.W. 1963 "Commercial Structure and Commercial
Blight", (University of Chicago,
Department of Geography, Research
Paper, 85)
- Berry,B.J.L. and
Baker,A.M. 1968 "Geographic Sampling", in
Berry,B.J.L. and Marble,D.F.
(Eds), "Spatial Analysis:A
Reader in Statistical Geography",
(Prentice Hall, New Jersey)
- Berry,L.L. and
Solomon,P.J. 1971 "Generalising about Low Income
Food Shoppers:A Word of Caution",
Journal of Retailing, 47, 41-51
- Berry,R.K., Dawson,J.A.,
Kirby,D.A. and Mair,G.V. 1977 "The Small Retail Unit in Urban Britain",
(Final Report of SSRC Research Grant)
- Bishop,D. 1975 "User Response to a Foot Street",
Town Planning Review, 46, 31-46
- Bromley,R.D.F. and
Humphrys,G. 1979 "Dealing With Dereliction:
The Redevelopment of the Lower
Swansea Valley", (University College
Swansea)
- Brooker-Gross, S.R. 1981 "Shopping Behaviour in Two Sets
of Shopping Destinations:An
Interactionists Interpretation
of Outshopping", T.E.S.G., 72, 1, 28-49
- Bruce,A. 1974 "Why We Shop Where We Do", Built
Environment, 3, 280-284
- Bucklin,L.P. 1967 "The Concept of Man in Intra
Urban Shopping", Journal of
Marketing, 31, 37-42

- Bucklin,L.P. 1971 "Retail Gravity Models and Consumer Choice:A Theoretical and Empirical Critique",Economic Geography,47, 489-497
- Bullock,N. et al 1974 "Time Budgets and Models of Urban Activity Patterns", Social Trends 5, 45-63
- Buursink,J. 1981 "Testing Nearest Centre Hypotheses", T.E.S.G.,72,1,47-51
- Cadwallader,M. 1975 "A Behavioral Model of Consumer Spatial Decision Making", Economic Geography,51,339-349
- Cadwallader,M. 1981 "Towards a Cognitive Gravity Model:The Case of Consumer Spatial Behaviour", Regional Studies,15,4,275-284
- Caplovitz,D. 1967 "The Poor Pay More", (The Free Press, New York)
- Carter,H. 1981 "The Study of Urban Geography", Third Edition, (Arnold,London)
- Carter,H. and Davies,W.K.D. 1970 "Urban Essays:Studies in the Geography of Wales", (Longmans, London)
- Cater,J.C. 1979 "Asian and non-Asian Retailing in Inner City Areas:A Preliminary Report on a Survey of Bradford,Leicester and the London Borough of Ealing" (Unpublished Paper Presented to the Institute of British Geographers Urban Study Group Symposium, Manchester)
- Cater,J.C. 1980 "The Impact of Institutions on Patterns of Ethnic Residence:Asian and White Estate Agents in Bradford" (Unpublished Paper Presented to the SSRC Conference on Current Research in Social Geography, University of Oxford)
- Chatfield,C.,Ehrenberg, A.S.C. and Goodhart,G.J. 1966 "Progress on a Simplified Model of Stationary Purchasing Behaviour", Journal of the Royal Statistical Society, A,129,317-367
- Child,D. 1970 "The Essentials of Factor Analysis", (Holt, Rinehart and Winston,London)
- Chisnall,P.M. 1973 "Marketing Research: Analysis and Measurement", (McGraw-Hill,New York)
- Chisnall,P.M. 1975 "Marketing:A Behavioural Analysis", (McGraw-Hill,New York)

- Christaller,W. 1933 "Central Places in Southern Germany",
Translated in 1966 from the 1933
German version by C.W.Baskin
(Prentice-Hall Inc.,Englewood Cliffs)
- Clark,B. and Bolwell,L. 1968 "Social Economic Status and
Consumer Behaviour",Journal of Town
Planning Institute,54
- Clark,W.A.V. 1968 "Consumer Travel Patterns and the
Concept of Range",Annals of the
Association of American Geographers,
58,386-396
- Clark,W.A.V. and Rushton,G. 1970 "Models of Intra-Urban Consumer
Behaviour and Their Implications
for Central Place Theory",Economic
Geography,46,486-497
- Cochran,W.G. 1954 "Some Methods for Strengthening the
Common Chi-Square Tests",Biometrics,
10,417-451
- Cohen,L. and Holliday,M. 1982 "Statistics for Social Scientists",
(Harper and Row,London)
- Comish,N.W. 1958 "What Influences Customer
Choice of a Food Store?",
Jornal of Retailing,Summer,90-100
- Conroy,M., Murphy,S., Symes,D., O'Shea,T.
and Costelloe. 1977 "Annascual Pilot Area- Development
Proposals", Resource Survey,
(An Foras Talientais,Dublin)
- Cox,R. 1974 "American Research into Marketing:
Where Next?",Chapter 9 in
Thorpe,D., "Research into Retailing
and Distribution",(Saxon House)
- Crimp,M, 1981 "The Marketing Research Process",
(Prentice Hall,London)
- Cronbach,L.J. 1967 "Principles of Educational,Psychological
Measurement" in Mehrens,W.A. and
Ebel,R.L. Read-McNally,Chicago
- Cullen,I., Godson,V. 1972 "The Structure of Activity
Patterns",in Wilson,A.G.(Ed)
"Patterns and Processes in Urban
and Regional Planning",(Pion,London)
- Cullen,I. and Godson,V. 1977 "Urban Networks:The Structure of
Activity Patterns",Progress in
Planning,4,1-96
- Darden,W.R. and Perreavlt,W.D. 1976 "Identifying Inter-Urban
Shoppers:Multiproduct Purchase
Patterns and Segmentation
Profiles", Journal of Marketing
Research, XIII, 51-60.

- Daultry,S. 1976 "Principal Components Analysis",
CATMOG,8,Geoabstracts,
Norwich
- Davies,R.L. 1968 "Effects of Consumer Income Difference
on the Business Provisions of Small
Shopping Centres",Urban Studies, 5, 144-164
- Davies,R.L. 1969 "Effects of Consumer Income Difference
on Shopping Movement Behaviour",
T.E.S.G.,60, 111-121
- Davies,R.L. 1972 "Structural Models of Retail Distribution:
Analogies with Settlement and Urban
Land-use Theories",Transactions of the
Institute of British Geographers,57,59-82
- Davies,R.L. 1972 "The Retail Pattern of
the Central Area of Coventry",
(Institute of British Geographers Urban
Study Group,Occasional Publication,1,1-42)
- Davies,R.L. 1973 "Patterns and Profiles of Consumer
Behaviour", (University of Newcastle-
upon-Tyne,Department of Geography,
Research Series,No.10)
- Davies,R.L. 1974 "Nucleated and Ribbon Components
of the Urban Retail System in Britain",
Town Planning Review,45(1),91-111
- Davies,R.L. 1976 "Marketing Geography:With Special
Reference to Retailing", (Retail and
Planning Associates,Corbridge)
- Davies,R.L. 1977 "Store Location and Store Assessment
Research:The Integration of Some
New and Traditional Techniques",
Transactions of the Institute of
British Geographers,2,141-157
- Davies,R.L. and Bennison,D.J. 1978 "Eldon Square: The Repercussions",
The Planner,May,73-74
- Davies,R.L. and Bennison,D.J. 1978 "The Eldon Square Regional Shopping
Centre: The First Eighteen Months",
(Retail Planning Associates,Corbridge)
- Davies,R.L. and Bennison,D.J. 1978 "Retailing in the City Centre:
The Characters of Shopping
Streets", T.E.S.G.,69,5,270-285
- Davies,R.L. and Hall,P.
(Eds) 1978 "Issues in Urban Society",
(Penguin,Harmondsworth)
- Davies,R.L. and Kirby,D.A. 1979 "Retail Organisation", (Unpublished
Position Paper for SSRC Seminar
Group on Geography and Retailing)

- Davies, T.J. 1982 "Local Authority Housing and Urban Managerialism: A Study in Swansea, South Wales" (Unpublished Ph.D Thesis, University of Wales, Cardiff)
- Davies, W.K.D. 1971 "Varimax and the destruction of generality: A methodological note", Area, 3, 2, 112-118
- Davies, W.K.D. 1972 "Conurbation and City-region in an Administrative Borderland: A Case Study of the Greater Swansea Area", Regional Studies 6, 2, 217-236
- Daws, L.F. 1974 "On Shoppers Requirements for the Location of Shops in Towns", (Building Research Establishment, Current Paper, 23/74)
- Daws, L.F. and Bruce, A.J. 1971 "Shopping in Watford", (Building Research Establishment, Watford)
- Daws, L.F. and McCulloch, M. 1974 "On Shoppers Requirements for the Location of Shops in Towns", (Building Research Establishment, Current Paper, 23/74)
- Daws, L.F. and McCulloch, M. 1974 "Shopping Activity Patterns: A Travel Diary Study of Watford", (Building Research Establishment, Current Paper, 31/74)
- Dawson, J.A. 1977 "The Impact of Changing Marketing Practices on the Urban Environment", (Unpublished Paper Presented to Urban Studies Group of the Institute of British Geographers)
- Dawson, J.A. 1979 "Public Policy and Retailing", (Unpublished paper presented to SSRC Seminar Group on Geography and Retailing)
- Dawson, J.A. 1980 "Research Priorities in Retail Geography", (Interim Report of S.S.R.C. sponsored Seminar Group on Geography of Retailing)
- Dawson, J.A. 1980 "Retail Geography", (London, Croom Helm)
- Dawson, J.A. and Kirby, D.A. 1980 "Urban Retail Provision and Consumer Behaviour: Some Examples from Western Society", Chapter 3 in Herbert, D.T. and Johnston, R.J. "Geography and the Urban Environment", Vol III (Wiley, London)
- Day, R.A. 1973 "Consumer Shopping Behaviour in a Planned Urban Environment", T.E.S.G., 64, 77-85

- Department of Employment 1972 "Classification of Occupations: Directory of Titles" (HMSO, London)
- Department of Employment 1978 "Family Expenditure Survey", (HMSO, London)
- Dixon, C.J. and Leach, B. 1978 "Questionnaires and Interviews in Geographical Research", CATMOG, 18 (Geoabstracts, Norwich)
- Dixon, C.J. and Leach, B. 1978 "Sampling Methods for Geographical Research", CATMOG, 17 (Geoabstracts, Norwich)
- Downs, R.M. 1970 "Geographic Space Perception: Past Approaches and Future Prospects", Progress in Geography, 2, 65-108
- Downs, R.M. 1970 "The Cognitive Structure of an Urban Shopping Center", Environment and Behaviour, 2, 13-39
- Downs, R.M. and Stea, D. 1973 "Image and Environment", (Edward Arnold, London)
- Eagly, A.H. and Himmelfarb, S. 1978 "Attitudes and Opinions", Annual Review of Psychology, 29, 517-554
- Edwards, J.R. 1970 "Social Patterns in Birmingham, 1966", (Centre for Urban Studies, University of Birmingham)
- Ehrenberg, A.S.C. 1968 "The Practical Meaning and Usefulness of the NBD/LSD Theory of Repeat Buying", Applied Statistics, 17, 17-32
- Ehrenberg, A.S.C. 1969 "Towards the Integrated Theory of Consumer Behaviour: Something for Theoreticians to Work On and for Practical Men to Think About", Journal of the Market Research Society, 11, 305-337 ; also in
- Ehrenberg, A.S.C. and Pyatt, F.G. (Eds) 1971 "Consumer Behaviour", (Penguin Modern Management Readings, Harmondsworth, Middlx.)
- Ehrenberg, A.S.C. 1972 "Repeat Buying: Theory and Application", (North Holland Publishing, Amsterdam)
- Engel, J.F., Kollat, D.T. and Blackwell, R.D. 1973 "Consumer Behaviour", (Holt, Rinehart and Winston Inc, New York)
- Evans, A.W. 1972 "A Linear Programming Solution to the Shopping Problem proposed by R.W. Bacon", Urban Studies, 9, 221-222

- Evans,D.J. 1973 "A Comparative Study of Urban Social Structures in South Wales", in "Social Patterns in Cities", Institute of British Geographers Special Publication, No.5, 87-101
- Everitt,B. 1974 "Cluster Analysis", (Heinemann,London)
- Eyles,J. 1971 "Pouring New Sentiments into Old Theories:How Else Can We Look at Behaviour Patterns?", Area,3,242-250
- Eyles,J. 1974 "Social Theory and Social Geography" Progress in Geography,6, 27-87
- Eysenck,H.J. 1958 "A Short Questionnaire for The Measurement of Two Dimensions of Personality", Journal of Applied Psychology,42,1
- Fernie,J. and Carrick,R.J. 1981 "Quasi-Retail Activity in Britain", (Unpublished Paper Presented at the Annual Conference of the Institute of British Geographers,Leicester)
- Fingleton,B. 1975 "A Factorial Approach to the Nearest Centre Hypothesis",Transactions of the Institute of British Geographers, 65,131-139
- Fishbein,M.(Ed) 1967 "Readings in Attitude Theory and Measurement", (Wiley,New York)
- Fisk,G. 1962 "A Conceptual Model for Studying Customer Image", Journal of Retailing,37,4,1-8
- Foxall,G.R. 1975 "Social Factors in Consumer Choice:Replication and Extension", Journal of Consumer Research,2,60-64
- Foxall,G.R. 1977 "Consumer Behavior:A Practical Guide", (Retail and Planning Associates,Corbridge)
- Garner,B.J. 1966 "The Internal Structures of Shopping Centres", (Northwestern University, Studies in Geography,12)
- Garner,B.J. 1970 "Towards a Better Understanding of Shopping Patterns", (Geographical Essays in Honour of K.C.Edwards,University of Nottingham,179-186)
- Getis,A. and Getis,J.M. 1968 "Retail Store Spatial Affinities", Urban Studies,5,317-332

- Girt, J.L. 1976 "Some Extensions to Rushton's Spatial Preference Scaling Model", Geographical Analysis, 9, 137-152
- Gittus, E. (Ed) 1972 "Key Variables in Social Research", Vol. 1; Religion, Housing, Locality Vol. 2; Politics, Voluntary Associations, Stratification, Demographic Variables, (Heinemann, London)
- Goddard, J. and Kirby, A. 1976 "An Introduction to Factor Analysis", CATMOG, 7, (Geoabstracts, Norwich)
- Goldman, A. 1978 "Confined Shopping Behavior Among Low Income Consumers: An Empirical Test", Journal of Marketing Research, 15, 11-19
- Goldthorpe, J.H. 1969 "The Affluent Worker in the Class Structure", (Cambridge Studies in Sociology, No. 3, Cambridge University Press, Cambridge)
- Goldthorpe, J.H. 1980 "Social Mobility and Class Structure in Modern Britain", (Open University Press)
- Goldthorpe, J.H. and Hope, K. 1974 "The Social Gradings of Occupations", (Clarendon Press, Oxford)
- Goldthorpe, J.H. and Llewellyn, C. 1980 "Class Mobility in Britain: Three Theses Examined", in Goldthorpe, J.H. "Social Mobility and Class Structure in Modern Britain", Ch. 2, 38-42
- Goldthorpe, J.H., Lockwood, F., Bechofer, F. and Platt 1968 "The Affluent Worker in the Class Structure", (Cambridge Studies in Sociology, Cambridge University Press)
- Golledge, R.G. 1967 "Conceptualizing the Market Decision Process", Journal of Regional Science, 7, 239-258
- Golledge, R.G. 1969 "The Geographical Relevance of Some Learning Theories" in Cox, K.R. and Golledge, R.G. (Eds), "Behavioral Problems in Geography: A Symposium", (Northwestern University, Department of Geography, Research Studies, 17, 107-145)
- Golledge, R.G. 1970 "Some Equilibrium Models of Consumer Behaviour", Economic Geography, 46, 417-424
- Golledge, R.G. and Brown, L.A. 1967 "Search Learning and the Market Decision Process", Geografiska Annaler, B 49, 116-124

- Golledge,R.G., Rushton,G. and Clark,W.A. 1966 "Some Characteristics of Iowa's Dispersed Farm Population and their Implications for the Grouping of Central Place Functions", Economic Geography, 52, 261-272
- Goode,W.J. and Hatt,P.K. 1952 "Methods in Social Research", (McGraw Hill, New York)
- Goyder,J.C. and Pineo,P.C. 1977 "Self Assessment of Social Status", Canadian Review of Sociology and Anthropology, 14(2), 235-246
- Gray,F. 1975 "Non-explanation in Urban Geography", Area, 7(4), 228-235
- Gray,P. 1957 "A Sample Survey with Both a Postal and an Interview Stage", Applied Statistics, 6, 139-153
- Gross,S.J. and Niman,C.M. 1975 "Attitude Behaviour Consistency: A Review", Public Opinion Quarterly, 39, 358-368
- Guardian,The 1979 "The Great American Petrol Pinch", July 17, Manchester
- Guy,C.M. 1975 "Consumer Behaviour and its Geographical Impact", (Geographical Paper, 34, Department of Geography, University of Reading)
- Guy,C.M. 1976 "The Location of Shops in the Reading Area" (University of Reading, Geography Paper, 46)
- Guy,C.M. 1977 "A Method of Examining and Evaluating the Impact of Major Retail Developments Upon Existing Shops and Their Users", Environment and Planning A, 9, 491-504
- Guy,C.M. 1979 "Evaluation of the Impact of Changes in Local Shopping Opportunities" (Unpublished Paper Presented to the Urban Study Group of the Institute of British Geographers, January)
- Guy,C.M. 1981 "Unpublished Research Application into Minimisation-of-Effort Models", UWIST, Cardiff.
- Guy,C.M., Wrigley,N., O'Brien,L.G. and Hiscocks,G. 1983 "The Cardiff Consumer Panel: A Report on the Methodology", (UWIST Papers in Planning Research, No.68, Department of Town Planning, UWIST, Cardiff)
- Hagerstrand,T. 1970 "What about people in Regional Science?", Papers and Proceedings of the Regional Science Association, 24, 7-24

- Hall, J. and Caradog-Jones, D. 1950 "Social Gradings of Occupations", British Journal of Sociology, 1, 31-55
- Halloran, J.D. 1967 "Attitude Formation and Change", (Leicester University Press, Blackfriars Press, Leicester)
- Hallsworth, A. 1979 "Structure Planning Influences on Retail Development", (Unpublished Paper Presented to The Annual Conference of The Institute of British Geographers)
- Hallsworth, A.G. 1981 "Impact Studies, Research Priority area 2 viii(a)" (Unpublished Paper Presented to the Institute of British Geographers, Leicester)
- Handyside, J.D. 1960 "Introducing Attitude Scaling Techniques", in The Market Research Society, "Attitude Scaling", 15-29
- Hanson, S. 1977 "Measuring the Cognitive Levels of Urban Residents", Geografiska Annaler, 59B, 67-81
- Hanson, S. 1977 "The Activity Patterns of Elderly Households", Geografiska Annaler, B, 59, 109-124
- Harrison, J. and Sarre, P. 1969 "Personal Construct Theory in the Measurement of Environment Images", Environment and Behaviour, 1, 351-374
- Harvey, D. 1973 "Social Justice and the City", (Edward Arnold, London)
- Herbert, D.T. 1970 "Principal component analysis and urban social structure: A study of Cardiff and Swansea", in Carter, H. and Davies, W.K.D. (Eds) "Urban Essays: Studies in the Geography of Wales", 79-100 (Longmans, London)
- Herbert, D.T. • 1972 "Urban Geography: A Social Perspective", (David and Charles, Newton Abbot)
- Herbert, D.T. and Evans, D.J. 1974 "Urban Sub-areas as Sampling Frameworks for Social Survey", Town Planning Review, 45, 171-188
- Herbert, D.T. and Evans, D.J. 1975 "Urban Sub-areas: A Comment", Town Planning Review, 46, 213-214
- Herbert, D.T. and Johnston, R.J. (Eds) 1976 "Social Areas in Cities", Vol. 1 "Spatial Processes and Forms", Vol. 2 "Spatial Perspectives and Policies", (Wiley, London)

- Herbert, D.T. and Johnston, R.J. (Eds) 1978 "Geography and the Urban Environment", Vol. I, (Wiley, London)
- Herbert, D.T. and Johnston, R.J. (Eds) 1979 "Geography and the Urban Environment", Vol. II, (Wiley, London)
- Herbert, D.T. and Johnston, R.J. (Eds) 1980 "Geography and the Urban Environment", Vol. III, (Wiley, London)
- Herbert, D.T. and Thomas, C.J. 1982 "Urban Geography: A First Approach", (Wiley and Sons, Chichester)
- Herrmann, R.O. and Beik, L.L. 1968 "Shoppers' Movements Outside Their Local Retail Area", Journal of Marketing, 32, 45-51
- Hillman, M. 1973 "The Social Costs of Hyper-market Developments", Built Environment, 2, 89-91
- Hillman, M., Henderson, I. and Whalley, A. 1972 "In The Market Place: The Hypermarket Debate", New Society 21, 543-546
- Hillman, M., Henderson, I. and Whalley, A. 1973 "Personal Mobility and Transport Policy", Political and Economic Planning Review Broadsheet, No. 542, Vol. XXXIX, July
- Hillman, M., Henderson, I. and Whalley, A. 1976 "Transport Realities and Planning Policy", Political and Economic Planning Broadsheet, No. 567
- Hillman, M. and Whalley, A. 1977 "Fair Play For All: A Study of Access Sport and Informal Recreation", Political and Economic Planning Broadsheet, No. 571, Vol. XLIII, October
- Hillman, M. and Whalley, A. 1978 "The Measurement of Catchment: Personal Mobility as a Critical Input", (Unpublished Paper Presented to the Institute of British Geographers Urban Studies Group, Hull, January)
- Hoggart, K. 1978 "Consumer Shopping Strategies and Purchasing Activity: An Exploratory Investigation", Geoforum, 9, 415-423
- Hoinville, G. 1971 "Evaluating Community Preference", Environment and Planning, 3, 33-50
- Hooloway, R.J., Mittelstaedt, R.A. and Venkatesan, M. 1971 "Consumer Behaviour: Contemporary Research in Action"
- Horton, F.E. and Reynolds, D.R. 1969 "An Investigation of Individual Action Spaces", Proceedings of the Association of American Geographers, 1, 70-75

- Horton,F.E. and Reynolds,D.R. 1971 "Effects of Urban Spatial Structure on Individual Behaviour", Economic Geography,47,36-46
- Hubbard,R. and Thompson,A.F. 1981 "Preference Structures and Consumer Spatial Indifference Behaviour: Some Theoretical Problems",Signalement/Research Note, T.E.S.G.,72,1,35-39.
- Hudson,R. 1974 "Images of the Retailing Environment: An Example of the Use of the Repertory Grid Methodology",Environment and Behaviour,6,470-494
- Hudson,R. 1975 "Patterns of Spatial Search", Transactions Institute of British Geographers,65,141-154
- Hudson,R. 1976 "Linking Studies of The Individual with Models of Aggregate Behaviour: An Empirical Example",Transactions Institute of British Geographers,1,159-174
- Hudson.R. 1980 "Personal Construct Theory,The Repertory Grid Method and Human Geography", Progress in Human Geography,4,346-359
- Huff,D.L. 1960 "A Topographical Model of Consumer Space Preferences",Papers and Proceedings of the Regional Science Association, 6,159-174
- Huff,D.L. 1963 "A Probabilistic Analysis of Shopping Centre Trade Areas",Land Economics, 39,81-90
- Humphrys,G. 1972 "South Wales", (David and Charles, Newton Abbot)
- Irving,H.H. 1975 "A Geographer Looks at Personality", Area,7,3, 207-212
- Irving,H.W. 1978 "Space and Environment in Interpersonal Relations", in Herbert,D.T. and Johnston,R.J.(Eds) "Geography and The Urban Environment", Chapter 6, (Wiley, London)
- Isard,W. 1956 "Location and Space Economy", (MIT Press,Cambridge,Massachusetts)
- Jahoda,M. 1967 "Research Methods", in Halloran,J.D., "Attitude Formation and Change", (Blackfriars Press,Leicester)
- Jensen-Butler,C. 1972 "Gravity Models as Planning Tools: A Review of Theoretical and Operational Problems",Geografiska Annaler,54B,68-78

- Jessor,R. and
Jessor,S.L. 1973 "Perceived Environment in Behavioural
Science",American Behaviour Scientist,
16,801-828
- JICNARS 1979 "National Readership Survey"
(JICNARS,London)
- Johnston,R.J. 1968 "Choice in Classification: The
Subjectivity of Objective Methods",
Annals of The Association of
American Geographers, 58, 575-589
- Johnston,R.J. 1976 "Classification in Geography",
CATMOG 6,(Geoabstracts,Norwich)
- Johnston,R.J. 1976 "Residential Area Characteristics:
Research Methods for Identifying Urban
Sub-areas,Social Area Analysis and
Factorial Ecology",in Herbert,D.T. and
Johnston,R.D.(Eds) "Social Areas in
Cities",Vol.I,193-235,(Wiley,London)
- Johnston,R.J. 1978 "Multivariate Statistical Analysis in
Geography", (Longman,London)
- Johnston,R.J. 1979 "The Characterization of Urban
Social Areas",Signalment/Research Note,
T.E.S.G.,70,4, 232-238
- Jones,K. 1978 "Percentages,Ratios and Inbuilt Relationships
in Geographical Research : An Overview and
Bibliography", (Department of Geography
Discussion Paper No.2, University of
Southampton)
- Kantorowich,R. 1966 "Regional Shopping Centres in
North-West England Part II:A Retail
Shopping Model"(University of
Manchester,Department of Town and
Country Planning)
- Karpf,A. 1980 "Ask a Silly Question",
The Guardian,March 31(Manchester)
- Kassarjian,H.H. 1971 "Personality and Consumer Behaviour:A
Review", Journal of Marketing Research
Vol. VIII, 409-418
- Kassarjian,H.H. and
Robertson,T.S.(Eds) 1973 "Perspectives in Consumer Behaviour",
(Scott, Forsman and Co.,New York)
- Katona,G. 1960 "The Powerful Consumer: Psychological
Studies of the American Economy",
(McGraw-Hill,New York)
- Katona,G. 1963 "Psychological Analysis of Economic
Behaviour", (McGraw-Hill,New York)
- Katona,G. 1964 "The Mass Consumption Society",
(McGraw-Hill,New York)

- Kelly,R.F. and Stephenson,R. 1967 "Semantic Differential:An Information Source for Designing Retail Patronage Appeals", Journal of Marketing,31,43-47
- Kelvin,R.P. 1959 "Rational and Irrational Factors Determining Consumer Attitudes",The Market Research Society,"Attitude Scaling",30-34
- Kish,L. 1965 "Survey Sampling", (Wiley,New York)
- Kivell,P.T. and Shaw,G. 1978 "Retail Location", (Unpublished Position Paper for the SSRC Seminar Group on Geography and Retailing)
- Kunkel,J.H. and Berry,L. 1968 "A Behavioral Conception of Retail Image",Journal of Marketing, 32,21-27
- Lakshmanan,T.R. and Hansen,W.G. 1965 "A Retail Market Potential Model", Journal of the American Institute Planners,31,134-144
- Lansing,J.B. and Kish,L. 1957 "Family Life Cycle as an Independent Variable", American Sociological Review, 22,512-519
- Lee,T.R. 1962 "Brennan's Law of Shopping Behaviour", Psychological Reports, 11, 662
- Lee,T.R. 1970 "Perceived Distance as a Function of Direction in the City",Environment and Behaviour, 2, 40-51
- Lentnek,B.,Lieber,S.R. and Sheskin,I. 1975 "Consumer Behaviour in Different Areas",Annals of the Association of American Geographers,65,538-545
- Lieber,S.R. 1977 "Attitudes and Revealed Behaviour: A Case Study",Professional Geographer, 29,53-58
- Likert,R. 1932 "A Technique for the Measurement of Attitudes", Archives of Psychology, No.140,5-55
- Littler,S. 1976 "A Retail Model of Swansea: Retailing in Swansea and its Region", (Unpublished MSc Thesis,University of Wales,Cardiff)
- Lloyd,R.E. 1977 "Consumer Behaviour after Migration: A Reassessment Process", Economic Geography,53,1,14-27
- Lloyd,R. and Jennings,D. 1978 "Shopping Behavior and Income: Comparisons in an Urban Environment", Economic Geography,54,157-167

- Loomis, C.P. 1936 "The Study of the Life Cycle of Families",
Rural Sociology, 1, 180-199
- Lowenthal, D. (Ed) 1967 "Environmental Perception and
Behaviour", (Research Paper No. 109,
Department of Geography, University
of Chicago)
- Lunn, J.A. 1968 "Empirical Techniques in Consumer Research",
in Pym, D. "Industrial Society:
Social Sciences in Management"
(Penguin, Harmondsworth)
- Lynch, K. 1960 "The Image of the City", (MIT Press,
Cambridge, Massachusetts)
- Mackay, D.B. and 1975 "Cognitive Maps of Retail
Olshavsky, R.W. Locations: An Investigation of
Some Basic Issues", Journal of
Consumer Research, 2, 197-205
- MacLennan, D. and 1979 "Revealed Space Preference Theory -
Williams, N.J. A Cautionary Note", T.E.S.G., 70, 307-309
- Madge, J. 1969 "Shopping Survey for the Research Institute
for Consumer Affairs, Norwich and
Stevenage", (Which? Consumers Association,
London)
- Makridakis, J. and 1978 "Forecasting: Methods and Application",
Wheelwright, S.C. (Wiley, London)
- Market Research Society 1960 "Attitude Scaling", Publication of The Market
Research Society, No. 4, (London)
- Martineau, P. 1958 "Social Classes and Spending
Behaviour", Journal of Marketing, 23, 121-130
- Mason, J.B. and 1970 "An Empirical Reappraisal of
Moore, C.T. Behaviouristic Assumptions in Trading Area
Studies", Journal of Retailing, 46, 31-37
- Massam, B. 1975 "Location and Space in Social
Administaration", (Edward Arnold, London)
- Mather, P.M. 1969 "Computer Applications in the
Natural and Social Sciences,
No. 1, Cluster Analysis",
(University of Nottingham, Nottingham)
- Mather, P.M. 1976 "Computational Methods of Multivariate
Analysis in Physical Geography",
(Wiley, London)
- McKenna, A.C. 1974 "Surveying Attitude Structures",
(Elsevier, Amsterdam)
- McKenna, A.C. 1970 "Attitude Measurement: Use of Coefficient
Alpha with Cluster or Factor Analysis",
Sociology, 4, 227-245

- McKenna, A.C. 1977 "Attitude Scale Construction", in O'Muirchaertaigh, C.A. and Payne, C. (Eds), "The Analysis of Survey Data", (Wiley, London)
- Meyer, G. 1977 "Distance Perception of Consumers in Shopping Streets", T.E.S.G., 68, 6, 355-362
- Mitchell, C.G.B. and Town, S.W. 1977 "Accessibility of Various Social Groups to Different Activities", (Transport and Road Research Laboratory, Supplementary Report, 258)
- Monk, D. 1973 "Social Grading on the National Readership Survey", (Joint Industry Committee for National Readership Surveys)
- Morgan, J. 1958 "A Review of Recent Research on Consumer Behaviour", in Clark, L.H. (Ed) "Consumer Behaviour: Research on Consumer Reactions", (Harper and Brothers, New York)
- Morgan, R.H. 1974 "Postal Questionnaires: The Problem of Non-Response", Swansea Geographer, 12, 54-60
- Moser, C.A. and Kalton, G. 1971 "Survey Methods in Social Investigation", Second Edition, (Heinemann, London)
- Mottershaw, B. 1968 "Estimating Shopping Potential", Planning Outlook, 5, 40-68
- Mullins, D. 1980 "Race and Retailing", (Unpublished Paper Presented to IBG Annual Conference, Lancaster)
- Myers, J.H. and Alpert, M.I. 1968 "Determinant Buying Attitudes: Meaning and Measurement", Journal of Marketing, 32, 13-20
- Myers, J.H., Stanton, R.R. and Haug, A.F. 1971 "Correlates of Buying Behaviour: Social Class vs. Income", Journal of Marketing, 35, 8-15
- Nader, G.A. 1969 "Socio-Economic Status and Consumer Behaviour", Urban Studies, 6, 235-245
- Nelson, R.L. 1958 "The Selection of Retail Locations", (Dodge, New York)
- NEDO 1970 "Urban Models in Shopping Studies", National Economic Development Office (London)
- Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K. and Bent, D.H. 1975 "Statistical Package for the Social Sciences", Second Edition, (McGraw-Hill)

- Nie,N.H. and Hull,C.H. 1981 "Statistical Package for the Social Sciences Update 7-9:New Procedures and Facilities" (McGraw-Hill)
- Novick,M.R. and Lewis,C. 1967 "Coefficient Alpha and the Reliability of Composite Measurements", Psychometrika,32,1-13
- Nunally,J.C. 1978 "Psychometric Theory", (McGraw Hill,New York)
- Office of Population and Census Survey 1970 "Classification of Occupations" (HMSO,London)
- Office of Population and Census Survey 1970 "Census 1971;Small Area Statistics (Ward Library) Explanatory Notes" (HMSO,London)
- Office of Population and Census Survey 1982 "Census 1981: Preliminary Report for Towns", (HMSO,CEN 81 PR(2))
- Olsson,G. 1975 "Birds in Egg"(University of Michigan, Department of Geographical Publication,15)
- O'Muircheartaigh,C.A. 1977 "Statistical Analysis in the Context of Survey Research",in O'Muircheartaigh,C.M. and Payne,C.(Eds),"The Analysis of Survey Data Volume I: Exploring Data Structures" (Wiley,London)
- O'Muircheartaigh,C.A. and Payne,C.(Eds) 1977 "The Analysis of Survey Data Volume I: Exploring Data Structures", (Wiley,London)
- O'Muircheartaigh,C.A. and Payne,C.(Eds) 1977 "The Analysis of Survey Data Volume II: Model Fitting", (Wiley,London)
- Openshaw,S. 1975 "Some Theoretical and Applied Aspects of Spatial Interaction Shopping Models", CATMOG,4 (Geoabstracts, Norwich)
- Openshaw,S. 1976 "An Empirical Study of Some Spatial Interaction Models",Environment and Planning,A,8,23-41
- Oppenheim,A.N. 1966 "Questionnaire Design and Attitude Measurement", (Heinemann,London)
- Pacione,M. 1974 "Measures of the Attraction Factor:A Possible Alternative"Area,6,279-282
- Pacione,M. 1975 "Preference and Perception: An Analysis of Consumer Behaviour", T.E.S.G.,66,2,84-92
- Pacione,M. 1979 "The In Town Hypermarket: An Innovation in the Geography of Retailing", Regional Studies,13,15-24

- Pacione, M. 1980 "Redevelopment of a Medium Sized Central Shopping Area: A Case Study of Clydebank", T.E.S.G., 71, 3, 159-168
- Pahl, R.E. 1970 "Whose City?" (Penguin, Harmondsworth)
- Pahl, R.E. 1970 "Patterns of Urban Life" (Longmans, London)
- Parker, A.J. 1976 "Consumer Behaviour Motivation and Perception: A Study of Dublin" (Department of Geography, University College, Dublin)
- Patricios, N.N. 1979 "Human Aspects of Planning Shopping Centres" Environment and Behaviour, 11, 4, 511-538
- Payne, C. 1977 "The Log-Linear Models for Contingency Tables: A Generalisation of Classical Least Squares", Applied Statistics, 23, 323-329
- Payne, C. 1979 "A Generalised Scheme of Linear Models and the Log-Linear Model in particular" (Unpublished Paper Presented to the BSA Conference on Methodology, University of Lancaster, January)
- Peace, S.M. 1977 "The Elderly in an Urban Environment" (Unpublished Ph.D Thesis, University of Wales, Cardiff)
- Phillips, D.R. 1977 "Some Attitude Measurement Techniques for Use in Geographical Research", Swansea Geographer, 15, 39-44
- Phillips, D.R. 1978 "The Utilisation of, and the Attitudes of the Public, to GP Services: A Geographical Study in West Glamorgan" (Unpublished Ph.D Thesis University of Wales, Cardiff)
- Phillips, D.R. 1979 "Public Attitudes to General Practitioner Services: A Reflection of an Inverse Case Law in Intra-Urban Primary Medical Care?", Environment and Planning A, 11, 815-824
- Pinch, S. 1981 "The Geography of Pre-School Provision" (Unpublished Paper Presented to the Institute of British Geographers Quantitative Methods Study Group Symposium, University of Leicester)
- Pirie, G.H. 1976 "Thoughts on Revealed Preference and Spatial Behavior", Environment and Planning A, 8, 947-955

- Pipkin, J.S. 1977 "Some Probabilistic Revealed-Preference Models of the Choice Process in Recurrent Urban Travel", *Geografika Annaler*, 59B, 82-94
- Pocock, D.C.D. 1971 "Urban Environmental Perception and Behavior: A Review", *T.E.S.G.*, 62, 321-326
- Pocock, D.C.D. 1973 "Environmental Perception: Process and Product *T.E.S.G.*, 64, 4, 251-257
- Pocock, D.C.D. 1976 "Some Characteristics of Mental Maps: An Empirical Study", *Transactions, Institute of British Geographers*, 1, 493-512
- Potter, R.B. 1976 "Directional Bias within the Usage and Perceptual Fields of Urban Consumers", *Psychological Reports*, 38, 988-990
- Potter, R.B. 1976 "Spatial Nature of Consumer Usage and Perceptual Fields", *Perceptual and Motor Skills*, 43, 1185-1186
- Potter, R.B. 1977 "Spatial Patterns of Consumer Behaviour in Relation to the Social Class Variable", *Area*, 9, (2), 153-156
- Potter, R.B. 1977 "The Nature of Consumer Usage Fields In An Urban Environment: Theoretical and Empirical Perspectives", *T.E.S.G.*, 68, 3, 168-176
- Potter, R.B. 1979 "Designative Aspects of Consumer Perception of Urban Retailing Facilities: Implications Concerning Suburban Retailing Developments" (Unpublished Paper Presented to IBG Annual Conference, Manchester)
- Potter, R.B. 1979 "The Morphological Characteristics of Urban Retailing Areas" (Bedford College, *Papers in Geography*, No. 2)
- Potter, R.B. 1980 "Retailing, Spatial and Structural Variations in the Quality Characteristics of Intra Urban Retailing Centres", *Transactions of the Institute of British Geographers, New Series*, 5, 2, 207-228
- Potter, R.B. 1982 "The Urban Retailing System", (Gower, Aldershot)
- Pred, A. 1963 "Business Thoroughfares as Expressions of Urban Negro Culture", *Economic Geography*, 39-217-233

- Pred,A. 1967 "Behaviour and Location Part I",
Lund Studies in Geography, Series B,
No.27, Gleaup, Lund, Sweden
- Proudfoot, M.J. 1937 "City Retail Structure", Economic
Geography, 13, 425-428
- Ray, D.M. 1967 "Cultural Differences in Consumer
Travel Behaviour in Eastern Ontario",
Canadian Geographer, 11, 143-156
- Raybould, A.R. 1973 "A Geographical Analysis of the
Effects of Socio-Economic
Class on Consumer Movements",
(Unpublished M.A. Thesis,
University of Wales, Cardiff)
- Rees, P.H. 1971 "Factorial Ecology: An Extended
Definition, Survey and
Critique", Economic Geography,
47, 220-233
- Rees, P.H. 1972 "Problems of Classifying Sub-Areas
Within Cities", in B.J.L. Berry, (Ed),
"City Classification Handbook",
(J.Wiley, New York)
- Registrar General 1970 "Classification of Occupations",
(HMSO, London)
- Reilly, W.J. 1931 "The Laws of Retail Gravitation",
(Knickerbocker Press, New York)
- Rich, S.U. and 1968 "Social Class and Life Cycle as
Jain, S.C. Predictors of Shopping Behaviour",
Journal of Marketing Research, 5, 41-49
- Rosser, C. and Harris, C.C. 1965 "The Family and Social Change",
(Routledge, London)
- Rushton, G. 1969 "Analysis of Spatial Behaviour
by Revealed Space Preference",
Annals of the Association of
American Geographers, 59, 391-400
- Rushton, G., Golledge, R.G. 1967 "Formulation and Test of a Normative
and Clark, W.A.V. Model for the Spatial Allocation of
Grocery Expenditures by a Dispersed
Population", Annals of the Association
of American Geographers, 57, 389-400
- Saey, P. and Lietaer, M. 1980 "Consumer Profiles and Central Place Theory"
Signalment/Research Note, T.E.S.G., 3, 71,
180-186
- Sample, J. and Warland, R. 1973 "Attitude and Prediction of Behaviour",
Social Forces, 51, 292-304

- Schiller,R.K. 1972 "The Measurement of the Attractiveness of Shopping Centres to Middle Class Luxury Consumers" Regional Studies,6,291-297
- Schiller,R.K. 1974 "Retailing and Planning", The Planner,60, 744
- Schiller,R.K. 1975 "The Impact of New Shopping Schemes on Shops in Historic Streets" The Planner,61, 367-369
- Scott,C. 1961 "Research on Mail Surveys", Journal of the Royal Statistical Society,(A),124.143-205
- Scott,P. 1970 "Geography and Retailing", (Hutchinson, London)
- SCPR 1972 "Postal Survey Methods", (SCPR Technical Manual No.1)
- SCPR 1973 "Sample Design and Selection", (SCPR Technical Manual No.2)
- SCPR 1973 "Interviewers Guidebook", (SCPR Technical Manual No.3)
- SCPR 1972 "Questionnaire Design Manual" (SCPR Technical Manual No.5)
- Shepherd,I.D.H. 1979 "Consumer Behaviour and Geographical Research"(Unpublished Paper Presented to SSRC Seminar on Retailing: Discussion Paper 1)
- Shepherd,I.D.H. and Newby,P.T. 1978 "The Brent Cross Regional Shopping Centre:Characteristics and Early Effects" (Retail and Planning Associates,Corbridge)
- Shepherd,I.D.H. and Newby,P.T. 1979 "Brent Cross:A Milestone in Retail Development",Geography,133-137
- Shepherd,P.M. and Rowley,G. 1978 "The Association of Retail Functions Within The City Centre", T.E,S.G.,69,4,233-237
- Shepherd,I.D.H. and Thomas,C.J. 1980 "Urban Consumer Behaviour",Chapter 1 in Dawson,J.A.(Ed),"Retail Geography", (Croom Helm, London)
- Shepperdson,M.J. 1974 "Social Problems and Welfare Services in Swansea", (Social Administration Department,University College Swansea)
- Shevky,E. and Bell,W. 1955 "Social Area Analysis", (Stanford University Press,Stanford,California)

- Siegel, S. 1956 "Nonparametric Statistics for the Behavioural Sciences", (McGraw-Hill, New York)
- Silk, J. 1979 "Statistical Concepts in Geography", (George Allen and Unwin, London)
- Smith, D.M. 1977 "Human Geography: A Welfare Approach", (Edward Arnold, London)
- Smith, G.C. 1976 "The Spatial Information Fields of Urban Consumers", Transactions of the Institute of British Geographers, New Series, 175-189
- Spencer, A.H. 1978 "Deriving Measures of Attractiveness for Shopping Centres", Regional Studies, 12, 713-726
- Spencer, A.H. 1979 "Preference and Shopping Choice - A Multidimensional Scaling Approach" (Unpublished Paper Presented to the Institute of British Geographers Conference, Manchester)
- Spencer, A.H. 1980 "Cognition and Shopping Choice: A Multidimensional Scaling Approach", Environment and Planning, A, 12, 1235-1251
- Stacey, M. (Ed) 1969 "Comparability in Social Research" (Heinemann, London)
- Stimson, R.J. and Amptie, S. 1972 "Mail Questionnaires and the Investigation of Spatial Behaviour: The Problem of Respondent and Non Respondent Differences", Australian Geographer, 12(1), 51-54
- Stone, G.P. 1954 "City Shoppers and Urban Identification", American Journal of Sociology, 60, 36-45
- Sweetser, F.L. 1965 "Factorial Ecology: Helsinki 1960", Demography, 2, 372-385
- Taylor, B. 1974 "Supermarket Language", New Society, 12th December, 677-678
- Thomas, C.J. 1974 "The Effects of Social Class and Car Ownership on Intra-Urban Shopping Behaviour in Greater Swansea", Cambria, 2, 98-126
- Thomas, C.J. 1976 "Sociospatial Differentiation and The Use of Services" in D.T. Herbert and R.J. Johnston (Eds), "Social Areas in Cities, Volume II: Spatial Perspectives on Problems and Policies", (Wiley, London)
- Thomas, C.J. 1977 "Leo Superstore: Pyle, Mid Glamorgan", (Research Report No. 22, Retail Outlets Research Unit, Manchester Business School)

- Thomas,C.J. 1978 "Retail Change in South Wales - With Special Reference to Redevelopment in Small Town Centres", (Retail Planning Associates, Corbridge)
- Thomas,C.J. 1979 "Studies of Consumer Spatial Behaviour A Critical Review", (Unpublished Paper Presented to SSRC Seminar on Retailing)
- Thomas,C.J. and Philips,D.R. 1978 "An Ecological Analysis of Child Medical Emergency Admissions to Hospitals in West Glamorgan" (Preliminary Report, Research Centre, University College Swansea)
- Thomas,C.J. and Williams,C.H. 1976 "A Behavioural Approach to the Study of Linguistic Decline and Nationalistic Resurgence:A Case Study of The Attitudes of Sixth Formers in Wales" Part I,Cambria,3,2,102-124. Part II in Cambria,4,2,(1977),152-173
- Thomas,K.(Ed) 1971 "Attitudes and Behaviour", (Penguin,London)
- Thomas,R.E. 1970 "Change in the Distribution Systems of Western Industrial Economies" British Journal of Marketing,4, 62-69
- Thorpe,D. 1974 "Locating Retail Outlets", Chapter 5 in Thorpe,D. "Research into Retailing and Distribution"(Saxon House)
- Thorpe,D. 1974 "Research into Retailing and Distribution", (Saxon House,Farnborough)
- Thorpe,D. 1977 "Shopping Trip Patterns and the Spread of Superstores and Hypermarkets in Great Britain"(Retail Outlets Research Unit, Research Paper,10)
- Thorpe,D. 1978 "Progress in the Study of the Geography of Retailing and Wholesaling in Britain", Geoforum,9,83-106
- Thorpe,D. and Kivell,P.T. 1971 "Woolco Thornaby"(Manchester Business School,Retail Outlets Research Unit, Research Report,3)
- Thorpe,D. et al 1972 "The Hampshire Centre, Bournemouth" (Manchester Business School,Retail Outlets Unit,Research Report,3)
- Thrift,N. 1977 "An Introduction to Time Geography", CATMOG,13 (Geoabstracts, Norwich)
- Thrift,N. 1977 "Time and Theory in Human Geography", Progress in Human Geography,1,64-101

- Timmermans,H. 1979 "A Spatial Preference of Regional Shopping Behaviour", T.E.S.G., Research Note,70,1,45-48
- Timmermans,H. 1980 "Consumer Spatial Choice Strategies A Comparative Study of Some Alternative Behavioural Spatial Shopping Models", Geoforum,11,123-131
- Timmermans,H. and Rushton,G. 1979 "Revealed Space Preference Theory - A Rejoinder",T.E.S.G.,30,309-312
- Timmermans,H., van der Heijden,R. and Westerveld,H. 1982 "Cognition of Urban Retailing Structures A Dutch Case Study", T.E.S.G.,73,1,2-12
- Tittle,C.R. and Hill,R.J. 1967 "Attitude Measurement and Prediction of Behaviour: An Evaluation of Conditions and Measurement Techniques", Sociometry,30, 199-213
- Tivers,J. 1977 "Constraints on Spatial Acctivity Patterns:Women With Young Children" (King's College,London, Department of Geography,Occasional Paper,6)
- Trier,H., Smith,H.C. and Shaffer,J. 1960 "Difference in Food Buying Attitudes of Housewives", Journal of Marketing, July, 66-69
- Turner,R. and Cole,H.S.D. 1980 "An Investigation into the Estimation and Reliability of Urban Shopping Models",Urban Studies,17,139-157
- Upton,G.J.G. and Fingleton,B. 1979 "Log Linear Models in Geography", Transactions of the Institute of British Geographers,New Series,4,103-115
- Wagner,W.E. 1975 "Preference Structures for Grocery Shopping:A Behavioral Analysis", Proceedings of the Association of American Geographers,7,257-259
- Walker,R.L. 1975 "Urban Sub Areas as Sampling Frameworks: A Further Development", Town Planning Review 46,2,201-212
- Walker,R.L. 1976 "Social Survey Techniques: A Note on the 'Drop and Collect' Method", Area,8(4),284-288
- Wallin,D.R., Schmidt,C.G. and Lee,Y. 1975 "A Comparative Analysis of Black Ghetto Commercial Structures", Proceedings of the Association of American Geographers,7,259-263
- Walters,C.G. and Paul,G.W. 1970 "Consumer Behaviour:An Integrated Framework", (R.D. Irwin,Illinois)

- Walton,S. 1973 "The Ritual of Shopping",
New Society,6 Sept. 586-587
- Ward,J.H. 1963 "Hierarchical Grouping to Optimize
an Objective Function", Journal of
the American Statistical Association,
58,236-244
- Ward,S. and Robertson,T.S. 1973 "Consumer Behaviour:Theoretical Sources"
(Prentice-Hall,Englewood Cliffs)
- Warnes,A.M. and 1978 "Intra-Urban Shopping Travel: A Review
Daniels,P.W. of Theory and Evidence from British Towns",
(Unpublished Paper Presented to the
Institute of British Geographers,
Annual Conference, Hull, Jan.1978)
- Warnes,A.M. and 1980 "Urban Retail Distribution: An Appraisal
Daniels,P.W. of the Empirical Foundations of Retail
Geography",Geoforum,11,133-146
- Warren,N. and 1976 "Attitudes",Second Edition
Jahoda,M.(Eds) (Penguin,Harmondsworth)
- Watson,W. and Susser,M.W. 1971 "Theories and Indexes of Social Class",
Chapter 3 in "Sociology in Medicine"
- Webber,R. 1976 "National Classification of Enumeration
Districts",Centre for Environmental
Studies(OPCS,London)
- Wells,W.D. and Gubar,G. 1966 "Life Cycle Concept in Marketing Research",
Journal of Marketing Research,
Vol.3,355-363.
- Wells,W.D. and 1971 "Activities, Interests and Opinions",
Tigert,D.J. Journal of Advertising Research,
Vol.12,27-35
- West Glamorgan 1977 "West Glamorgan Structure Plan"
County Council (Written Statement of Policies,
Swansea)
- West Glamorgan 1977 "West Glamorgan Structure Plan"
County Council (Report of Survey,Swansea)
- West Glamorgan 1978 "West Glamorgan Structure Plan Examination
County Council in Public" Position Statement No.4
- West Glamorgan 1979 "Shops and Offices Floorspace Survey"
County Council West Glamorgan Planning Department,Sansa
- Wheeler,J.O. 1972 "Trip Purposes and Urban Activity
Linkages",Annals of the Association of
American Geographers,62,4,641-654
- Wicker,A.W. 1969 "Attitudes versus Actions: The Relationship
of Verbal and Overt Behaviour Responses
to Attitude Objects",Journal of Social
Issues,25, 4, 41-78

- Wild,M.T. and Shaw,G. 1979 "Trends in Urban Retailing:The British Experience During The Nineteenth Century",T.E.S.G.,70,1,35-40
- Williams,N.J. 1975 "Spatial Choice Behaviour" (Unpublished Ph.D. Thesis, University of Wales,Cardiff)
- Williams,N.J. 1979 "The Definition of Shopper Types as an Aid in the Analysis of Spatial Consumer Behaviour", T.E.S.G.,70,3,157-63
- Williams,N.J. 1981 "Attitudes and Consumer Behaviour", T.E.S.G.,72,3,145-154
- Wilson,A.G. 1970 "Entropy in Urban and Regional Modelling"(Pion, London)
- Wilson,A.G. 1971 "A Family of Spatial Interaction Models and Associated Developments", Environment and Planning,3,1-32
- Wilson,A.G. 1974 "Urban and Regional Models in Geography and Planning"(Wiley,London)
- Wishart,D. 1970 "Clustan IA Manual",University of Saint Andrews Computing Library,Fife,Scotland
- Wood,L.J. 1979 "Perception Studies in Geography", Transactions of the Institute of British Geographers,50,129-141
- Worsley,P.(Ed) 1970 "Introducing Sociology", Second Edition,(Penguin)
- Wrigley,N. 1979 "Developments in the Statistical Models in Geography",Concepts and Techniques in Modern Geography,10, (Geoabstracts, Norwich)
- Wrigley,N. 1979 "Developments in the Statistical Analysis of Categorical Data" Progress in Human Geography,Vol.3, No.3, 315-355
- Wrigley,N. 1980 "An Approach to the Modelling of Shop Choice Patterns:An Explanatory Analysis of Purchasing Patterns in a British City", in D.T.Herbert and R.J.Johnston(Eds), "Geography and the Urban Environment" Vol.3,45-85 (Wiley,London)
- Wrigley,N. and Dunn,R. 1984a "Stochastic Panel Data Models of Urban Shopping Behaviour I: Purchasing at Individual Stores in a Single City" Environment and Planning A,(in press)

- Wrigley,N. and Dunn,R. 1984b "Stochastic Panel Data Models of Urban Shopping Behaviour II: Multistore Purchasing Patterns and the Dirichlet Model" Environment and Planning A,(in press)
- Wrigley,N. and Dunn,R. 1984c "The Fit of the NBD Model for Repeat Buying of Brands in the Cardiff Consumer Panel", (Department of Geography, University Bristol)
- Wrigley,N. and Dunn,R. 1984d "Stochastic Panel Data Models of Urban Shopping Behaviour III: The Interaction of Store Choice and Brand Choice" (Department of Geography, University of Bristol)
- Yates,F. 1934 "Contingency Tables Involving Small Numbers and the Chi Square Test", Journal of the Royal Statistical Society, Supplement 1, 217-235
- Yeates,M.H. and Garner,B.J. 1976 "The North American City" (2nd edn, Harper and Row, New York)
- Young,M. and Willmott,P. 1973 "The Symmetrical Family", (Routledge and Kegan Paul, London)