

SPATIAL PERSPECTIVES

AT

THE CONSUMER-STORE INTERFACE

by

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ABSTRACT

The understanding of consumer spatial behaviour, and of the forces influencing the spatial organisation of urban retail activity, can be advanced through an analysis of the processes operating at the consumer-store interface. Such an analysis can contribute to the development of models of consumer spatial behaviour which combine predictive accuracy and theoretical adequacy. A review of the literature indicates that this combination has not characterised the models previously developed in the course of retail geographic research.

A model formulated in the field of consumer behaviour theory serves as the conceptual framework for analysing the process whereby a consumer forms preferences for particular stores. This process involves complex interactions at the consumer-store interface between two basic variable sets comprising consumer characteristics and store characteristics. In essence, preferences are formed as the outcome of the consumer comparing perceived store characteristics with a set of predetermined evaluative criteria. These preferences relate to the set of store characteristics which the consumer interprets as sources of satisfaction in the course of shopping experience.

The measurement of consumer attitudes towards salient store characteristics provides the basis for operationalising the conceptual model of store preference formation. An empirical study was conducted to identify the structure of consumer preferences for clothing stores and to derive consumer groups consisting of individuals with relatively similar attitude profiles.

Unstructured interviews with consumers served to determine a set of salient attitudinal items. These items were then incorporated within

a modified Likert attitude scaling instrument, which was administered to a convenience sample group comprising undergraduate students and their parents.

The data obtained was factor analysed to identify attitudinal dimensions. Ten factors were extracted which indicated that concepts such as "boutiqueness", "cheapness", "security", "convenience", "exclusiveness" and "reliability" were appropriate to describe the structure of the clothing store preferences of the sample group. Factor scores were computed for each of the respondents and a hierarchical grouping technique was used to derive six consumer groups. Interpretation of the 'representative group profiles' showed that the groups could be equated with recognisable shopper types, including the 'teenage boutique' shopper, the 'bargain store' shopper, and the high class 'specialty store' shopper.

The findings of this empirical study require further validation and extension in the course of additional research; nevertheless, they indicate the potential utility of attitude measurement as a basis for explaining the spatial preferences of consumers in the retail environment. This is a step towards the development of models which can adequately explain and accurately predict consumer spatial behaviour.

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GENERAL INTRODUCTION

A major focus of research in the behavioural sciences at the present time is concerned with analysing the process whereby man imposes order on the complexity of his environment so that his interactions with his surroundings result in consistently satisfying outcomes.

The essential elements of this process are seen to be the objects, conditions, or alternatives which are encountered in the environment; the information about environmental phenomena which is received by the discriminating process of individual perception; the interpretation of the information and the calculation of satisfaction or desire, and expressions of preference through decision-making or discriminating behaviour.

Order therefore is achieved by the individual establishing environmental space preferences as an outcome of a complex sequence of cognitive processes, which then serve to direct his future interactions with specified environmental phenomena. The rapidly emerging discipline of environmental psychology is characterised by research of this kind, and significant advances are being made, for example, in explaining the formation of residential space preferences.

The purpose of this thesis is to examine the formation of space preferences in relation to the urban retail environment. It is maintained that by so doing explanation of consumer spatial behaviour will be enhanced, and, furthermore, the forces influencing the spatial distribution of retail activity should also become more clearly understood.

In order to analyse the process of store preference formation

it will be necessary to focus attention on the interactions that occur at the interface between the consumer and the retail store, since it is through the perception and evaluation of store characteristics that an individual's store preferences are established.

The analysis of store preference formation as a result of the interaction at the consumer-store interface has been the subject of only limited investigation by consumer behaviour researchers. Even more rarely has their interest extended to an explication of the spatial significance of their results. This would seem therefore to be an endeavour which has latent possibilities for the geographer, and it is hoped that this study will serve to expose them.

In the context of this underlying purpose, the organisation of the thesis can be briefly outlined as follows:

Chapter 1 presents an outline of the major approaches to the study of retail geography. The main purpose of this brief review of the literature is to identify certain limitations of existing explanatory frameworks and to emphasise the potential theoretical advances that can be made as a result of pursuing a disaggregate approach which focusses on the interaction at the consumer-store interface.

Chapters 2, 3 and 4 concern the development of a research framework for analysing interaction at the consumer-store interface, with the subsequent purposes of identifying store preference dimensions and deriving store preference groups.

More specifically, Chapter 2 examines the nature of the interaction at the consumer-store interface in conceptual terms within the larger framework of a model of consumer behaviour. Particular emphasis

is placed on the formation of store preferences as a result of the consumer's perception and evaluation of store characteristics.

Chapter 3 addresses the problem of the empirical definition of store preference dimensions and preference groups. The use of proxy demographic and sociological variables in this context is outlined and their adequacy is discussed. It is suggested that since preferences are an outcome of individual evaluation of perceived store characteristics, then the measurement of consumer attitudes towards these characteristics provides a more reliable basis on which to define preference dimensions and preference groups. The application of multidimensional scaling models in this research context is also considered.

Chapter 4 examines in more detail the utility of the attitude concept as a basis for measuring store preference and analysing consumer spatial behaviour. Especial emphasis is placed on the relationship between stated attitudes and actual behaviour since this has been the major source of contemporary criticism with respect to the application of attitude measurement in geographic research.

Chapter 5 illustrates an empirical application of the research methodology discussed in the previous three chapters. This chapter describes a pilot research project which was designed to investigate the structure of consumer preferences with respect to clothing stores. The procedure involved interviewing and questionnairing sample groups of consumers to determine the nature and strengths of their attitudes towards perceived store characteristics. On the basis of this data preference dimensions were identified using factor analysis, and preference groups were derived using taxonomic procedures.

The final chapter discusses the implications of this project for

future research. It is maintained that the application of attitude measurement in the testing of suggested hypotheses should advance the understanding of consumer spatial behaviour and of the forces influencing the spatial distribution of retail activity.

CHAPTER 1

APPROACHES TO THE STUDY OF RETAIL GEOGRAPHY

A. INTRODUCTION.

In this chapter, the purpose is to outline the various approaches to retail geography which have been adopted. This is in no way intended to serve as a comprehensive review of the extensive literature pertaining to this research area. The aim is rather to pinpoint limitations of existing explanatory models in the context of the contemporary search for more sophisticated geographic theory.

It is apparent that although aggregate approaches have been successful in explaining macroscopic patterns of behaviour and distribution in the retail environment, it becomes necessary to adopt a disaggregate approach in order to explain more detailed characteristics of consumer spatial behaviour and the spatial distribution of retail activity.

Studies undertaken by marketers and social psychologists are seen to give some indication of the direction in which research at this disaggregated level might proceed; but, if theory is to be significantly advanced, it seems very necessary to develop a behavioural framework to function as a directive for future research. It is suggested that an analysis of the interaction at the consumer-store interface and the consequent formation of consumer store preferences should form the essential elements of this framework.

B. A CONTINUUM OF RETAIL RESEARCH APPROACHES.

Retailing basically involves the satisfaction of demand at selected points of supply where goods are distributed to consumers within the organisational setting of the retail store. The retail function can therefore be seen to comprise the following basic

components: the goods to be distributed, the consumers to whom these goods are to be distributed, the individual merchant or corporate structure responsible for determining retail strategy, and the store in which the transaction takes place. Whatever aspect of retailing is selected for study, it would therefore seem to follow that each of these components must receive consideration. Hence, in the context of retail geography, these same basic units of analysis are applicable, and it is the varying ways in which they have been manipulated that essentially differentiate the research approaches which have been adopted.

Furthermore, it seems useful in reviewing geographical approaches to retail research to categorise previous studies in terms of the level of analysis employed. It is suggested that retail studies can be thought to occur along a continuum, ranging from those studies wherein a totally aggregated approach has been adopted to those characterised by a totally disaggregated approach. Between these two extremes are found those studies which illustrate a partly disaggregated approach. Further breakdown within each of these categories is necessary to distinguish between conceptual and empirical research.

(i) Aggregate Approaches to Retail Geography.

In the case of totally aggregated studies, interest has commonly focussed on the nature of the business function in terms of the kinds of goods and services distributed, rather than on the characteristics of individual retail establishments. Therefore no allowance is made for variation in merchant strategy and the effect this has in differentiating stores which perform essentially the same business function. In addition, no attempt is made to differentiate between consumers; they are assumed to comprise a homogeneous group. There is a history of

studies illustrating this approach and these have been the subject of critical review in another context (Leigh, 1965) and hence only a brief resume will be given here.

Some of the earliest research in this area is attributable to Proudfoot (1937), who was essentially concerned to describe the empirical regularities he observed in the urban landscape. He was among the first to point out the existence of classes of business centres, and was able to describe their functional differentiation, and trade area characteristics. His observations were later set within a more analytical framework by Ratcliff (1949), who argued from an ecological standpoint, maintaining that the intra-urban pattern of retail activity reflected rent competition among businesses for strategic locations.

The development of a theoretical framework to explain the spatial organisation of retail activity within the city involved applying the basic concepts of central place models, particularly the notions of 'threshold' and 'range' which had been originally formulated by Christaller (1933) and Losch (1954) to apply at the inter-urban scale. Carol (1960) argued that since goods vary in their demand frequency they are characterised by differences in threshold and range. This is seen to be the causal basis for the development of an hierarchical system of business centres within the city representing a microcosm of the inter-urban central place system.

The work of Berry and associates at the University of Chicago probably constitutes the most sophisticated application of central place concepts at the intra-urban scale. For example, Berry (1963), undertook a detailed study of the retail structure of Chicago, which he described as a pattern of business centres, business ribbons and

specialised business areas. The centres are seen to compose a five-level hierarchy, ranging from the low order convenience centre to the level of the metropolitan centre or C.B.D. The organisation of functions within centres, at each level of the hierarchy is related to the thresholds of the goods distributed, and the frequency with which these goods are demanded. It is hypothesised that businesses distributing high threshold, infrequently demanded goods, will locate within high order centres, and more especially the C.B.D., in order to maximise their accessibility in relation to the total market area which, it is assumed, they serve. Clearly, businesses distributing low threshold, frequently demanded goods do not depend for their survival on serving the total market area; they can therefore locate within low order centres, meeting the demand in particular areas within the city. The expected pattern of retail organisation results therefore from businesses competing for locations which will satisfy the demands of their respective thresholds. It is to be expected therefore that businesses, having similar thresholds, will locate in centres occupying the same level in the hierarchy.

(ii) Limitations of a Central Place Approach.

Considerable status has been attributed by geographers to the central place model as a basis for explaining the intra-urban pattern of retail activity. This status is certainly justified where the concern is with the interpretation of patterns of behaviour and distribution at a macroscopic level. Nevertheless, despite its general applicability at this level of analysis, certain limitations of the model have been recognised in the course of empirical study.

Leigh (1965) noted that specialty stores in Metropolitan Vancouver were commonly located at suburban sites. This is contrary to expect-

ations based on the central place model whereby specialty stores are seen to locate in the C.B.D. to secure accessibility to the total market area. Leigh demonstrated however that such stores frequently do not depend on attracting custom from all parts of the market area; on the contrary, they were shown to depend on the patronage of a small segment of the market. Consumers within this segment were concentrated within very particular urban areas and hence the specialty stores could operate profitably by locating within the same areas, or at sites attractive to their special market groups.

Schiller (1971) has shown that seemingly anomolous situations can exist at the inter-urban scale with respect to the distribution of specialty retail outlets. He found that in the Outer Metropolitan Area of London specialty stores and services were concentrated in urban centres serving high income groups. This resulted in a breakdown of the central place hierarchy of business functions since in certain cases small urban centres had many more specialty outlets than considerably larger centres.

The market areas of a discount and non-discount supermarket were compared in a study by Eliot Hurst and Sellers (1969). The distribution of shoppers around the two stores was found to differ significantly from theoretical expectations. It was quite clear that the discount store was attracting customers from a wide market area and dispersed points by virtue of low prices. Customers at the non-discount store were found to be much more local in origin, and motivated less by cost than by convenience.

The limitations of the central place model, in part illustrated by these studies, result from the far-reaching assumptions which inevitably form the basis of an aggregate approach. For example, the assump-

tion of perfect competition in retailing is a fundamental weakness of the theoretical framework as outlined. This suggests that each store, performing a specified business function, offers an identical good, with the assumed result that the customer's choice of store is based primarily on distance-cost minimisation, whereby the customer selects the nearest store offering the required good. While this outcome might pertain to the purchase of certain convenience goods (although not always then as Eliot Hurst and Sellers have pointed out), it is unrealistic in relation to the purchase of shopping and speciality goods, where the extent of customer search has been shown to be much greater. (Bucklin, 1963)

If the assumption of perfect competition is relaxed, and a differentiated product is assumed, it follows that each store will be differentiated on the basis of product differences, and in terms of the conditions surrounding the sale of the product. This situation more accurately describes the real world, where monopolistic competition operates (Chamberlin, 1965). This immediately helps to explain how spatial patterns at variance with theoretical expectations can exist.

Garner (1967) has attempted to reinterpret the notion of 'threshold' in a situation where monopolistic competition is assumed. He argues that the means by which a particular retail outlet seeks to differentiate its product has an effect on the cost-revenue structure of the firm, and this, in turn, has an effect on the size of the threshold. It follows that a range in threshold values exists for each business type rather than a single unique value which has hitherto been supposed. When the notion of threshold is recast in this framework, Garner argues that explanations are available for some of the anomalies which have hitherto characterised central place studies. Research has yet to indicate the validity of this contention.

A further basic limitation of an aggregate approach is that by

assuming rational (i.e. cost-minimising) behaviour on the part of all consumers, no recognition is made of the existence of fundamental variations in consumer store preferences. For this reason, it is again inevitable that anomolous situations are found to occur when seeking to explain spatial patterns of behaviour and distribution on the basis of the central place model.

In summary, an aggregate approach is useful in so far that it yields broad generalisations applicable at a macroscopic level of analysis. Furthermore, the nature of the anomolies unaccounted for by these generalisations function to direct further research which has as its aim the development of more sophisticated explanatory frameworks applicable at a microscopic level.

To view the central place model in this way merely reflects the function of models in general. As Haggett (1965, p.19) has stated: "in model building we create an idealized representation of reality in order to demonstrate certain of its properties." Certainly the central place model demonstrates certain important properties of urban retail structure. Haggett has also observed that another purpose of model-building is to stimulate fresh inquiry, leading on to further research and modifications, since model-building "through its very over-generalizations, makes clear those areas where improvement is necessary." (p.23). Again this accurately reflects the status of the central place model as previously discussed. The central place model has certainly stimulated fresh inquiry and the development of several models which have a less aggregative structure, and it is to a brief consideration of these that attention now turns.

(iii) Partly Disaggregated Approaches.

Studies falling within this category are characterised by a finer breakdown of either the consumer market or the universe of retail

establishments. Greater recognition is given to the existence of store preference variations and some consideration is given to the factors which give rise to these variations.

Huff (1961, 1962 and 1963) developed a model to measure the market penetration of stores on the basis of variations in consumer-choice behaviour. Such an inclusion lies beyond the capacity of the central place model given its limiting assumptions regarding the homogeneity of the consumer market. Huff's stochastic model of consumer spatial behaviour assumes that consumers isolate a set of alternative shopping centre choices from a much larger group consisting of all possible alternatives; that they calculate a positive measure of utility for each of these perceived alternatives; and that they distribute their retail patronage spatially in probabilistic fashion. Huff states that the probability of a person's travelling to a given shopping centre is proportional to the utility of that centre in relation to the utility of other centres, where the utility of a centre is determined by its size (in terms of square footage of selling space) and the time necessary to reach it expressed in the following terms:

$$P_{ij} = \frac{\frac{S_j}{(T_{ij})^\lambda}}{\sum_{j=1}^n \frac{S_j}{(T_{ij})^\lambda}}$$

where P_{ij} is the probability of a consumer at i travelling to shopping centre j , S_j is the size of the shopping centre j , T_{ij} is the travel time separating i and j , and λ is a parameter that varies with the type of merchandise under consideration. This reflects that different types of merchandise support different amounts of consumer search. The value

of the exponent was determined empirically on the basis of linear correlation analysis to give a 'best-fit' solution, in a similar manner that Reilly (1931) determined the value of the exponent of the distance term in his model of retail gravitation.

The basic limitation of Huff's model is the assumption that consumer's evaluate retail opportunities on the basis of only two variables, these being the size of the shopping centre and the travel time taken to reach it, whereas, in practice, there is every reason to believe that a great many other considerations affect the consumer search process for retail merchandise. Huff's limited appraisal of individual choice behaviour reflects the fact that his purpose was to develop a procedure for estimating retail sales potentials at specific store sites, and not to analyse the formation of consumer store preferences per se. He acknowledges that the utility of a shopping centre to a consumer is based upon a host of different factors, but he maintains that, for the purpose of making reasonably accurate predictions of consumer spatial behaviour, it is sufficient to "discover and specify only a few relevant variables". (Huff, 1962, p.17)

While this assertion may be true, the problem remains that a simplistic predictive model may deviate so far from reality as to lack conceptual value. It follows therefore that success in the development of accurate predictive models is not a justification for a neglect of research which is aimed at increasing our knowledge of the complex process whereby consumer retail preferences are formed.

A dynamic model developed by Simmons (1964) recognises the importance of consumer preference as a variable affecting the changing patterns of retail location in an urban area. He regards the popula-

tion and income of an area as factors controlling the retail structure, modified by the effects of consumer preference and mobility and retail operating costs. His model has an additional dynamic dimension in that changes in income, technology, and patterns of urbanisation affect its structure over time. In comparison with the models previously discussed, this framework exhibits much greater structural complexity. Although some of the relationships in the model are defined with relative precision, for example the population-income relationship, others are far less precisely formulated, representing estimates which tend to push the model in a desired direction. The latter would seem to apply to the relationships involving consumer preference, which suggests that more specific attention needs to be paid to this variable if its relationship to the pattern of retail location is to be better understood.

Disaggregation to the level of the individual retail establishment is proposed by Horton (1968). His contention is that an understanding of consumer attraction necessitates the isolation and utilisation of factors which underlie the variation in the attraction capabilities of specific retail establishments. He argues therefore that research should focus on establishments selected rather than on the individual consumer. Horton questions the usefulness of aggregate approaches as exemplified by the majority of commercial trip generation studies, which have essentially been concerned with the attraction of consumers to commercial categories rather than to individual outlets. He derives a regression model, having as its dependent variable, consumer attraction (primarily measured in terms of the number of trips to particular establishments), and as its independent variables, micro and macro features of the store site, expressed as investment

and locational differentials. The underlying hypotheses are that the quality of the site, measured on the basis of these two dimensions (defined in terms of twenty separate variables), is a major determinant of consumer attraction and therefore site profitability.

The work of Claus (1969) and Rothwell (1970), illustrates a similar approach to that adopted by Horton, since in both cases they were concerned to predict the performance of gasoline service stations on the basis of micro and macro site features. Rothwell was able to develop a model capable of predicting performance within ten per cent of actual figures in terms of total gallonage pumped by individual service stations. Furthermore, the work of Claus is perhaps unique in seeking to relate variations in retail strategy and performance to the characteristics of the decision-makers involved. In this regard, Claus sought to operationalise the dimensions of Pred's 'behavioral matrix', these being: the actor's 'level of information' and his 'ability to act'. (Pred, 1967 and 1969) He demonstrated that the locational and overt site performance of gasoline service stations could be associated with differences in the information level and ability to act of corporate actors. This research methodology clearly illustrates the potential insight into the spatial dynamics of urban retail structure to be achieved through a systematic analysis of the merchant's decision-making process.¹

¹This process is not a focus of consideration in subsequent chapters, but it is nevertheless recognised that the analysis of the behavioural characteristics of individual and corporate actors is a very necessary component of a comprehensive framework of urban retail research.

There can be little doubt that the total characteristics of the store site are basic to an understanding of consumer attraction as these studies maintain. But it is important to recognise that a particular set of site characteristics is not perceived as equally attractive by all consumers. To argue in that way would be to deny the importance of retail strategy as a key to profitability. It would seem more realistic to argue therefore that the characteristics of a particular store site are attractive to a segment of the consumer market, rather than to consumers in total, especially when a shopping or specialty good is sought. This argument therefore calls for a modification of Horton's contention that research should focus on establishments selected rather than on the individual consumer, in favour of an approach which is focussed on the establishments selected and on the particular consumers by whom they are selected.

The basis on which an aggregate approach to consumer behaviour has been adopted in the context of retail research is clearly stated stated by Yuill (1957, p.105). He points out that any attempt to isolate the reasons for the success of any one establishment ultimately involves the examination of "the actions, reactions, and motives of its customers, for they make the system operate." But because the data required for such an examination has been seen to be (in Yuill's words) "at best unmeasurable", investigation has retreated to a surrogate measure - the resultant behaviour, thus precluding the segmentation of the market on the basis of behavioural variables. That such a retreat is not inevitable is a major contention of this study, and indeed underlies much of the discussion in subsequent chapters.

(iv) Marketing Geography.

Studies under this heading are characterised by a partly disaggregated approach. Marketing geographers have basically concerned themselves with the pragmatics of store location research, and have shown little interest in the construction of theory. Emphasis has been placed on the accurate measurement and prediction of the potential sales likely to be achieved at alternative sites, and therefore interest has centred on the individual establishment, while no significant attempt has been made to study variations in consumer preferences and their relationship to choice of store. A representative selection of studies undertaken in this context is to be found in Kornblau (1968).

In their attempts to determine sales potentials, marketing geographers have been concerned with the accurate delimitation of trade areas of particular store sites. In so doing, they have employed an empirical rather than theoretical approach. The principal variables which have been studied include accessibility and traffic flow, extent of trading area, population and its distribution, income, economic stability, and competition. On this basis, the marketing geographer has performed the function of providing expert assistance to business management, to aid in making decisions about the geographical pattern of business activities. This has involved maintaining close contact with business organisations, because only there can be found the information and facilities needed, and because of the need for testing and evaluating techniques of analysis in the context of actual business operations.

The future direction of marketing geography seems no more aimed to theory building than hitherto; the emphasis remains on the development of better techniques for collecting and using information, and Hamill (1965), recognising this continuing trend has expressed doubt

as to the need for formal theories in marketing geography. This opinion is reinforced by Applebaum, who is probably the most active researcher in this field; he contends that the professional geographer in business "cannot expect to find his answers to specific problems in broad generalisations and neat formulas." (Applebaum, 1961, p.49) Thompson, however, is not convinced of the truth of this argument; he feels that advances in marketing geography are dependent on "generalizing and developing a theoretical structure from existing research", in an attempt to "relate such studies to the large body of research on consumer behavior, which largely ignores the locational aspects of the purchasing decision." (Dalrymple and Thompson, 1969, p.105 ff) Elsewhere, Thompson has stated that such a reorientation of research effort will necessitate "less emphasis on census and other published data as the principal inputs to explanatory models, more emphasis on the sampling of consumer attitudes, and attention to survey research." (Thompson, 1966, p.17)

Thompson's comments constitute a particularly cogent criticism of the marketing geographer's approach and they are directly relevant to the purposes of this thesis. It is interesting that he counters Yuill's defence of an aggregative approach to consumer behaviour by suggesting that the measurement of behavioural variables, (for example attitudes) is possible and the further implication is that, by so doing, a theoretical framework to serve as the basis for future marketing geography research could be developed. The possibility of measuring consumer attitudes as a basis for advancing theory in retail geography is the subject of detailed discussion in subsequent chapters.

The orientation to retail research which Thompson has advocated

is essentially a disaggregate one. When a disaggregate approach is adopted, the process by which consumer store preferences are formed becomes a focal point of the analysis; studies illustrative of this approach are briefly discussed in the following section.

(v) Disaggregate Approaches.

In the case of totally disaggregated studies, interest has focussed on the relationship between store characteristics and consumer characteristics, and has therefore involved the measurement of behavioural variables. Since geographers have only recently begun to realise the potentialities of behavioural research in the analysis of spatial patterns, very few strictly geographical studies have adopted a disaggregate approach. However, consumer behaviour research, partly undertaken by marketers and partly by psychologists, has involved certain studies of retailing which have definite spatial implications, although these have not always been developed in the context of the original research. This is true, for example, of store image studies.

The studies undertaken by Martineau (1958 and 1958a), examining the relationship between consumer characteristics and choice of store, have received considerable attention, perhaps because Martineau was among the first to recognise the importance of store 'image' as a determinant of retail patronage. His studies of female shopping behaviour led him to the conclusion that the shopper seeks out the store whose image is most congruent with the image she has of herself - regardless of the price factor. The degree of congruence, he felt, was determined by the shopper either consciously or subconsciously answering for herself such questions as: 'what is the status of the store?'; 'what can I expect in terms of overall atmosphere, product

quality and personal treatment?'; 'how interestingly does it fulfil its role?' 'how does this image match my own desires and expectations?'

Becker (1967), has explored the notion of retail store 'image' in some depth. He conceptualises that image is an outgrowth of 'attitudes' in the mind of the consumer in relation to a particular store. 'Image' is seen to be a convenient way of summarizing an 'attitude'; these 'images' then guide the individual's consumption habits. Becker maintains that the consumer constructs a mental map of retail opportunities which directs his choice of store; the store with a strong positive image being preferred to one with a strong negative image. In this way a hierarchy of image value is constructed and a choice is made on the basis of the highest positive image. These mental maps are supposedly constructed on the basis of the consumer's past experience, perceptions, social interactions values and aspirations. (p.8) Becker goes on to consider the ramifications of retail store image as it bears upon the retailer's choice of marketing strategy.

Store image studies indicate that store preference formation and store selection are complex processes, involving numerous interactions between consumer characteristics and store characteristics. The variables which are assumed to determine retail patronage in aggregate studies, (for example size of store and distance to store) are not refuted, but they emerge as components of a much larger set of variables which impinge upon consumer behaviour. This underlines the limiting assumptions which inevitably characterise aggregate models, and it helps to explain why such models fail to account accurately for patterns of consumer spatial behaviour and distributions of stores as observed in the real world.

The concept of store image is a fundamental one in analysing the formation of consumer store preferences and it is the subject of further discussion in the next chapter.

Research at a disaggregate level has been undertaken on behalf of retail firms by consultant psychologists. In measuring individual consumer profile characteristics and relating these to retail location decisions, the practicability of a disaggregate research approach has been demonstrated.

The Gruens present a method, using survey research, designed to estimate the behavioural variables that determine the value of alternative locations to a particular firm. They admit that these estimates are probably less precise than those obtainable for more easily measurable variables such as driving time and income, but they justify their methodology on the basis that "an imprecise estimation of the significant variables is of more value than a precise estimation of the insignificant variables." (Gruen and Gruen, 1967, p.327) This comment is indicative of their strong criticism of previous retail location studies. They maintain that such studies have too often assumed the existence of standardised retail firms and customers who are motivated uniformly by a desire to shop at the nearest and largest shopping agglomeration. In reality, the Gruens contend that the economy is characterised by retail firms whose survival depends upon their ability to offer a product differentiated by the unique identity and operating methods of the firm; while, the shopping population is non-uniform and strongly attracted to certain retail firms.

If research is to be undertaken on the basis of these realistic assumptions, the nature of the interaction between consumer and store characteristics must become the focal point of analysis. One outcome

of this analysis might be the definition of consumer preference group profiles, which could serve as a basis for testing hypotheses concerning consumer spatial behaviour and patterns of retail location. The method by which this outcome might be achieved is also the basis of discussion in subsequent chapters.

C. CONCLUSIONS.

From this cursory survey of approaches to retail geography, the following conclusions emerge.

Central place approaches have undoubtedly contributed a great deal to a macroscopic understanding of urban retail patterns. At the same time, the idealised assumptions about consumers and merchants on which the central place model is based seriously limit its appropriateness when seeking to explain real world patterns of behaviour and distribution. The anomolous situations which remain unaccounted for stimulate the search for more sophisticated explanatory frameworks.

No well articulated alternative framework has yet emerged in the course of research at the partly disaggregated level with the possible exception of Claus' research. This is perhaps because this approach has emphasised the development of pragmatic models to give accurate predictions of retail sales potentials. The contributions made to the development of geographic theory appear to have been minimal; this has been a cause of criticism in the literature, and it has also encouraged the adoption of a totally disaggregated behavioural approach.

At the disaggregated level much more realistic assumptions can be made with regard to both consumer and store characteristics. The formation of consumer store preferences emerges as a key process. But it is also a complex process closely related to the formation and evaluation of retail store images. Despite the increased complexity involved

in adopting a disaggregate approach, the work of social psychologists has demonstrated its practicability. The potential utility of this approach with respect to the development of retail geographic theory remains essentially an unknown quantity.

In order to shed light on the utility of a disaggregate approach, it is necessary first of all to discuss the components of a possible research framework in greater detail than has been relevant to the purposes of this brief review. As suggested, the nature of the interaction at the consumer-store interface and the consequent formation of store preferences are regarded as the fundamental components. It is to an analysis of these that our attention now turns.

CHAPTER 2

INTERACTION AT THE CONSUMER-STORE INTERFACE.

A. INTRODUCTION.

The associated processes of store preference formation and store selection are subcomponents within the total framework of consumer behaviour. Although geographical interest is focussed on these sub-component processes, they can only be understood in the context of the total framework. The initial purpose of this chapter therefore is to describe briefly a model of consumer behaviour, outlining the sequential nature of consumer decision-making and indicating that the consumer's interaction with the retail environment forms an end-point of this decision-making sequence.

Interaction at the consumer-store interface is then analysed in detail and the contingent cognitive processes are described. The notion of 'preference' is invoked to summarise the outcome of the complex cognitive processes which mediate between the reception of environmental stimuli and the performance of a behavioural response in terms of store selection.

The contemporary research interest in environmental space preference formation is noted, and the relevance of contributions in this field to the retail context is briefly discussed.

B. A MODEL OF CONSUMER BEHAVIOUR.

A model of consumer behaviour must attempt to define the structure of the psychological processes operating within the 'black box' which intervenes between stimulus reception and individual response. Both intuitively and realistically the development of such a model is extremely complex, especially as it is often impossible to validate the

hypothesised relationships between 'black box' components.

Various conceptual frameworks have been proposed (Howard, 1963; Nicosia, 1966), which essentially describe consumer behaviour in terms of the operation of a complex set of interrelated decision processes. While such propositions have done much to advance knowledge and understanding of consumer behaviour, they leave many questions unanswered. This results partly from their abstract formulation and partly from the paucity of empirical studies which might provide substantive clarification and validation of these conceptualisations.

Howard's model can be criticised on the basis of its abstract formulation and the failure to specify with clarity the linkages between variables. The components of Nicosia's model are more specifically defined but the model has limited applicability since it relates only to individual responses to an advertising stimulus.

However, Engel and others (1968), sensitive to the inherent weaknesses of the pre-existing conceptual frameworks, have developed a comprehensive model of consumer motivation and behaviour. They have shown greater concern than earlier workers to arrive at precise definitions of the concepts incorporated within the model framework, and they have also attempted to relate their conceptualisations to empirical research findings. Engel's model is particularly appropriate in the retail context since it emphasises the importance of interaction at the consumer-store interface, and isolates the component variables involved in this interaction.

This model therefore constitutes an advance on previous analyses of consumer behaviour, and, at the same time, it has particular relevance for the study of retail preference formation and choice behaviour. For these reasons a detailed discussion of the model is justified in the

present context. The model will first be discussed in its totality before a detailed analysis of the consumer-store interface per se is attempted.

A description of Engel's model.

As Figure 1 illustrates, the operation of the model is determined by the 'central control unit' which functions at the interface between the input stimuli and output responses of the system. (Engel et al, op.cit, pp40-53) The 'central control unit' consists of memory and thought processes, which are conditioned by the personality characteristics of the individual, in terms of his behavioural traits and motives, and by his stored information level based on past experience. These conditioning components find combined expression in the individual's values and attitudes.

The individual is exposed to stimuli emanating from his physical and social environment, but an active response will not occur until arousal takes place in the form of need activation. The nature of the need will determine the selective perception of incoming stimuli, and a comparison process undertaken at this stage controls what action, if any, is to be taken to solve the problem which the need creates.

If a decision is made that a course of action can lead to a satisfactory solution of the problem, then a search for alternative solutions is begun. Once the alternatives have been isolated they are subject to evaluation to determine the preferred solution. It is only at this stage, having made this sequence of prior decisions, that the individual consumer enters into a purchasing situation, and even then it is far from certain that an actual purchase will eventually be made. But whatever the ultimate outcome, the experience derived will be added to the stored information to influence future behaviour.

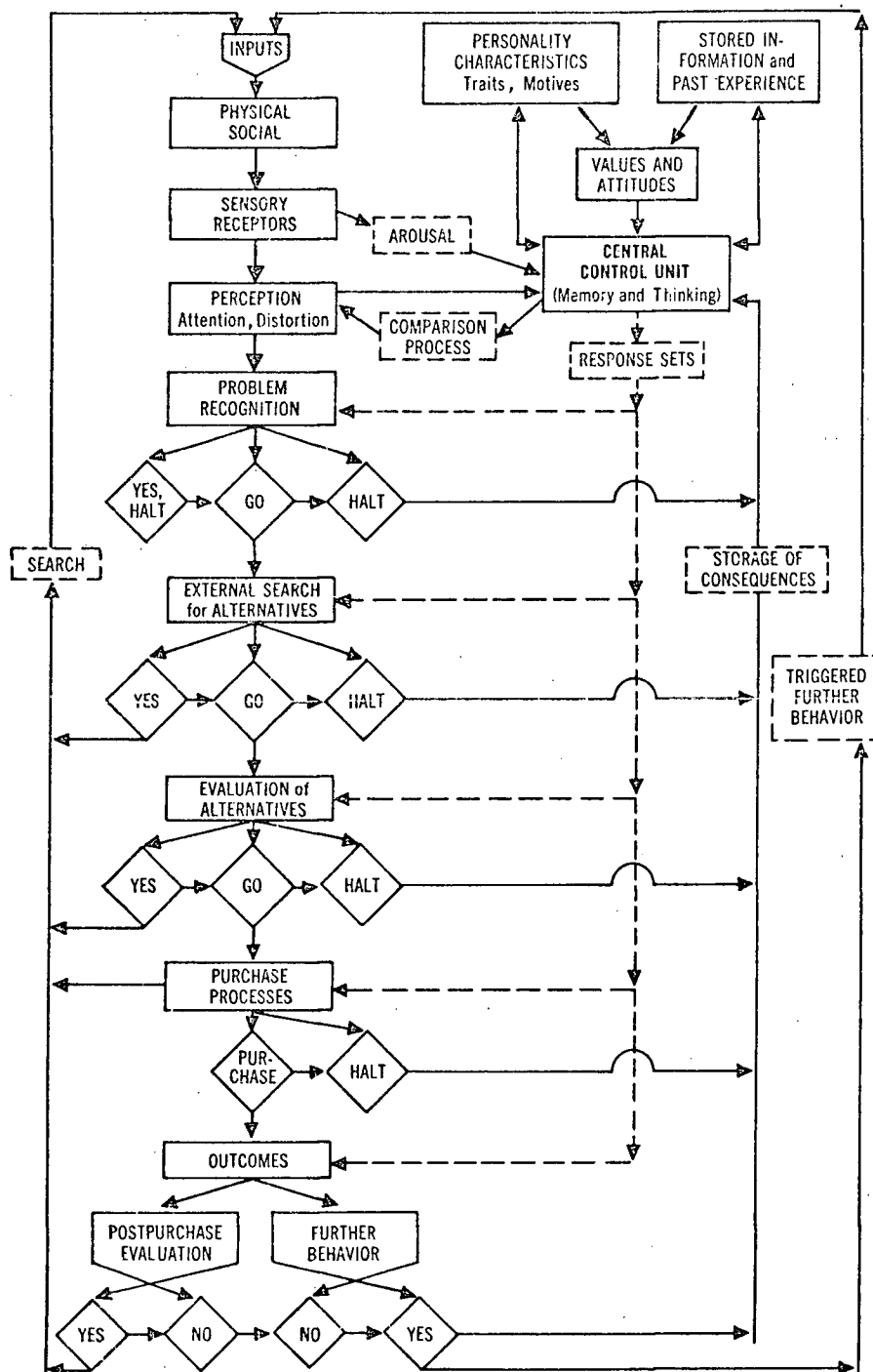


Figure 1. An Integrated Model of Consumer Behaviour.

(from Engel et al, 1968, p.50)

The basic components of the model will not vary with the nature of the product under consideration, but clearly the relative importance of the various stages within the decision process will be appreciably modified by the potential purchase. For example, the search of alternative solutions will obviously be more extensive if the purchase of a car is proposed, as opposed to a carton of milk; in the latter case, where the purchase is probably based on habit, this step may be completely bypassed.

It is also readily apparent that termination of the process can occur at virtually any stage; in many instances this is likely to take place prior to the individual entering into an actual purchasing situation. In addition, the outcomes at each stage may be modified by the effects of psychological response sets such as the individual perceiving considerable risk and doubt in buying situations.

Given the abstract nature of the discussion so far, it is perhaps useful to illustrate the operation of the model in terms of a hypothetical "realistic" example.

Let us assume a situation in which a husband and wife have received an invitation to a dinner party. The wife's thoughts are quickly directed to the question of whether she has anything suitable to wear for this occasion. There are perhaps various items in her wardrobe which come near to satisfying her requirements, but not to the extent that she wholly discounts the possibility of buying something new. In this way, therefore, a need has been activated, and the wife becomes receptive to incoming stimuli. These may be of various forms: advertisements in fashion magazines or newspapers; shop window displays; the clothes of relatives and friends. The perception of these stimuli will be selective in relation to the wife's values and attitudes; for

example, if she is not very fashion conscious she may pay little or no attention to the contents of fashion magazines. At this stage a decision will probably be made as to whether the possible purchase of new clothes will satisfy her needs better than the clothes she already owns. If she decides that there is nothing to be gained from having new clothes then the buying process is terminated. But, if new clothes are favoured then a problem has been recognised and a search for alternative solutions proceeds.

The purpose of searching and evaluating alternative solutions will be to determine the type of clothing to be bought, whether a dress or a suit, for example; furthermore, decisions have to be made regarding the style and colour preferred, and, of course, price considerations can rarely be ignored. Again, the extent of search and evaluation will depend upon the personality characteristics of the individual; if, for example, she places great importance upon her appearance then it is more likely that this stage will be prolonged.

Once, the wife has a reasonably precise idea of the type and style of clothing she prefers, she is in a position to enter into a purchasing situation which will probably involve the evaluation of various stores before she reaches a decision as to where the purchase is to be made. In the event that no store offers the kind of good sought then the planned purchase might still be abandoned. Whatever the eventual outcome, the experience gained in the course of the buying process, plus the degree of post-purchase satisfaction in the case of a good being bought, will be added to the buyer's stored information and so influence future behaviour.

This is the context in which interaction at the consumer-store interface occurs, and attention can now turn to a detailed discussion

of the interaction itself.

C. THE CONSUMER-STORE INTERFACE.

(i) The Purchasing Process

The purchasing process is conceptualised as consisting of four interacting sets of variables: (i) pre-shopping purchase intentions; (ii) consumer characteristics; (iii) store environment characteristics; (iv) purchase outcomes. (Engel et al., 1968 pp.444-458)

Pre-shopping purchase intentions can vary from the situation in which the shopper has decided before entering the store both the product and the specific brand of product to be purchased, to the situation in which prior to entering the store the consumer has little or no preconceptions about what if anything is to be purchased. In the latter case the occurrence or non-occurrence of a purchase decision will largely depend on the influence of in-store stimuli.

Variation again exists in the nature of the post-shopping outcomes. It may be that the product and brand is bought in accordance with original intentions; in other instances brand substitution may occur; and it is also quite possible that no purchase is made.

To the marketer and consumer behaviour researcher there is obvious insight to be gained from a study of the relationship between the state of pre-shopping intentions and the subsequent post shopping outcomes, but in the context of the present study interest focusses far more on the two sets of variables which are seen to intervene between the intentions and the outcomes, namely on consumer characteristics and store characteristics and the relationships which exist between them.

(ii) Basic Components of Interaction Processes.

Interaction processes at the consumer-store interface consist of

four basic components: (a) evaluative criteria; (b) perceived characteristics of stores; (c) comparison processes; (d) acceptable and unacceptable stores. (Engel et al, 1968, p451) This structure is illustrated in Figure 2. Store preference formation and store selection are therefore outcomes of processes whereby the consumer compares the characteristics of stores, as she perceives them, with evaluative criteria. In order to understand fully the way in which the shopper distinguishes between acceptable and unacceptable stores, it is clearly necessary to define the evaluative criteria on which a comparison of alternative retail opportunities is based.

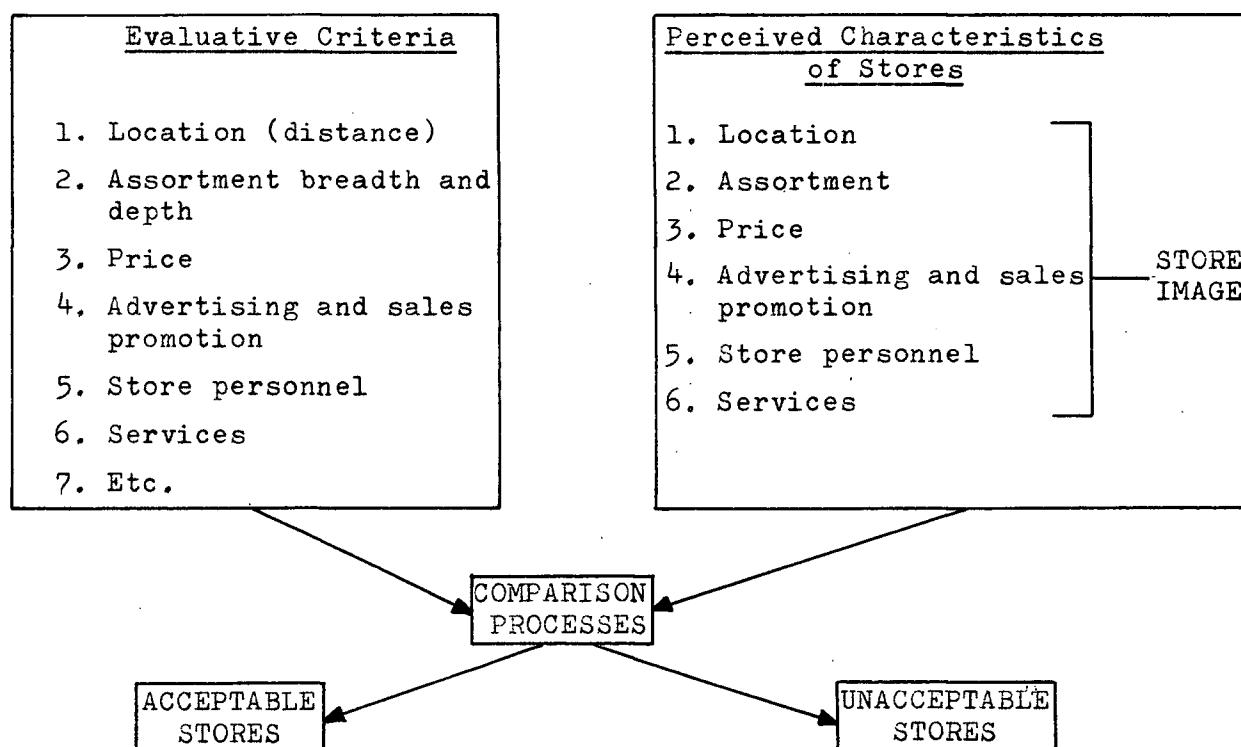


Figure 2. Basic components of consumer-store interaction processes.
(from Engel et al, 1968, p451)

(a) Evaluative criteria.

Engel (1968, pp.452-53), lists six variables which he argues form the basis on which consumers evaluate stores. These are (i) location - Engel cites the shift away from downtown shopping in favour of suburban

shopping centres, in which the factor of parking convenience has been very important (Jonassen, 1953), to substantiate the significance of the location variable; (ii) depth and breadth of assortment - clearly the characteristics of the goods offered are going to affect the choice of store; (iii) price - it is difficult to assess the importance of the price variable as an evaluative criterion, since its significance seems to vary greatly in relation to the product being purchased; (iv) store personnel - various aspects of personnel behaviour may be evaluated including friendliness, courteousness, product knowledge and others; (v) advertising and sales promotion - here again it is difficult to generalise about the importance of this criterion; (vi) services - the return policy of the store and credit policies are certainly important items under this heading.

Clearly, these criteria subsume more detailed evaluative items, which can perhaps only be accurately determined in relation to a specified product category. A more detailed definition of evaluative criteria is discussed by Brown and Fisk (1965). They were concerned to measure the relative importance of various characteristics of department stores as factors influencing consumers' choices of places to shop. They list thirty five characteristics ranked in order of the importance attributed to them by the sample group of consumers. The highest ranking characteristic was 'high quality' and the lowest ranking was 'trading stamps'. The extent to which a rank ordering of this kind is a realistic representation of evaluative criteria is open to question; there is no doubt that the relative importance of the variables will change with the product and the consumer.

The definition of evaluative criteria has been equated with the isolation of consumer patronage motives. (Brown and Fisk, 1965) It is

questionable how far these two variable sets are synonymous. There is no doubt that motivation affects the set of evaluative criteria which a consumer establishes when selecting a store. (Douglas, Field and Tarpey, 1967, ch.3) But other personality constructs such as values and attitudes are also of importance. Furthermore, it is doubtful whether patronage motives really do constitute 'motives', since they usually refer to overt store characteristics such as 'wide selection' or 'good quality' rather than to concealed forces within the personality. This criticism is indicative of a common misuse of the term 'motive' in the marketing literature. (Engel et al., 1968, p68 ff).

Bucklin (1963, p.53) has provided some clarification of this confusion in terminology by stating that: "Patronage motives are derived from consumer attitudes concerning the retail establishment. They are related to factors which the consumer is likely to regard as controlled by the retailer. These will include assortment, credit, service, guarantee, shopping ease, and enjoyment, and usually price." This synoptic statement accords well with the conceptual basis of this thesis, which, as the following chapters reveal, emphasises the importance of consumer attitudes towards store characteristics in seeking to analyse the process whereby consumer retail preferences are formed.

(b) Perceived characteristics of stores.

The analysis of interactions at the consumer-store interface is further complicated by the fact that what consumers perceive the price, merchandise offering and services of a store to be may differ considerably from what they actually are. Whether or not a consumer patronises a store depends on his perception of store characteristics and how they compare with evaluative criteria. The way in which consumers perceive

a store is typically referred to as a store's 'image'. This concept was introduced in the previous chapter, and it is now necessary to discuss its role as a basic component of consumer-store interaction processes.

The concept of store image has been variously defined, but Martineau's definition would probably meet with fairly general agreement. In his scheme image is interpreted as "the way in which the store is defined in the shopper's mind, partly by its functional qualities and partly by an aura of psychological attributes." (Martineau, 1958)

Various categorisations of the determinants of store image have devised (Fisk, 1961; Kunkel and Berry, 1968; Dalrymple and Thompson, 1969), but they basically parallel the evaluative criteria listed above. Studies have illustrated the importance of the attitudes and behaviour of store employees as determinants of image formation (Martineau, 1957; Progressive Grocer, 1965). Store fixtures and decoration are also influential factors (Martineau, 1958), as also are price (Nelson, 1962) and advertising (Arons, 1961). More detailed definition of store image determinants is possible and necessary where image studies are used to shape retail strategy. For example, Fisk (1961, p.5), lists six 'cognitive dimensions' which can be subdivided to give thirty determinants of store image. Kunkel and Berry (1968, p.26) list twelve major components, comprising forty-six image determinants. These variations in classification reflect the fact that precise definition will depend on the kind of purchase under consideration, and it is therefore probably necessary to isolate the salient determinants of store image independently for different product categories.

Just as store image has been defined and categorised in various

ways, so too have the methods of measuring store image varied. The techniques employed include the semantic differential attitude scale, (Mindak, 1961), the staple non-verbal rating scale (Crespi, 1961), Guttman scaling, (Richards, 1957), customer prototypes (Weale, 1961), Q-sort (Stephenson, 1963), projective techniques, (Khoo, 1968), regression analysis, (Hughes, 1966). Each of these techniques possess certain advantages combined with certain limitations, with the result that no one approach offers universal advantages. The relative merits of these techniques will not be discussed in the present context.

The amount of research effort that has been expended in studying the store image concept emphasises the importance it is seen to exert on purchasing behaviour; it is reasonable to question therefore why this should be so. The possible explanation derives from gestalt psychology, whereby individuals are thought to organise their perceptions of phenomena in terms of patterned totalities. (Clawson, 1950) In relation to consumer perceptions of retail stores, this implies that the total store environment has a symbolic significance for the individual consumer, which is related to her personality characteristics. This symbolic attribute of the store is the essence of its image, and for this reason objective measurements of store image can perhaps never uncover its complete identity. While the symbolic significance of certain products has received attention in the consumer behaviour literature (Levy, 1959 and 1964), there has been an apparent failure to recognise that stores can also assume a symbolic meaning in the minds of consumers.

The results of two geographical studies are relevant in this regard, and furthermore indicate that image formation may operate at a

higher level of aggregation than the retail store. Simmons (1964) demonstrated that shopping centres present distinct images which serve to attract some types of consumers and repel others. A study by Lynch (1960) showed that individuals tend to simplify the complexity of the world around them in order to make decisions, and that subsequent behaviour patterns were related to the total image of the environment in which the individual lived. Environmental phenomena were attributed symbolic significance and organised within a gestalt framework.

In the marketing context, it is the operational definition of store image, rather than the theoretical explanation of image formation, that is of primary importance in directing the design of retail strategy. The retailer is concerned to manipulate all four aspects of the marketing mix - product, price, place and promotion - so as to create an image which is attractive to a sufficiently large segment of the market to ensure profitability.

(c) Comparison processes and acceptable versus unacceptable stores.

Although research has indicated that store preferences are formed and stores are selected on the basis of the consumer comparing perceived store characteristics (or the store's image) with a pre-determined set of evaluative criteria, the comparison processes themselves have not been the subject of specific investigation.

Equally, the characteristics of acceptable and unacceptable stores have not been researched. It is reasonable to assume that, when the perceived characteristics of a store fulfill the evaluative criteria, the store is presumably acceptable; but there is no empirical evidence to suggest, for example, whether consumers seek a maximising or satisficing solution when choosing a store. Becker(1967)

in his conceptual study of retail image suggests that a maximising solution is sought. In addition, it is not clear what happens when perceived characteristics fail to satisfy evaluative criteria. It remains an open question whether consumers stop evaluating stores, whether evaluative criteria are revised downward, or whether the problem which initiated the evaluation of store alternatives is extinguished. There is clearly a need to investigate these unresolved questions.

(iii) Problem-Solving or Habitual Behaviour at the Consumer-Store Interface.

To this point the discussion has assumed that interaction at the consumer-store interface consists of the consumer comparing alternative shopping opportunities in terms of the degree of coincidence between evaluative criteria and perceived store characteristics. This implies that the consumer adopts a problem-solving approach, whereby 'rational' decisions are achieved through the operation of cognitive processes. However, in certain situations, the effect of habitual behaviour may be of equal, if not greater, importance in determining store preference and selection.

In Engel's model of consumer behaviour, it can be seen that feedback occurs as the result of a purchase decision, the consequences of the action are stored and will almost certainly exert an influence on future behaviour. It follows that the nature of post-purchase satisfaction will determine the nature of the feedback. If the customer is completely satisfied with the product and services received from a particular store, it is probable that the same store will be chosen when seeking to satisfy similar needs on subsequent occasions. Each succeeding purchase reinforces the conviction that this store and the products it sells are a vehicle to satisfying needs: a pattern of learned behaviour is established and shopping habits are developed.

A habit involves the automatic reaction of a person to a stimulus. Habits differ from instincts in that habits are learned. (Rachman, 1969, p.101 ff.) They are repeated response patterns accompanied by a minimum of cognitive activity (Bayton, 1958, p.286). Store patronage based on habit clearly differs greatly from the purchasing process as outlined in previous sections, where considerable cognitive activity was assumed to take place in the course of rational, problem-solving behaviour.

Considerable debate has surrounded the issue of whether consumer behaviour normally proceeds on the basis of problem-solving or habit. Katona (1953), argued that problem-solving is a relatively rare occurrence, and that habitual behaviour is the most usual alternative to genuine decision-making. Problem-solving is recognised most commonly as a deviation from habitual behaviour under the impact of strong motivational forces and new events. Furthermore, Katona maintains that changes in behaviour due to problem-solving tend to be substantial and abrupt rather than small and gradual.

If we accept Katona's comment that problem-solving behaviour most commonly occurs under the impact of strong motivational forces and new events, it would seem that this applies to purchasing behaviour in relation to an infrequently demanded good and one which involves substantial capital outlay. This contention is further substantiated by the fact that it is in such a situation that the consumer is sufficiently motivated to undertake an extensive search of alternative shopping opportunities, consistent with a problem-solving approach; equally, it is in such a situation that the consumer has a minimum of past experience from which to have developed a pattern of learned behaviour and shopping habits. It follows that habitual behaviour is most common

where a frequently demanded and relatively low cost item is sought. For example, grocery items are normally purchased on the basis of habitual behaviour in terms of the weekly or monthly visit to the supermarket.

The occurrence of problem-solving or habitual behaviour is not only related to the type of product sought however; the personality characteristics of the consumer are also important. For those consumers who regard shopping as an arduous and unenjoyable activity, the formation of habitual behaviour to maximise convenience may be more characteristic than for those consumers who regard shopping as an attractive leisure time activity, and who, therefore, have no objection to shopping around when they feel the need arises. These differing attitudes towards shopping may exert an influence over the entire product range.

It is therefore difficult to generalise about the relative occurrence of habitual as opposed to problem-solving behaviour, other than to recognise the importance of the product to be purchased and consumer attitudes toward shopping as associated factors. Clearly, it is necessary to consider both types of behaviour in studying the interaction at the consumer-store interface.

Where post-purchase dissatisfaction occurs the consumer experiences varying degrees of frustration. If this is repeated on a number of occasions, a pattern of learned behaviour will again be established, but in this instance it will lead to the avoidance rather than the habitual patronage of a particular store or stores. Collazzo (1965) demonstrated that the degree and nature of frustration is related to variations in the income class and occupation of the consumer. It is interesting to note that the most common cause of

frustration among the upper-income group of consumers was in fact the least common cause among the lower-income group. However the results of this study do not provide conclusive evidence to the effect that the higher the social class the more sensitive the buyer is to failures in a store's services and goods.

(iv) A Summary of Interaction at the Consumer-Store Interface and the Role of Store Preference.

The preceding discussion can be summarised as follows. On the basis of consumer behaviour theory, it is argued that the process whereby a consumer selects a store at which to purchase a particular good involves complex interactions between two basic variable sets: consumer characteristics and store characteristics.

Selection is determined by the consumer comparing perceived store characteristics with a set of predetermined evaluative criteria. This comparison involves the operation of complex cognitive processes, including perception and memory, in ways which are not wholly understood, but it is clear that they are conditioned by the effects of consumer personality constructs (eg. motivation).

The decision reached, as the outcome of this interaction at the consumer-store interface, almost certainly reflects habitual behaviour as well as true problem-solving. Past shopping experience provides the consumer with stored information to direct future decision-making. Store selection, therefore, is partly a product of learned behaviour and partly of problem-solving unique to a particular situation. The balance between learned behaviour and problem-solving is seen to be related to the frequency with which the good is purchased, the characteristics of the good, and the consumer's shopping attitudes.

Throughout the discussion it has been assumed that the consumer forms preferences which are expressed in store selection behaviour. In

light of this analysis of interaction at the consumer-store interface, it is possible to define consumer store preference more specifically.

Store preferences define a set of characteristics in the retail environment which the individual interprets as sources of satisfaction in the course of shopping experience. Preference is a function of problem-solving and learned behaviour, since problem-solving leads to the isolation of satisfying retail choices, while the sources of this satisfaction are learned and stored in the memory. This stored information is consolidated in the course of further shopping experience with the result that preferences become increasingly well defined, leading to the establishment of stable choice behaviour.

This stability provides a method of ordering the complexity of the retail environment, thereby increasing the efficiency with which shopping behaviour can be performed; efficiency being a measure of the ease with which satisfying outcomes can be achieved.

D. ENVIRONMENTAL SPACE PREFERENCE STUDIES.

The contention that individual preferences serve as a basis for ordering and evaluating complex sets of environmental attributes is by no means unique to the consumer-store interface. Indeed, the analysis of environmental space preference formation and of the relationship between individual preferences and behaviour is attracting increasing attention among behavioural scientists in the field of environmental psychology.

Research interest in this regard has extended to a variety of environmental phenomena ranging from roadsides (Winkel, Malek and Thiel, 1970) to student dormitories (Preiser, 1970). So far little research within environmental psychology has focussed on preference

formation in the retail environment. However, one exception is Downs' study of the cognitive structure of urban shopping centres (Downs, 1970).

Downs hypothesised that shoppers hold 'images' of shopping centres based on their evaluations of these centres in terms of nine cognitive categories. Since the nature of the images is seen to determine the consumer's preferences, the centre with the most favourable image was assumed to be the most preferred. This led to the testing of the hypothesis that the image of the area regularly used by the consumer would be weighted to the more favourable end of a set of semantic differential scales.

Unfortunately, Downs encountered an insoluble sampling problem since respondents were unable to describe their images of shopping centres other than in terms of individual stores, and it was impossible to assume that respondents considered the same stores when describing shopping centre images.

He was able however to test the hypothesis that the consumer's image of a major shopping centre and her associated preferences are organised in terms of nine cognitive dimensions. By means of factor analysis he demonstrated the existence of eight cognitive categories: service quality, price, structure and design, shopping hours, internal pedestrian movement, shop range and quality, visual appearance, and traffic conditions. This result was seen to accord well with the hypothesis. However, Downs recognises that this was an ideographic study, related to a particular urban shopping centre, and hence there was no means of assessing the generality of the cognitive structure produced by the analysis. The cognitive categories which he hypothesised and the semantic differential scales he employed to test their

validity are shown in Table I (p.44)

Downs' study is especially interesting in the context of this thesis since a pilot research project, reported in a later chapter, was designed to analyse the cognitive dimensions underlying consumer preferences with respect to clothing stores and used a somewhat similar methodology.

Golledge (1967) has presented a conceptual analysis of consumer preference formation. He regards stable preferences as the equilibrium state of a stochastic learning model. He argues that search activity will continue until the consumer's goal has been satisfied. If the decision made at this point proves favourable then the extent of future search activity is reduced and is replaced by some regular or habitual pattern of responses. The achievement of an equilibrium state follows a probabilistic function described by a Markov chain model. The evaluation of this model must await empirical testing. However, it should be noted that the model describes preference formation with respect to market areas and not necessarily particular stores; it would seem that preferences may function differently in the former case.

In passing it is interesting to note that present attempts to revise the central place model, through the incorporation of more realistic behavioural assumptions, have also recognised the centrality of consumer space preference functions. A series of papers by Rushton (1969, 70, 71) are particularly instructive in this regard. However, the definition of preference in this case is far different from that formulated in this chapter. Rushton argues that preferences are formed on the basis of only two variables: distance-separation and place-utility. It is not clear how this contention differs substantially

Table I. Downs' Cognitive Categories and Semantic Differential Scales.

(1) Price	
1 competitive	uncompetitive
2 many bargains	few bargains
3 good value for money	poor value for money
4 many price cuts	few price cuts
(2) Structure and Design	
5 well designed	badly designed
6 simple layout	complicated layout
7 designed with shoppers in mind	not designed with shoppers in mind
8 wide pavements	narrow pavements
(3) Ease of Internal Movement and Parking	
9 easy to cross roads	difficult to cross roads
10 easy to park	difficult to park
11 not congested	congested
12 easy to walk around in	difficult to walk around in
(4) Visual Appearance	
13 well kept shops	badly kept shops
14 tidy	untidy
15 clean	dirty
16 attractive	unattractive
(5) Reputation	
17 good reputation	bad reputation
18 generally well known	generally little known
19 generally popular	generally unpopular
20 recommend to friends	wouldn't recommend to friends
(6) Range of Goods	
21 good choice	poor choice
22 wide range	narrow range
23 well stocked	badly stocked
24 can get it	can't get it
(7) Service	
25 helpful	unhelpful
26 friendly service	unfriendly service
27 good service	poor service
28 polite	rude
(8) Shopping Hours	
29 late closing	early closing
30 convenient opening times	inconvenient opening times
31 good for evening shopping	bad for evening shopping
32 always somewhere open	never anywhere open
(9) Atmosphere	
33 busy	not busy
34 relaxed atmosphere	tense atmosphere
35 personal	impersonal
36 friendly atmosphere	unfriendly atmosphere

(from Downs, R. (1970), p.22.)

from assumptions regarding consumer preferences in previous central place formulations, especially as Rushton chooses to measure place-utility solely in terms of town population. However, it should be recognised that these assumptions may be reasonable at the inter-urban scale with which Rushton is directly concerned.

Beyond the retail context, many interesting studies have been undertaken which provide useful insight into the process of environmental space preference formation. This information is sufficiently general in its scope to have implications for a variety of environmental contexts, including retailing.

A number of papers presented at the annual meetings of the Environmental Design Research Association fall into this category. Among papers of especial interest are those of Craun (1970), Hershberger (1970) and Peterson, Bishop and Neumann (1970). They refer to individual preference formation in an architectural environment generally, and specifically a residential environment. It soon becomes clear that the interaction and comparison processes discussed earlier in the context of store preference formation are equally relevant in other environmental settings.

E. SUMMARY.

This chapter has outlined the interaction processes which operate at the consumer-store interface, and this interaction has been related to the formation of consumer store preferences.

'Preference' emerges as a fundamental concept when analysing the process whereby an individual orders complex sets of environmental attributes in seeking to achieve consistently satisfying behavioural outcomes. The selection of a store is seen to involve an ordering

process of this kind. The significance of preference formation is underlined by the variety of environmental contexts in which it has been a focal point of analysis.

The analysis of consumer-store preferences therefore is suggested as a potentially productive approach in seeking to advance the explanation of spatial patterns in the retail environment. Subsequent chapters in this thesis discuss ways in which this potential might be realised.

CHAPTER 3.

THE DEFINITION OF STORE PREFERENCE GROUPS.

A. INTRODUCTION

Although the preceding chapter was concerned with the process whereby the individual consumer forms store preferences, it is a truism to point out that the retail market operates to serve consumer groups. A retailer cannot function to satisfy what may be the unique preferences of a particular individual; he must assume the existence of groups which are relatively homogeneous with respect to store preference. It is therefore necessary to define these groups in seeking to explain the spatial organisation of retail activity.

This chapter addressed the question of how consumer preference groups can be defined. This is essentially a classification problem, and as such, two possible approaches can be adopted.

The first involves the subdivision of a population on the basis of defined criteria. This approach has commonly been employed in segmenting the retail market according to demographic and socio-economic criteria; in which case, it is assumed that demographic and socio-economic variables are suitable proxy measures of preference per se.

The alternative approach is the agglomeration method, whereby individuals are grouped on the basis of structural similarities in their store preferences. This approach requires the direct measurement of individual consumer preferences, and the subsequent assembly of individuals into classes according to some grouping procedure.

This chapter considers these two approaches in some detail in attempting to determine which method is better suited to the purpose of analysing retail spatial organisation.

B. SUBDIVIDING A POPULATION TO DETERMINE STORE PREFERENCE GROUPS.

Many different variables have been used in market segmentation analysis for the purpose of subdividing a population into groups which are seen to exhibit distinct preferences. (Kotler, 1967, ch.3) Discussion in this section will focus on two variables which have perhaps been most commonly employed to subdivide a population into store preference groups; these variables are income and social class.¹

(i) Income.

The existence of a relationship between income level and store preference can be illustrated by reference to a number of research studies.

It has been shown that certain kinds of specialty store appeal to distinct income groups. Reference was made in the first chapter to the studies by Leigh (1965) and Schiller (1971) which demonstrate that the clientele of specialty stores in Vancouver and the Outer Metropolitan Area of London is largely drawn from upper income groups. This is seen to explain why these stores have located in those urban areas where the upper income groups are concentrated, or to which they can be attracted.

In contrast, certain retail firms definitely appeal to low income groups and this too has been a factor which has influenced store location policy. For example, Schlesinger (1963), in a study of 'John's Bargain Stores', a variety chain in the eastern United States, indicated the importance for that particular firm of a

¹The criteria used to define social class have varied in the context of marketing research, and the studies referred to in this chapter reflect this variation. A thorough consideration of the problem of applying social class measures in market segmentation analysis is found in Carmen (1965).

location within a low-income neighbourhood where the response to bargains is usually dramatic.

The importance of income as a determinant of consumer preference is implied by Nader (1963). In a study of the relationship between socio-economic status and consumer behaviour, he demonstrated that significant differences in shopping patterns could be related to the consumer's house type, and therefore that house type may be regarded as a salient variable in market segmentation. The rationale was that the rateable value of the house formed a valid index of the socio-economic status of the occupants.

In comparing two suburban shopping areas in Leeds, Davis (1968) demonstrated that wide differences can be found in degrees of functional specialisation and quality ratings of stores according to income differences between the two suburban populations. He noted that, although a cursory classification of business activities in the two areas revealed a basic similarity, significant differences in the nature of the functional structures of the two centres emerged from a detailed analysis of the full complex of activities pursued by individual establishments. He concluded that establishments in the high income area were much more specialised in their activities and of much higher quality than those establishments in the low income area. Here again the implication is that differing income groups vary in their store preferences and this is reflected in the characteristics of the stores which serve them.

A study conducted by Rich and Portis (1964) used income in combination with stage in life-cycle and place of residence as a basis for identifying large segments of a retail market. Department stores in New York and Cleveland metropolitan areas were classified as project-

ing high-fashion, broad-appeal or price images. Patrons of the three store types were then analysed in terms of their demographic characteristics. It was found that middle-income groups, earning between \$5,000 and \$10,000 annually, accounted for 60 per cent of the shoppers in the price-appeal stores, and 43 per cent of the shoppers in the high-fashion department store. Shoppers in the "no children" life cycle stage represented 52 per cent of the shoppers in the typical high-fashion store but only 25 per cent of the shoppers in the store with a broad-appeal.

These references are sufficient to indicate the significance of the relationship between income and store preference. Furthermore, it would seem that the spatial distribution of income groups within an urban area has often affected the location of particular store types.

(ii) Social Class.

Several marketing studies can be quoted to indicate the usefulness of subdividing the retail market on the basis of social class differences.

The relationship between social class membership and store preference was the focus of interest in the 'Chicago Tribune' studies undertaken by Martineau in collaboration with the sociologist, W. Lloyd Warner (Martineau, 1958a).

Martineau was conscious of the limitations of employing income as a basis for market segment analysis. He noted that the majority of the population in a metropolitan market fall into the middle-income ranges, but that this income category is characterised by significant internal diversity in terms of the buying behaviour, tastes and spending-saving aspirations of its members. He argued that social class position and mobility-stability dimensions would reflect in much

greater depth each individual's life-style including his purchasing behaviour.

One of the Chicago studies (Martineau, 1958a) described how a sample of the Chicago population was divided into social classes for the purpose of analysing the relationship between social class groupings and consumption patterns, including the relationship between social class and store patronage. A comparison of social class and store preference was made for two leading Chicago furniture stores. Results showed that while the one store appealed primarily to the middle and upper classes, the other appealed to the lower classes. This segmentation of the market was found to occur even though both stores had furniture in all price ranges and professed to sell to everyone.

Brown and Fisk (1965) related the store preferences of housewives drawn from four social groups and a quality ranking of six Philadelphian department stores. It was found that the store hierarchy and social class hierarchy were directly related in that the highest quality store was preferred by housewives in the upper social class group, while the store preferences of successively lower social classes corresponded with decreasing quality ranking of the stores.

Levy (1966) has made some interesting observations about the relationship between social status and shopping behaviour, suggesting that social status appears to affect how people feel about where they should shop. The result is that the same products may be purchased in different channels of distribution by members of different social classes. He notes that in the purchase of cosmetics, upper middle class women are more apt to shop in department stores than are lower

status women who are, in turn, relatively more apt to shop in variety stores. Drug stores however seem equally attractive or suitable to all. In addition he makes the general observation that there are sharp differences in the status reputation of department stores, and that consumers tend to sort themselves out in terms of where it is appropriate for themselves to shop. Most establishments, Levy argues, will have customers of more than one social class, but their loadings will differ, and their purchasing patterns may differ.

Levy goes on to develop a perceptive social class typology of shopping behaviour. He observes that the upper middle class woman organises shopping more purposefully and efficiently than women of lower status, being more knowledgeable about what she wants, where she will go for it, and when she will get it; with the result that her shopping is both selective and wide-ranging. Lower middle class women are seen to exhibit greater anxiety about shopping, especially for non-food purchases, and they are oriented toward seeking out the best buy for the money. Lower class women are characteristically the most impulsive and the least organised, often using shopping as a reason to get out of the house. Perhaps the most specific social class type of shopper is the lower lower class woman who prefers local face-to-face places where she feels she will get a friendly reception and perhaps even easy credit if needed.

The relationship of social class to consumer spatial behaviour has been the subject of detailed study in Metropolitan Vancouver. Gayler (forthcoming) compared the spatial behaviour of shoppers for convenience, shopping and specialty goods with their social class, measured on the basis of the Blishen scale. He found that differences in spatial behaviour were significantly related to social class differ-

ences.

These studies indicate that members of the same social class group are likely to exhibit similar store preferences. The usefulness of social class as a basis for delimiting preference groups is emphasised by Engel et al (1968 pp.305-6). They recommend social class as the most significant variable on which to base a market segmentation policy. One of the major reasons they put forward to support this recommendation is that social classes are relatively homogeneous in income, psychological variables, geographical location (within an urban area) and patterns of activity. In short, many characteristics of importance in forming store preferences are seen to be compounded in the social class variable.

This is certainly a strong argument in favour of the use of social class to derive store preference groups. However, it is not at all clear from the existing literature whether social class groups are as homogeneous as Engel and associates claim. For example, there seems to be some debate in the marketing literature as to the homogeneity of social classes with respect to income. Wasson and McConaughy (1968) maintain that no social class forms a homogeneous market because of the wide range of incomes within every class and the overlap between classes. Martineau (1958a), as noted above, expressed similar doubts regarding the coincidence of income and social class groups. He maintained that no income group forms a homogeneous market because of the range of social class within every group.

It is perhaps sufficient to conclude that, since many of the social class indices incorporate a measure of income, a considerable degree of overlap between income and social class groups is to be expected, although total congruence is unlikely.

(iii) The Adequacy of Proxy Measures of Store Preference.

From these studies, it is clear that income and social class measures form useful bases for segmenting the retail market. Other variables which have also proved useful in segmentation analysis include a variety of geographical, personality and buyer behaviour measures (Kotler, 1968). The approach to market segmentation seems to have been largely pragmatic such that the variables used have been selected to fit a particular marketing situation. However, ease and cost of data collection has often favoured the use of socio-economic variables rather than personality or buyer behaviour measures.

It is important to recognise that, although market segmentation studies indicate the existence of a relationship between various aggregate criterion measures (such as income and social class) and store preference, the nature of this relationship remains undefined. In other words this approach does not answer the question of why, for example, income or social class groups are differentiated in terms of their store preferences. Intuitively, it is clear that the answer lies in the fact that store characteristics are evaluated differently by different income and social class groups; but how these evaluations differ remains largely unexplained.

This points to the theoretical inadequacy of defining store preference groups on the basis of proxy variables, which have only intuitive validity. The alternative to the use of proxy measures of preference involves the adoption of an agglomerative rather than a subdivision approach to store preference group classification.

C. THE AGGLOMERATIVE APPROACH TO STORE PREFERENCE GROUP DEFINITION.

The agglomerative approach involves grouping individuals on the basis of structural similarities in their store preferences. In the

previous chapter it was shown that preferences are structured as an outcome of the individual evaluating perceived store characteristics. It follows that the agglomerative method of classifying store preference groups necessitates an analysis of the individual consumer's evaluation of store characteristics, and subsequently grouping individuals who exhibit similar evaluative structures.

This method of defining preference groups has the advantage over the subdivision approach of being consistent with the process whereby individual preferences are formed.

(i) Illustrative Studies.

Fewer studies exist which illustrate this method of deriving consumer typologies. Perhaps the most widely quoted study of this kind is Stone's typology of Chicago shoppers. (Stone, 1954) He identified four types of shoppers among a sample of 150 female residents of Chicago's northwest side. His classification was based on the respondent's evaluations of store characteristics.

The first type was the 'economic' shopper, who was extremely sensitive to price, quality, and assortment of merchandise, when making a purchasing decision; secondly, the 'personalising' shopper formed strong relations with store personnel which were crucial in determining store patronage; thirdly, the 'ethical' shopper was willing to sacrifice lower prices and wider selection in order to support the small retailer in the face of competition from the chain store; and fourthly, the 'apathetic' shopper found shopping an onerous task, and hence convenience of location proved crucial to her selection of a store rather than price, quality of goods, relations with store personnel or ethics.

Table II outlines the distribution of consumer types identified by Stone:

Table II. Stone's Distribution of Consumer Types.

TYPE OF CONSUMER	%
Economic	33
Personalising	28
Ethical	18
Apathetic	17
Indeterminate	4
Total	<u>100</u>

Source: Stone, 1954, pp36 - 45.

Stone also noted the relationship between shopper types and social characteristics of the respondents. He found that the higher the level of aspiration among newcomers to a residential neighbourhood, the greater the probability that they would evaluate stores on the basis of 'economic' criteria; the lower level of aspiration and the greater the degree of social isolation of newcomers, the greater the importance of 'personalising' criteria. In the case of long-time residents, Stone concluded that the greater the success they had enjoyed, the greater the probability that convenience would assume the the most importance in evaluating stores.

In a much more recent study Kenny-Levick (1969) has attempted to demonstrate the extent to which Stone's typology could be used to segment the grocery trade market in Liverpool. A sample of 554 housewives were asked why they preferred to shop at their first choice grocery store. Responses were classified in terms of twelve categories which were then collapsed to form five broader based divisions. Kenny-Levick identified these five categories with Stone's four shopper types plus a miscellaneous category. He then compared the percentage representation of consumers in the four coincident categories. He found that

a significant difference existed between the two distributions. Liverpool housewives seemed to be more 'apathetic' and less 'ethical' than their Chicago counterparts. The 'personalising' factor was stronger in Chicago, while the 'economic' factor was of equal and the greatest importance in both studies. Kenny-Levick concluded that Liverpool shoppers could best be described in terms of a seven-fold typology, the first four being coincident with Stone's. The three additional types he derived were characterised as 'time-saving', 'enhancement of self-image', and 'pleasure seeking'.

Furthermore, he hypothesised the kind of store that a particular type of shopper was most likely to prefer. The two extremes were the 'economic' shopper who was most likely to prefer a cut-price store and the 'pleasure-seeking' shopper who was attracted by the continental delicatessan with wide variety and interesting foods.

Although both of these studies are open to methodological criticism, the fundamental approach adopted is the focus of concern here. Both Stone and Kenny-Levick were seeking to analyse the dimensions on which consumers evaluate stores as a means of deriving a consumer typology consisting of groups exhibiting similar evaluative structures and store preferences.

The marketing implications of this kind of research are extremely important; since, by identifying the relevant evaluative criteria, a retailer can know what attributes his store must possess if it is to attract a particular preference group. This is clearly much more precise information on which to base retail decision-making than conventional market segmentation analysis can provide, whereby groups are defined only on the basis of proxy measures of preference.

(ii) The Measurement of Individual Store Preferences.

The measurement of consumer store preference groups on the basis of an agglomerative approach depends on the prior measurement of individual store preferences.

Previous discussion has shown that individual preferences result from the consumer evaluating perceived characteristics of the retail environment. It follows that there are two questions to be answered in measuring individual store preferences: firstly, what factors of the retail environment do consumers consider important when evaluating alternative stores, in other words, what are the evaluative criteria; and secondly, what weightings are ascribed to these criteria.

As was indicated in the previous chapter, it is possible to identify general criteria which are probably relevant to most purchasing situations, these include such variables as price, location, advertising and personnel. However the specification of additional criteria is dependent on the characteristics of the particular purchasing situation being investigated. It seems likely, for example, that consumers adopt a different set of criteria when evaluating alternative supermarkets as opposed to alternative clothing stores, although certain general criteria may be common to both situations.

Downs (1970) defined evaluative criteria with respect to urban shopping centres partly on the basis of the existing literature and partly on the basis of informal interviews with consumers. Since, existing literature in this area is relatively limited it is perhaps necessary to interview consumers in order to determine the evaluative criteria relevant to a specific purchasing situation.

Having identified the criteria, it is necessary to measure the

importance that consumers ascribe to each criterion when evaluating alternative stores. Several techniques, developed in psychology for the purpose of measuring individual evaluations of environmental displays, are applicable (Craik, 1968); but, as Downs (1970a) has pointed out, we need to be aware of the many problems attendant to their use.

In essence, it would seem that in seeking to define individual store preferences the basic concern is with the measurement of consumer attitudes towards various aspects of the retail environment. The questions that are really being asked therefore are what attitudes do consumers hold towards stores and what are the relative strengths of these attitudes. If it is accepted that an analysis of consumers' attitudes is basic to the identification of preferences then the use of attitude measurement procedures is clearly appropriate.

The applicability of the concept of 'attitude' and attitude measurement in this regard rests on two fundamental issues. First, it is necessary to show that a consumer's attitudes are more important in the formation of his preferences than are other aspects of his personality. The second issue concerns the relationship between attitudes and behaviour. Unless a close relationship can be assumed between an individual's attitudes towards stores and his purchasing behaviour then the measurement of preferences on the basis of attitudes has little meaning.

These are both crucial issues which demand detailed consideration and this forms the focus of attention in the following chapter.

(iii) The Dimensionality of Preference.

Because of the complexity of the retail store environment, preferences are likely to result from the evaluation of a very varied

set of attributes. Preference therefore is a multivariate concept. But, at the same time, previous studies have suggested that this variable set can be reduced to a smaller number of underlying dimensions without too much information being lost. The various store image studies referred to in the previous chapter indicate the existence of a dimensionality in consumer perceptions and evaluations of retail stores which underlies a more complex cognitive structure and facilitates the interpretation of that structure. (Fisk, 1961; Kunkel and Berry, 1968). Equally, Downs (1970) was able to isolate the cognitive dimensions which formed the basis on which consumers evaluated alternative shopping centres.

The major advantage to be gained from determining the dimensionality of consumer store preferences lies in the clearer understanding of preference structure which results. Furthermore, the dimensions serve as a basis for deriving interpretable preference groups. The extraction of preference dimensions from a complex data set and the subsequent grouping of individuals in terms of similarities in their preference structures is made possible through the use of a variety of multivariate statistical procedures.

(iv) The Definition of Preference Groups using Multivariate Statistical Techniques.

Multidimensional scaling models seem the most appropriate multivariate statistical techniques for the purpose of analysing preference structure. Guilford (1954, p.246) has suggested that multidimensional scaling models are applicable in the following situations:

- 1 with complicated stimuli (where stimuli are the objects of concern)
- 2 with stimuli whose physical dimensions are not well known
- 3 with judgements of psychological qualities for which there are no recognised corresponding physical dimensions.

These categories accurately describe the situation faced in measuring store preference, since the retail store comprises a complex set of stimuli; moreover, preferences are essentially psychologically determined and the associated dimensionality is not clearly understood.

Multidimensional scaling models define a geometrical space of varying dimensionality in which points are located representing the relative positions of objects (these may be people, products, stores etc. depending on the nature of the investigation on the dimensions).

Two characteristics of the space form the foci of interest: its structural dimensionality and the grouping of points on the basis of their relative location in the space.

The input data, from which the space is constructed and the points positioned, is frequently in the form of scores on a series of scale constructs. In the context of store preference studies, the data may be scores on a set of attitudinal constructs.

Three kinds of multidimensional scaling techniques have been used in marketing to determine the structural dimensionality of object spaces; these are, factor analysis, multiple discriminant analysis and non-metric multidimensional scaling. The subsequent application of taxonomic procedures (cluster analysis) to the object spaces derived using these techniques determines the natural groupings of points.

Each of these four techniques will be briefly described. A specific illustration of the use of factor analysis, discriminant analysis and cluster analysis in the context of store preference research is found in Chapter 5.

(a) Factor analysis.

Of the three multidimensional models, factor analysis has been

the one most commonly used in geographic and marketing analysis. The raw data usually consists of the scores of a set of objects or a series of scales. Interval level data is normally used.

The scale scores are intercorrelated and the resulting correlation matrix is reduced to a factor matrix, each element of which contains a scale score (or loading) on a particular factor. The factors define the dimensionality of the input data, and the scale loadings form the basis for labeling the dimensions.

A number of factoring methods are available, which vary in terms of the kind of axis rotation employed; each method is likely to yield a different factor solution. The number of factors to be extracted from the correlation matrix is normally determined by an inspection of the eigenvalues.

The relative positioning of objects in the resulting multi-dimensional space is determined by computing factor scores for each object.

A detailed discussion of factor analytic procedures is found in Harman (1967). The use of factor analysis in a marketing context is exemplified by Frank, Kuehn and Massy (1962), Heller (1968) and Myers and Nicosia (1968). The pilot research project described later in this thesis also illustrates the use of factor analysis as a basis for determining preference structure.

(b) Multiple discriminant analysis.

In this case the input data is similar to that used in factor analysis, consisting of the scores of objects rated on the basis of specified attributes which together are seen to account for the important differences between the objects.

Given such data, multiple discriminant analysis is a powerful technique for determining the dimensions which best discriminate between the objects. The procedure involves first finding the weighted combination of attributes which discriminates most among objects, maximizing an F-ratio of between-object to within-object variance. Second and subsequent weighted combinations are found which discriminate maximally among objects, within the constraint that they all be uncorrelated with one another.

Having determined as many discriminating dimensions as possible, average scores can be used to plot products on each dimension and hence to locate them in multidimensional space. Distances between pairs of objects in this space reflect the amount of discrimination between them.

The application of multiple discriminant analysis in market segmentation analysis is the subject of specific discussion in a recent paper by Johnson (1971).

(c) Nonmetric multidimensional scaling.

This technique represents a relatively recent methodological development which has the advantage over the two techniques already described that it does not require interval data. Nor is it necessary to determine in advance salient attributes of the objects to function as scale constructs.

It is termed a 'nonmetric' technique since the input data is ordinal; but, a further positive advantage of nonmetric multidimensional scaling is that, although the data is ordinal, it is seen to possess latent interval properties. This follows from the pioneer research in this area by Coombs (1950) who noted that, where the existence of a unit of measurement is not assumed, it is still

possible to order the magnitude of the intervals between objects, and hence to define an "ordered metric" for a psychological scale.

The data is provided by respondents making judgements of the relative similarity of the objects under study. This may involve respondents specifying which two objects of a set of three they perceive to be most or least similar; alternatively, they may be asked to indicate a most similar pair among a set of paired objects; or thirdly, data may be derived from a rank-ordering of $k-1$ objects in terms of similarity with the k th.

From this data it is possible to rank order each object pair in terms of "subjective" similarity. The rank order is then submitted to a computer algorithm which develops a spatial configuration representing the data. The dimensionality of the space produced is minimised on the basis of a predetermined 'goodness of fit' constraint.

The dimensions represent perceived characteristics of the objects; each object has a point location in the space. The positions of the respondents on these dimensions are represented by 'ideal' points derived from each respondent's rank ordered preferences for the objects. The latent interval properties of this technique are such that it is possible to infer a measure of similarity between two objects from the distance separating the two points representing them. It follows that the closer two points are to each other the more similar they are perceived to be by the respondents, and the closer two 'ideal' points are together the more similar are the preferences of the two respondents thus represented.

The most comprehensive discussion of this technique in the context of marketing analysis is that by Green and Carmone (1970).

(d) Taxonomic procedures.

Each of the three techniques just described produces a multidimensional space in which objects are represented by point locations. In the context of store preference research, we can conceive of the dimensions as definers of the structural components of preference, and of each point location as representing the preferences of a particular respondent.

Therefore, in order to achieve the final objective of assigning individuals to groups, which exhibit relative internal homogeneity with respect to their preference structures, it is necessary to identify the natural groupings in the data as it is distributed in multidimensional space.

Over recent years a set of numerical procedures for classifying objects has been developed, primarily in the area of biology, under the heading of numerical taxonomy (Sokal and Sneath, 1963). These procedures are directly applicable to the problem of grouping objects in multidimensional space.

The possibilities for applying numerical taxonomy in marketing analysis have been reviewed by Frank and Green (1968). They point out (p.104) that the essential problem in taxonomic studies consists of deciding how to assign objects to groups such that within-group similarity is maximised and between group differences are also maximised. Four other questions are seen as subsidiary to this basic issue:

1. How is the relative positioning of points in the multidimensional space to be determined? Three major alternative approaches to this question have been discussed above.
2. What grouping process is to be used? A variety of approaches are possible including hierarchical grouping

routines, threshold or cut-off routines, Q-technique, and space-density search routines.

3. What descriptive measures are appropriate for summarizing the characteristics of each group? The cluster's centroid may be used, or, in other instances, the profile of the object closest to the group's centroid may function as the "representative profile".
4. Are the groups so formed really different from each other? This raises the question of what inferences can be drawn from the results of cluster analyses. Frank and Green (1968, p.121) suggest that, although numerical taxonomy has obvious potential in marketing analysis, results should be viewed with caution because of the ad hoc character of many of the decisions made when applying clustering techniques. They advise that the systematic study of similarities and differences among the results of alternative procedures should be undertaken where possible.

It would seem therefore that numerical taxonomy provides a variety of methods for deriving preference groups where the input data consists of point locations of individuals in multidimensional preference space. However, the results obtained must be accepted with caution since different clustering techniques are likely to yield different solutions, while there seem to be no clearly defined criteria to guide the selection of a specific technique.

D. SUMMARY.

This chapter has examined possible approaches to the definition of store preference groups. A distinction was drawn between the measurement of preference on the basis of proxy variables such as socio-economic characteristics, and the direct measurement of preference in terms of how consumers evaluate the complex attributes of a store environment, which, it was suggested, may constitute a measurement of consumer attitudes.

Where proxy variables have been used the determination of store preference groups has normally involved subdividing a population on the basis of a priori classes, for example social classes. However this approach is limited by the fact that the relationship between these a priori groups and store preference per se is not clearly understood. Nevertheless, research studies were summarized which demonstrate the utility of subdividing a population on the basis of income and social class as a means of distinguishing between store preference groups.

The alternative approach is to group individuals on the basis of similarities in their preference structures. Since preference structures are seen to be multidimensional, they can best be described using multivariate statistical procedures. Relevant procedures were discussed and the applicability of numerical taxonomy to the problem of group definition was considered.

The inherent advantage of this agglomerative approach is that it isolates the factors which seem directly to underlie the development of store preferences. As such, this approach provides a more precise basis for predicting the purchasing behaviour of consumer groups. This possibility promises to become a focus of increased research interest in conjunction with the development of the multivariate statistical techniques required to process the complex data involved.

The pilot research project, described in chapter 5, illustrates the use of some of the multivariate techniques mentioned here in relation to the definition of clothing store preference groups.

CHAPTER 4

THE ANALYSIS OF PREFERENCE ON THE BASIS OF CONSUMER ATTITUDES

A. INTRODUCTION.

In the previous chapter, it was suggested that the analysis of preference may essentially involve the measurement of consumers' attitudes towards stores. This possibility raises two questions which form the focus of discussion in this chapter.

Firstly it is necessary to justify the isolation of attitudes as the key variable in analysing preference, since it is clear (from the model of consumer behaviour outlined in Chapter 2) that various other psychological variables impinge upon individual purchasing.

Secondly, if attitude measurement is to provide a sound basis for preference studies, it is necessary to assume a close relationship between an individual's attitudes and his actual behaviour. The nature of this relationship has been the subject of considerable debate in the social psychological literature, as well as within geography and marketing. A consideration of this issue is therefore relevant in the present context.

B. ATTITUDE AS THE KEY VARIABLE IN PREFERENCE STUDIES.

(i) The Function of Attitudes in the Consumer Behaviour Model.

In seeking to justify the selection of attitude as the key variable in analysing store preference, it is necessary to refer back to the model of consumer behaviour discussed in Chapter 2. From Figure 1 we see that a consumer's attitudes are regarded as a basic component of the 'central control unit'. Moreover, these attitudes are thought to be partly an outcome of personality characteristics (e.g. motives) and partly an outcome of information stored from past purchasing experience. The compound structure of attitudes, suggested

by Engel's model, is consistent with McKeachie and Doyle's definition ; they describe an attitude as "an organisation of concepts, beliefs, habits and motives associated with a particular object." (McKeachie and Doyle, 1966, p.560)

This is not to suggest that the personality characteristics and the past experience of the consumer function solely as attitudinal components; they each retain a unique function; but the organisation of these various elements for the purpose of evaluating an object does seem to be the distinguishing feature of attitude formation (Engel et al, 1968, p.166).

A distinction is drawn in the model between 'values' and 'attitudes'. The distinction is not totally clear but, it is suggested, that "values are more basic and pervasive than attitudes and serve, therefore, as a type of central organising variable for this more specific evaluative orientation." (p.166)

The evaluative dimension of an attitude is further emphasised in Osgood's operational definition: "attitudes are learned and implicit; they may be evoked by perceptual signs or linguistic signs; they are predispositions to respond evaluatively to these signs; and the evaluative predisposition may fall anywhere along a scale from 'extremely favourable' through 'neutral' to 'extremely unfavourable'" (Osgood, 1965).

From this it would seem that an individual's basis for evaluating objects is closely related to his attitudes. As was pointed out in the previous chapter, in analysing individual store preferences, the essential concern is to understand the evaluative structure which consumers apply to the complexity of the retail environment. The measurement of consumer attitudes is therefore clearly an appropriate

methodology to advance understanding in this regard.

(ii) The Ordering Function of Attitudes.

In Chapter 2 (p.41), it was suggested that preferences essentially serve as a means of establishing order at the consumer-store interface. Preferences are therefore a stabilising force within a dynamic behavioural system, enabling individuals to achieve consistently satisfying outcomes within a complex environmental setting.

Similar stabilising and ordering functions have been attributed to attitudes. Katz (1960) discusses the order creating function of attitude formation. He recognises that no one can exist for long in an unorganised, chaotic universe, and that attitudes satisfy the need for order by providing standards for evaluating and understanding the environment. Once order has been achieved, the individual is reluctant to allow conflict and hence disorder to interfere, with the result that attitudes tend to be fairly permanent.

Cantril (1934) noted the permanency and consistency of attitudes in his definition: "an attitude is a more or less permanently enduring state of readiness of mental organisation which predisposes an individual to react in a characteristic way to any object or situation with which it is related."

The resistance of consumer attitudes to change has been thoroughly discussed in the marketing literature, in relation to the development of effective promotional strategy. In reviewing the research in this area, Engel et al (1968, pp 224-25) conclude that marketing strategy is not likely to be successful if it contradicts strongly held attitudes of the consumers it seeks to attract. Promotions which are inconsistent in this way are more likely to be screened

out by the consumer through selective perception, distortion and retention of incoming stimuli. In short, it seems that advertisers have little hope of changing customer preferences unless the individual is willing to allow his preferences to be challenged.

The ordering and stabilising functions performed by attitudes are apparently congruent with the functions attributed to preference formation in earlier discussion, and this underlines the appropriateness of attitude measurement in preference analysis.

(iii) Attitude Measurement in Spatial Image Studies.

Preferences are formed as the result of the individual evaluating the perceived characteristics of store environments. As was stated in Chapter 2, this has led to the view that individuals select stores on the basis of the images they hold. In this regard, the consumer's set of store images is closely related to his preferences. It is significant, therefore, that attitude measurement has been suggested as a method for determining spatial images.

Downs (1970a) has noted the relevance of attitude theory in the field of geographic space perception studies, and more specifically, he suggests that important parallels exist between the concepts of an 'image' and an 'attitude'. He cites the work of Kates (1967) as illustrative of the application of attitude theory in space perception research. At another point in the same paper, he discusses the "evaluative approach" to space perception research (pp 80-81), and here again attitude theory would appear to be a very relevant consideration.

The relevance of attitude theory and measurement with respect to store image studies is specifically discussed in a thesis by Becker (1967). As noted previously, in Chapter 1, Becker conceives of an

individual's 'image' of a store as an outgrowth of his 'attitudes'. The image concept is seen as a convenient way of summarising the combined effects of various attitudes towards stores. Moreover, it is implied that, through the formation of images, the consumer's attitudes determine store preference and selection.

In summary, because of the close relationship which is taken to exist between the formation of spatial images and preferences, the applicability of attitude measurement in relation to the former is seen to justify further the focal importance of attitudes in preference analysis.

(iv) Attitudes and Preference - Illustrative Studies.

The importance of attitudes in preference analysis is emphasised by studies undertaken by social psychologists on behalf of retail firms. To a large extent, research in this area is not reported in the marketing literature because of the confidential nature of the findings. However, papers by Gruen and Gruen (1966 and 1967) indicate the kind of investigation that is being carried out.

In discussing the determination of an optimal location of a new outlet for a multi-store retail firm, they suggest the use of attitude measures to determine the profile(s) of the consumer group(s) which patronise existing stores. A survey of consumer attitudes is recommended in the market areas of the alternate sites for the new outlet in order to determine the kind of store preferred by local consumers. The number of possible sites is thereby reduced to those where the consumer preferences are most congruent with the identity of the firm, as established and maintained by its existing outlets. A change in firm identity at a new location is not advised since this will affect the image of the firm as a whole, and may have a detrimental effect on sales at existing

outlets.

The attitude data is used in combination with demographic statistics of the market areas as a basis for predicting the number of consumers who would shop at each of the alternate sites. From these predictions, it is possible to isolate the 'optimum' site for the location of a new store.

The adoption of this research methodology clearly assumes that attitude measurement provides a sound basis for defining consumer preferences. There is also the further implication that the adoption of a strategy which is inconsistent with the established attitudes of existing customers may lead to a loss of sales. This reflects the earlier suggestion that consumer attitudes are not easily changed and that marketing strategy should be consistent with existing preferences.

A study by Murphy (1970) demonstrates the significant influence of attitudes on recreational and shopping preferences. His basic hypothesis was that the attitude strength of an individual toward any given destination will vary over distance and will influence the frequency with which the individual will patronise the given destination. Murphy found that attitudes towards a chosen alternative and attitudes towards competitors combined to explain up to 50 per cent of the variations in spatial behaviour. This evidence gives some indication of the importance of attitude strength as a variable in analyses of space preference and spatial behaviour.

(v) Conclusion.

From the preceding discussion, it seems that the selection of the attitude concept as the key variable in preference analysis can be supported on various grounds. The importance of attitudes is confirmed by their role within the model of consumer behaviour outlined in a

previous chapter; attitudes perform an ordering and stabilising function which is congruent with the function of preference; attitudes have formed the basis for defining an individual's spatial images which, in the form of store images, are seen to be an integral part of preference formation; furthermore, research studies suggest that attitude measurement provides a valid basis for determining consumer store preferences.

Attention now turns to a discussion of the second issue, concerning the nature of the relationship between attitudes and behaviour.

C. ATTITUDES AND BEHAVIOUR.

(i) Geographical Scepticism.

Definitions of attitude have been many and various, but it is significant that they have commonly stated the existence of a close relationship between an individual's attitudes towards an object and his behaviour with respect to that object.

Allport (1934) reviewed a varied selection of definitions, and synthesised the common elements he observed to formulate a further definition, which has perhaps been the most widely quoted in the behavioural research literature. He defined an attitude as: "a mental and neural state of readiness, organised through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related." This definition clearly assumes a strong relationship between attitudes and behavioural response towards specified objects.

However, in the geographical literature, Harvey (1969) has suggested that a person's attitude towards an object is not a major determinant of his behaviour, and he concludes that, if this is the case, "then we can afford largely to ignore the problem of attitudes in seeking

for a cognitive behavioural location theory." His scepticism is based on social psychological research findings and specifically those of Fishbein (1967).

Downs (1970a, p.89ff) also sees in Fishbein's research a cause for caution in trying to produce predictive models for behaviour based on an individual's perception and images. On the other hand, Golledge (1970) is more optimistic with regard to the application of attitude studies in analysing spatial behaviour. In any event, it would seem that Fishbein's comments justify consideration.

(ii) Fishbein's Findings.

Although social psychologists have frequently defined attitude as a multicomponent concept - consisting of cognitive, affective and conative domains - measures of attitude have been essentially unidimensional, attempting to ascertain in a single score the individual's degree of feeling toward the attitude object in question. Thus Fishbein (1967, p.479) concludes that: "this hypothetical variable we call an 'attitude' can be measured by considering either beliefs or behavioural intentions or by attempting to get at evaluation per se."

In fact, rather than viewing beliefs and behavioural intentions as part of attitude, Fishbein prefers to define them independently, and to view them as phenomena that are related to attitudes; in other words, he sees beliefs and behavioural intentions as determinants or consequents of an individual's attitude. It follows that it is insufficient to investigate the relationship between attitudes and behaviour in isolation; rather, it is necessary to consider the interrelations between at least four concepts, those of attitude, belief, behavioural intention, and behaviour. The failure to consider this set of interrelationships is seen to explain why the measurement of attitudes alone has not served as

an accurate basis for predicting behaviour.

In terms of the relations between beliefs and attitudes, Fishbein argues that in many cases an individual's attitude toward a class of people or objects has been measured and this attitude has been used in an attempt to predict the individual's behaviour with respect to a particular member of that class. Thus a respondent's attitude toward 'Negroes' is frequently measured, and then an attempt is made to predict his behaviour with respect to a particular Negro individual. However, it seems very unlikely that the subject's beliefs about this particular Negro are even similar to his beliefs about 'Negroes in general'. Hence, it seems fairly obvious that "the chances of predicting behaviour from attitude are practically nil until at least we start measuring attitudes toward the appropriate stimuli." (p.480)

A second possible reason for failure to predict behaviour from attitudes is simply that the particular behaviour being studied may be completely or partially unrelated to attitude; this is hardly surprising since most investigators believe that any behaviour is determined by a large number of variables and, as Fishbein himself maintains, beliefs and behavioural intentions may function as determinants of a specific behaviour independent of attitude. Fishbein is therefore led to suggest that even if attitude measures were designed to take account of sets of beliefs and types of behavioural intentions in combination with attitudes per se, the chances would still be high that the behaviour could not be predicted.

In conclusion, he develops a model which does not assume a strong relationship between attitude and behaviour, but rather emphasises the importance of situational, motivational and normative variables as factors influencing overt behaviour. This model states that "an individ-

ual's intention to perform any behaviour (and his actual performance of the behaviour) is a function of (1) his attitude toward performing the behaviour in a given situation, and (2) the norms governing that behaviour in that situation and his motivation to comply with those norms." (p.489)

This modified view of the relationship between attitudes and behaviour doubtless constitutes a conceptual advance, but it is not clear to what extent the proposed model can be operationalised. The need to assess the relevant norms and the individual's motivation to comply with those norms introduces extreme measurement problems and it is uncertain how these could be satisfactorily overcome.

Nevertheless, this is not to deny the basic significance of Fishbein's comments. As a result, it would be naive to regard the attitude concept as a panacea in analyses of spatial preference and behaviour; at the same time, there does not seem to be total justification for accepting Harvey's contention either and therefore dismissing the possibility of utilising the concept altogether.

As Fishbein points out, some of the problems associated with predicting behaviour on the basis of attitudes can be overcome if care is taken to ensure that we measure attitudes towards the appropriate stimuli, vis-a-vis the behaviours we are attempting to predict. Equally, we can be more confident in using attitude measures if we are first satisfied that a sphere of attitudes exists in relation to the particular behaviour under investigation.

(iii) Attitudes and the Nature of the Behaviour under Study.

There is a basis for arguing that the use of attitude measurement in analysing spatial preferences and behaviour may be more reliable than Fishbein's findings suggest because of the very nature of the

behaviour itself. It may have been the controversial nature of the issues that social psychologists have frequently attempted to study using attitude measurement which has contributed to their inability to predict overt behaviour with accuracy.

For example, LaPiere (1934) investigated the consistency between the attitudes and behaviour of hotel proprietors with respect to Chinese guests. He reports that he accompanied a Chinese during a two year period of travel within the United States and only once were they refused service at any of the hotels and restaurants they visited during that time. Six months after an establishment had been visited, the proprietor was sent a questionnaire which included the question: "Will you accept members of the Chinese race as guests in your establishment?" Replies were received from 128 of the establishments that had been visited previously and the outcome was that 91 per cent of the restaurant proprietors and 92 per cent of the hotel managers replied "No" in answer to that particular question.

The complications involved in measuring attitudes involving controversial issues is further illustrated by Fendrich (1967), when investigating the consistency between the stated attitudes and overt behaviour of whites with respect to their interaction with Negroes. He found that "verbal attitudes can be either consistent or inconsistent with overt behaviour, depending upon the way respondents define the attitude measurement situation." (p.355) The references that Fendrich lists underline the extent to which the consistency between attitudes and behaviour has been tested in relation to controversial issues. It is therefore reasonable to suggest that greater consistency might be expected in less contentious situations of which measuring attitudes towards stores and their characteristics might be one.

Support for this supposition is to be found in the fact that several marketing studies show rather convincingly that a knowledge of attitudes provides a realistic basis upon which to predict behaviour. (American Marketing Association, 1966 and 1968)

A further factor favouring the application of attitude measurement in studies of consumer spatial preferences and behaviour is that the accuracy of predicting behaviour from stated attitudes has been shown to be related to the familiarity of the subject with the particular activity under investigation. (Murphy and Golledge, 1971) Clearly shopping is one activity with which subjects can be expected to have quite a high degree of familiarity.

(iv) Conclusion.

From this discussion it would seem that there are grounds for cautious optimism in assuming a close relationship between consumer attitudes and behaviour. Fishbein has indicated the necessity for caution, and the weaknesses that have characterised the application of attitude measurement in the past. If these cautions are recognised and applied, we can be somewhat optimistic about the reliability of measuring attitudes in seeking to analyse consumer spatial preferences and behaviour, particularly as our attention is focussed on relatively familiar and non-controversial activities.

D. SUMMARY.

Discussion in this chapter has centred on two fundamental issues arising from the proposition that store preferences can be defined on the basis of measuring consumer attitudes towards stores.

Various arguments were put forward to support the selection of attitude as the key variable in preference studies. Further, it was argued that there is justification for assuming a close relationship

between attitudes and behaviour in the context of consumer behaviour research, although careful consideration should be given to the cautionary findings of social psychologists in this regard.

It is not considered necessary to discuss the various attitude scaling techniques since these have frequently been described and reviewed in the existing literature. The most comprehensive discussion is found in Fishbein (1967a).

CHAPTER 5.

AN EMPIRICAL ANALYSIS OF CLOTHING STORE PREFERENCE DIMENSIONS AND PREFERENCE GROUPS.

A. INTRODUCTION

This chapter describes the results of a pilot research project which was designed to investigate the structure of consumer preferences for clothing stores, and, subsequently, to define consumer groups exhibiting relatively uniform preference structures. This research is therefore a direct outgrowth of the discussion in the previous chapters.

In seeking to achieve these purposes, it was necessary to determine those attributes of the store environment which are salient in the formation of consumer preferences. Unstructured interviews with a sample group of consumers formed the basis for data collection in this regard.

Secondly, it was necessary to measure the importance that consumers ascribe to these attributes. A second sample group of consumers completed questionnaires which supplied the data concerning the direction and intensity of feeling with respect to each of the attributes.

Factor analysis was used to reduce this data to a smaller number of dimensions which are seen to form the basis on which preferences are structured. Factor scores were computed for each respondent and the application of a grouping procedure identified individuals with similar preference structures.

In earlier discussion, it was noted that the store preference structures of consumers probably vary depending upon the type of product to be purchased. In other words, the store attributes which

are salient in preference formation will differ in relation to the types of store which the consumer has to evaluate.

It is seen as necessary therefore to define and measure attitudes towards store attributes for a particular retail function rather than for stores in general which has frequently been the approach in store image studies. This is not to suggest that underlying dimensions do not exist which are basic to the evaluation of stores irrespective of their particular retail functions. However, the existence of such a structure is something which we should seek to uncover in the course of research rather than to assume its validity a priori.

On this basis, research in the present study is restricted to the analysis of clothing store preferences. Clothing stores were selected for two basic reasons. Firstly, it was assumed that, when purchasing major items of clothing, consumers normally evaluate and compare a number of alternative retail opportunities, which suggests a conscious formation of preferences. Secondly, clothing is purchased at frequent intervals by most consumers thereby allowing for the development of relatively stable preference structures. On the basis of these two considerations, it is assumed that definable clothing store preferences exist and that consumers are able to describe their preferences. Clearly, these are two fundamental assumptions without which the research findings can have little meaning.

Attention now turns to a detailed discussion of the data collection and analysis procedures employed.

B. THE DETERMINATION OF EVALUATIVE CRITERIA.

(i) Purpose.

It was seen as essential at the outset to determine the evaluative criteria relevant to the class of objects under investigation, in this

case, clothing stores. This is consistent with Kelvin's observation regarding the starting point of attitude research studies in marketing analysis; he has suggested that: "in the first place attitude research should aim at disclosing as much as possible of the pattern of attitudes which exist vis-a-vis the product (store) type." (Kelvin, 1960, p.31)

The use of an a priori listing of evaluative criteria based either on past research or on intuition was not regarded as justifiable, since this may have obscured the true dimensions on which consumer attitudes towards clothing stores are organised. For similar reasons, Downs (1970), when analysing the cognitive structure of an urban shopping centre, began with a series of impromptu discussions with women shoppers in order to help isolate the cognitive categories underlying the image of a shopping centre.

(ii) Method of Data Collection.

Interviews with female consumers served as the basis for determining evaluative criteria. This reflects Eysenck's contention that: "ideally the attitude analyst starts out with some preliminary open-ended techniques for getting a feel for the situation in order to obtain material to develop a sensible hypothesis." (Eysenck, 1960, p.14) The method therefore most appropriate to the purpose of identifying variables to guide other phases of the research is that of the 'unstructured' or 'open-ended' interview.

This method has been described by Kerlinger in the following terms: "although the research purposes govern the questions asked, their content, their sequence, and their wording are entirely in the hands of the interviewer. Ordinarily, no schedule is used. In other words, the unstandardised, nonstructured interview is an open situation in contrast to the standardised, structured interview, which is a

closed situation. This does not mean that an unstandardised interview is casual. It should be just as carefully planned as the standardised one." (Kerlinger, 1964, p.469)

(iii) Sample Selection.

The subjects selected for interview were known personally by the investigator. This was not seen to be of any disadvantage or a source of bias, given that the information to be requested was essentially not of a confidential nature. On the contrary the investigator's acquaintance with the subjects was regarded as an advantage since it facilitated maximising the age range and socio-economic differentiation of the sample group. The frequency distribution of the interviewees by age is shown in Table III.

Table III. Frequency Distribution of Interviewees by age.

<u>AGE</u>	<u>NO. OF INTERVIEWEES</u>
UNDER 20	7
20-30	10
31-40	4
41-50	1
51-60	5
	<hr/>
	N = 27

(iv) Interview Procedure.

A few days prior to the interview date each of the subjects was informed of the purpose of the research, and was asked to consider her most recent major clothing purchase (eg. dress or coat) and the factors which had influenced her choice of store. It was hoped that in this way the subjects would find it easier to verbalise their experiences during the interview than if they had had no prior indication of the kind of information to be requested.

In each interview the subject was asked to describe her most

recent clothes shopping experience, and, in the course of this account, to specify, where possible, those factors which she felt had guided her choice of store. In the subsequent stages of the interview the investigator attempted to interject as little as possible. Clearly, the subject could have been asked a series of questions to the effect: "...do display features influence you?... do you prefer small stores?...is convenient parking important?..." and so on. But, it was felt that by proceeding in that way the subject might merely confirm the investigator's preconceptions without actually stating the factors that she herself felt to be of most importance to her when choosing a store at which to make clothing purchases. In which case the investigator could have saved time by compiling an a priori list of evaluative criteria, and have dispensed with the interview stage altogether.

The fact that the subjects had been given time to consider their shopping experiences before being interviewed probably contributed to the investigator's ability to avoid over-frequent interjections. It was commonly only necessary to intervene when a subject was finding difficulty in verbalising some concept of her shopping experience; any direction given in such instances could be considered a source of bias.

The criteria which each subject suggested had directed her store selection were recorded verbatim. The approximate length of each interview was forty five minutes.

(v) Results.

The twenty seven interviews resulted in a list of one hundred and seventy two evaluative criteria. Some items were essentially synonymous with others although their wording differed slightly. Some of the criteria were frequently mentioned, while others were only

mentioned by one interviewee.

Each subject had been asked to distinguish between those criteria which disposed her positively towards a store and those which resulted in a negative disposition. 111 criteria were suggested as positive influences and 61 as negative influences. However, it is doubtful to what extent a mutually exclusive division can be drawn between positive and negative influences since certain criteria might be considered positive by some consumers and negative by others.

A complete list of the suggested criteria is given in Table IV. They are ordered on the basis of frequency of occurrence. A plus or minus sign indicates whether a particular item was suggested as a positive or negative influence.

The frequency distribution of the items gives some very general indication of the relative importance of various criteria as bases for preference formation. But, given the small size of the sample group, any conclusions drawn are inevitably tenuous, and, therefore, each item was regarded as equally significant for the purpose of subsequent data collection and analysis.

The items listed range along a specificity-generality continuum. This suggests that some consumers evaluate stores on the basis of general criteria, whereas others can specify much more detailed attributes of the store environment as being influential in their preference formation.

Although this list of evaluative criteria is more detailed than those discussed in Chapter 2, the existence of common broad categories can be noted. Such categories include price, quality, location, personnel and advertising. However, it does not necessarily follow that these categories are synonymous with the dimensions on which preferences are formed.

Table IV. Evaluative Criteria.

<u>ITEM</u>	<u>FREQUENCY</u>
Aggressive assistants (-)	18
Good quality products (+)	16
Ease of returning goods (+)	14
Selection of goods (+)	14
Good reputation (+)	14
Favourable past experience (+)	13
Good value for money (+)	12
Sales offers/special promotions (+)	11
Advertised goods (+)	10
Being left alone to browse (+)	10
Stock of suitably styled goods (+)	10
Crowded store (-)	10
Convenient to home (+)	9
Well-organised layout (+)	9
Convenient for parking (+)	9
Suitably priced goods (+)	8
Stock of non-standardised goods (+)	7
Attractive window display (+)	6
Convenient for bus (+)	6
Colourful displays (+)	6
Interesting display (+)	6
Being recognised by the assistants (+)	5
Being familiar with the store (+)	5
Too expensive goods (-)	5
Cluttered display (-)	5
Location near other stores used (+)	5
Well-carpeted store (+)	5
Non-pressurising assistants (+)	4
Being able to feel anonymous (+)	4
Colour of goods stocked (+)	4
Background music (+)	4
Disorganised layout (-)	4
Bad past experience (-)	4
Jumbled arrangement of goods (-)	4
Holding a charge account (+)	3

<u>ITEM</u>	<u>FREQUENCY</u>
Stock of fashionable goods (+)	3
Post-purchase satisfaction (+)	3
Multiple purchasing opportunities (+)	3
Quiet store (+)	3
Spacious layout (+)	3
Airy atmosphere (+)	3
Tasteful displays (+)	3
Trustworthy store (+)	3
Mature clerks (+)	3
Professional sales staff (+)	3
Partitioned layout (+)	3
Good lighting (+)	3
Insincerity of sales staff (-)	3
Low quality merchandise (-)	3
Close scrutiny by assistants (-)	3
Empty store (-)	3
Feeling conspicuous (-)	3
Ease of obtaining charge account (+)	2
Personnel oriented to the young (+)	2
Atmosphere oriented to the young (+)	2
Knowledgeable sales staff (+)	2
Stock of brand name goods (+)	2
Easy to find goods (+)	2
Convenient to workplace (+)	2
Sincere personnel (+)	2
Good provision of mirrors (+)	2
Boutique-type store (+)	2
Exclusively tailored items (+)	2
Centrally located (+)	2
Subdued lighting (+)	2
Well-spaced racks (+)	2
Delivery service (+)	2
Clean store (+)	2
Clearly tagged items (+)	2
Ease of exit (+)	2

<u>ITEM</u>	<u>FREQUENCY</u>
Easily distinguishable personnel (+)	2
Inconvenient location (-)	2
Cheap atmosphere (-)	2
Cramped layout (-)	2
Standardised items (-)	2
Poor service (-)	2
Rushed selling (-)	2
Confusing display (-)	2
Bargain basement atmosphere (-)	2
Rock music playing (-)	2
Location in depressing area (-)	2
No pressure on time payments (+)	1
Stocking correct size (+)	1
Interested personnel (+)	1
Money back guarantee (+)	1
Being able to try on goods at home (+)	1
Assistants with pleasing personalities (+)	1
Assistants unperturbed by no sale (+)	1
Range of medium priced goods (+)	1
Conservative style of goods (+)	1
Store which stands behind its goods (+)	1
Concise arrangement of goods (+)	1
Empty store (+)	1
Reliable pricing (+)	1
Attractive displays (+)	1
Expenditure on decor (+)	1
Post-purchase services (+)	1
Assistants near at hand (+)	1
Well-made items (+)	1
Items made from quality materials (+)	1
Well-written signs/labels (+)	1
Use of attractive models (+)	1
Exclusive atmosphere(+)	1
Clerks dressed in line with own taste (+)	1
Mixed lighting (+)	1
Desirable items in the window (+)	1
Young window models (+)	1
Exclusively designed items (+)	1
Style of packaging (+)	1
Comprehensive display (+)	1

<u>ITEM</u>	<u>FREQUENCY</u>
Texture of goods (+)	1
Young personnel (+)	1
Casually dressed sales staff (+)	1
Independently operated store (+)	1
Selective buying (+)	1
Peer group personnel (+)	1
Prominent displays (+)	1
Complementary items in window display (+)	1
Location in pleasant area (+)	1
Small store (+)	1
Calm atmosphere (+)	1
Wooden fittings (+)	1
Established-looking store (+)	1
Discretely priced goods (+)	1
Stock of British goods (+)	1
Modern store (+)	1
Air-conditioning (+)	1
Location in quality area (+)	1
One-floor store (+)	1
Luxurious setting (+)	1
Coats arranged around walls (+)	1
Nice dressing rooms (+)	1
Off the ground floor (+)	1
Display suggestive of bargains (+)	1
Impersonal assistants (-)	1
Failing to stock correct size (-)	1
Stylish goods (-)	1
Specialty store (-)	1
Poor store services (-)	1
Very modern store (-)	1
Suspicious atmosphere (-)	1
Salon-type atmosphere (-)	1
Misleading advertising (-)	1
Not being allowed to browse (-)	1
Stock of Japanese goods (-)	1
Having to pay for decor (-)	1
Amateurishly printed signs/labels (-)	1
Bullying by other customers (-)	1
Excessive advertising (-)	1
Dominant smells (-)	1

<u>ITEM</u>	<u>FREQUENCY.</u>
Narrow aisles (-)	1
Unpartitioned shop floor (-)	1
Harsh lighting (-)	1
Major retail organisations (-)	1
Very wide selection (-)	1
Disinterested sales staff (-)	1
Large price tags (-)	1
Chrome fittings (-)	1
Dirty store (-)	1
Near bankrupt store (-)	1
No opportunity to try on goods (-)	1
Use of dull colours (-)	1
Goods scattered over a wide area (-)	1
Very quiet store (-)	1
Checking in/out of dressing rooms (-)	1
Self-service (-)	1
Frequent sales offers (-)	1
Modish assistants (-)	1
Elderly assistants (-)	1
Old stock (-)	1
Noisy store (-)	1

The purpose of the next stage of the research was to reduce this list of criteria to a smaller number of underlying dimensions in order to identify the structure of clothing store preferences.

C. THE ANALYSIS OF PREFERENCE DIMENSIONS.

(i) Development of the Questionnaire.

The interview stage determined attributes of the store environment which are apparently salient in the formation of consumer preferences. In order to isolate the evaluative dimensions on which preferences are structured it was necessary to measure the importance that consumers ascribe to these attributes when selecting a store at which to purchase clothing. For this purpose a questionnaire was developed incorporating the criteria listed in Table IV.

It was decided to include all of the criteria suggested in the course of the interviews. This decision was made on the basis that a subjective editing at this stage would have introduced an unwanted source of bias. The fact that a number of 'redundant' criteria were

therefore retained' was not regarded as a disadvantage since the subsequent analysis was seen to provide a more valid basis on which to determine redundant variables. In addition, the retention of seemingly synonymous criteria provided a measure of data reliability in the form of internal consistency checks.

The items were listed in a random order in the questionnaire. This served to ensure a random distribution of positive and negative items, and hence to reduce the possibility of response set error.

Two item rotations were employed. The purpose of this was to avoid items being scored in the same sequence by all respondents. This was seen to be important given the exhaustive length of the questionnaire. It is debatable whether schedule length and data reliability are inversely related, but the use of different item rotations serves to minimise the possibility of error being introduced from this source.

The scaling procedure employed to measure the attitudes of consumers towards the various store attributes described by the criteria represents a modification of a Likert scale. (Likert, 1932) Each respondent was asked to score each of the criteria on a scale ranging from '1' to '10', where '1' was to indicate an item of no importance when selecting a store at which to purchase clothing and '10' indicated an item of great importance. Items which were felt to be important negative influences were to be scored in the same way except that a minus sign was to be used to indicate negative valence. (It transpired that most respondents used a twenty-one point scale ranging from -10 to +10 with a mid-point zero.)

Items relating to demographic and socio-economic variables were also included in the questionnaire. Each respondent was asked to give details with respect to age, sex, marital status, occupation, education,

financial status and clothing expenditure. The purpose of collecting this information was to investigate whether systematic variations existed between the respondents' attitudes and their demographic and socio-economic characteristics.

The questionnaire which served as the basis for data collection appears in the appendix.

(ii) Sample Selection.

Questionnaires were distributed to members of a first year undergraduate geography class at the University of British Columbia. Those students living at home were given additional questionnaires for their parents to complete. Approximately 250 questionnaires were distributed, of which 120 were used as the basis for data analysis. The remaining 50 per cent were either not returned or were returned incomplete.

The use of convenience samples of this kind is common where the research purpose is to identify underlying dimensions within complex data sets as a basis for generating hypotheses for subsequent testing.¹

The purpose in distributing the questionnaire to the parents of the students was to increase the demographic and socio-economic heterogeneity of the sample group in seeking to investigate the relationships between attitude scores and consumer characteristics.

(iii) Data Analysis.

(a) Model selection

In Chapter 3 various methods for defining the underlying structure of initial data sets were discussed; one of these, factor analysis, was

¹ The environmental psychology literature provides a number of examples of the use of convenience sampling procedures in research contexts similar to the one discussed here; see, Downs (1970), McKechnie (1971), and Peterson, Bishop and Neuman (1970).

used in this pilot study. Factor analysis was selected as the most appropriate multidimensional scaling model given the nature of the data (i.e. scale scores on predetermined attributes), the nature of the objects (i.e. clothing stores in general rather than specific outlets), and the exploratory purpose of the investigation.

Factor analysis is useful in two research contexts; these are (a) to explore variable areas in order to identify the factors presumably underlying the variables; (b) to test hypotheses about the relations among variables. (Kerlinger, 1964, p.680) The concern here is with the first of these two purposes, since the aim is to examine the relationships between the original variables (evaluative criteria) and to derive common factors (preference dimensions) which are related to the variables to varying degrees. The primary value of using factor analysis in this way is to achieve conceptual clarification, and here the specific concern is to clarify the concept of store preference by identifying its underlying dimensions.

(b) Basic concepts of factor analysis.

Analysis begins with the calculation of the correlation coefficients among all the variables. From these correlations it is possible to derive linear expressions for each of the variables in terms of some new factors in such a way that the linear model provides an adequate fit to the observed data.

Factor analysis assumes that the total variance of a variable j is composed of common, specific and error variance. Common variance is that portion of the variance which correlates with other variables; specific variance is that portion of the total variance which does not correlate with any other variable; and error variance is the chance variance due to errors of sampling, measurement, unstandardised

conditions of testing, and many other influences which may contribute to unreliability. It is assumed to be uncorrelated with the reliable variance and other error variance. (Fruchter, 1954, p.45)

The relationship between these various types of variance can be described by the following linear equation where the total variance of j equals 1.0.

$$1.0 = \underbrace{a_{j1}^2 + a_{j2}^2 + \dots + a_{jr}^2}_{\substack{\text{common variances or} \\ \text{communality } (h_j^2)}} + \underbrace{s_j^2}_{\substack{\text{specific} \\ \text{variance}}} + \underbrace{e_j^2}_{\substack{\text{error} \\ \text{variance}}}$$

As this equation indicates, the communality of variable j is determined by the sum of its independent common variances.

It is important to distinguish this "classical" factor analysis model from the principal components model. Whereas, in the case of the classical factor model, each variable is described linearly in terms of a number of common factors and a factor unique to the particular variable, in the principal components model each variable is described in terms of common factors only.

Harman (1967, p.28) points out the operational distinction between the two models in that "the values put in the diagonal of the observed correlation matrix determine what portions of the unit variances are factored into common factors." In the case of the classical factor analysis model, numbers approximating the communalities are put in the diagonal of the correlation matrix, and the subsequent factor solution involves both common and unique factors; whereas, in the case of the principal components model, unities are placed in the diagonal with the result that the factor solution must

necessarily involve only common factors "since only common factor coefficients are involved in reproducing the correlations, and unities must be reproduced." (Harman, 1968, p.147)

The initial factor matrix (n variables \times m factors) can be arrived at by various methods of which the most common is the principal factor solution developed by Hotelling (1933). This method involves defining axes which best describe the distribution of N individuals in n dimensional space. These axes correspond to the factors. Factor 1 is defined in such a way that its contribution to the variance is maximised, the second and succeeding factors are obtained such that their contributions to the residual variances in each case are maximised.

This initial factor solution has an arbitrary reference basis, and for the purposes of factor interpretation a rotational procedure is usually employed to derive a second factor matrix. Various orthogonal or oblique solutions can be obtained. Of the orthogonal solutions, the varimax method (Kaiser, 1958) is perhaps the most popular, and this was used in the present analysis.

Criteria to guide the selection of a reference basis for a factor solution are outlined by Harman (1967, p.98) on the basis of Thurstone's principle of 'simple structure'. (Thurstone, 1947) The 'simple structure' criterion facilitates factor interpretation since it involves finding factors which are highly correlated with given clusters of variables but which are uncorrelated with those indices belonging to the other clusters.

Once the rotated factor structure has been determined, it is usual to compute factor scores which define the profiles for the N individuals in terms of the new hypothetical constructs. It is possible to derive these factor scores by obtaining linear expressions for the

factors in terms of the observed variables, and subsequently substituting the values of such variables for each individual.

(c) Reduction of the variable set.

Prior to the factoring of the questionnaire data, it was necessary to reduce the number of variables. A reduction was necessary for two reasons: firstly, to eliminate suspected redundancy in the initial set of variables, since, in order to obtain a factor structure which was not simply a reflection of these redundancies, it was important that they be identified and removed before factoring. Secondly, a reduction in this particular case was necessary to satisfy the constraint of the factor analysis model, that the number of observations exceed the number of variables.

Correlation analysis was performed to serve as a basis for identifying redundancies in the variable set. Where two or more conceptually synonymous variables were found to be highly intercorrelated, only one variable was retained for inclusion in the factor analysis. For example, 'attractive display', 'colourful display' and 'tasteful display' were highly intercorrelated and only 'tasteful display' was retained; similarly, from 'quiet store', 'very quiet store' and 'noisy store' only 'quiet store' was retained.

It is noteworthy that the occurrence of significant correlations between intuitively similar variables provides confirmation on the internal consistency of the subjects' responses. At the same time, however, to assume that apparently 'similar' variables are in fact synonymous on the basis of their being highly intercorrelated must be recognised as a source of bias; equally, the selection of a particular variable from a set of two or more statistically related alternatives inevitably introduces subjectivity. Nevertheless, it is argued that

the degree of subjectivity introduced in this way is less than would have occurred had the variable set been reduced prior to the administration of the questionnaire.

Certain variables, which were not regarded as commonly significant to consumers when selecting a clothing store, were predictably characterised by low bivariate correlations (for example, 'coats arranged around walls' and 'wooden racks'). These were usually items which had been recorded only once during the interview stage. Such variables were also excluded from the factor analysis since they were judged not to contribute significantly to the definition of common factors.

On the basis of these partly subjective criteria, the variable set was reduced to 70. The selected variables are indicated in the appendix.

(d) Factor analysis of the reduced variable set.

The BMDX 72 factor analysis programme was used to process the questionnaire data. Values in the diagonal of the correlation matrix were initial communality estimates computed on the basis of squared multiple correlations for a particular variable with respect to the remaining variables. A varimax orthogonal rotation was performed to determine the factor structure, and factor scores were computed for each of the 120 observations.

The first stage of the analysis involved the formation of a 70x70 correlation matrix describing the association between the variables. Of the 4830 off-diagonal correlations, 917 (approximately 20 per cent) were significant at the .01 probability level. (n.d.f.=118)

As a basis for the initial factor solution the characteristic

equations of the correlation matrix were computed; the roots of these equations, termed eigen-values, serve as a guide for determining the number of common factors to be extracted. It is usual to establish a cut-off level for factoring at the point where the eigen-values fall below a value of +1.0. In this case, ten factors with eigen-values greater than +1.0 were extracted which together accounted for 55.5 percent of the total variance.

The initial factor solution resulted in a 70 variables x 10 factors matrix which was then rotated to produce a second 70x10 matrix. Elements in the rotated factor matrix contained factor loadings which comprise a measure of the correlations between the variables and the factors. The rotated factor structure provided a reference basis for factor interpretation. Table V shows the percentage of the total variance accounted for by each factor, and the contribution made by each factor to the common factor variance both before and after rotation. Table VI shows the rotated factor matrix.

Table V. Variances Accounted for by each Factor.

	% of total variance	% of common factor variance before rotation	% of common factor variance after rotation
Factor 1	22.268	40.12	13.80
Factor 2	10.922	19.68	18.19
Factor 3	5.179	9.33	14.46
Factor 4	3.527	6.35	10.32
Factor 5	3.144	5.66	14.04
Factor 6	2.368	4.26	5.86
Factor 7	2.311	4.16	4.62
Factor 8	2.110	3.80	9.61
Factor 9	1.876	3.38	4.05
Factor 10	1.798	3.24	5.04
	<hr/> 55.5 approx.	<hr/> 100.0 approx.	<hr/> 100.0 approx.

Table VI. Rotated Factor-Loadings Matrix.

ROTATED FACTOR-LOADINGS MATRIX

* INDICATES A VALUE GREATER THAN OR EQUAL TO 0.50000

	FACTOR									
	1	2	3	4	5	6	7	8	9	10
VARIABLE										
1 CLUTDISP	-0.02857	*-0.71416	-0.07993	0.00566	-0.02421	-0.10813	-0.20482	0.02184	-0.13827	0.10243
2 DULLCILD	-0.13865	-0.48166	0.06960	-0.12674	0.01267	0.04099	-0.36681	0.20545	0.12926	0.08141
3 WALLMARE	-0.05311	0.10149	* 0.05469	0.01380	-0.09744	0.12914	0.05540	-0.03735	0.05531	0.08224
4 CONVDORK	-0.13186	0.07246	0.07766	*-0.59984	-0.23928	-0.06161	0.07235	-0.06490	-0.05389	-0.02237
5 CASSTAFF	*-0.46182	-0.05762	0.01808	-0.30067	-0.12928	0.11542	-0.06177	0.02385	-0.02474	-0.21994
6 SCOUTASS	-0.10516	*-0.63876	-0.06571	-0.15042	0.05683	0.02903	0.11027	-0.24221	0.28437	-0.04619
7 CALMATNG	-0.36024	0.01012	0.49086	-0.27028	-0.05072	0.09293	0.01570	-0.06202	0.38508	0.03765
8 EXCLITEM	-0.35407	-0.08117	0.19340	-0.13047	-0.06188	0.04467	-0.07969	-0.20670	0.28984	0.18495
9 QUALMATS	-0.12882	0.02530	* 0.70875	-0.11510	-0.09570	0.00859	-0.12569	-0.09718	-0.08847	0.10128
10 ROUISTOR	-0.48558	-0.14360	0.05325	-0.04766	-0.01930	-0.04520	-0.02131	0.00553	0.09545	0.04839
11 MISADVER	0.04251	*-0.60657	-0.07329	-0.10330	-0.14881	0.15208	0.13201	-0.00767	0.33856	-0.09013
12 PARTLAYD	-0.44836	-0.16227	0.00272	-0.09617	-0.25324	0.03208	-0.11374	-0.19197	0.00161	0.16245
13 JUMPGOOD	-0.02428	*-0.75492	-0.06247	0.06405	-0.05229	-0.00020	-0.15634	0.01958	-0.01368	0.07549
14 FASTASTOR	-0.09582	-0.15322	0.17187	-0.27116	-0.07626	-0.04481	0.00029	-0.07208	0.07644	* 0.56496
15 HASLIGHT	0.02744	*-0.71238	0.09343	-0.00466	-0.04160	0.03049	0.01958	-0.02810	-0.04061	-0.00872
16 PODESERV	-0.04876	*-0.76609	-0.09159	-0.05629	0.12641	0.05299	0.17163	0.07546	-0.02039	0.12128
17 CLEARSTO	-0.28401	0.10244	0.29611	0.02823	*-0.62984	0.04715	0.02382	-0.11812	0.15262	0.16351
18 QUALAPFA	-0.27685	-0.23584	0.04351	-0.42193	-0.47797	0.05102	-0.03468	-0.01410	0.09899	0.25331
19 FEELCANS	0.04143	-0.47664	-0.02625	0.12695	0.18276	-0.02178	0.07668	-0.28603	0.14371	0.06240
20 STYLPACK	-0.37065	-0.00073	0.07572	-0.10435	-0.48521	0.10819	-0.00021	-0.16939	0.17375	0.34739
21 NICEOPES	-0.25025	0.12845	0.27201	-0.27614	*-0.66933	0.14614	0.11142	-0.17269	0.15973	0.02028
22 DINTSTOP	0.03441	*-0.74077	-0.11038	-0.11298	0.29659	-0.01813	-0.11178	-0.07381	-0.00096	-0.07907
23 INTEDISO	-0.40950	0.00764	0.26446	-0.26582	-0.32871	-0.03284	0.40548	-0.23947	0.07834	0.21646
24 YOUNGPTR	*-0.70586	-0.06951	0.03352	-0.22379	-0.23216	0.12798	0.07683	-0.16931	-0.22218	-0.02925
25 CHARGEAC	0.03132	0.05429	-0.03987	*-0.54156	0.02877	0.07849	-0.05204	-0.08801	0.09457	0.18791
26 FASHGOOD	-0.30600	0.04130	0.21719	-0.10318	*-0.64590	0.05456	-0.04346	-0.01524	-0.01486	0.00425
27 TIMEPAYS	-0.14053	-0.05175	-0.06721	*-0.55090	0.03917	0.21079	0.00775	-0.21543	0.06957	0.11184
28 CONVDICE	0.02791	-0.02208	0.13347	*-0.63101	-0.14195	-0.02609	-0.00835	-0.08479	0.04121	0.02338
29 INSINCER	-0.10221	*-0.66994	-0.09240	-0.01389	-0.17015	0.02681	-0.05242	0.09917	0.14719	0.11966
30 DRGALAYD	-0.27697	0.07941	0.09567	-0.18491	*-0.54394	0.14488	0.00305	-0.49494	0.14446	0.06494
31 CHEATMOS	-0.18854	*-0.58719	0.04037	0.05873	0.23231	-0.01611	-0.17298	-0.09526	-0.18246	-0.09205
32 COESIZE	-0.05543	-0.02480	0.13668	-0.15338	*-0.57353	0.08466	-0.07005	-0.11148	-0.09741	-0.01918
33 INTEPFERS	-0.25428	0.08770	0.28696	-0.36138	-0.05931	0.05846	-0.06462	*-0.57498	0.01706	0.04190
34 MONEYPAC	0.03141	-0.05534	0.42665	-0.09602	-0.06496	0.08505	-0.00406	*-0.58846	-0.06160	0.11300
35 CRUXSTO	0.01173	*-0.56301	0.04605	-0.10629	-0.27624	0.01442	0.16579	-0.11811	0.01253	0.18891

Table VI - continued.

36	SATPCFFS	-0.19087	-0.23582	0.20367	-0.33248	-0.32532	0.07170	0.04601	-0.03355	-0.04563	0.03652
37	ATNOYING	*-0.71271	-0.06699	0.00439	0.02972	-0.18310	0.07826	0.05707	-0.15619	-0.10822	-0.05214
38	GOODVALU	0.05598	0.11184	* 0.78681	0.00263	-0.14259	-0.01457	0.08752	-0.03073	-0.06346	0.01928
39	SILGOODS	-0.03330	0.08355	* 0.68255	0.00657	-0.21672	0.07213	0.00651	-0.14356	0.00818	0.06480
40	DISCPLAY	-0.11368	*-0.69296	0.04055	0.07374	-0.08084	-0.04155	-0.06689	0.07733	-0.08836	-0.08515
41	ADVGGOODS	-0.16552	-0.25713	0.16762	-0.47474	-0.17193	0.21749	-0.03823	-0.21463	-0.06213	0.01851
42	QUISTORE	-0.32864	0.25259	0.22154	-0.13805	-0.17249	0.08876	-0.07399	-0.08871	0.42004	0.01263
43	TASIDISP	-0.34034	0.09603	0.30189	-0.12223	-0.22214	0.24002	0.32184	-0.42895	0.20136	0.23388
44	WELLCAEP	*-0.50431	0.08832	0.05821	-0.13847	-0.19779	0.16431	0.00872	-0.02737	0.10697	0.28180
45	REFLIPIC	-0.05442	-0.07154	* 0.62307	-0.14984	-0.16593	-0.08127	-0.03059	-0.12536	0.13503	0.01056
46	SCONBIC	*-0.55693	-0.20906	-0.13165	-0.01147	-0.10928	-0.05349	0.06178	0.10768	-0.28461	-0.16294
47	SHALSID	-0.42534	-0.17658	0.17078	0.16402	-0.01637	0.01133	0.05239	-0.13347	0.12463	0.23030
48	RATIGOOD	-0.20651	-0.10326	0.07243	-0.36678	-0.19777	0.08018	0.00714	-0.23354	0.00388	0.40655
49	MODERSTO	-0.35231	-0.11014	0.02797	-0.45108	-0.16873	0.05065	0.29644	-0.35446	0.16235	0.11432
50	SALATHOS	*-0.65782	-0.06096	0.08548	-0.03711	-0.12343	0.02881	-0.16062	-0.06248	0.14992	0.09162
51	CONVPACK	-0.07010	0.01422	0.24112	-0.33330	-0.16705	0.00626	-0.02548	-0.45082	0.12347	0.05792
52	FAVEKPER	-0.04042	0.11246	* 0.57919	-0.07173	-0.11645	0.14124	0.11355	-0.29702	-0.00444	0.19089
53	ATTWIND	-0.36550	-0.02207	0.25892	-0.22195	-0.29279	0.22438	0.46568	-0.31623	0.00269	0.26089
54	REFIPIC	-0.18703	-0.05823	0.32877	0.02945	-0.20399	0.10508	0.28234	-0.42325	-0.22522	0.19750
55	LEITALON	-0.06141	0.06500	0.22184	0.06829	*-0.77684	0.07817	0.00098	-0.05592	-0.13124	0.00071
56	EMSTORE	-0.24333	-0.26623	-0.06767	0.09826	-0.08627	-0.07736	*-0.53417	-0.29365	0.06397	0.16342
57	CONCARPA	-0.12584	-0.00292	0.26878	-0.21904	*-0.56778	0.19781	0.09896	-0.15756	0.16045	0.05509
58	TRUSTORE	0.01081	0.00046	* 0.74282	-0.11652	-0.22482	0.09223	0.12709	-0.29799	0.12024	-0.05302
59	WELLSON	-0.19186	-0.13041	0.24243	-0.31649	-0.22353	0.17893	-0.04910	*-0.50965	-0.01617	0.05743
60	PUSHSELL	-0.16198	*-0.68112	-0.05960	-0.10665	-0.15133	0.04724	0.09704	0.12203	-0.08652	0.05972
61	MAJDEGAN	-0.04472	-0.06380	0.24561	-0.46400	-0.14727	0.20461	0.22417	0.10183	-0.01068	0.11935
62	RAFDRAFE	-0.14326	*-0.56734	-0.12655	0.03296	-0.06227	-0.08194	-0.10593	-0.03442	-0.28713	0.05989
63	KINDWASSI	-0.17584	0.04458	0.30248	-0.13667	-0.14842	0.01044	-0.05694	*-0.68612	0.04742	0.05471
64	GOODFPU	-0.12523	0.07077	0.42561	-0.32475	-0.24302	0.11194	-0.03229	-0.37913	0.30180	-0.06649
65	FEELAND	-0.04462	-0.15379	0.18992	-0.18375	-0.13391	0.24833	-0.07011	-0.11506	-0.14432	* 0.60198
66	LOCSTORE	-0.16171	-0.03047	0.15424	-0.32403	-0.45894	0.02044	-0.01076	0.01802	0.00377	0.08929
67	EXPDEFCO	*-0.52920	0.02325	-0.08812	-0.05664	-0.45197	0.14029	0.13293	-0.09092	0.18485	0.19697
68	SPACLAYO	-0.22955	-0.03180	0.10979	-0.10705	-0.27930	* 0.75812	0.04511	-0.07895	0.08638	0.11350
69	FASERIND	-0.05617	0.03460	0.24548	-0.13006	-0.13078	* 0.81165	0.10546	-0.13654	0.07048	0.01970
70	LARSETAG	-0.09320	-0.15567	-0.04659	-0.08673	-0.24591	* 0.54773	-0.47652	-0.05755	-0.09142	0.11897
SUM OF SQUARED FACTOR-LOADINGS DIVIDED BY SUM OF COMMUNALITIES											
		0.13801	0.18186	0.14467	0.10322	0.14038	0.05861	0.04624	0.09608	0.04051	0.05040

(e) Factor interpretation.

The rotated factors are best described in terms of their highest loading variables. Table VII lists the ten highest loading variables on each factor. A distinction is drawn between those variables which load higher on the factor they are describing than on any other, and variables which loaded higher on a factor other than the one they are describing (shown in parentheses).

Factor interpretation is inevitably subjective. Ideally, the aim is to achieve a capsule description which crystallises the common characteristic which has presumably resulted in a set of variables being clustered together on a particular factor dimension. However, factor definition is rarely straightforward, since it may be the case that dimensions represent clusters of seemingly unrelated variables. This is more especially a problem where factor analysis is employed in an exploratory context, as in the present instance, as a priori expectations with regard to factor structure are then seldom well-defined.

The variables listed in Table VII are used here to describe the dimensions which underlie the respondents' evaluations of clothing stores.

Examination of the variables loading highly on factor 1 leads to the conclusion that they have in common an association with boutique-type stores appealing to a relatively young clientele. For this reason the concept of 'boutiqueness' is conjured to summarise this evaluative dimension.

Variables describing factor 2 are clearly associated with low quality stores, reflecting such in-store characteristics as the atmosphere, service and arrangement of the goods. 'Cheapness' is seen to

be an appropriate summary concept.

Factor 3 can perhaps be labelled a 'reliability' dimension. The concept of reliability is seen to be related here to such variables as good value, quality merchandise, and the reputation and trustworthiness of the store.

Factor 4 represents a clustering of variables which commonly define the concept of 'convenience'. Convenience perhaps extends beyond the notion of the relative locations of store and home, and store and workplace, to factors which make for ease of purchasing. It is perhaps for this reason that variables related to credit buying load highest on this factor.

Factor 5 brings together variables which imply the concept of 'exclusiveness'. This is seen to pertain to the characteristics of the merchandise, the store facilities and the character of the neighbourhood in which the store is located.

Factor 6 accounted for a low percentage of the common factor variance, and only three variables have their highest loadings on this dimension. These seem to be related to features of store arrangement and layout.

Variables describing factor 7 are largely associated with 'display' characteristics.

Factor 8 represents a clustering of variables which can perhaps be described in terms of the concept of 'security', extending from characteristics of store policy such as a money-back guarantee, and from the dispositions and abilities of the personnel.

The positive loading variables on factor 9 relate to the concepts of 'quietness' and 'calmness', while variables with negative loadings are

Table VII. Highest Loading Variables on the Rotated Factors.*

Factor 1 "boutiqueness"	Factor 2 "cheapness"	Factor 3 "reliability"	Factor 4 "convenience"	Factor 5 "exclusiveness"
ATMOYUNG (-.71)	POORSERV (-.76)	GOODVALU (+.78)	CONVHOME (-.63)	LEFTALON (-.77)
YOUNGPER (-.70)	JUMBGOD (-.75)	TRUSTORE (+.74)	CONVWORK (-.59)	NICEDRES (-.66)
SALATMOS (-.65)	DIRTSTOR (-.74)	QUALMATS (+.70)	TIMEPAYS (-.55)	FASHGOOD (-.64)
CASSTAFF (-.56)	CLUTDISP (-.71)	SELGOODS (+.68)	CHARGEAC (-.54)	CLEANSTO (-.62)
ROCMUSIC (-.55)	HARLIGHT (-.71)	WELLMADE (+.65)	ADVGOODS (-.47)	CORRSIZE (-.57)
EXPODECO (-.52)	DISORLAY (-.69)	RELIPRIC (+.62)	MAJORGAN (-.46)	CONCARRA (-.56)
WELLCARP (-.50)	RUSHSELL (-.68)	FAVEXPER (+.57)	(MODERSTO) (-.45)	ORGALAYO (-.54)
BOUTSTOR (-.48)	INSINCER (-.66)	CALMATMO (+.49)	(QUALAREA) (-.42)	STYLPACK (-.48)
PARTLAYO (-.44)	SCRUTASS (-.63)	(MONEYBAC) (+.42)	(BRITGOOD) (-.36)	QUALAREA (-.47)
SMALSTOR (-.43)	CHEATMOS (-.58)	GOODREPU (+.42)	INTEPERS (-.36)	LOCSTORE (-.45)
Factor 6	Factor 7 "display"	Factor 8 "security"	Factor 9 "noisiness"	Factor 10
EASEFIND (+.81)	EMPSTORE (-.53)	KNOWASSI (-.68)	QUISTORE (+.42)	FEELANON (+.60)
SPACLAYO (+.75)	(LARGETAG) (-.47)	MONEYBAC (-.58)	(CALMATMO) (+.38)	ESTASTOR (+.56)
LARGETAG (+.54)	ATTRWIND (+.46)	INTEPERS (-.57)	(MISADVER) (+.33)	BRITGOOD (+.40)
(FEELANON) (+.24)	(INTEDISP) (+.40)	WELLSIGN (-.50)	(GOODREPU) (+.30)	(STYLPACK) (+.34)
(TASTDISP) (+.24)	(DULLCOLO) (-.36)	(ORGALAYO) (-.49)	(EXCLITEM) (+.28)	(WELLCARP) (+.28)
(ATTRWIND) (+.22)	(TASTDISP) (+.32)	CONVPARK (-.45)	(BARGBASE) (-.28)	(ATTRWIND) (+.26)
(ADVGOODS) (+.21)	(MODERSTO) (+.29)	TASTDISP (-.42)	(ROCMUSIC) (-.28)	(QUALAREA) (+.25)
(TIMEPAYS) (+.21)	(MEDIPRIC) (+.28)	MEDIPRIC (-.42)	(SCRUTASS) (+.28)	(TASTDISP) (+.23)
(MAJORGAN) (+.20)	(MAJORGAN) (+.22)	(GOODREPU) (-.37)	(MEDIPRIC) (-.22)	(SMALSTOR) (+.23)
(CONCARRA) (+.19)	(CLUTDISP) (-.20)	MODERSTO (-.35)	(YOUNGPER) (-.22)	(CASSTAFF) (+.21)

* The key to the variable abbreviations is found in the appendix.

associated with noisy environments. The concept of 'noisiness' perhaps therefore best describes this dimension.

Factor 10 is described by variables which are not obviously related and interpretable in terms of a conceptual definition.

Although the specific concepts suggested here as a basis for defining the factor dimensions are largely speculative, certain general characteristics of the factor structure stand out clearly.

The factor structure does suggest the possibility that evaluative dimensions transcend a simple classification in terms of general and tangible criteria. Downs (1970) has suggested that the process by which consumers collect, code, and evaluate information concerning the retail environment may well reflect the importance of intangible influences which may lack obvious physical referents. This is in contrast to the evaluative concepts put forward in much of the existing literature which are essentially coincident with tangible store characteristics. These concepts were referred to earlier as general criteria such as price, selection and quality of merchandise, store location and so on.

There are indications in the results outlined above of subtle inter-relationships between specific aspects of these more general criteria, which reflect the existence of less tangible conceptual dimensions functioning as the basis for the evaluation of alternative stores and for the subsequent development of store preferences. The problem comes, as noted already, in attempting to define these dimensions; but, in relation to the analysis of clothing store preferences, it seems that notions such as 'boutiqueness', 'cheapness', 'reliability', 'convenience' and so on may be fundamental considerations on the basis of the data and methods used here.

Clearly the validity of the structure of consumer retail preference obtained depends to a large extent upon the validity of the input variables. A justifiable criticism of the use of factor analysis has been that a desired result can easily be achieved if the input variables are suitably selected. In this respect, the cognitive structure of an urban shopping centre derived by Downs (1970) is perhaps suspect. It can be argued that he was inevitably able to confirm the cognitive structure which he hypothesised simply as a result of the nature of the variables he incorporated as the bipolar constructs of his research instrument (see Table I). The question therefore arises of whether his results are solely a product of his research methodology, or whether they do indeed reflect the structure of consumer images of an urban shopping centre as they exist in reality. It is obviously necessary to pose the same question in assessing the validity of the analysis and results outlined above.

In the context of variable selection and measurement, Kunkel and Berry (1968, p.25) have commented upon the weakness of using structured techniques in analysing retail image dimensions. They conclude that, where only structured techniques are employed, "the resulting 'image' is likely to be more highly correlated with the instrument than with reality". As an alternative they advocate the use of unstructured interviews and questionnaires as a means of isolating "critical image components".

In the context of this pilot study, the comments of Kunkel and Berry indicate a possible strength of the research methodology employed. This strength results from the use of unstructured interviews as a basis for determining the set of evaluative criteria to be included within the questionnaire. The purpose in so doing was to avoid the

possibility of merely confirming what may have been false a priori assumptions with regard to the structure of consumer retail preferences.

However, the use of unstructured techniques in variable selection can only increase the likelihood of obtaining more valid results in so far as all of the salient variables are uncovered. To have confidence in this respect would seem to require that a large number of sample interviews be conducted, involving interviewees drawn from a diversity of demographic and socio-economic groups. Although a conscious attempt to achieve this diversity was made in selecting the interviewees in this study, there must be some question as to the adequacy of the sample size.

It is possible to derive some confidence in the reliability of the results from the fact that the dimensions described do coincide in certain respects with the results of retail image studies. For example, the concept of 'convenience' is commonly identified by Berry (1968), Downs (1970), Fisk (1961) and Stephenson (1969). The concept of 'reliability' can be equated with Stephenson's 'dependability' dimension, and it is also apparently similar to the concept of 'reputation' as derived by Downs and Berry.

However, it is hardly surprising to discover that in general the results of this study demonstrate only a limited coincidence with previous findings. The reason for this is seen to result from the fact that the research domain in this pilot study was limited to clothing stores. This implies that the results are only truly comparable to those obtained in a similarly defined research context. Unfortunately, the store image studies referred to, which are comparable in terms of methodology, are not directly comparable in terms of the retail universe

selected. For example, Berry's results relate to department stores, Downs' to a shopping centre, Stephenson's to supermarkets, and Fisk's results supposedly relate to stores in general.

The extent to which the research domain can determine the resulting dimensions of consumer preference is demonstrated by the emergence of 'boutiqueness' as a major dimension in this study. It seems likely that this concept in particular is peculiar to clothing stores. It follows therefore that an assessment of the reliability of the factor structure obtained cannot be satisfactorily determined by comparison with the results of previous studies; rather, it seems that validation must await further analyses of consumer attitudes towards clothing stores involving the use of different, and hopefully larger, sample groups.

(iv) The Definition of Consumer Preference Groups.

(a) The computation and meaning of factor scores.

As discussed previously, once the factor dimensions have been determined it is possible to compute factor scores for each observation (respondent). Each respondent therefore has a set of scores equal to the number of factors which have been extracted, in this case ten.

These factor scores serve as a useful check on the orthogonality of the factor dimensions. This check can be made by computing the correlations between the factors on the basis of the factor scores. The matrix of correlations between the factors outlined above is shown in Table VIII. The very low intercorrelations confirm that the ten factors are orthogonal.

As a result of the computation procedure employed, the factor scores obtained were effectively standardised having therefore a zero mean and standard deviation equal to one. The individual factor score

Table VIII. Matrix of Correlations between the Factors.

	1	2	3	4	5	6	7	8	9	10
Factor 1	1.000									
Factor 2	0.013	1.000								
Factor 3	0.008	0.009	1.000							
Factor 4	0.022	0.014	-0.006	1.000						
Factor 5	0.050	-0.009	-0.021	0.025	1.000					
Factor 6	-0.004	0.003	0.006	-0.015	-0.009	1.000				
Factor 7	-0.017	0.017	0.009	-0.012	-0.003	0.002	1.000			
Factor 8	0.025	-0.001	-0.048	0.043	0.013	-0.016	-0.018	1.000		
Factor 9	0.006	0.013	0.012	-0.038	-0.009	0.007	0.002	-0.016	1.000	
Factor 10	-0.017	-0.020	0.006	-0.018	-0.013	0.014	0.021	-0.023	-0.003	1.000

profiles are thus a measure of the relative importance attributed by a particular respondent to the specified preference dimensions. It is important to note that, since the factor scores were derived on the basis of obtaining linear expressions for the factors in terms of the observed variables, they are effectively weighted to reflect the proportion of total variance accounted for by each factor.

It is very unlikely that any two respondents would have exactly the same profile, but it is probable that the profiles of several respondents would exhibit relative similarity. In other words, it is likely that a number of consumers ascribe similar degrees of importance to the dimensions described earlier when choosing between alternative clothing stores. This suggests that the total number of respondents can be reduced to a smaller number of distinguishable preference groups.

(b) Grouping of factor scores.

The problem of identifying 'natural' groupings of points as distributed in multidimensional spaces was discussed in Chapter 3, and the applicability of various taxonomic procedures in this regard was noted. In the present context a hierarchical grouping programme (FACT HGROUP) was used to aggregate respondents on the basis of similarities in their factor score profiles.

This programme begins by defining each respondent as a group, and then reduces these N (120) groups by a series of step decisions until all N respondents have been classified into one or other of two groups. More specifically, this clustering technique compares a series of N score profiles over a series of K (10) variables and progressively associates them into groups in such a way as to minimise an overall estimate of variation within clusters. In each of the series of steps the technique combines some pair of groups, thus reducing the number of

groups by one in each step. The criterion to determine which pair is to be combined is established on a basis of profile similarity where the total within group variation is the function to be minimally increased at each step in the process. Profile similarity is measured in terms of the distances separating the N points in the k dimensional space, and distances are recomputed after each step.

Any grouping analysis inevitably involves a decision as to how many groups to study. The essential criterion on which to base this decision is the index of cumulative error which increases as the number of groups is reduced in the case of a hierarchical procedure. Examination of the step-wise changes in the value of the error term usually reveals a particular stage(s) where a noticeable error jump occurs. The number of groups defined in the stage preceding this jump is seen to be especially worthy of study since reduction to the next stage would involve a substantially large increase in error. This criterion is normally combined with a consideration of the approximate number of groups required to determine the specific number of groups to be analysed.

In grouping the factor scores in the present analysis, a noticeable jump in the error term was apparent in reducing the number of groups from ten to nine. It was decided therefore to examine the characteristics of the ten groups. Six of these ten groups accounted for all but five of the 120 respondents and attention was concentrated on the profiles of these six groups.

Ideally, the 'representative profile' for a group is obtained by examining the characteristics of the group centroid. Unfortunately, since there was no programme available which defined the group centroid, it was necessary to approximate the centroid by computing the ten mean

factor scores for each group on the basis of the scores of the group members; these are listed in Table IX. Group profiles were then drawn using these mean factor score values and these are shown in Figure 3. Profiles are shown for each of the six groups separately, and they can be compared by examining the superimposed profile graph (figure 3g).

Table IX. Group Mean Factor Scores. *

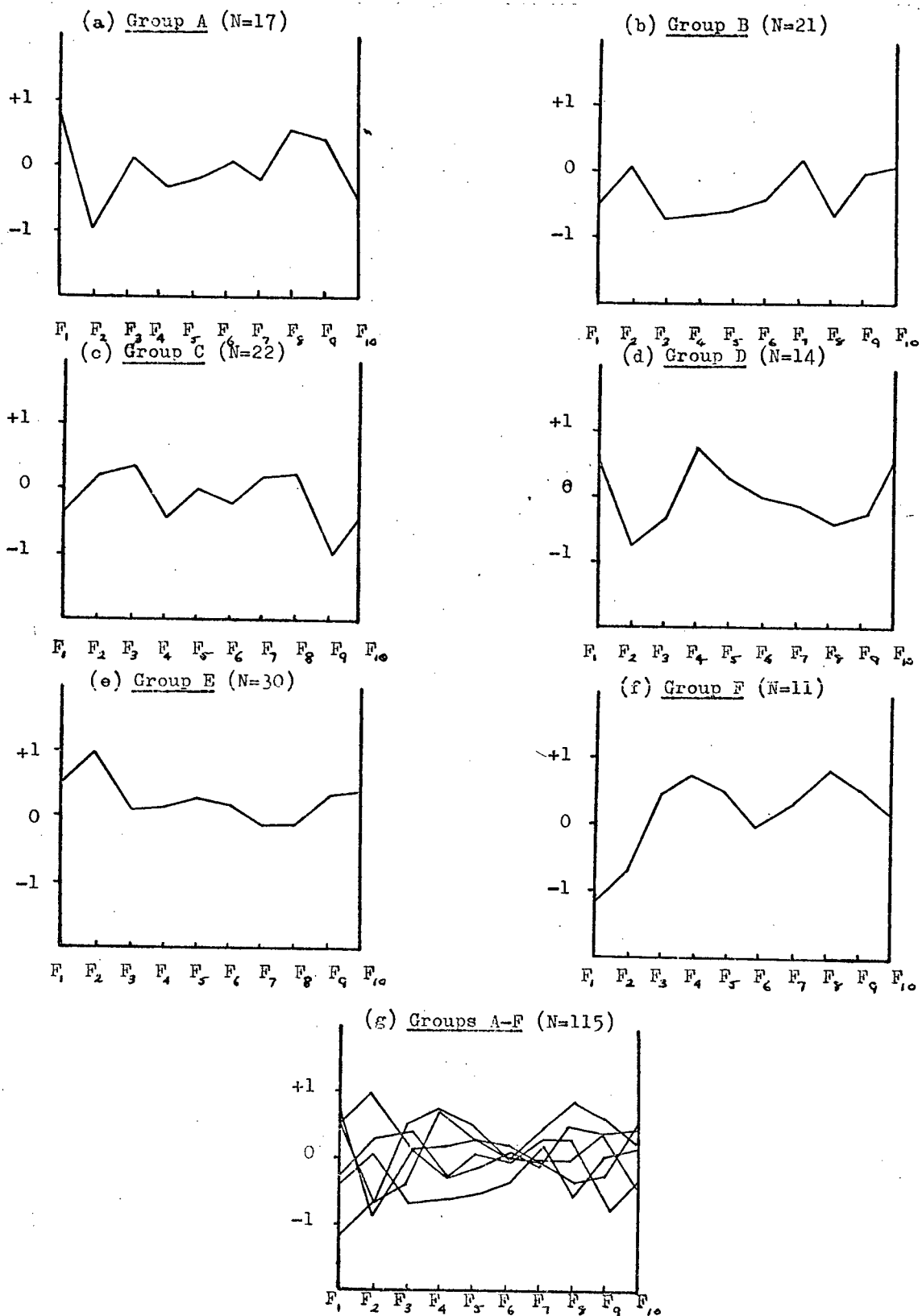
	A	B	C	D	E	F
Factor 1	-0.796	0.599	0.358	-0.494	-0.469	1.212
Factor 2	0.996	-0.042	-0.177	0.757	-0.982	0.723
Factor 3	0.125	-0.747	0.278	-0.317	0.192	0.460
Factor 4	0.392	0.664	0.482	-0.718	-0.217	-0.768
Factor 5	0.178	0.608	-0.055	-0.325	-0.351	-0.507
Factor 6	0.068	-0.444	-0.262	-0.055	0.247	-0.054
Factor 7	0.229	-0.190	-0.118	0.174	0.224	-0.318
Factor 8	-0.550	0.638	-0.135	0.436	-0.200	-0.816
Factor 9	0.399	0.006	-0.955	-0.207	0.310	0.491
Factor 10	-0.620	0.084	-0.376	0.628	0.334	0.187

* In constructing the factor score profiles, the valences of the mean values were reversed for those factors which were negatively defined (ie. factors: 1, 2, 4, 5, 7, 8)

In terms of the factor interpretation outlined above, the major characteristics of the group profiles can be described as follows.

Group 1 respondents attributed positive importance to 'boutiqueness', and 'security', and negative importance to 'cheapness', while being essentially indifferent to 'convenience'; 'reliability', and 'exclusiveness' when selecting a clothing store. Group 2 members attributed negative importance to 'boutiqueness', 'reliability', 'convenience' and 'exclusiveness' and were relatively indifferent to the other dimensions. Group 3 represented individuals who placed positive importance on 'reliability' and negative importance on 'noisiness' and 'boutiqueness'. Group 4 consumers placed positive

Figure 3. Group Profiles.



importance on 'convenience' and to a lesser extent on 'boutiqueness' and negative importance on 'cheapness'. Group 5 members attributed positive importance to 'cheapness' and to a lesser extent 'boutiqueness' 'exclusiveness' and 'convenience'; and Group 6 individuals placed positive importance on 'convenience', 'security' and 'exclusiveness' and negative importance on 'boutiqueness' and 'cheapness'.

It should be recognised, given the method by which factor scores are built, that these profile descriptions necessarily indicate the relative rather than absolute scores of the six groups on the ten preference dimensions.

Examination of Table IX shows that only one of the mean factor scores was greater than ± 1 , which suggests that no extreme differences exist between the group profiles. Nevertheless the group profile diagrams indicate recognisable differences in the preference structures of the six groups.

It is interesting to conjecture to what extent these profiles match intuitive ideas regarding recognisable types of clothing store clientele. The profile of Group 1 seems to characterise the young, fashion-conscious shopper who would regularly frequent boutique stores and be prepared perhaps to forego cheapness and convenience for the sake of being in fashion. At the same time, this type of shopper is likely to place importance on the security attached to a 'money-back guarantee' as a precaution against a 'wrong' decision at the time of purchase.

In certain respects the profile of Group 2 is suggestive of the 'bargain hunter', who prefers lower quality stores. Indicative of this type of shopper is the negative importance placed on consider-

ations of 'reliability' and 'exclusiveness' which commonly characterise high quality stores. A higher score on 'cheapness' might have been expected however to be totally consistent with the preferences of the 'bargain hunter'.

The profile of Group 3 fits that of a nondescript type of shopper, who has few strongly held attitudes about clothing stores, although the aversion to noise suggests a probable avoidance of stores oriented to younger consumers.

In some ways the profile of Group 4 matches that of Stone's 'apathetic' shopper (Stone, 1954), particularly in terms of the importance placed on 'convenience'. In addition, the negative importance attributed to 'cheapness' perhaps suggests an unwillingness to expend any effort to secure a bargain purchase in a lower quality store.

The young 'bargain hunter' seems to match the profile of Group 5 most closely. The greatest importance is placed on 'cheapness' but not to the total neglect of fashion considerations. The 'boutique' chain stores are perhaps most likely to attract this type of shopper.

The profile of Group 6 clearly characterises the older specialty store customer, who is averse to stores which seek to attract a young clientele or which have low quality characteristics, while favouring stores which are 'exclusive' and ensure the shopper's 'security'. It is interesting that importance is also placed on 'convenience', which might suggest that specialty store shoppers expect to find suitable clothing stores near to their homes. This is significant in light of Leigh's observation that certain specialty stores seek locations in areas where their clientele are concentrated or in areas to which they

can be attracted (Leigh, 1965).

Clearly, these thumb-nail sketches are largely intuitive, but they nevertheless suggest that the consumer groups derived in this pilot study are reasonably consistent with recognisable types of clothing store customer. In addition, the conclusions drawn here with regard to the types of store to which each of these groups might be attracted are of interest, although they require validation in the course of further empirical research.

(c) Validation of respondent classification and group differences.

It is possible to validate the classification of respondents obtained from the hierarchical grouping programme and to confirm that significant differences exist between the group profiles using multiple discriminant analysis. This technique provides a measure of the posterior probability of an individual having come from a prespecified group and an associated reclassification of the respondents. Where these probabilities are high and where the reclassification essentially replicates the initial classification, the group membership is validated and the existence of clearly distinguishable differences in the group profile characteristics is confirmed.

Input data in the present analysis consisted of the respondents' factor scores listed in order of group membership. The procedure was to determine the coefficients of the linear combination of input variables which best discriminated between the groups of respondents, in the sense that the between-groups sum of squares was maximised with respect to the within-group sum of squares. The combination of variables obtained in this way is called a discriminant function and was used to reclassify the respondents. The summary classification obtained is shown in Table X.

Table X. Summary Classification obtained from Discriminant Analysis.

Group	A	B	C	D	E	F
A	16	0	0	1	0	0
B	0	21	0	0	0	0
C	0	2	20	0	0	0
D	0	0	0	14	0	0
E	0	0	0	1	28	1
F	0	0	0	0	1	10

Off-diagonal values in this table indicate a misclassified case. On this basis it is apparent that only 6 of the 115 respondents were misclassified, which serves to validate the group composition and to confirm that distinguishable differences exist between the group profiles. This latter condition was further demonstrated by the fact that values in the between group F probability matrix were all found to be zero. These values are a measure of the probability that differences in the profile characteristics of any two groups could have occurred by chance.

Discriminant analysis also indicates the relative powers of the input variables to discriminate between the respondents. Since a stepwise technique was employed (BMD:07M), the order in which the variables were entered into the set of discriminating variables reflects these relative powers. This ordering in turn essentially reflects the initial F values computed for each of the input variables; these are shown in Table XI.

Table XI. Initial F Values of the Input Variables.

Factor 1	20.8578 *
Factor 2	31.2623 *
Factor 3	6.1201 *
Factor 4	13.6332 *
Factor 5	11.6277 *
Factor 6	7.0072 *
Factor 7	1.3797
Factor 8	12.8120 *
Factor 9	10.7124 *
Factor 10	6.7353 *

* significant at .001 probability level, n.d.f. = 5, 109.

It is apparent therefore that nine of the ten input variables were statistically significant in discriminating between the respondents' profiles; the exception being factor 7 which did not assist in discriminating between the profile characteristics. In fact the F probability value ascribed to factor 7 exceeded the critical limit of .051 with the result that this variable was deleted from the set of discriminating variables and therefore did not appear in the subsequent discriminant function. The F values in Table 9 further indicate that the respondents' profiles were found to differ most markedly in relation to factor 2, which, in terms of the conceptual structure of this factor, may signify the contrast between the attitudes of the 'bargain hunter' and of the shopper who regularly patronises 'high quality' specialty stores. Other seemingly important discriminating variables included 'boutiqueness' (factor 1), 'convenience' (factor 4), 'security' (factor 8) and 'exclusiveness' (factor 5).

Different weighted combinations (discriminant functions) of the nine discriminating variables were computed in such a way that they maximally discriminated among the respondents, within the constraint

that they were uncorrelated to one another. It emerged that two major dimensions accounted for approximately 70 per cent of the total dispersion among the respondents. A plot of the first discriminant function (X axis) against the second (Y axis) was obtained and is shown in Figure 4. Scores on these two co-ordinates were computed for each respondent and their position is shown by a letter equivalent to their group. This scattergram also specifies the locations of the group means.

Two general characteristics can be noted: first, the group means are quite close together, particularly in the case of groups A, F, and D; and second, there is subsequently a certain degree of spatial overlap between the groups. Nevertheless, discreet clusters of individuals drawn from the same group are clearly identifiable. The distribution of points on the two dimensions shown in the scattergram tend to confirm previous conclusions regarding the respondents' profile characteristics; these being, that the profiles of individuals drawn from different groups do differ significantly and can be discriminated with minimal misclassification, but that extreme differences in group profile characteristics are not found.

(v) The Relationship of Demographic and Socio-economic Characteristics to Attitude Scores.

In order to determine whether systematic variations existed between the respondents' attitudes towards clothing stores and their demographic and socio-economic characteristics, a correlation analysis was performed. The input data consisted of the respondents' scores on the various demographic and socio-economic items, appearing on page 1 of the questionnaire (see the appendix) and their ten factor scores. The resulting set of correlations are shown in Table XII; demographic and socio-economic variables are listed across the top and the factor dimensions on the side.

Figure 4. Scattergram of respondents on the first two discriminant functions.

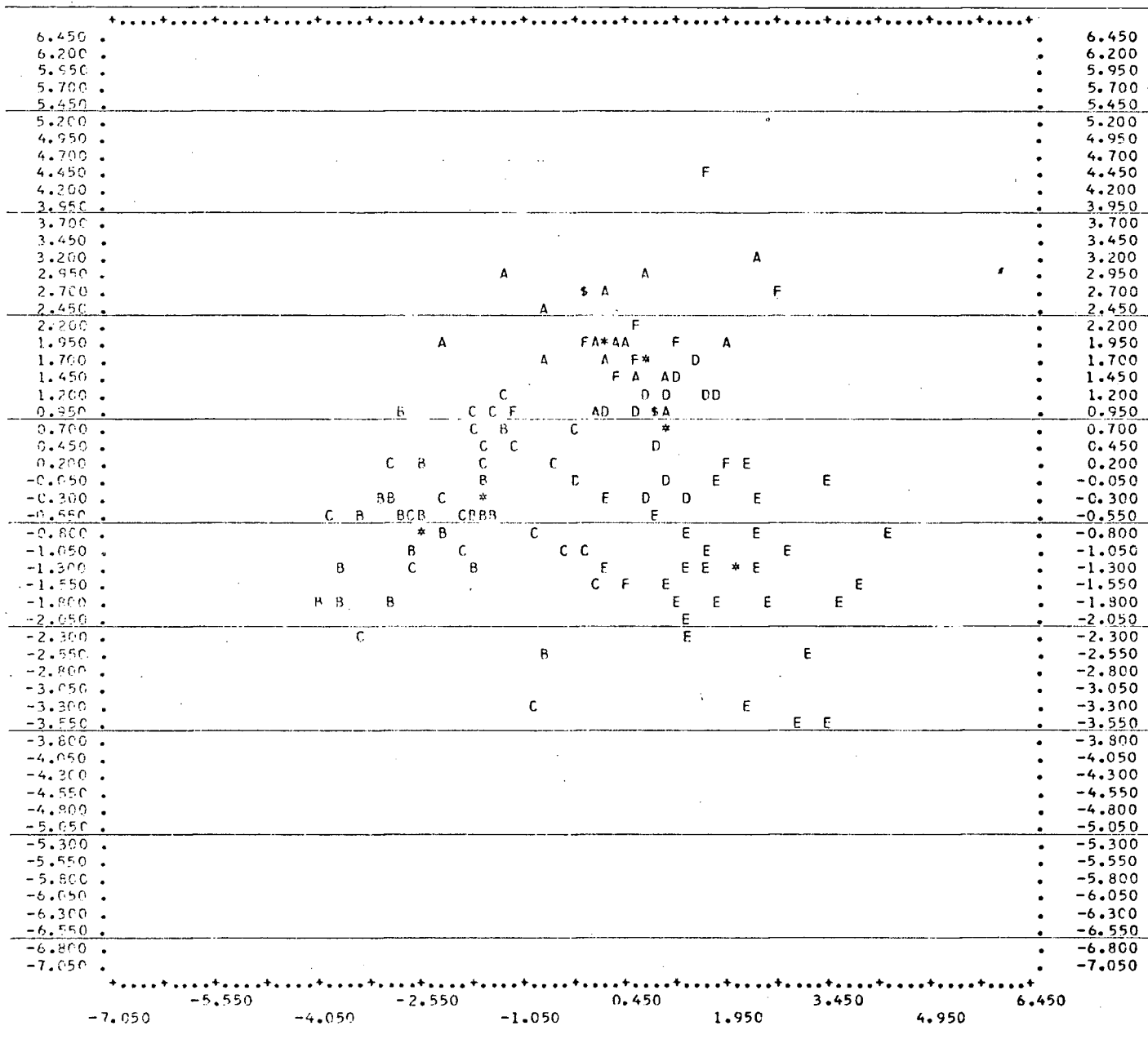


Table XII. Correlations between Demographic Variables and Factor Scores.

	Age	Marital Status	Student	Children	Earnings	Financial Support	Sex	Clothes Spending	Education
Factor 1	-.297 *	-.297 *	-.228	-.265 *	-.258 *	-.061	-.059	.022	-.030
Factor 2	.068	-.039	.059	-.017	.002	-.005	.049	.081	-.045
Factor 3	.205	.219	.172	.140	-.012	.154	.282 *	.180	-.164
Factor 4	.304 *	.227	.223	.234	.028	.047	.040	.108	-.269 *
Factor 5	-.120	-.088	.027	-.093	.011	.021	.154	.154	.045
Factor 6	.082	-.005	.029	-.017	-.058	-.025	.023	.018	-.030
Factor 7	-.172	-.049	-.114	.009	-.019	.074	-.063	-.016	.068
Factor 8	.307 *	.164	.267 *	.196	.140	.061	-.038	.111	-.183
Factor 9	.217	.204	.232	.070	.141	.247 *	.007	.044	-.014
Factor 10	.214	.198	.223	.092	.007	.084	.119	.089	-.061

* significant at the .01 level (n.d.f. = 118)

It is immediately apparent that the correlation values are generally low. Only two values exceed .30, and of the 90 bivariate correlations only 10 are significant at the .01 level.

These ten significant correlations indicate an inverse relationship between age and importance attributed to 'boutiqueness'; a positive relationship between age and 'security'. An inverse relationship was found between marital status and 'boutiqueness', suggesting that married respondents were less likely to place positive importance on this factor. Other significant correlations suggest that female respondents were more likely to place importance on 'reliability'; non-students were more likely to place importance on 'security'; 'boutiqueness' was inversely related to number of children, and also to earnings; 'calmness' was positively related to financial support; and 'convenience' was inversely related to education.

These results, though intuitively reasonable, are to a large extent speculative, given the small size of the sample. In addition, the low values of the correlations is perhaps indicative of the fact that the respondents were relatively homogeneous with respect to the demographic and socio-economic variables measured. This leads to the conclusion that it is necessary to test for relationships between demographic and attitudinal variables using larger and more heterogeneous samples. Only then will it be possible to distinguish causal relationships from spurious correlations.

D. SUMMARY.

The results of the pilot research project described in this chapter provide a tentative indication of the nature of the variables which underlie the selection of clothing stores. It was demonstrated that the complex set of attributes which impinge upon the evaluation of alternative

retail opportunities can be reduced to a smaller number of conceptual dimensions, thus providing a more intelligible view of the structure of consumer store preferences. At the same time, the computation of the respondents' scores on these dimensions facilitates the identification of interpretable consumer groups, each of which exhibits a significantly different preference structure.

The preliminary and exploratory nature of the research described here inevitably leads to a limited set of substantive conclusions. Nevertheless, the research methodology outlined would seem to have important implications for future research investigation, and it is the purpose of the final chapter to indicate what these implications are.

CHAPTER 6
IN RETROSPECT AND PROSPECT:

A. PRELUDE.

Consistent with current developments in the study of human spatial behaviour in geography and the environmental sciences (Harvey 1969, Downs, 1970a, Craik, 1970), a large part of this thesis has involved a conceptual and empirical consideration of the nature of the responses of individuals to a particular environmental setting. The emphasis has been to comprehend the process whereby spatial preferences are formed in the retail environment.

On a conceptual level, it was suggested that this process involves the individual consumer evaluating environmental attributes in relation to his perceptions of them. Although this process is conceptually complex, it has been shown that empirical investigation can succeed in identifying certain basic structural components of preference through the measurement of consumer attitudes towards store characteristics and the subsequent application of multivariate statistical procedures such as factor analysis.

The possibility of analysing environmental behaviour on the basis of measuring the responses of individuals to environmental displays is an intriguing one, which is attracting an increasing amount of research attention in the field of environmental psychology. However, in a geographical context, the measurement of response and the isolation of the conceptual dimensions underlying environmental cognition and evaluation are not to be mistaken for research ends in and of themselves. Rather, this research methodology should be considered as a means to an end which is an enhancement of our abilities to explain human spatial behaviour over and above the capacities of existing models.

In the present context therefore the fundamental question concerns the way in which the measurement of consumer attitudes towards stores can contribute to advancing our ability to explain consumer spatial behaviour.

B. METHODOLOGICAL REFINEMENT.

A fundamental pre-requisite to the achievement of research goals is to further develop and refine techniques for analysing retail preference beyond the preliminary stages described in the previous chapter. Pilot studies of that kind serve a necessary purpose in indicating the nature of the relevant variables to incorporate within the research instrument; the initial item pool is thereby reduced and it is then possible to develop subsequent instruments on the basis of the 'key' variables previously identified.

For the research instrument used in the pilot study, the constructs took the form of short phrase items. It is seen to be desirable in the interests of conceptual precision and intelligibility to express the items in terms of behavioural statements for use in subsequent data collection phases. For example, the item 'trustworthy store' might perhaps be replaced by the statement 'I shop at stores I know I can trust'. Clearly, the scale format would have to change accordingly; rather than a ten point scale of importance, it would be possible to use a five point statement response, ranging from 'strongly agree' to 'strongly disagree' or perhaps from 'always' to 'never'. The respondent would then be required to indicate the extent to which each item was descriptive of his views or of his typical behaviour. This method of measuring environmental attitudes is consistent with the response inventories at present being developed within environmental psychology. (McKechnie, 1970)

By administering a research instrument of this kind to larger and more representative samples than were involved in the pilot study, it will be possible to determine the reliability of the research instrument and to arrive at more definitive conclusions concerning the nature of store preference dimensions and of the variables which critically differentiate between the preferences of individuals and consumer groups. By using this instrument to measure attitudes towards a variety of store environments, it should be possible to assess the stability of preference dimensions across a range of retail functions.

C. FACT OR FICTION.

In seeking to achieve the research goal of theoretical advancement in the field of consumer spatial behaviour, it is not sufficient to be able to demonstrate that the preferences of individuals can be distinguished on the basis of analysing their attitudes towards stores; it is a fundamental necessity to show convincingly that individuals and groups, which differ in terms of their retail preferences, also exhibit different patterns of behaviour. In short, it is necessary to determine the predictive validity of the research methodology; here, the question of interest is whether the attitude scales actually measure what they purport to measure.

Throughout the discussion in previous chapters, the implicit assumption has been made that store preference, as measured in terms of consumer attitudes directly determines store selection behaviour. It is obviously necessary to validate this central assumption empirically. Validation in this context basically involves the testing of two related hypotheses: firstly, that consumers with different preference profiles exhibit different spatial choices; and secondly, that

individuals with similar preferences exhibit similar spatial choices. If it is not possible to reject the null hypotheses in each case then the validity of assuming a strong relationship between attitudinal measures of preference and behaviour is clearly questionable, and the potential usefulness of the research methodology outlined previously is in doubt. Furthermore, the validity of the conceptual analysis of the store selection process within the consumer behaviour literature would require reassessment.

Assuming for the moment that these null hypotheses can be rejected with confidence, it would be relevant to investigate also the implication that variations in store preference and store selection behaviour have with reference to the spatial distribution of retail activity itself. It was pointed out earlier that retail research being undertaken by consultant social psychologists seems to indicate the significance of consumer attitudes as a variable influencing the location of urban retail activity (Gruen and Gruen, 1966 and 1967), and the conclusions of Leigh (1965) and Schiller (1971) concerning the distribution of specialty stores seem also to be relevant in this regard.

In attempting to analyse the relationship between store location and consumer attitudes, it would be necessary as a preliminary to determine the spatial distribution of consumer attitudes within an urban area using areal sampling procedures. If it then appears as though store preference groups can be spatially segregated, there would be some justification for testing for significant differences in the functional structure and environmental characteristics of stores located within or in close proximity to various preference areas. In so doing, it would be necessary to develop a research instrument to

measure characteristics of the retail environment similar to the observation rating scale used by Davies (1968) to test for significant differences between suburban shopping centres.

There is certainly good reason to suppose that the implications of store preference analysis extend beyond the study of consumer spatial behaviour of retail firms. It was noted in the first chapter that, as stores have become critically differentiated from one another, retail consultants have increasingly placed emphasis on the importance of analysing variations in consumer store preferences at alternative locations as a basis for determining the optimum location of the retail firm. It follows therefore that a systematic analysis of the distribution of consumer attitudes and preferences within an urban area is perhaps a necessary endeavour in seeking to develop more accurate explanatory and predictive models of urban retail structure.

In this regard, it is also necessary to undertake an analysis of the decision-making process of the retail firm in order to assess the extent to which information concerning consumer attitudes and preferences has been sought and implemented in determining store location policy. The research methodology developed by Claus (1965), referred to in the first chapter, is indicative of one possible approach to the analysis of retail decision-making, which might be useful in this context.

It is clear therefore that the analysis of the consumer cannot be divorced from an analysis of the retail firm if the significance of consumer behaviour variables within models of urban retail structure is to be properly understood.

D. CONSUMER CHARACTERISTICS AND STORE PREFERENCE.

In Chapter 2, it was suggested that store preferences are formed

as the outcome of interaction between consumer characteristics and store characteristics. In subsequent discussion the concern has largely been to determine the attributes of the store environment which are salient in preference formation; as a result, little consideration has been given to the possible relationship between consumer characteristics and store preference with the exception of the speculative conclusions reached as part of the pilot study described in the previous chapter. The apparent neglect of this relationship is no reflection on its significance.

In Chapter 3, it was maintained that attitude measures provide us with a more adequate theoretical basis for defining store preference groups than do proxy variables related to demographic and socio-economic characteristics of the consumer. Again this is a supposition which requires validation. If it should transpire that attitude variables are consistently highly correlated with demographic and socio-economic indices, it could perhaps be argued that the use of the latter set of variables is preferable in models of consumer spatial behaviour since they are usually more easily and reliably measured. If a consistently high correlation is not found to exist, and if the previously mentioned hypotheses concerning the relationship between store preference and selection have been confirmed, then this would suggest that a detailed analysis of preference structure is a necessary component in spatial behaviour research.

It is significant that in the development of environmental response inventories interest has focussed as much on the psychodynamic meaning of the scales employed as on considerations of predictive validity. (McKechnie, 1970) The question frequently asked therefore is 'what are the personality characteristics of individuals who respond in particular

ways to specified items or sets of items?' Descriptions of the personal characteristics of high scorers on inventory scales have been largely based upon correlations of the scales with such well-known personality tests as the Californian Psychological Inventory (Gough, 1964), the Myers-Briggs Type Indicator (Myers, 1962) and the Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1943).

Analysis of the relationship between personality characteristics and environmental response is an important and essentially unexplored aspect of store preference research. If we accept the premise that preference structure is conditioned by the personal characteristics, then it would seem important to investigate the nature of this relationship in seeking to develop a comprehensive theory of consumer spatial behaviour. This could possibly be achieved by administering personality tests in conjunction with retail response inventories.

E. SYNTHESIS.

It seems increasingly clear that, by choosing to adopt a disaggregated approach to the analysis of consumer spatial behaviour focussing on the process whereby the individual makes decisions within the complexity of the retail environment, many intriguing and potentially productive research avenues are revealed.

In the previous chapters, a cognitive behavioural research methodology has been outlined in both conceptual and empirical terms and it is maintained that the further development and application of this methodology should serve to enhance our ability to develop models of consumer spatial behaviour which combine predictive accuracy with theoretical adequacy, a combination which existing models have essentially lacked as was indicated in the first chapter.

The long term research prospect therefore is seen to be characterised by an expansion and increased sophistication of theory, pertaining to the dynamics of urban retail structure, involving both the behaviour of the consumer and the retail firm. It seems likely that theory development will follow from a synthesis of research endeavour within the behavioural sciences, of which the rapid growth of environmental psychology is a contemporary reflection.

If this thesis has succeeded in presenting an intelligible outline of one possible research methodology by which this anticipated research progress might be furthered, its purpose will have been fulfilled.

LITERATURE CITED

- Allport, G.W., 1935, "Attitudes", in C. Murchison (Ed.), Handbook of Social Psychology, Clark University Press, Worcester, Mass.
- American Marketing Association, 1966, Attitude Research at Sea, Chicago.
- American Marketing Association, 1968, Attitude Research on the Rocks, Chicago.
- Applebaum, W, 1961, "Teaching Marketing Geography by the Case Method", Econ. Geog., vol.37, pp.48-60.
- Arons, L, 1961, "Does Television Viewing Influence Store Image and Shopping Frequency?" Journal of Retailing, vol.37, pp.1-13.
- Bayton, J.A., 1958, "Motivation, Cognition, Learning - Basic Factors in Consumer Behaviour", Journal of Marketing, vol.23, pp.282-289.
- Becker, W.H., 1967, Retail Store Image; A conceptual Approach, Unpublished M.B.A. Thesis, University of British Columbia.
- Berry, B.J.L., 1963, Commercial Structure and Commercial Blight, University of Chicago, Dept. of Geography, Research Paper No.85.
- Berry, L.L., 1968, The Components of Department Store Image: A Study of Three Selected Department Stores in Phoenix, Arizona, Unpublished D.B.A. dissertation, Arizona State University.
- Brown, F, and Fisk, G, 1965, "Department Stores and Discount Houses: Who Dies Next?" Journal of Retailing, vol.41.
- Bucklin, L.P., 1963, "Retail Strategy and the Classification of Consumer Goods", Journal of Marketing, vol.28, pp.51-56.
- Cantril, H, 1934, "Attitudes in the Making", Understanding the Child, vol.4, pp.13-15.
- Carman, J.M., 1965, The Application of Social Class in Market Segmentation, Berkeley, University of California, Institute of Business and Economic Research.
- Carol, H, 1960, "The Hierarchy of Central Functions within the City", Annals of the American Association of Geographers, vol.50.
- Chamberlin, E, 1965, The Theory of Monopolistic Competition, Eighth Edition, Harvard University Press, Cambridge, Mass.
- Christaller, W, 1966, Central Places in Southern Germany, American Edition, Englewood Cliffs, N.J.
- Claus, R.J., 1969, Spatial Dynamics of Gasoline Service Stations, B.C. Geog. Series, No.10, Tantalus Research Ltd.

- Clawson, J, 1950, "Lewin's Vector Psychology and the Analysis of Motives in Marketing", in Reavis Cox (Ed.), Theory in Marketing, Richard D. Irwin, Homewood, Ill., pp.41-63.
- Collazzo, C, 1965, "Effects of Income upon Shopping Habits and Frustrations", Journal of Retailing, vol.41.
- Coombs, C.H., 1950, "Psychological scaling without a Unit of Measurement", Psychological Review, vol.57, pp.148-158.
- Craik, K.H., 1968, "The Comprehension of the Everyday Physical Environment", Journal of the American Institute of Planners, vol.34, pp.29-37.
- Craik, K.H., 1970, "Environmental Psychology", in Craik et al, New Directions in Psychology IV, New York, Holt, Rinehart and Winston.
- Craun, R.M., 1970, "Visual Determinants of Preference for Dwelling Environs", Proceedings of the First Annual Meeting of the Environmental Design Research Association, pp.75-85.
- Crespi, I, 1961, "Use of a Scaling Technique in Surveys", Journal of Marketing, vol.25, pp.69-72.
- Dalrymple, D, and Thompson, D, 1969, Retailing, An Economic View, New York, Free Press.
- Davies, R.J., 1968, "Consumer Income and Small Shopping Centres", Urban Studies, pp.144-164.
- Douglas, J. Field, G, and Tarpey, L, 1967, Human Behaviour in Marketing, Columbus, Ohio, C.E. Merrill Books.
- Downs, R, 1970, "The Cognitive Structure of an Urban Shopping Centre", Environment and Behavior, vol.2 No.1, pp.13-39.
- Downs, R, 1970a, "Geographic Space Perception", in Board, C (Ed.), Progress in Geography 2, London, Edward Arnold.
- Eliot Hurst, M, and Sellers, J, 1969, "An Analysis of the Spatial Distribution of Customers Around Two Grocery Retailing Operations", Professional Geographer, vol.21, pp.184-199..
- Engel, E, Kollat, D, and Blackwell, R, 1968, Consumer Behavior, New York, Holt, Rinehart and Winston.
- Eysenck, H, 1960, "Organisation, Nature and Measurement of Attitudes", in Attitude Scaling, Marketing Research Society, London.
- Fendrich, J.M., 1967, "A Study of the Association Among Verbal Attitudes, Commitment and Overt Behaviour in Different Experimental Situations", Social Forces, vol.45, pp.347-355.
- Fishbein, M. 1967, "Attitudes and the Prediction of Behavior", in Fishbein (Ed.), Readings in Attitude Theory and Measurement, New York, Wiley.

- Fishbein M, 1967a, Readings in Attitude Theory and Measurement, New York, Wiley.
- Fisk, G, 1961, "A Conceptual Model for Studying Customer Image", Journal of Retailing, vol.37, No.4, pp.1-8.
- Frank, R, and Green, P, 1968, "Numerical Taxonomy in Marketing Analysis", in Arndt, J, (Ed.), Insights into Consumer Behavior, Allyn and Bacon.
- Frank, R, Kuehn, A, and Massy, W, 1962, Quantitative Techniques in Marketing Analysis, Homewood, Ill., Richard D. Irwin.
- Fruchter, B, 1954, Introduction to Factor Analysis, New York, Van Nostrand.
- Garner, B.J., 1967, "Some Reflections on the Notion of Threshold in Central Place Studies", Paper presented at the Association of American Geographers Meetings, St. Louis.
- Gayler, H, (forthcoming), Social Class and Consumer Spatial Behaviour, Ph.D. Thesis, University of British Columbia.
- Golledge, R, 1967, "Conceptualising the Market Decision Progress", Journal of Regional Science, vol.7, pp.239-258.
- Golledge, R, 1970, "Process Approaches To The Analysis of Human Spatial Behavior", Ohio State University, Dept. of Geography, Discussion Paper No.16.
- Gough, H.G., 1964, Manual for the California Psychological Inventory, Palo Alto, California, Consulting Psychologists Press.
- Green, P, and Carmone, F, 1970, Multidimensional Scaling and Related Techniques in Marketing Analysis, Allyn and Bacon.
- Gruen, Cm and Gruen, N.J., 1966, "Store Location and Customer Behavior", Urban Land Institute Technical Bulletin 56.
- Gruen, C, and Gruen, N.J., 1967, "A Behavioral Approach to Determining Optimum Location for the Retail Firm", Land Economics, vol.43, pp.320-327.
- Guilford, J.P., 1954, Psychometric Methods, New York and London, McGraw Hill.
- Haggett, P, 1965, Location Analysis in Human Geography, London, Edward Arnold.
- Hamill, L, 1965, "Are Formal Theories Needed in Marketing Geography?", Professional Geographer, vol.17, No.2, pp.11-13.
- Harman, H, 1967, Modern Factor Analysis, University of Chicago Press.
- Harman, H, 1968, "Factor Analysis", in Whitla, D, (Ed.), Handbook of Measurement and Assessment in the Behavioral Sciences, Addison-Wesley.

- Harvey, D, 1969, "Conceptual and Measurement Problems in the Cognitive-Behavioral Approach to Location Theory", in Cox, K, and Golledge, R, (Eds.), Behavioral Problems in Geography, Northwestern University Studies in Geography, No.17.
- Hathaway, S, and McKinley, J, 1943, Manual for the Minnesota Multiphasic Personality Inventory, New York, Psychological Corporation.
- Heller, H, 1968, "Defining Target Markets by Their Attitude Profiles", in A.M.A., Attitude Research on the Rocks, Chicago.
- Hershberger, R, 1970, "A Study of Meaning and Architecture", Proceedings of the First Annual Meeting of the Environmental Design Research Association, pp.86-99.
- Horton, F, 1968, "Location Factors as Determinants of Consumer Attraction to Retail Firms", Annals of the Association of American Geographers, vol.58, pp.787-801.
- Hotelling, H, 1933, "Analysis of a Complex of Statistical Variables into Principal Components", Journal of Educational Psychology, vol.24, pp.417-441, 498-520.
- Howard, J, 1963, Marketing Management Analysis and Planning, Homewood, Ill., Richard D. Irwin.
- Huff, D, 1961, "Ecological Characteristics of Consumer Spatial Behaviour", Papers and Proceedings of the Regional Science Association, vol.7, pp.19-28.
- Huff, D, 1962, Determination of Intra-Urban Retail Trade Areas, University of California, Los Angeles, Real Estate Research Program.
- Huff, D, 1963, "A Probabilistic Analysis of Consumer Spatial Behavior", in Decker, W, (Ed.), Emerging Concepts in Marketing, Chicago, A.M.A., pp.443-461.
- Hughes, G, 1966, "Developing Marketing Strategy through Multiple Regression", Journal of Marketing Research, vol.3, pp.412-415.
- Johnson, R, 1971, "Market Segmentation: A Strategic Management Tool", Journal of Marketing Research, vol.8, pp.13-18.
- Jonassen, C.T., 1953, "Downtown versus Suburban Shopping", Columbus, Ohio, Bureau of Business Research, Ohio State University, Special Bulletin No.X-58.
- Kaiser, H, 1958, "The Varimax Criterion for Analytical Rotation in Factor Analysis", Psychometrika, vol.23, pp.187-200.
- Kates, R, 1967, "The Perception of Storm Hazard on the Shores of Megalopolis", in Lowenthal, D, (Ed.), Environmental Perception and Behavior, University of Chicago, Dept. of Geography, Research Paper 109, pp.60-74.
- Katona, G, 1953, "Rational Behavior and Economic Behavior", Psychological Review, vol.60, pp.307-318.

- Katz, D, 1960, "The Functional Approach to the Study of Attitudes", Public Opinion Quarterly, vol.24, pp.163-204.
- Kelvin, R, 1960, "Rational and Irrational Factors Determining Consumer Attitudes", in Attitude Scaling, London, The Market Research Society, pp.30-34.
- Kenny-Levick, C, 1969, "Consumer Motivations: Examples from the Grocery Trade", British Journal of Marketing, pp.2-8.
- Kerlinger, F, 1964, Foundations of Behavioral Research, New York, Holt, Rinehart and Winston.
- Khoo, S, 1968, The Use of Projective Techniques in Consumer Attitude Research, Unpublished M.B.A. Thesis, University of British Columbia.
- Kornblau, C, 1968, Guide to Store Location Research, Addison-Wesley.
- Kotler, P, 1967, Marketing Management: Analysis, Planning and Control, Englewood Cliffs, N.J., Prentice Hall.
- Kunkel, J. and Berry, L, 1968, "A Behavioral Conception of Retail Image", Journal of Marketing, vol.32, pp.21-27.
- LaPiere, R, 1934, "Attitudes versus Actions", Social Forces, vol.13, pp.230-237.
- Leigh, R, 1965, Specialty Retailing: A Geographis Analysis, B.C. Geog. Series, No.6, Tantalus Research.
- Levy, S, 1959, "Symbols for Sale", Harvard Business Review, vol.37, pp.117-124.
- Levy, S, 1964, "Symbolism and Life Style", in Greyser, S, (Ed.), Toward Scientific Marketing, Chicago, A.M.A., pp.140-150.
- Levy, S, 1966, "Social Class and Consumer Behavior", in Newman, J, (Ed.), On Knowing the Consumer, Wiley, pp.146-160.
- Losch, A, 1954, The Economics of Location, New Haven, Yale.
- Lynch, K, 1960, Image of the City, Cambridge, Mass., Harvard University Press.
- Martineau, P, 1958, "The Personality of the Retail Store", Harvard Business Review, vol.36, No.1, pp.47-55.
- Martineau, P, 1957, Motivation in Advertising, New York, McGraw Hill.
- Martineau, P, 1958a, "Social Classes and Spending Behavior", Journal of Marketing, vol.23, No.2, pp.121-130.
- McKeachie, W, and Doyle, C, Psychology, Addison-Wesley.

- McKechnie, G, 1970, "Measuring Environmental Dispositions with the Environmental Response Inventory", Proceedings of the Second Annual Meeting of the Environmental Design Research Association, pp.320-326.
- Mindak, W, 1961, "Fitting the Semantic Differential to the Marketing Problem", Journal of Marketing, vol. 25, pp.28-33.
- Murphy, P, 1970, A Study of the Influence of Attitude, as a Behavioral Parameter, on the Spatial Choice Patterns of Consumers, Ph.D. Thesis, Ohio State University.
- Murphy, P, and Golledge, R, 1971, "The Position of Attitude Theory and Research as a Potential Variable in Urban Geography Research", paper presented at the Annual Meeting of the Western Division of the C.A.G. in Vancouver.
- Myers, I, 1962, Manual for the Myers-Briggs Type Indicator, Princeton, N.J., Educational Testing Service.
- Myers, J, and Nicosia, F, 1968, "On the Study of Consumer Typologies", Journal of Marketing Research, vol.5, pp.182-193.
- Nader, G, 1969, "Socio-Economic Status and Consumer Behaviour", Urban Studies, pp. 235-244.
- Nelson, B, 1962, "Seven Principles in Image Formation", Journal of Marketing, vol.26, pp.67-71.
- Nicosia, F, 1966, Consumer Decision Processes, Englewood Cliffs, Prentice Hall.
- Osgood, C, 1965, "Cross-cultural Comparability in Attitude Measurement", in Steiner and Fishbein (Eds.), Current Studies in Social Psychology, New York, Holt, Rinehart, and Winston.
- Peterson, G, Bishop, R, and Neumann, E, 1970, "The Quality of Visual Residential Environments", Proceedings of the First Annual Meeting of the Environmental Design Research Association, pp.101-114.
- Pred, A, 1967, Behavior and Location Part I, Sweden, The Royal University of Lund.
- Pred, A, 1969, Behavior and Location Part II, Sweden, The Royal University of Lund.
- Preiser, W, 1970, "Behavioral Design Criteria in Student Housing", Proceedings of the First Annual Meeting of the Environmental Design Research Association, pp. 243-259.
- Progressive Grocer, 1965, Colonial Study, New York.
- Proudfoot, M, 1937, "City Retail Structure", Economic Geography, vol.13.
- Rachman, D, 1969, Retail Strategy and Structure - A Management Approach, Englewood Cliffs, Prentice Hall.

- Ratcliff, R, 1949, Urban Land Economics, New York, McGraw Hill.
- Reilly, W, 1931, The Law of Retail Gravitation, New York, Putman.
- Rich, S, and Portis, B, 1964, "The 'Imageries' of Department Stores", Journal of Marketing, vol.28, pp. 10-15.
- Richards, E, 1957, "Commercial Application of Guttman Attitude Scaling Techniques", Journal of Marketing, vol.22, pp.166-173.
- Rothwell, D, 1970, Vancouver Gasoline Market, M.A. Thesis, University of British Columbia.
- Rushton, G, 1969, "Temporal Changes in Space Preference Structures", Proceedings of the American Association of Geographers, pp.129-132.
- Schiller, R, 1971, "Location Trends of Specialist Services", Regional Studies, vol.5, pp.1-10.
- Schlesinger, F, 1963, "John's Bargain Stores", The New York Retailer.
- Simmons, J, 1964, The Changing Pattern of Retail Location, Chicago, University of Chicago, Dept. of Geography, Research Paper No.92.
- Sokal, R, and Sneath, P, 1963, Principles of Numerical Taxonomy, San Francisco, Freeman and Co.
- Stephenson, W, 1963, "Public Images of Public Utilities", Journal of Advertising Research, vol.3, pp.34-39.
- Stone, G, 1954, "City Shoppers and Urban Identification", American Journal of Sociology, vol.59, pp.36-45.
- Thompson, D, 1966, "Future Directions in Retail Area Research", Economic Geography, vol.42, No.1, pp.1-18.
- Thurstone, L.L., 1947, Multiple Factor Analysis, Chicago, University of Chicago Press.
- Wasson, C, and McConaughy, D, 1968, Buying Behavior and Marketing Decisions, New York, Appleton-Century-Crofts.
- Weale, W, 1961, "Measuring the Customer's Image of a Department Store", Journal of Retailing, vol.37, pp.40-48.
- Winkel, G, Malek, R, and Thiel, P, 1970, "A Study of Human Response to Selected Roadside Environments", Proceedings of the First Annual Meeting of the Environmental Design Research Association, pp.224-240.
- Yuill, R, 1967, "Spatial Behavior of Retail Customers; Some Empirical Measurements", Geografiska Annaler, vol.49B, No.2, pp.105-115.

APPENDIXCONSUMER ATTITUDE SURVEYADDRESS:

_____ hundred block

_____ street

_____ city

AGE: _____

For the following items record your answers under the appropriate heading:

SINGLE PERSONS
ONLY (1)_____ male _____ female
(1) (2)_____ student _____ other
(1) (2)If 'other' please specify occupation:

Approx. earnings/year

\$ _____

Approx. financial support
from family/year

\$ _____

Estimated annual spending
on clothing goods

\$ _____

MARRIED PERSONS
ONLY (2)_____ male _____ female
(1) (2)_____ student _____ other
(1) (2)If 'other' please specify occupation:

Number of children _____

Approx. earnings/year

\$ _____

Approx. financial support
from family/year (incl. spouse)

\$ _____

Estimated annual spending
on clothing goods

\$ _____

EDUCATION COMPLETED TO DATE: (check the appropriate item)

some high school	()	(1)
graduated from high school	()	(2)
some university	()	(3)
graduated from university	()	(4)
postgraduate work	()	(5)

ITEM RATINGS:

In the space provided, rate the following items in terms of their importance for you when choosing a store at which to make major clothing purchases. Items should be rated on a scale ranging from 1 to 10, where 1 indicates an item of least or no importance, and 10 an item of greatest importance; for example, if you think an item is somewhat important you might want to rate it in the following way:

easy to return goods

6

In the case of items likely to make you decide against a store, the rating should be preceded by a minus sign (-).

SMT/UBC/MARCH 71.

*Holding a <u>charge account</u> at the store	___ Stylish goods	___
*Stock of <u>fashionable goods</u>	___ Aggressive assistants	___
*No pressure on <u>time payments</u>	___ *Convenient for <u>parking</u>	___
Impersonal attitude of assistants	___ *Favourable past <u>experience</u>	___
*Convenience to <u>home</u>	___ *Attractive <u>window display</u>	___
Failing to stock correct size	___ *Range of <u>medium priced goods</u>	___
Ease of obtaining charge account	___ *Being <u>left alone</u> to browse	___
Inconvenient location	___ *Empty <u>store</u>	___
Easy to return goods	___ Store which stands behind its goods	___
Personnel oriented to the young	___ Mature assistants	___
* <u>Insincerity</u> of sales-staff	___ Exclusive atmosphere	___
Good quality products	___ Stock of Japanese goods	___
*Well <u>organised layout</u>	___ Heavily advertised	___
* <u>Cheap atmosphere</u>	___ Standardized items	___
* <u>Stocking correct size</u>	___ Mixed lighting	___
*Interested <u>personnel</u>	___ Young window models	___
* <u>Money-back guarantee</u>	___ Airy atmosphere	___
* <u>Crowded store</u>	___ *Concise <u>arrangement</u> of goods	___
* <u>Sale offers</u> /special promotions	___ Convenient for bus	___
* <u>Atmosphere oriented</u> to the <u>young</u>	___ *Trustworthy <u>store</u>	___
Being recognised by the assistants	___ *Well written <u>signs and labels</u>	___
*Good <u>value for money</u>	___ Unpartitioned shop-floor	___
Bad experience of self/friends	___ *Rushed <u>selling</u>	___
Post-purchase satisfaction	___ *Major retail <u>organizations</u>	___
* <u>Selection of goods</u>	___ Chrome-plated fittings	___
* <u>Disorganised layout</u>	___ Frequent sales offers	___
Being able to try on goods at home	___ Self-service operation	___
* <u>Advertised goods</u>	___ *Bargain <u>basement atmosphere</u>	___
* <u>Quiet store</u>	___ Checking in/out of dressing rooms	___
* <u>Tasteful displays</u>	___ *Knowledgeable <u>assistants</u>	___
Elderly assistants	___ *Good <u>reputation</u>	___
*Well <u>carpeted store</u>	___ Stock of suitably styled goods	___
Too expensive goods	___ *Being able to <u>feel anonymous</u>	___
Good lighting	___ Price of goods	___
* <u>Reliable pricing</u>	___ Familiarity with a store	___
Store located in pleasant area	___ Ease of sorting through items	___
* <u>Rock music playing</u>	___ Colourful displays	___
Stock of non-standardized goods	___ Exclusively designed items	___
* <u>Small store</u>	___ Guaranteed post-purchase services	___
Multiple purchasing opportunities	___ *Location near other <u>stores frequented</u>	___
Narrow aisles between racks	___ Sincere personnel	___
Clearly tagged items	___ *Expenditure on <u>decor</u>	___
*Stock of <u>British goods</u>	___ Good provision of mirrors	___
* <u>Modern store</u>	___ *Spacious <u>layout</u>	___
* <u>Salon-type atmosphere</u>	___ *Ease of finding type of good sought	___
Bullying by other customers	___ Background music	___
Peer group personnel	___ Display suggestive of bargains	___
Wooden racks	___ Poor store services	___
Independently operated store	___ *Large <u>price tags</u>	___

Specialty store	Assistants unperturbed by no-sale
* <u>Cluttered display</u>	* <u>Misleading advertising</u>
Very wide selection	Very modern store
* <u>Use of dull colours</u>	No opportunity to try on goods
* <u>Well-made items</u>	* <u>Partitioned layout</u>
Assistants near-at-hand	* <u>Jumbled arrangement of goods</u>
Attractive displays	Well-spaced racks
* <u>Convenient to workplace</u>	Having to pay for decor
Colour of goods stocked	Disinterested clerks
Non-pressurizing assistants	Complementary items on display
Conservative style of goods	Not being allowed to browse
Amateurishly printed signs/labels	Low quality merchandise
Location in depressing area	* <u>Old established-looking store</u>
Very quiet store	Goods scattered over a wide area
Confusing display	* <u>Harsh lighting</u>
Coats arranged around walls	Texture of goods
Ease of exit	Professional sales-staff
Air-conditioned store	Store with a dominant smell
* <u>Casually dressed sales-staff</u>	* <u>Poor service</u>
Discretely priced goods	* <u>Clean store</u>
* <u>Close scrutiny by assistants</u>	Comprehensive display of goods
Noisy store	* <u>Location in quality area</u>
Luxurious setting	Near bankrupt store
One-floor store	Old stock
Delivery service	'Modish' assistants
* <u>Calm atmosphere</u>	* <u>Feeling conspicuous</u>
* <u>Exclusively tailored items</u>	Prominent display of selected items
Desirable items in the window	* <u>Style of packaging</u>
Clerks dressed in line with your taste	Easily distinguishable personnel
Use of attractive models	* <u>Nice dressing rooms</u>
* <u>Items made from quality materials</u>	Off the ground floor
* <u>Boutique-type store</u>	* <u>Dirty store</u>
Cramped layout	* <u>Interesting display</u>
Assistants with pleasing personalities	Selective buying by the store
Stock of brand-name goods	* <u>Young personnel</u>
Suspicious atmosphere	Empty store
Centrally located store	Subdued lighting

* Indicates the input variables used in the factor analysis. Abbreviations used in Table VII (p.102) are underlined.