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The student food shopper

Segmentation on the basis of attitudes to store features and shopping behaviour

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Abstract Although students have several characteristics in common with the 18-24 year old youth group, they have many distinguishing features and merit consideration as a separate segment. Yet very little academic research has looked at the student market although over recent years commercial marketers have begun to take more interest in this group. The paper reports the results of a study of student food shopping behaviour. It is concerned especially with establishing the dimensions underlying the importance that students attach to supermarket store attributes, exploring the existence of student segments and subsequently, to profile the segments in terms of shopping behaviour and attitudes to store features. The empirical results indicate that there are four dimensions that underlie the importance of store features. These are defined respectively as economy, finance, products, personnel and access. Subsequently, two clusters are identified. The cluster profiles indicate that the clusters are distinguished by their financial situation.

Introduction

The paper reports the results of a study of student food shopping behaviour. In particular, consideration is given to the issue of the role of supermarket food shopping and the emphasis that is placed on supermarket store features. Hence the tone of the piece is set in the context of store image research. The aim of the study is to establish the dimensions underlying the importance that students attach to supermarket store features, to explore the existence of student segments and subsequently, to profile the segments in terms of shopping behaviour and attitudes to store features.

Students face the general problem of allocating scarce financial resources to a series of competing obligations and passions such as accommodation, food, clothes, course requirements and leisure. As a segment they are quite an important group with many of the attitudes and behavioural characteristics that are typical of the 18-24 year olds, who have been the subject of much marketing activity. However, they are different in many of their characteristics from their 18-24 year old non-student peer group.

In cities where there may be at least two universities student numbers run into thousands and clearly, will have an impact on local economies. Research conducted by Lincoln *et al.* (1995) estimated the multiplier effects of student expenditure in the city of Newcastle, the region of Tyne and Wear and the north east region. They estimated that the total impact on the city of Newcastle



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of expenditure of students from the two respective universities of Newcastle and Northumbria lay between £167.4 and 184.6 million.

The structure of the article is as follows. The section that follows presents background material on the student shopper and proceeds to develop the theme of store image and associated issues. This is followed by a description of the research methodology. The fourth section presents the empirical results and the paper concludes with some summary comments in which the results are drawn together and some marketing implications are identified.

The student shopper

Student food shopping has not been a popular area for academic research. However, over the last five years or so there has been an emerging interest in the student population by commercial marketers. Students are regarded as a prospective target for current marketing activity and as a potentially lucrative segment with which to form longer term marketing relationships (Jenkinson, 2000). Given this objective, commercial marketers have focussed on student lifestyle characteristics and subsequently, on targeting student segments. These are the issues that are addressed in the following sub-sections.

Student lifestyle characteristics

Within the UK there are currently 1.9 million students, representing a combined spending power of £10 billion per annum (Jenkinson, 2000). Within the cohort of full-time undergraduate students, 85 per cent are in the 18-24 year old age group, predominantly in the ABC1 social class categories. Consequently, apart from their numbers and spending power, they also are regarded as a "feeder group" to the 18-24 year old youth market of which they constitute around 30 per cent (Jenkinson, 2000). As Jenkinson reports, "what [*products*] will work with them [*students*] nine times out of ten will work outside of campus" (Jenkinson, 2000, italics added).

According to Mintel (1999a), lack of money is a pervasive problem for students. Student funding comes from a variety of sources including student loans, LEA grants, parents and relatives, part-time work, investments and savings, full-time work and sponsorship. Qualitative research conducted by Mintel (1999a) identifies five student segments, based upon two dimensions concerning respectively, the degree of responsibility for their own funding and, the extent of cash constraints imposed upon them from fund providers.

On this basis the segments are defined and characterised as:

- "*Smugly Sheltered*". Financed entirely by parents without cash constraints.
- "*Trust Fund Kids*". Financed from investments or sponsorship.
- "*Strongly self-sufficient*". Self-supporting, no parental support.
- "*Independent but cushioned*". Financed from a variety of sources and parental support.
- "*Parentally restricted*". Parental support but inadequate for social needs.

According to the National Union of Students Services (NUSSL), per capita student expenditure is £4,796 per annum (Arnold, 1998). Current estimates of expenditure by Jenkinson (2000) indicate that about 46 per cent of annual expenditure is allocated to accommodation (27.9 per cent) and food (17.6 per cent). Accommodation has an important influence on food shopping. Most students live away from home, typically spend their first year in university accommodation and move into rented accommodation in their second and subsequent years. Once this move is made, students move increasingly to an independent lifestyle, which implies that they need to acquire life skills, including those related to food shopping and meal provisioning (Mintel, 1999a). A further point of interest is that even those students in university accommodation may spend a higher proportion of their budget on food because they may miss catered meals. Typically this may occur because of course and social commitments or because of distaste for the food on offer.

Faced with the responsibility to organise their own food provisioning the options are typically to rely on fast food or meals prepared in the home. Fast food is cheap and easy and means that students can avoid the responsibility of cooking or to avoid catered food. Overall, about one-third of all students are heavy to medium users of fast food restaurants, eating fast food at least two to three times per month, compared to a figure of one-quarter for their non-student peer group. Male students in the first year of their course are particularly heavy users of fast food whilst male students in general admit to a lack of interest or ability in cooking (Mintel, 1999a).

With respect to cooking students distinguish themselves further from their non-student peer group. Whereas 46 per cent of students love cooking, only 40 per cent of non-students have the same attitude. This may be due to greater necessity or because of greater opportunity because students are more likely to live away from home. Cooking in rented accommodation takes on a role of a communal social activity with flatmates taking turns to prepare meals and to learn about, and experiment with, recipes and ingredients. Male students who take an interest in cooking tend to be interested in sport and are thus more conscious of the role of diet and nutrition (Mintel, 1999a).

In this respect students in general are more conscious of diet and health issues compared with their non-student peers. For example students are more likely (31 per cent compared to 23 per cent) to think that they follow a healthy diet and it is interesting to note that the distinction is particularly marked between male student and non-student groups (43 per cent compared to 34 per cent). Furthermore, just under one-third of students follow a pure or mainly vegetarian diet compared to under one-quarter of the non-student group. However within the student group there are marked differences on the basis of gender. For example four times (18 per cent compared to 4 per cent) as many female as male students are pure vegetarian and three times (47 per cent compared to 16 per cent) as many are pure or mainly vegetarian (Mintel, 1999a).

Targeting the student market

Students present marketers with the opportunity to catch consumers at a critical point in their life cycle (Bridges, 1995). Further to this is the prospect of building long-term marketing relationships with students. As Jenkins (2000) points out, "for the first time, students provide advertisers with a rare opportunity, as it is during these years that students will develop many of their opinions and preferences which they will keep throughout their lives" and, they are the high earners of the future (Arnold, 1998).

As a market segment, students may present marketers of some products or services with problems of accessibility. They are nomadic, living in one place but studying in another (Jenkinson, 2000). MacMillan (1995) for example reports that 87 per cent of all students in higher education are living away from home for the first time. They tend to be insulated from conventional targeting and brand communication strategies by virtue of their campus-based lifestyle (Jenkinson, 2000). Consequently, they typically do not spend a great deal of time watching television or listening to radio, and their magazine and newspaper purchases are light (Beattie, 1997). This is the reason why many firms, apart from banks and building societies, had avoided targeting students because they were perceived as being "difficult to reach and notoriously fickle" (MacMillan, 1995). More recently it has been noted that fmcg manufacturers have been slow to exploit the opportunity to reach this segment (Jenkinson, 2000).

In terms of their characteristics, research conducted by Reaction UK, a youth targeting research agency, revealed that students are sophisticated consumers, are as loyal to brands as other consumers and that only 23 per cent of the 18-24 year old group are motivated by price (*Precision Marketing*, 1996). Although students are regarded as a "feeder group" to the general 18-24 year old age group, recent research, conducted for Britvic Soft Drinks on student shopping, contributes further to understanding some distinct student characteristics. For example they are "incredibly" brand conscious in image-led markets such as soft drinks, alcohol and cigarettes compared to their non-student peer group. They also do not like to wait for a reward but like immediate deals such as special offers. Furthermore they prefer easy options such as linked promotions (Jenkinson, 2000).

The high street banks and building societies have courted the student market for some years with special deals, overdrafts, music vouchers and CDs, and free credit cards. For them the reward lies in the long-term benefits of customer retention, specifically the prospect of a lifetime of mortgages, loans and higher income salaries (Bridges, 1995; Beattie, 1997). Other national initiatives are linked to British Rail, Original Clothing Stores, BT and the Firkin Brewery (MacMillan, 1995).

Other sectors have been slower to seize the opportunity but the last five years have seen the introduction of several initiatives. In general students benefit from a whole series of high street discounts linked to the NUS card. In 1995 Tesco introduced the Student Clubcard while Virgin introduced a Student

Card discount scheme for music, records and T-shirts. Further initiatives have been taken by NUSSL, in association with sample bags (SUBs) which are sent out three times per year containing a whole series of samples and money-off coupons for a variety of products and services (MacMillan, 1995; Bridges, 1995). In 1989 four former students introduced *The Student Pages*, a listing of national and local businesses that offer special deals.

Store image

Store image management is concerned with the congruity between the image desired by the store and that perceived by its targeted customers or in a wider context, its publics (Omar, 1999). The store-managed image may be viewed as a consequence of its retail strategy, how the store is positioned relative to customers and competitors, location, merchandise, atmosphere and the marketing mix elements. The distinction between the image desired by retailers and that perceived by consumers is well established. Vescovi (1995) for example investigated the "Double Image" for bookstores in three European locations and found that the double image did indeed exist and that retailers' evaluations of store image were higher than those of their customers. A marketing orientation places the customer at the heart of the business. Hence the discussion in this section concentrates on consumer perceptions of store image.

The beginning of store image research is commonly attributed to Martineau (1958) who, according to Pessemier (1980) was one of several authors to apply psychological research to business contexts. The consensus of academic research accepts that store image is a multi-dimensional concept (McGoldrick, 1990). The components of store image are a series of relevant features that are linked to functional and psychological attributes that define the store in the shopper's mind (Martineau, 1958). Oxenfeld (1975) follows this theme with the suggestion that store image is composed of factual and emotional material. That is, customers may hold factually based opinions that enables them to summarise their feelings about a store and to compare one store with others.

Martineau (1958) suggested that stores might achieve differential advantage by matching store image with shopper self-image. Shoppers would be expected to shop in stores that have a good image. That is, one that differentiated from competitors and approaches a hypothetical ideal for the sector. Hence retail marketers need to understand how to position the store within its sector to satisfy the expectations of its target shoppers. As Martineau reports, a store cannot be all things to all people, which implies the need to understand the characteristics and attitudes of its target shoppers.

Hence, store image management would be expected to direct its efforts to the identification and manipulation of those store attributes that are held most important in its target market in an attempt to approach an ideal. Thus there may be a conflict in the attainment of a differentiated store image yet one that conforms to an ideal for the sector.

The concept of store image management attempts to create customer satisfaction, induce greater loyalty and patronage. Differential advantage may

be gained by achieving a match between store image and the customer's self-image. This is related to the customer's self-esteem needs and self-consistency needs. Self-esteem needs are those that facilitate the achievement of personal goals and that maintain or increase positive self-regard. Self-consistency needs are those related to the person's need to act in a way, which is consistent with their self-perceptions. Where store image is successful self-esteem needs and self-consistency needs are met and the store image matches self-image.

A further issue concerns shopper's motivation. Omar (1999) reports that much research has concentrated on motives for purchasing products or in choosing one store over another. However, Tauber (1972) introduced the notion that there may be other motives behind shopping apart from that concerned with provision (role playing). In other words, that shopping *per se* could be considered as an activity that delivers satisfaction in its own right. He subsequently identified a series of personal and social motives linked to shopping activity. Thus the motive for shopping as a provider (role playing) is supplemented by other motives such as recreation (diversion), alleviation of boredom (self-gratification), to learn of new ideas and products (learning), as a means of exercise (physical activity) and to stimulate senses (sensory stimulation).

In addition to these personal motives Tauber also identifies five social motives. So, for example shopping may be identified as providing an opportunity to enjoy social interaction with others (social experience) or to exploit the opportunity to interact with a desired peer group (peer group attraction). Further motives are identified as the opportunity to interact and communicate with staff and customers who share common interests (communication) or to enjoy being the centre of attention in a shopping situation (status or authority). Finally there is also the enjoyment that comes from the opportunity to negotiate and haggle over shopping deals and to find bargain buys.

Various studies have attempted to profile shopper typologies based on behaviour, motivation, or attitudes (McGoldrick, 1990). For example Stone (1954) identified four different types of shoppers. The first is the "economic" shopper who seeks value in terms of time and money. The second type is categorised as the "personal" shopper who seeks a high degree of interaction and personal attention. The "ethical" shopper seeks to patronise certain stores and to purchase types of products compatible with personal ethical standards. Finally, the "apathetic" shopper is disinterested in the whole process of shopping. Several studies have since contributed to this particular research theme. For example Reid and Brown (1996) cite ten studies conducted over the period 1954-1992. McGoldrick (1990) reports that some emphasis has been given to the four typologies ("convenience", "recreational", "price-bargain" and "store-loyal") identified by Stephenson and Willett (1969). In a study of the grocery sector, Williams *et al.* (1978) identified "apathetic", "convenience", "price" and "involved" shopper orientations while Steenkamp and Wedel (1991) identified "value", "quality" and "service" orientations for meat shoppers.

Apathetic shoppers are considered to be a neglected group, yet are reported to be a substantial segment. Brown uses the novel methodology of personal introspection to provide insight into the "apathetic" shopper in Reid and Brown (1996)

The issue of time has been investigated in some studies (Davies and Madran, 1997; Chetthamrongchai and Davies, 2000; McDonald, 1994). Time is relevant to store image in that attitudes to time and time related behaviour may influence why and how people shop and thus, the way they evaluate stores. As many people experience greater demands in their time they may expect to adopt time-saving strategies, for example to exploit the synergies of one-stop shopping, buying convenience goods and investing in time-saving devices. The way people allocate their time between competing activities is relevant too. A report by Mintel (1999b) on leisure shopping in out of town locations reveals that shopping is the third most popular out-of-home activity.

Davies and Madran (1997) set out to investigate whether attitudes to time-consuming activities can influence time-related behaviour more so than demographic variables. They drew on existing research and on focus group research to design two constructs, one relating to time orientation and the other to attitudes to the enjoyment of cooking and traditional and modern role orientations in food shopping and meal preparation. Factor analysis of the constructs produced five time orientation factors and three food orientation factors. Subsequently they established the correlation between time and food factors. The authors then employ cluster analysis of the joint set of factors and establish two clusters. The cluster profiles suggest differences in their degrees of time orientation and degree of enthusiasm for shopping and meal preparation. Hence the most positive cluster is associated with greater past and present time orientation but an enjoyment of cooking and traditional roles in meal preparation. Further consideration of the clusters revealed that there were no significant differences in demographic variables or in ownership of timesaving durables.

A study by Chetthamrongchai and Davies (2000) established a link between food shoppers segments on the basis of links between attitudes to time, attitudes to shopping and shopping behaviour. They identified four segments on the basis of attitudes to time and shopper motivation. The segments were identified as "time-pressured convenience seekers", "hedonists", "apathetic-regulars" and "convenience seekers". Further analysis employed regression of store patronage on attitudes to time and shopping, demographic and shopping behaviour variables. They were able to establish that shoppers at particular stores had distinct profiles and furthermore, that the attitudinal variables were more important than the demographic variables.

The most popular methodological approaches that have been employed by researchers in the measurement of store image include scaling techniques, open-ended techniques and multidimensional scaling (MDS) techniques (McGoldrick, 1990).

Several studies have attempted the classification and identification of store image variables. These have ranged from individual attributes, aggregation of similar attributes into components and the most general of all, constructs (McGoldrick, 1990). In this context Lindquist (1974) conducted a review of the store image literature and distinguished those component and individual attributes that were supported empirically from those that were hypothesised. The broad constructs included merchandise (five items), service (seven items), clientele (three items), physical (four items), convenience (three items), promotion (five items), atmosphere (one item), institutional (three items) and post transaction satisfaction (one item). However, McGoldrick (1990) emphasises that, despite the existence of a stock of such attributes, the relevant sub-set for any particular application would be subject to an understanding of the retail sector under investigation and its macro and micro business environments including national location, local conditions and consumer profiles.

A further development in this area has been in the development of scales to measure service quality. In general service quality is evaluated in the context of consumers' expectations and perceptions. Of these, the SERVQUAL scale developed by Parasuraman *et al.* (1985) has been tested and refined in several studies, including those applied to department stores (Finn and Lamb, 1991) and fast food (Cronin and Taylor, 1992). For example Parasuraman *et al.* (1994) provide an extensive evaluation of three alternative measures of the scale, including a rigorous test for reliability and validity, in a multi-sector study.

The open-ended approach allows consumers to set the agenda and to describe stores using characteristics that they hold important rather than those imposed upon them by the researcher. Thus this approach addresses a criticism that the use of forced-choice scales may result in a failure to identify critical aspects of image (Berry, 1969, Kunkel and Berry, 1968; McDougall and Fry, 1974, cited in McGoldrick, 1990). However, one of the problems identified in this approach has been that there is an element of subjectivity in the recording of respondents' responses and hence the likelihood of inconsistency between analysts. A further problem lies in the complex nature of the analysis, for example the use of content analysis, arising from the difficulty in quantifying the data. A later extension of this type of approach lies in the use of means-end analysis which establishes links from store attributes (e.g. high quality) to consequences (e.g. high status) and thus to consumers' values (e.g. self-image). In the spirit of the open-ended approach, attributes are identified by respondents, for example using the repertory grid technique (Kelly, 1955). A recent application of this analysis for the UK retail fashion sector is to be found in Thompson and Chen (1998).

MDS is concerned with the spatial representation (map) of stores in dimensional space using data that reflects respondents' perceptions of the similarity amongst all pairs of stores. The MDS solution is used to understand similarities between stores and to interpret the dimensions of the map. The broad approaches are defined as decompositional (attribute-free) or compositional (attitude-based). The decompositional approach allows

respondents to compare similarities between pairs of stores directly and produces a solution that represents stores in dimensional space.

This approach has been used by Doyle and Fenwick (1974) in a study of UK grocery chains and in Singson (1975) in a study of department, speciality and discount stores. However a disadvantage of this is that the solution does not provide a means to understand the position of stores relative to dimensions so that extraneous information is required to achieve this (Hair *et al.*, 1998; Green *et al.*, 1987)). The compositional approach is based upon evaluations of stores using store attributes and permits the joint positioning of stores and attributes and/or to produce a joint positioning of stores relative to respondents' ideals. Davies and Brooks (1989) and Davies (1992) employ this approach for example.

Some studies have attempted to combine some of the three broad methodologies rather than treat them as mutually exclusive. For example James *et al.* (1976) combine free response and attitudinal approaches. In a study of clothing store image amongst students in a small, mid-western college town, the authors first identified attributes through open ended questions and subsequently incorporated both evaluations and importance weights in a multi-attribute scale. Jain and Etgar (1976) combine both free response data and MDS in their study of stores in the Buffalo area. Data were collected in the form of free responses from 450 households and were then subjected to content analysis to provide a two-way frequency table of stores and cited attributes. Subsequently MDS provided a joint solution of stores and attributes in three dimensions in terms of social prestige (high-low), price orientation (price-non-price) and store orientation (generalist-specialist).

Davies and Brooks (1989) conducted a comprehensive analysis for three retail sectors (food, health food and electrical and DIY) within the UK over the period 1980-1987. Their approach collected data on the evaluation of actual stores, and an ideal store for the particular sector, so that the resulting solutions provide a basis for understanding the relative strengths and weaknesses of each store and an evaluation of each store relative to the ideal store. An interesting aspect of the research is that while the authors base their analysis on the Lindquist set of constituent store image attributes, they refine the set used for each sector using focus group research to identify those attributes respondents associated with that sector's ideal store. Further work by Davies (1992) presents a study of food retailers over the period 1983-1990 and an analysis of Marks & Spencer over the period 1999-1990 in terms of three departments. An interesting aspect of the 1992 study is in the changes in the ideal set of food retailers attributes over the course of the study and the emergence of non-tangible attributes over the study period.

Research methodology

The main research instrument was a questionnaire designed to cover three thematic areas of student food shopping. These concerned food-shopping behaviour, the importance of supermarket store features and demographic characteristics. The development of the questionnaire was informed by

secondary research, an observational study and focus group research. The sampling method employed a quota sample with recruitment instructions based upon proportional student faculty and gender membership within the University of Newcastle upon Tyne. The survey was administered by students and yielded a total of 731 usable responses.

The theme of shopping behaviour employed nominal variables and was broadly concerned with two aspects; shopping activity and associated financial features. With respect to shopping activity, specific questions were concerned with frequency of shopping, mode of travel, the composition of the shopping team and whether shopping was undertaken on behalf of the respondent or for the household. Financial aspects were investigated with nominal questions concerning weekly expenditure on food, the use of store cards and the use of a food budget.

The theme concerned with supermarket store features employed a 14-item scale that measured the importance of these features in a food shopping context (1 = not at all important, 5 = very important). The scale was derived from the store image scale of Lindquist (1974), modified in the light of the qualitative research to suit the student market and the UK food retail sector. Thus the study concentrated upon the importance of store image attributes instead of the evaluation of actual stores because qualitative research revealed that students tend to shop in stores that are located in their own residential area. Given the financial situation of students the scale included items linked to value for money, low prices and special offers, national and own-label brands, payment systems and money-back facilities. The resulting set of attributes was broadly consistent with those employed by Davies and Brooks (1989) in their study of food retail store positioning.

The theme concerning student demographic characteristics included nominal questions to reflect gender, vegetarianism, type of accommodation, year of study and age group.

Statistical analysis

The data were analysed using SPSS (SPSS, 1998). The sample characteristics are presented for the nominal demographic variables on the basis of frequencies. To provide more statistical rigour, a one-sample chi-square goodness of fit test is employed to test the null hypothesis that the distribution is uniform, against the alternative hypothesis that it is not uniform, at the 5 per cent significance level.

Factor analysis is applied to the 14-item five-point importance scale concerned with the importance of supermarket store features. Factor scores are saved as variables. These are subsequently employed in cluster analysis to establish student segments and a nominal cluster identity variable is saved as part of the analysis. The cluster identity variable forms the basis for the identification of cluster profiles.

The cluster profiles are initially established on the basis of average factor scores, the target variables of the cluster analysis. Subsequently the profiles are

developed further on the basis of behavioural, attitudinal and demographic variables for which there are statistically significant differences between clusters. All statistical tests are conducted at the 5 per cent significance level.

With nominal variables, the statistical analysis is based upon a contingency test using crosstabulations. The null hypothesis is that the (nominal) cluster group identity variable and the nominal variable in question are independent, against the alternative hypothesis that they are associated. With scale variables, the test is based upon multivariate analysis of variance (MANOVA) in which the null hypothesis is that the mean cluster group mean scale item scores are equal against the alternative hypothesis is that they are not.

Empirical results

The empirical results are presented in this section as follows. The characteristics of the sample are reported in the following sub-section. This is followed by the results of the factor analysis of the store image importance ratings. Subsequently, the results of cluster analysis are presented along with the cluster profiles.

Sample behavioural and demographic characteristics

With respect to the supermarket visits, approximately 30 per cent shop once per month or less often whilst approximately 70 per cent of students shop at least once per week (significance statistic = 0.000). A little more than two-thirds of students travel to the supermarket on foot or on public transport whilst just over one quarter use their own transport (significance statistic = 0.000).

The majority take place in a communal shopping experience, about 68 per cent go shopping with partners or flat-mates (significance statistic = 0.000) although once they are in the store approximately 46 per cent shop for themselves (significance statistic = 0.000). In terms of their weekly expenditure, just over one-half spend between £16 and £30 (significance statistic = 0.000). This is more or less consistent with the NatWest Student Survey of 1998 that reveals an average monthly expenditure of £66. While more than one-half (59 per cent) of students have a store card (significance statistic = 0.000) the majority do not shop according to a budget (significance statistic = 0.000).

The composition of the sample was more or less balanced in terms of gender (significance statistic = 0.767), the majority (90 per cent) were in their second or third year of their studies and 80 per cent were living in non-university accommodation (significance statistic = 0.000). Finally, approximately 16 per cent of students were either vegan or vegetarian (significance statistic = 0.000). This result is broadly consistent with the TGI BMRB survey that finds that 11 per cent of all students are vegetarian and that 20 per cent consider themselves to follow a diet that is mainly vegetarian (Mintel, 1999a).

Factor analysis

The original variables consisted of 14-item five-point scale concerned with the importance of supermarket store features. The analysis employed principal

components with Varimax rotation and the extraction criterion was to derive factors with eigenvalues greater than unity. The solution yielded five factors. Factor scores were generated for each respondent.

Confirmation that the test variables are inter-correlated is indicated by a KMO index of 0.697 together with Bartlett's test of sphericity, which yields a chi-squared test statistic of 1848.23 with 91 degrees of freedom. This results in the rejection of the null hypothesis, that the test variables are not inter-correlated, at the 5 per cent significance level.

The solution is presented in Table I. The solution is evaluated using cumulative variance explained and communalities. Thus approximately 62 per cent of total variance of the original test variables are explained by the five factors representing a data reduction rate of 64 per cent and information loss of 38 per cent. The communalities are generally respectable although those for the variables "a wide range of own-label products" and "other facilities" are quite low.

The first factor is most strongly correlated with the variables "low prices", "value for money" and "special offers" and is defined as an "economy" factor. The second factor is associated with "cash-back facilities" and "payment methods" and so is interpreted as a "financial" factor. The third factor is correlated with "a wide range of well-known brands" and "high quality products" and is defined as a "product" factor. The fourth factor is defined as a "personnel" factor since it is associated with "friendly, helpful staff". Finally the fifth factor is strongly correlated with "car parking facilities" and negatively correlated with "convenient location" so is interpreted as an "access" factor.

Store feature	Factor number					h^2
	1	2	3	4	5	
Convenient location	0.181	0.156	0.114	0.069	-0.769	0.665
Parking facilities	-0.013	0.123	0.132	0.161	0.781	0.668
Pleasant atmosphere	0.008	-0.010	0.594	0.402	-0.187	0.550
Well-known brands	0.010	0.173	0.769	0.020	0.099	0.632
Own-label products	0.601	0.044	0.132	-0.255	0.211	0.490
High quality products	0.047	0.066	0.734	0.100	0.037	0.557
Value for money	0.767	0.078	0.098	0.084	-0.148	0.634
Low prices	0.833	-0.068	-0.097	0.077	-0.123	0.729
Special offers	0.757	0.054	-0.017	0.095	-0.090	0.594
Friendly, helpful staff	0.103	-0.026	0.201	0.805	-0.114	0.714
Check-out speed	0.021	0.555	0.043	0.531	0.074	0.597
Methods of payment	0.077	0.824	0.162	0.024	-0.013	0.711
Cash-back facilities	0.003	0.846	0.055	0.006	-0.027	0.719
Other facilities	-0.020	0.088	0.087	0.560	0.291	0.414
Eigenvalue	2.271	1.799	1.630	1.535	1.440	
Variance	16.22	12.85	11.64	10.96	10.29	
Cumulative variance	16.22	29.07	40.71	51.67	61.96	

Table I.
Rotated factor matrix
for importance of store
attributes

Cluster analysis

Cluster analysis was applied as a two-stage process to the saved factor scores. In the first stage, a hierarchical analysis was employed to provide an indication of the appropriate number of clusters. Hair *et al.* (1998, p. 479) suggests a procedure based upon inspection of the distance information from the agglomeration schedule. Following this procedure the appropriate number of clusters is suggested at the stage where there is a “large” increase in the distance measure, indicating that a further merger would result in decrease in homogeneity. However Hair *et al.* point out that “the selection of the final cluster solution requires substantial researcher judgement and is considered by many to be too subjective”. This procedure suggested either a five-cluster solution or a two-cluster solution.

Consideration of relative cluster size and the desire for parsimony led to the choice of a two-cluster solution. Subsequently, in the second stage, the K-Means optimisation method was employed to derive a solution with the specified number of clusters. Consequently the student respondents are grouped into two clusters, respectively comprising approximately 38 per cent (cluster 1) and 62 per cent (cluster 2) of the student body.

Cluster profiles

Having established the clusters or student segments the analysis now focuses on establishing a profile of each segment in terms of their behavioural and attitudinal characteristics. First a profile of the segments is established in a descriptive sense using information on average factor scores for each group. Second, it is possible to develop the profiles further on the basis of statistical test for significant differences between the groups. This is achieved using contingency test for the nominal variables that measure behavioural aspects of student shopping activity and on the basis of comparison of means tests for the scale variables that measure attitudes.

Factor score profiles

The average scores for the five factors for each segment are presented in Table II. The table reveals that that compared to cluster 1, cluster 2 places more emphasis on “economy” and less emphasis on “finance”, “product”, “personnel” and “access”.

Factor	Cluster	
	1	2
Economy	-0.933	0.565
Finance	0.165	-0.998
Products	0.074	-0.045
Personnel	0.174	-0.106
Access	0.396	-0.239

Table II.
Average factor scores
for final cluster centres

Shopping behaviour

There are significant differences between the two groups with regard to several aspects of shopping behaviour. With respect to shopping frequency, cluster 1 contains a higher proportion of two types of shoppers; those who shop once per month and those who shop more frequently within the week. In contrast cluster 2 contains a higher proportion who shop two to three times per month or weekly (significance statistic = 0.018).

The groups also differ significantly in the methods of travel to the supermarket. Hence cluster 1 has a higher proportion of shoppers who use their own transport while cluster 2 contains a higher proportion who travel on foot or use public transport (significance statistic = 0.000).

Another issue that is of interest concerns shopping behaviour and choice. Since students tend to live in a communal situation a question that arises is, whether students shop for themselves or, on behalf of the household. The two groups also differ in this respect. Cluster 1 contains a higher proportion of shoppers who shop for themselves whilst cluster 2 contains a higher proportion who shop for themselves and others in their household (significance statistic = 0.016).

A further issue concerned the use of store cards such as the Safeway ABC card. This issue was not anticipated in the early stages of research design but emerged from the qualitative research. There is also a significant difference between the two groups in this respect. Cluster 2 has a much higher proportion of students who use a store card (significance statistic = 0.017).

The issue of finance is one that is a central feature of student life with conflicting demands of the allocation of scarce funds across academic and social demands. In comparison with cluster 1, cluster 2 has a higher proportion of students who plan their food expenditure according to a budget (significance statistic = 0.000).

A related feature of shopping behaviour raises the question of food expenditure and in this respect there is also a significant difference between groups. Students were asked to identify their average weekly food expenditure in one of three categories (£0-15, £15-30 and, more than £30 respectively). cluster 2 had a significantly higher proportion (approximately 40 per cent compared to 22 per cent) who spend no more than £15 per week. The groups differed marginally in the middle range with cluster 1 having a higher proportion (approximately 55 compared to 51 per cent). In the higher category, there was a marked difference, with a much higher proportion of in cluster 1 (23 per cent) spending more than £30 per week in contrast to 10 per cent in cluster 2 (significance statistic = 0.000).

In developing the profiles of the two clusters, student characteristics were also analysed. These comprised characteristics such as gender, type of accommodation, year of study and age group. Furthermore the issue of vegetarianism was also investigated. There were no significant differences between the groups on the basis of gender (significance statistic = 0.193), type of accommodation (significance statistic = 0.695), year of study (significance

statistic = 0.576) or age group (significance statistic = 0.070). However on the issue of vegetarianism there was a significant difference between the clusters (significance statistic = 0.022). Students were categorised as vegetarian, vegan or, neither vegetarian nor vegan. Although approximately 83 per cent of students were in the final category, there was a significant difference between the groups. Cluster 1 contained a relatively higher proportion of vegans (approximately 5 per cent compared to 2 per cent) whilst cluster 2 contained a relatively higher proportion of vegetarians (approximately 14 per cent compared to 2 per cent).

Importance of store features

Students were asked to indicate the importance of store features in their food buying behaviour. The data were measured on a 14-item five-point scale. The average scores for each cluster and the pooled sample are presented in Table III. In general terms students place most importance on value for money, low prices and special offers. They also attach importance on convenience of location and payment methods. Features related to produce, such as high quality products, well-known brands and own label products feature in the mid-range of the average scores. Greater than average importance is also attached to cash-back facilities and aspects of the store ambience such as friendly, helpful staff and pleasant shopping atmosphere. However, lower than average importance is placed upon parking facilities and other facilities such as dry-cleaning, pharmacy, café bars and so on.

Store feature ^a	Average for cluster		Overall mean	Sig. stat. ^b
	1	2		
Convenient location	3.66	4.26	4.03	0.000
Parking facilities	3.04	2.17	2.49	0.000
Pleasant atmosphere	3.19	3.11	3.14	0.257
Well-known brands	3.70	3.58	3.62	0.061
Own-label products	3.05	3.78	3.50	0.000
High quality products	3.83	3.76	3.78	0.250
Value for money	3.79	4.70	4.35	0.000
Low prices	3.39	4.59	4.14	0.000
Special offers	3.40	4.49	4.08	0.000
Friendly, helpful staff	3.33	3.30	3.31	0.817
Check-out speed	3.81	3.53	3.64	0.000
Payment methods	3.90	3.81	3.85	0.233
Cash-back facilities	3.60	3.31	3.42	0.001
Other facilities	2.73	2.29	2.45	0.000

Pillai's trace: $F(14) = 98.236, p < .001$

Notes:

^a Designed as a five-point importance rating where 1 = not at all important and 5 = very important

^b Defines the significance statistic in association with a test for the equality of group means at the 5 per cent significance level

Table III.
Importance of store features for student clusters

The MANOVA analysis reveals there are significant differences between clusters ($F(14) = 98.236, p < 0.001$). Cluster 1 place more importance on car-parking facilities (mean scores 3.04 and 2.17), wide range of well-known brands (mean score 3.70 and 3.58), speed of checkout (mean score 3.81 and 3.53), cash-back facilities (mean scores 3.60 and 3.31) and other facilities (mean scores 2.73 and 2.29). On the other hand, cluster 2 place more emphasis on convenient location (mean scores 4.26 and 3.66), value for money (mean scores 4.70 and 3.79), low prices (mean scores 4.59 and 3.39) and special offers (mean scores 4.49 and 3.40).

Otherwise the two groups place similar emphasis on pleasant shopping atmosphere (mean score 3.14), wide range of own-label products (mean score 3.50), high quality products (mean score 3.78), friendly helpful staff (Mean score 3.31) and method of payment (mean score 3.85).

Summary comments

The aim of the study was to investigate the segmentation of the student food shoppers on the basis of attitudes to supermarket store features and shopping behaviour. The study draws upon both secondary and primary data sources and reveals that students are an interesting prospect for segmentation by food marketers.

The secondary research, presented in the section "The Student Shopper" indicates that the student market satisfies all the characteristics of a meaningful segment. According to Zikmund and D'Amico (1989) this requires a segment that has meaningful characteristics, is of significant size, is accessible and is likely to respond to marketing offers. The secondary research reveals that the student market satisfies all of these characteristics. Although students are regarded in some respects as typical of the 18-24 year group, they are sufficiently different with respect to their food shopping behaviour from their non-student peers and clearly, a population of 1.9 million represents a significant market. They can be accessed through retail outlets since they are easily isolated and identified by their NUS identity cards and, given their general financial circumstances, are likely to respond favourably to suitable marketing offers.

The primary research identifies the dimensions of importance of supermarket features in food shopping occasions, the existence of two student food shopper segments and that the segments are significantly different in both attitudes and food shopping behaviour.

The results of factor analysis reveal five dimensions related to the importance of store features. In descending order of importance the dimensions have been labelled respectively "economy", "finance", "products", "personnel" and "access". Cluster analysis revealed two student segments. A profile of each segment was derived using average factor scores, behavioural variables and average scores on the original store image importance scale.

On the evidence of average factor scores cluster 2 is distinguished from cluster 1 by its greater emphasis on the "economy" and lesser emphasis on

“payment”, “products”, “personnel” and “access”. Further exploration of the segment profiles reveals differences between the clusters with respect to behavioural and attitudinal variables. These findings are further consolidated through a multivariate analysis of variance of the importance ratings of store features. For example cluster 1 place a greater emphasis on car-parking, a wide range of well-known brands, speed of check out cash-back facilities and other facilities such as a. The idea that cluster 2 are more constrained is indicated by their greater emphasis on convenient location, value for money, low prices and special offers. Otherwise both clusters place equal emphasis on atmosphere, range of own-label products, high quality products, friendly staff and methods of payment.

The distinction between the clusters is further emphasised with respect to shopping behaviour. Cluster 1 shop less often than cluster 2, an aspect which is enforced by the result that cluster 1 are more mobile, with a greater proportion of car ownership whereas cluster 2 are restricted to shopping on foot or using public transport. Cluster 1 also have a higher proportion of bigger spenders while cluster 2 are more considered in that they tend to shop according to a budget and are more likely to use store cards.

From the results of the cluster profiles a picture emerges of the two student segments. Cluster 2 is the majority group (62 per cent) whilst cluster 1 is a minority group. In comparison with cluster 1, cluster 2 appears to be more sensitive and cautious with respect to food shopping behaviour, it is suggested because of differences in financial resources. In terms of the student segments identified by Mintel (1999a). Cluster 1 is typical of students who are relatively less responsible for their funding and are less cash-constrained. Cluster 2 is typical of the majority of the student body who are relatively more cash-constrained and more responsible for their own funding.

The results of the both secondary and primary stages of the study suggest that students represent an interesting body for segmentation and targeting by food marketers and retailers. The secondary research suggests that the kinds of offers that would appeal to students would be based upon special offers and linked promotions. This message is further consolidated by the results of the primary research, which suggests that students focus on issues relating to special offers, low prices and value for money.

Hence, it would be feasible for food retailers to devise marketing schemes to cater specifically for students at individual store basis. Food retailers could introduce schemes similar to the Tesco Student Clubcard. The research conducted by Mintel (1999a) reveals that students enjoy cooking and are more conscious than their non-student peers of the healthiness of their diet. Nevertheless they tend to be medium to heavy users of fast food and take away food, partly because of cost and partly because they can avoid the necessity of cooking. Hence a further development of marketing schemes could address educational as well as commercial motives, for example in the form of special offers and linked promotions for meal

suggestions aimed at promoting a good, healthy student diet linked to store produce. This initiative could be designed at various levels in terms of required preparation, cooking expertise and cost to suit student financial circumstances.

The results of the study reveal a student emphasis on economy. With respect to the shopper types identified by Stone (1954) students are "economic" (perhaps even "apathetic") food shoppers. Furthermore, in the context of Maslow's (1954) hierarchy of needs one would anticipate that food provision satisfies a low-level physiological need whereas other aspects of student lifestyle such as leisure and entertainment for example, present opportunities for the satisfaction of higher level social and self-esteem needs respectively. In terms of the personal motives identified by Tauber (1972) it is likely that student food shoppers are motivated by the act of provision (role playing) more so than other motives. Furthermore it is likely that Tauber's social motives are hardly important in food shopping, given the existence of other opportunities for social interaction both within and outside of the campus. Thus there would appear to be several issues concerning the role of food provisioning in the wider context of students' personal goals and motivations, which are worthy of further research.

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