Access to food shops and dietary variety among older people

By

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For Norman – who taught me the essentials of family, good conversation, red wine and self belief.

With much love and thanks to my Parents and Belle, Steve and Mark as well as all my family and friends for their unfailing support and encouragement.

Thank you also to my supervisors, Dr Margaret Lumbers and Dr Andrew Alexander, and my friends and colleagues at the University of Surrey.
Older people are an increasing section of the UK population as part of what has been described as a global ageing phenomenon. It is projected that by the year 2021, 12.3 million people in the UK will be over pensionable age. It is suggested that the decentralisation of many food retailers to edge-of-town and out-of-town locations has resulted in some older people experiencing difficulty in accessing food shops. Older people who experience the greatest difficulties in food shopping are considered to be at the greatest nutritional risk. Varied diets are generally considered to be associated with increased nutrient intake and healthier diets.

The present study examined how older people residing in Guildford accessed food shops. The study considered the extent to which the availability of food shops, the stores older people use and their attitudes with regard to diet and health may influence their dietary variety. Shopping behaviour and dietary variety were investigated using focus groups, a face-to-face questionnaire and a food frequency questionnaire (FFQ). A dietary variety score system, developed from the FFQ, is employed in this study. Attitudes with regard to healthy eating were measured using questions based on the Theory of Planned Behaviour.

Neither access to food shops nor store choice was found to have an influence on dietary variety. Store choice was primarily influenced by respondents’ ability to reach food stores, namely in terms of the method of transport available and their perceived ease of access to the store. Respondents reported shopping more frequently or relying on friends or relatives, in order to maintain their independence and reach food shops. Attitudes to diet and health were found to influence dietary variety. Findings suggest that older people in Guildford employ coping strategies as a means of reaching food shops, obtaining food and maintaining independence and social inclusion.
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CHAPTER 1

Introduction

1.1 Introduction

Older people are an increasingly representative section of the UK population. In the year 2001 the UK population numbered 59.8 million people of whom 10.9 million were over retirement age (60 years of age for women, 65 years of age for men) (Office of National Statistics, 2002). By 2021 this figure is expected to have risen to 12.3 million (total UK population 62.3 million), comprising 19.2% of the UK population. Currently more than 1 million people residing in the UK are over 85.

Population trend information suggests that whilst the number of people over 65 continues to increase, support ratios via the working population are expected to alter as a result of a drop in birth rate, meaning more older people will require support from a smaller working population (ONS, 2002). Whilst population projections take into account that the retirement age for women will increase to 65 years between 2010 and 2020, the increase in the retired population is significant. Between 2001 and 2011 the older population (over 60/65) is expected to increase by 11%. The 'age shift' is demonstrated further by an increase in the median working age of the population for 37.4 years to 42.4.

Research considers that this ageing phenomenon will have a significant effect on society, health care, social services, and the economy (Foresight, 2000). The Ageing Population Panel (Foresight, 2000) proposed that it is the responsibility of both government and society to ensure that changes in the age structure of the UK do not lead to social exclusion and that they actively aim to achieve quality of life for all. Diet and nutrition is considered to be one method of ensuring that people maintain good health into older age, thereby reducing potential pressures on health and social services and increasing quality of life.
The 1999 UK Government health policy entitled “Our Healthier Nation” (DoH, 1999) outlined a new strategy for health as the UK moved into the new millennium. The policy aimed to encourage the development of initiatives at a community level to improve quality of life and increase independence through nutrition and good health. This approach hinges on increasing the length of people's lives and the number of years spent free from illness. The Government endorses good nutrition as a means to obtain good health, but concedes that this is strongly related to education and the availability of “healthy” foods.

The Social Exclusion Unit (SEU) was established by the UK Government in 1997 to 'develop integrated and sustainable approaches' by which to reduce poverty and social division within neighbourhoods. Social exclusion is defined as a shorthand term for what can happen when people or areas suffer from a combination of linked problems: unemployment, poor skills, low income, poor housing, a high crime environment, bad health and family break down. The SEU (1998) found that in addition to these potential problems residents living in some areas do not have adequate access to food shops, which may prevent them from eating an affordable healthy diet. The unit identified that independent shops could be up to 60% more expensive than a supermarket and highlighted regional differences in people's ease of access to food shopping facilities. The Policy Action Team (PAT 13) report commissioned by the SEU (DoH, 1998) reported the presence of estates with predominantly low income inhabitants, a large proportion of whom were elderly.

Both the SEU (1998) and the PAT 13 reports identified that poor retail provision was a potential indicator of a deprived neighbourhood. Attempts to persuade a large retailer to location more deprived areas had previously been unsuccessful due to a lack of spending power within this population. Carlessness and lack of available local transport provision were found to exacerbate the problem of poor retail provision as many people (including elderly, lone parents and those on low incomes) were unable to travel further to reach supermarkets and relied heavily on local provision. The disadvantage posed by lack of retail provision has been highlighted
by a variety of retail and health related research (Guy, 1994; Bromley & Thomas, 1995; McKie, 1999; Furey et al, 2001; 2002)

The SEU (1998) observed that there was little evidence that mainstream policies were bent towards poorer neighbourhoods, meaning the problems existing in deprived area were not correctly addressed. New policies were therefore recommended which involved regeneration, particularly in terms of the local community. In response to the needs of communities and retailer requirement for a profit generating store, the Government entered into a £20 million partnership with Tesco to open a supermarket in a more deprived area of Leeds. This is the first of six planned openings, the purpose of which is to deliver a comprehensive solution to social exclusion within inner cities. Research into the effect of this store is being conducted by an Economic and Social Research Council funded initiative to examine the impact of the store on diet, health and access of people living in this area (Wrigley et al, 2002; Whelan et al, 2002). The results of this will help determine the impact of this Government led intervention.

Older people have been identified as a group who experience difficulties accessing food (Gant, 1997; Lang & Caraher, 1998; SEU, 1998; Hare et al, 1999, Wylie et al, 1999). A report by the Gerontology data service with Age Concern, England (1996) found 27% of people aged 70-79 in Great Britain, found it impossible to do their own shopping. The same report found 50% of men and 68% of women in the same age group did not have access to a car. A third of people over 70 years reported difficulties in using public transport (Age Concern, 2000).

There is a need for further research into the factors that may hinder, assist or support older people in living a healthy life. Foresight (2000) noted that as life expectancy is increasing (one and a half years per decade for a 60 year old man) it is vital to ensure that healthy life expectancy runs concurrently with this change. Good nutrition is considered to contribute to the maintenance of a healthy lifestyle (COMA, 1992; DoH, 1999). The present study considers that the nutrition levels and dietary practices of older people may be compromised by in their ability to access food. The potential relationship between nutrition and access to food shops can be taken a stage
further to include shopping behaviour which may be linked to other aspects of older life such as health, mobility and income.

The present research addresses a gap in current research by examining whether older people's ability to access food may influence their food choices and dietary variety. In the present research older people were defined by the retirement age set by the UK government at the time of data collection, namely 60 years of age for women and 65 years for men. The study considers the potential influences that may affect older peoples' ability to reach food shops and the shops they visit and examines the effect of these shopping behaviours on dietary variety. The study also takes into account older peoples' attitudes to healthy eating as a method of examining their opinion of and desire to eat a healthy diet. Finally the potential influence of attitudes on dietary variety is also considered to determine whether food choices are driven primarily by an individual's access to food shops or by their attitudes and beliefs towards dietary practices.

1.2 Definitions of access, mobility and store choice

Previous research has identified several definitions of access and availability with regard to the shopping behaviour of older people (Bowlby, 1979; Westlake, 1995; McKie, 1999). The present study considers three potential factors that may influence food shopping behaviour, access, availability and store choice among older people. Figure 1.1 presents the relationships between the availability of food, access to food shops, store choice, store usage, actual mobility and reason behind store choice as proposed by the present study. The definitions used in the present study are presented below and drawn from the literature on which this research is based. The literature is considered in detail in chapters 2 & 3.
Availability -

Availability in this study refers to the availability of food. This is defined as 'the food an individual can obtain based on external or personal factors' which may influence food purchasing or choices.

Access -

Bowlby (1979) examined access to grocery shops in Oxford in terms of the time and money costs inflicted by those with mobility difficulties and the resulting restrictions on their shopping opportunities and quality of life. The study defined access according to the location of shops in relation to the individual and did not describe the cost, frequency or amount of shopping undertaken. Following Bowlby (1979) the present study considers physical access in terms of an individual’s ability to reach food shops. Access is therefore defined as 'the ease with which a person could reach a given location or set of locations'. This concept does not describe the actual usage of food stores or store choice; instead it describes the ease/difficulty with which shopping opportunities can be reached. Access is considered to be a function of an
individual’s current location (i.e. their home) in relation to food shops and has previously been considered to be reliant on transport or distance (Bowlby, 1979).

**Actual mobility**

Actual mobility is defined as how an individual reaches the shop they visit to conduct food shopping. This is as opposed to potential mobility, which describes how an individual would reach a shop in the absence of any limiting factors.

**Store Usage**

Store usage defines the store actually visited to conduct food shopping. For the present research this is the store most often visited to conduct the main food shop.

**Store Choice**

Store choice examines store usage on a broader scale and is the main variable of this type considered by the present research. Whilst store usage examines the shop actually visited, store choice takes into account the number of stores which could potentially be visited depending on access or availability. For example, an individual may choose to shop at a store for a number of reasons including access restrictions, transport, distance or lack of an alternative store.

**Reason for visiting the food shop most often visited**

Although a number of reasons could be given for choosing a food shops and this subjective factor which will be measured as part of the current research, it is worth noting the potential influence of reason on store choice and therefore qualifying the context in which it will be examined as part of the current research. The present study considers the reason given for store choice to be indicative of the factors which influence this choice. Therefore reasons will dictate store choice which will in turn influence the store visited (store usage).
1.3 Study Area.

The present study explores the food shopping behaviours, dietary variety and food choices of a sample older people residing in the town of Guildford, Southeast England. Initially the population and socio-economic characteristics of the wider area of Surrey County is considered followed by a more detailed discussion of the study area of Guildford Borough.

1.3.1 Population trends within Surrey

Surrey is a regional county in the South East of England comprised primarily of 11 Districts (Fig 1.3). Guildford Borough is one of the larger of these districts and the main study area for this research. The 2001 UK census identified 1.5 million people residing in Surrey County, 172,165 of whom were aged over 65 (16.3% of population), an increase of 7,300 (4.4%) since 1991 23,896 people aged over 85. Population changes in Surrey County reflect those of the rest of England and Wales in terms of the increasing ageing population (ONS, 2003a).

Data on population characteristics had not been published from the 2001 census at the time of writing; however data from the 1991 UK census was available on a County level. The population characteristics presented below are drawn from the 1991 census regarding Surrey County. These characteristics were chosen to highlight some of the demographics which may potentially influence older people’s access to food shops.

1.3.2 Car ownership

Thirty eight percent of pensioner households in Surrey have no access to a car (Surrey County Council, 1994); compared to 54% of older people in the UK as a whole (ONS, 1991). Those living alone were found to be less likely to have a car and for those aged over 75 years the percentage of those without a car rose to 78%. Whilst there has been a general increase in car ownership by older people since the 1981 census when 45% of pensioner households had no access to a car, a significant
number of older people rely on other methods of transport. It is also worth noting that both Surrey and Guildford have large rural areas, which may contribute to a wider problem of access for those without cars.

1.3.3 Home Ownership

Older people in Surrey were less likely to own their own home and less likely to have central heating than those living in other areas. 72% of pensioners owned their own home in Surrey (ONS, 1991; SCC, 1996), compared to 80% of non-pensioner households. This figure is strongly influenced by lone pensioner households where only 61% owned their own house.

Both car and home ownership figures provide additional information about the older population of Surrey County, which contribute to a broader understanding of the wider study area. However, these characteristics are representative of the County as a whole; the main study area of Guildford Borough is therefore discussed below.

1.3.4 Patterns within Guildford Borough

The resident population of Guildford Borough at the time of the 2001 census was 129,701 (ONS, 2002), 20% of whom were aged over 60 years of age meaning that population trends within the Borough are representative of those in the UK as a whole (older people comprise 21% of the UK population).

Guildford consists of 21 wards; established for the purpose of collecting census and voting information (shown in Figure 1.4). Of the 21 wards in Guildford Borough, 8 are defined as urban (population 63,312) and the remaining 13 as rural (population 66,389). The 2001 census identified 22,776 people over retirement age (60 for women, 65 for men) residing in Guildford Borough (ONS, 2003b). Figure 1.5 shows the percentage of older people residing in each ward of Guildford Borough as a proportion of the total population of the ward.

In addition to the rural/urban mix discussed above, Guildford also has a varied socio-economic make up. The Jarmen index of deprivation indicates that despite being a generally affluent area, Guildford has pockets of deprivation, which are not
immediately apparent and may contribute to problems when accessing food (Table 1.2). The Jarmen Index is a multi-component index (i.e. contains more than 1 indicator) developed originally for use by GPs to predict workloads. The index is based on eight measures; older people living alone, children under five years of age, lower SEC, level of unemployment, lone parent households, highly mobile population and ethnic minorities. The index is standardised against a national average of 0, positive scores represent less disadvantaged areas and negative scores more disadvantaged. To place this in context, the least disadvantaged area in England is Mid Sussex with a score of -32.04 and the most disadvantaged is Newham with a score of +39.33. The Jarmen index was used as an indicator of population characteristics due to the fact that it presents ward level information is based on health care indicators and has a small number of indices making it more applicable than other scores. The Jarmen Indices for wards in Guildford Borough are shown in Table 1.2.
Table 1.2 Jarmen Indices of the wards of Guildford Borough (DETR, 1998)

<table>
<thead>
<tr>
<th>WARD</th>
<th>JARMEN INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>-0.08</td>
</tr>
<tr>
<td>ASH VALE</td>
<td>-10.66</td>
</tr>
<tr>
<td>CHRISTCHURCH</td>
<td>-20.18</td>
</tr>
<tr>
<td>CLANDON &amp; HORSLEY</td>
<td>-21.77</td>
</tr>
<tr>
<td>EFFINGHAM</td>
<td>-20.19</td>
</tr>
<tr>
<td>FRIARY &amp; ST NICHOLAS</td>
<td>1.86</td>
</tr>
<tr>
<td>HOLY TRINITY</td>
<td>-0.22</td>
</tr>
<tr>
<td>LOVELACE</td>
<td>-12.82</td>
</tr>
<tr>
<td>MERROW &amp; BURPHAM</td>
<td>-9.43</td>
</tr>
<tr>
<td>NORMANDY</td>
<td>-14.72</td>
</tr>
<tr>
<td>ONSLOW</td>
<td>-1</td>
</tr>
<tr>
<td>PIRBRIGHT</td>
<td>7.26</td>
</tr>
<tr>
<td>SEND</td>
<td>-20.56</td>
</tr>
<tr>
<td>SHALFORD</td>
<td>-0.57</td>
</tr>
<tr>
<td>STOKE</td>
<td>7.23</td>
</tr>
<tr>
<td>STOUTHTON</td>
<td>7.74</td>
</tr>
<tr>
<td>THE PILGRIMS</td>
<td>-19.02</td>
</tr>
<tr>
<td>TILLINGBOURNE</td>
<td>-14.58</td>
</tr>
<tr>
<td>TONGHAM</td>
<td>-0.76</td>
</tr>
<tr>
<td>WESTBOROUGH</td>
<td>12.97</td>
</tr>
<tr>
<td>WORPLESDON</td>
<td>-9.34</td>
</tr>
</tbody>
</table>
As Table 1.2 demonstrates, 16 of the 21 wards in Guildford Borough were found to be less deprived than the national average (DETR, 1998). Of those wards found to be more deprived than the national average, one is classed as a rural ward (Pirbright) and the remaining four are urban, including the town centre ward of Friary and St. Nicholas. Although none of the wards were found to be in the top 45 most deprived local authority areas according to the SEU (1998), the more deprived wards have populations between 10 and 25% of which are older people. Whilst the present study does not examine economic access per se (see chapter 4, section 4.3) the Jarmen Index further demonstrates the characteristics of the study area and suggests that the older people living in Guildford Borough may have a wide range of lifestyle factors influencing their access to food shops. Sampling within the Borough took into account the variation in Jarmen Indices across wards.

Guildford was chosen for several reasons. The percentage of population over retirement age (60 for women, 65 for men) is resembles that of UK population. Firstly, it has, broadly speaking, patterns of retail provision typical of many similar sized provincial towns; comprising of a concentrated urban centre, with edge-of-town and out-of town superstore development and several district and local centres across the borough. Figure 1.6 shows the Jarmen index of each of the 21 wards in Guildford Borough over laying the retail provision available in each ward. The retail provision available in Guildford Borough is discussed in more detail in Chapter 8 (section 8.2) detailing both the methods used to determine food retail provision and the types of food stores available to people residing and shopping in the borough. Secondly, the study area is partially urban and partially rural in character (See Figure 1.4). Therefore, it has the potential to highlight food access issues of older people from these two different environments as well as taking into account socio-economic issues. People living in rural parts of Guildford Borough have reported more difficulty in accessing services and substantially greater car use than those living in urban areas (ONS, 2003b). However as mentioned in section 1.3.2, 38% of older people living in Surrey do not have access to a car. In addition in rural areas of Guildford only 50% of people live within 13 minutes walk of a bus stop with an hourly bus service; compared to 73% in small urban areas (ONS, 2003b). This will include those living in the rural areas of Guildford Borough (between 5 and 30% of
the ward population in rural areas – see figure 1.4). Older people have been highlighted as a group who experience particular problems in accessing services, including food shops in Guildford Borough (ONS, 2003b), which makes the study area appropriate for researching how older people access food shops. Finally, given the characteristics presented above Guildford was considered appropriate as a point from which to begin this research. Previous research into the relationship between access to food shops and food choice and dietary variety has been limited. Whilst older people have been considered both in terms of their role as a consumer group and their food choices, few studies have examined a potential relationship between the two. Previous studies on shopping behaviour in older people have focused on urban and rural Scotland, where diets, health beliefs and facilities available to older people in terms of social support differ from England. (McKie, 1999. Hare et al, 1999). As a result the present study examines an aspect of food choice and shopping behaviour which remains relatively unexplored in England.
Figure 1.3. Surrey County and its Districts (SCC, 1996).
Figure 1.4 - A map of Guildford Borough showing ward boundaries

Figure 1.5 – The percentage of older people residing in the 21 wards of Guildford Borough; as a proportion of ward population.

Source: Guildford Borough Council, 2001
(' refers to people aged 60/65 and over)
Figure 1.6 – Food retail provision in each ward of Guildford Borough. The overlay identifies each ward and the Jarmen index assigned to each area (GBC, 2002).
1.4 Conclusions

Older people in the UK are an expanding section of the population. The present study proposes to examine how and to what extent a relationship exists between access to food shops and dietary variety among older people. Definitions of accessibility and availability of food are based on previous research (Bowlby, 1979) and adapted to the present study. Guildford Borough was selected as a study area which showed population trends similar to those of the UK as a whole. The food retail development within the Borough is also indicative of the changes which have occurred in food retailing as a whole. Finally the rural/urban mix and socio-economic characteristics of the Borough contribute to its suitability as a study area from which to implement the present research.
CHAPTER 2 - LITERATURE REVIEW

Retail Marketing and Older People: Development and Consumer Perspectives

2.1 Introduction

In 1998, the UK population spent on average 3.5 times as much on food and non-alcoholic drinks from supermarkets than from any other retailer (DETR, 1999). Whilst one stop supermarket shopping has become the main method of purchasing food among UK consumers, research has raised the question of whether all consumers are served equally by changes in food retail provision (Guy, 1988; Bromley & Thomas, 1995; Wrigley, 1998b). The following chapter examines location and development perspectives in terms of grocery retailing in the UK, considering the question of how and to what extent changes in food retailing have affected older people as a consumer group, with particular reference to their shopping behaviour, transport and the accessibility of food shops. Chapter 3 discusses work conducted with regard to the dietary and food choice considerations of older people.

2.2 Developments in food retailing

Grocery retail development has altered dramatically over the past 30 years in both focus and function. The type of food retailer that exists and those that have grown to dominate the market has altered over the last 30-40 years (Femie, 1997). Many grocery retailers have developed from smaller food specific shops to those that include a wide range of food and non-food items. The changes in location, distribution and marketing of food retailers has both enhanced and reduced consumer access to a range of goods. The basis for these changes has been in the shift from town centre stores to out of town supermarkets. The growth of a few major multiples in conjunction with a reduction in the number of local, independent stores has demonstrated both the benefits of modernisation, including lower prices and a wider
range of goods as well as the difficulties experienced by those unable to reach such stores (Social Exclusion Unit, 1998).

2.2.1. Food store location and retail development

Rapid changes in UK retail development occurred during the 1970s. The modernisation of the retail sector (i.e. the move to larger out or edge of town locations) was considered to provide a shopping environment in which all consumers could benefit in terms of greater choice and lower prices (Dawson, 1980; Davies, (R), 1995). Development increased further during the 1980s, an era that has since been considered a time during which retail planning was minimised (Davies, (R), 1995; Marsden & Wrigley, 1998). Government initiatives during the 1980s aimed to ‘free up industry from the shackles of planning’ thereby creating an enterprise culture (Davies, (R), 1995). Dawson (1980) observed that it was uncertain whether changes in retail structures were attributable to changes in consumer demand per se or whether changes in planning may have initiated a situation to which consumers responded. Guy (1994) suggested that development was primarily consumer driven and attributed the change in focus with regard to consumer demand to two broad trends, which influenced demand and therefore provision. Firstly, population and economic changes led to an increase in discretionary income, which in conjunction with changes in lifestyle factors such as the decentralisation of households, led to changes in consumer expenditure on goods and services. The second influence was that of the structural development of the retailing sector as a result of competition between firms, in order to meet consumer demands and establish a presence in the market place.

During the large-scale development of the 1970s and 1980s, geographical spread became a principal method of capturing and maintaining a larger section of a relatively static market (Guy, 1988). This led to larger stores being built on ‘out of town’ sites and providing a larger range of products at lower prices. Out of town growth held many advantages for retailers. The stores operated at lower wage costs as a percentage of sales and sales per square foot were increased, as were profit margins (Wrigley, 1994). However these out of town, or edge of town stores were
aimed primarily at families with cars. Indeed by 1988, 65% of all new supermarkets were built on edge of town sites with only 10% in shopping centres or High Streets (National Consumer Council, 1992). The increase in use of cars for shopping in general increased the popularity of out of town stores. In addition shopping became split into a dual purpose function, encouraging a separate trip to supermarkets for food items (Guy, 1994). In more recent years supermarkets have taken advantage of the division in shopping function as a competitive tool by stocking increasing numbers of non-food items (e.g. clothing or electrical goods) to encourage consumers to visit a store.

From a consumer based perspective Guy (1998) later suggested that the changes in consumer lifestyle were in fact complemented by the development of off-centre shopping. Shopping mileage by car drivers has more than doubled and by passengers increased by 2/3 (between 1975 and 1991). More than ¾ of total mileage for shopping was by car by 1991. Only 1 in every 14 miles of shopping journey was on foot (DETR, 1999). Out of town supermarkets offer benefits to many consumers in the form of a wider choice, increased price competition, convenient access and the opportunity to bulk purchase. Guy states that few shoppers accustomed to visiting a supermarket would choose to return to a more traditional small specialist store format. However, Guy does also note that advances of the kind food shops have experienced inevitably leave sections of the community who are unable to take advantage of these benefits as a result of income or access problems.

A small, but significant section of the population has been highlighted as being disadvantaged by the changes in food retailing over the last 20 years. Despite the Government’s recommendations for the movement of retail provision back to town centres (PPG6, 1993; PPG6, 1996; PPG13, 2002), food provision in many areas has not improved significantly (Thomas & Bromley, 2003).
2.2.2. Store development perspectives

Retailers have previously been known for their so-called "cavalier" approach to location development decisions (Guy, 1994). This involved more rudimentary calculations of space and size, past experience with similar stores, established customer bases and intuition or "flair" for a successful site. However, as the more relaxed attitude to planning adopted by the Conservative governments of the 1980s gave way to a shift back to a restrictive planning stance during the 1990s, development strategies among retailers evolved with the development of accurate mapping and modelling systems such as GMAP (Birkin et al, 2002; Clarke et al, 2002). As a result of these developments the movement of power became increasingly concentrated on one component, the retailer and as development continued, in the UK this became fewer retailers. The development of predictive tools and the growth of the use of strategic measures in making location decisions occurred in parallel with changes in urban and regional planning legislation. Whilst the UK does not have legislation which focuses directly on the retail development process, guidance notes exist (Department of Environment, PPG6, 1993; 1996) as guidance for national government policy and are designed to provide a basis from which Local Authorities can maintain relatively persist planning policies (Davies, (R), 1995). For the retailer, land use planning constraints placed on new development by Local Authorities has led to intense competition for new out of town sites. The implication of planning policy and government regulation will be discussed further in section 2.2.4.

2.2.3. Channel/competition perspectives

Grocery retailing is very different to other areas of retailing in terms of consumer expenditure and potential for profitability (Guy, 1994). Overall consumer expenditure on food and related products is constant over time when monetary inflation is taken into account. This can be seen in the 'strength' of multiple grocery companies as the constant expenditure on food ensures that grocery retailers are less severely affected by economic recession. These firms have greater buying power as a result of their size, meaning they are able to buy in bulk. As a consequence of this, the companies can offer a price advantage to consumers and therefore maintain a
competitive advantage over smaller or independent stores, making it harder for smaller companies to compete.

Howard (1995) observed that the 'strength of multiples' was particularly apparent in the UK, with fewer stores per head and fewer retail enterprises than other EC countries, making it a country of large retail companies operating from large stores. Wrigley (1998a) noted that by 1990 five retailers controlled 60% of the total food market. However estimates of the proportion of the food trade controlled by the five largest grocery retailers vary according to different sources. Guy (1994) proposes between 37% and 60% depending on the base used for the calculation. Whatever the precise figure, as Davies (R) (1995) makes clear, the UK and Germany have the highest multiple dominance in Europe with the top three to five companies holding at least half of the market share. Concern regarding the effect of this potential state of oligopoly in British retailing, as well as the increasing amount of evidence of the presence of groups who had little access to food shops, (Bromley & Thomas, 1995; SEU, 1998; Lilley et al, 1998) led to an enquiry into the dominance of multiple retailers in the UK. The Competition Commission (OFT, 2000) found that 5 main parties Asda, Morrison, Safeway, Sainsbury and Tesco exercised market power over other retailers, but not to an extent where action was required. The report concluded that Asda, Sainsbury, Somerfield and Tesco each had at least 8% of the market share, holding 40% of the total market share between them. However it was suggested that this had a stronger effect on suppliers than on competition. The report concluded that applications by the five main multiples for planning permission to build or develop a store within 15 minutes travel (by car or public transport) of an existing store should initially be through the Director General of the Office of Fair Trading as opposed to local planners.
2.2.4. UK Government and Regulation

One of the main focuses of retail research has been regarding the changes in planning policy that have run concurrently with many of the changes seen in retail development. In 1979 the Government moved towards a less restrictive land use planning policy which with time afforded opportunities for expansive retailers (Gilbert, 1999). Initial planning policies aimed to channel development, but failed to plan actively for the changes the policy proposed. However planners and developers complained that Local Authorities had neither the information nor the policies to deal with the realities of commercial pressures. PPG6 (Department of Environment (DoE), 1988) was an attempt to provide a framework from which local authorities could make planning decisions. However, in reality this first guidance note probably had little direct effect on the development of retailing as the majority of planning applications during the 1980s (see section 2.2.1) were either underway or approved by the time PPG6 was issued as policy. In 1993 a revised PPG6 was published. Reaction to this policy has played an important part in creating the development environment of today (Howard, 1995; Birkin, 2002). The policy reiterated that commercial competition was not a planning matter, stating that government would have no influence in identifying areas for retail development although green belt areas would not be considered at any time and major developments outside town centres would be encouraged on derelict land. PPG6 (DoE, 1993) was the first policy to define the government objectives of maintaining the vitality and viability of town centres, expressing concern with the regard to the shift of retail spaces to out of town locations. Whilst PPG6 was initially more driven by the comparison goods than by the grocery retailing sector it has since been applied on a wider scale and used as a guide for approving the development of food retail locations as well as edge or out of town developments as a whole.

In 1996 the Government introduced its third and most recent PPG6 (Planning Policy Guidance 6) a land use planning guide regarding the building of new sites for commercial use. The function of this guidance was four fold:
1. To improve the “vitality and viability” of town centres.
2. To focus development where all consumers could benefit maximising its use by all forms of transport.
3. To enable town, district and regional centres to fulfil the traditional role of meeting the needs of residents.
4. To safeguard and strengthen existing town centres as areas of commerce.

These aims included a proviso (known as the sequential test) which stated that potential developers must demonstrate that all existing town centre sites have been assessed for development and found wanting, before planners would consider edge of and out of town sites. PPG6 focused on out of town locations, stating their previous role had been as an anchor store to maintain the quality and range of shops within a district thereby ensuring that all groups had adequate access to a range of shops via public or private transport. Edge-of-town shops were considered preferential to out of town locations on the condition that developers provided car parking and easy access via public transport.

When considering planning policy it is also worth noting that PPG13 (DEFRA, 2002) on transport has also had a significant effect on retail development. The planning policy guidance for transport considers that land use planning plays a significant role in delivering the Government’s integrated transport strategy. The policy suggests that by influencing the pattern and type of development taking place it is possible to ensure that individuals can reach these developments by a range of transport methods. However, the focus of this policy is in turn influenced by environmental factors, which recommend and encourage the implementation of alternatives to car travel as opposed to ensuring the accessibility of stores for all groups.

Although, as mentioned previously both PPG 6 & 13 are guidance, not law, the introduction of these policies, particularly PPG6, was met with a sharp reduction in the number of approvals for planning applications by supermarkets. A report by Keynote (2001) found that the shift in policy initiated by PPG6 (1996) continued to influence town centre development. Maintenance of the vitality of town centres and
the promotion of alternative transport methods have remained a priority. However, evidence still remains of the desolation of town centres as a result of movement of stores out of town centres (Bromley & Thomas, 2002). The publication of the Government's competition commission enquiry into supermarkets (OFT, 2000) demonstrates a continuing focus on PPG6 as policy.

Wrigley (1998b) discussed the influence of PPG6 on the contemporary UK food store development dynamic. There have been a number of significant developments as a result of government policy, increasing competition and issues of market share. Pre 1996 the majority of changes focused on developing market share as part of large store development as discussed above. Wrigley (1998b) suggested that as a result of PPG6 accessibility by different groups of consumers to food choices offered by major retailers had changed. However these changes were not necessarily to the benefit of all consumers, as those without cars (particularly older people or those on low incomes) may experience difficulties in reaching the larger out of town stores and were at a distinct disadvantage. The concept of older people as a disadvantaged group has been discussed in some detail with regard to food shopping (Bromley & Thomas, 1995; McKie, 1999; Thomas & Bromley, 2003). The evidence for this disadvantage will be addressed with regard to older people as consumers in section 2.3.

2.2.5 The development of the convenience sector

Convenience retailing has become one of the most dynamic sectors in the UK retailing market (Keynote, 2002a). Four main types of convenience stores have emerged over the last few years (Keynote, 2002b) neighbourhood stores, forecourt stores, town/city centre stores and travel related stores (e.g. in railway stations). Studies have found that whilst convenience shopping continues to be about top up and impulse purchases, this definition has disguised a shift in consumer expectations and requirements as convenience stores become destination shops in their own right (Keynote, 2002a; Birkin et al, 2002).
Birkin et al (2002) discussed the move of supermarkets back into the High Street. This move was considered to be partly in response to the prevention of development in out of town areas and partly as a way of maintaining market share through developing new formats by targeting the convenience sector. The sector offers scope for growth, but is forecast to become increasingly competitive. Tesco and Sainsbury have developed new stores in their Metro and Central formats. In addition supermarkets have increasingly targeted the growing convenience sector in petrol stations (e.g. Tesco 'express') as well as convenience stores. Tesco have recently announced the purchase of the T & S group which includes both Dillons and 800 One-Stop convenience stores and plan to convert 450 One-Stops into Tesco Express in the next 3-4 years. These stores provide good investment opportunities as they are inexpensive to build, but bring in similar operating margins as superstores, providing a high return on investment (Wrigley, 1998a). The stores remain quite small stocking around 2,000 items, compared to 23,000 in a superstore, with an emphasis on fresh produce and opening hours. This shift towards convenience retailing is not confined to the larger food retailers, Budgens announced in 2001 that they were to opened another 20-25 stores over the next few years. In addition, Unwins has recently announced a plan to convert 300 of its 400 UK stores from off license to convenience store format (The Grocer, 2002). However, market analysis has forecast that whilst the convenience sector will continue to grow and gain market share, independent convenience store traders will suffer as in order to maintain market share they must convert to a brand, or be forced out of an increasingly competitive environment (Keynote, 2002a).

Nonetheless the development of the convenience sector is acknowledged as part of this research. The study examines store choice, which would be increased by these new retail developments. Section 2.3 considers previous research into the requirements, needs and preferences of older people as a consumer group. Future projections for the convenience sector consider socio-demographic and lifestyle factors as well as highlighting the convenience sector as filling a gap in the market required by the increasing over 55 age group, the forecasts focus on time-poor cash rich consumers looking for snack, dinner or lunch solutions (Keynote, 2002b). The effect of these smaller stores with reduced choice, but convenient locations will have
on the older consumer remains to be seen. Focus group work conducted by Miller et al (1998) found that older people were highly dissatisfied with contemporary shopping and continued to lament the loss of local shops for small, top up purchases. However, those interviewed expressed a marked preference for supermarkets, partly due to the cost, but also due to the range, atmosphere and feeling of social inclusion gained from shopping with others in a modern supermarket environment.

2.3 Older People as Consumers

By 2008, the number of people of pensionable age will exceed those under the age of 16. In 1998 people aged over 60 constituted 21% of the population of Guildford Borough compared to 19% for those under 16. Older people have been found to be an active and diverse consumer group (Miller et al, 1999; Thomas & Bromley, 2003). However, the heterogeneity apparent in people aged over 60/65 years has meant that research into the specific needs of older people is limited. It has been suggested that companies that currently rely on the custom of older people may need to reassess their policies to remain successful as by 2011 one in six consumers will be over 60 years of age (Institute of Grocery Distribution (IGD), 2001). However, the IGD has tended to focus on the potential of more affluent older people as consumers. Whilst this group have been identified as increasing both in terms of actual numbers and in terms of consumer power (Watts, 1994) a large number of older people have been identified as experiencing difficulties when food shopping (Miller et al, 1998; McKie, 1999; Hare et al, 1999; Bromley & Thomas, 2002).

The National Consumer Council (1992) stated that the policies of big retailers have reflected and reinforced social and economic disparities among UK consumers. This is a view that has been supported in studies of older people (Smith, 1985, 1992; Bromley & Thomas, 1995; Kang & Ridgeway, 1996; Gant 1997; McKie, 1999) and more recently by the Government (DoH, 1999). As a consumer group, older people have been identified as having different needs from other population groups (Gunter, 1998; Smith, 1991). However, many of the issues that affect all consumers have been shown to affect older people, including mobility, financial resources or time available (Miller et al. 1998; Hare et al, 1999; Morgan, 1992). The following
discussion examines factors that have been found to have relevance to older people as a consumer group with particular reference to the physical and economic accessibility of food.

2.3.1 Physical Accessibility

Bowlby (1979) conducted a study of shopping provision and access in Oxford. The author noted the difference that exists between the terms access and usage (shop visited). Poor accessibility does not necessarily equate with non-usage, or even reduced usage (Westlake, 1995). Bowlby considered that access is a function of a person's 'potential' mobility (the ease with which they can travel if they so desire). In contrast 'actual' mobility is used to describe the movement actually undertaken (Chapter 1, section 1.2). Those unable to access food stores would be considered to be disadvantaged in comparison to other population groups.

Bromley & Thomas (1995) examined the concept of the 'disadvantaged consumer' resulting from the movement of stores to edge of town locations and the consequent decline of small town centres. The study observed that an individual's level of access was the most restricting factor in their food shopping experience. 'Carlessness' was found to be strongly associated with grocery shopping locally rather than at a supermarket and therefore having a decreased food choice. Those without access to cars stated that their accessibility and therefore their food choice was greatly reduced.

Henson (1992) stated that to survive, independents needed a smaller range with basic food and non-food goods, longer opening hours and higher prices. This forced lower income or less mobile older people to pay more and miss out on savings others were experiencing. Leighton et al (1996) challenged this view, examining the quantitative and qualitative findings of a study carried out in both rural and urban Scotland. Having interviewed independent older people over 60 years and living alone, the results suggested that the elderly questioned shopped at supermarkets and were therefore not disadvantaged in a simple sense. Nonetheless, of the 57% who did not
have access to a car, 94% said it affected the amount they bought and 71% said it affected what they bought.

Recently, the notion of 'food deserts' has entered the debate. In 1997 the UK Government established the Social Exclusion Unit (SEU) to investigate the prevalence of and reduce poverty and social division within neighbourhoods. Social exclusion is defined as people or areas suffering from a combination of linked problems e.g. unemployment, poor skills, low incomes, poor housing, high crime environment, bad health and family break down. The SEU (1998) identified that in addition to these potential problems some areas do not have adequate access to food shops, which may prevent them from eating an affordable healthy diet. The SEU's finding related to previous research by a working group for the Low Income Project Team of the Nutrition Task Force (1996), who suggested that areas without adequate retail provision were becoming more apparent in the UK and some areas had the potential to become "food deserts". These were been defined as areas where low-income households (including older people and lone parent families) face poor accessibility to good quality retailing (Lilley et al, 1998; SEU, 1998). Sustain (2000) noted that those on lower incomes often had to shop more frequently due to budgetary constraints and lack of a freezer. Lilley et al (1998) stated that many older people fall into the category of low income or disadvantaged, but that little research had been conducted to ascertain the extent of these problems. A large-scale interdisciplinary research project concerned with the issue of food deserts is currently being undertaken in Leeds (Wrigley et al, 2002, Whelan et al, 2002; Clarke et al, 2002). It is considered that the problem of food deserts particularly, and constraints on access more generally, contribute to the inequalities in health. Initial findings suggest that the development of a Tesco store in a deprived area of Leeds marked as a potential food desert had a positive impact on both access to food stores and consumption of a more healthy diet. However a large number of respondents did not change the food shop visited or their food purchasing behaviour as a result of the development of the store. The authors suggest that there may be additional socio-economic and cultural factors that influence the food shopping behaviours and the food choices of the population interviewed.
Clearly, the issues of access to food shops and the food shop visited are of importance on a wider scale than simply in those areas defined as food deserts. Older people have long been considered a disadvantaged group in term of their ability to access food shops (Davies, 1981; Smith, 1991; Bromley & Thomas, 1995; McKie, 1999). Bromley & Thomas (2002) examined the food shopping behaviour of residents in a small town in Wales. Carlessness and age were identified as being critical variables in the explanation of food shopping behaviour among consumers stating that older people were often forced to continue to shop in town centres when major food retailers had developed further afield. The authors noted that any move back to town centres by multiple supermarkets would be of most and direct benefit to disadvantaged groups.

Smith (1991) suggested that difficulties experienced by older people in Canada were often missed or overlooked in studies as a result of small sample sizes or the elderly not being treated as a specialised group. Smith noted that many older people respond to restriction by substitution, with smaller usage fields and frequent use of local stores. In total 43% of the sample (n= 177) experienced walking difficulties and used local facilities with higher prices. The study found many social acts were often linked to grocery shopping including visiting relatives, eating out and meeting friends. Most food trips were daily and single purchase as respondents felt this increased social contact. The findings of Smith (1991) were reinforced by those of Davies (G), (1995) in the UK, who noted the apparent lack of success in encouraging home shopping among the elderly. The lack of interest was repeatedly stated as being due to the transformation of shopping into a leisure and social experience ensuring contact for those who live alone and preventing social isolation.

McKie (1999) explained the reluctance of older people to fundamentally change shopping habits through interviews with older people regarding dietary beliefs and practises. Those respondents who lived in urban areas had greater choice in where they shopped as these facilities were nearer, however those living in rural areas were increasingly restricted as few shops were within walking distance. For both groups, mobility problems exacerbated an existing problem of reaching food stores and choices available. For those interviewed, maintaining independence was a priority,
with some participants consciously developing strategies to overcome social isolation, spending increasing amounts of time getting to food shops in a way they could manage. Many older people indicated that they implemented coping strategies in order to continue to access food in a way that enabled them to manage and maintain their independence, a finding also highlighted by other research (Leighton & Seaman, 1997; Hare et al, 1999). Access to stores although difficult was also essential; problems were generally overcome either by the support of social services or family networks. This often meant having to use a store that was easier to get to and therefore more expensive. Using local shops reduced older people’s reliance on others to purchase food on their behalf. Behaviours identified as coping strategies included shopping more frequently or with friends or relatives, and using local shops in order to choose foods.

2.3.2 In store access

In addition to considering whether older people need to develop mechanisms to reach food shops, some research has been conducted into the issues which may affect older consumers once inside food shops (Mason & Beardon, 1979; Hare et al, 1999). Hare et al (1999) looked at access both to and within the stores older people visited. Several factors were highlighted which made shopping difficult including: choice, price, promotions, quality, assistance, design, shelf height and package size. The majority of respondents were dissatisfied with the environment in store, but felt they had to accept it because their views would make little difference. In contrast to difficulties expressed by these consumers, other studies have begun to speculate on the power older people may have as consumers in an ever changing market place (Watts, 1994; Johnson-Hillery et al, 1997; Falkingham & Victor, 1991). However, there has been relatively little research into the notion that the internal layout of a store may exacerbate problems that already exist in reaching stores. In addition some research has identified older people who stated in public that they found food shopping relatively easy and admitted to difficulties only in private (Miller et al, 1998). This has made drawing conclusions about many aspects of food shopping difficult. It may be that there are two types of older consumers, those that exert a
level of consumer power and those that experience difficulties once inside the store, which can only be confirmed by further research.

2.3.3 Economic Accessibility

The identification of older people as a potentially disadvantaged group has highlighted that this group may be economically as well as physically disadvantaged (Moon, 1991; Chung & Myers, 1999). Duncan & Smith (1989) suggested that the living standards of older people had increased to such an extent in the last 25 years that a rise in affluence was clearly apparent in this section of the population. At this time there were still more than three million people aged over 65 living below the poverty level set by the Government (60% of the median contemporary national income is usually used as a cut off, although no official poverty line has been set). Falkingham and Victor (1991) challenged the so called 'myth of the Woopie' (Well Off Older Person) suggesting that this was due to the presence of two nations of older age, those with occupational pensions and those without. Chung & Myers (1999) stated that poor sections of the population pay more for food than other groups and spend a higher proportion of their income on food. This may result from stores in their communities having higher prices due to increased market pressure and lower item availability. Donkin et al (1999) conducted a study mapping food access in Brent, which used the Carstairs Index of deprivation to define levels of access to food shops (e.g. include car ownership and income). The study found that milk was the only fresh produce available in more than 50% of shops and that petrol stations, off licences and newsagents were particularly expensive. Economic availability of food has been found to be exacerbated by the effects of carlessness, which in turn is considered to be a function of low income. Older people have reported having to use taxis to reach food shops and spending more money in order to access food in a way they can manage (Ryan & Bower, 1989). The reported use of taxis to access food shops relates back to the previously mentioned issue of physical access (see section 2.2.1). However, like many other low income groups older people may have to make budgetary decisions as a result of lack of physical access thereby further affecting the economic access difficulties they face due to lack of income (Leather, 1992). In addition low income and socio-economic status have
been found to be linked to poorer nutritional intake and poor health (Leather, 1992; Craig & Dowler, 1998, DoH, 1999). The economic factors mentioned above have been found to be related to the physical availability of food. As a result of this, economic access is not considered to form the focus of the study, but to be one of the many potentially contributing factors that may affect older people's physical access to food shops.

2.4 Conclusions

The changes and development in food retailing over the last 30 years have been dramatic. The most notable of these was a move from town centres to edge or out of town sites. Large-scale development, the increase in car use for food purchases and the decline of local independents has had both positive and negative effects. Large stores provide a simple and convenient shopping experience stocking a wide range of goods and passing price benefits onto the consumer. However inevitably certain consumer groups have been left out. Government policy recommendations have encouraged a move away from large edge or out of town stores and back to town centres. This policy aims to increase accessibility of food shops and maintain the vitality and viability of town centres. In addition the convenience market is becoming increasingly prevalent, particularly on the 'High Street'.

Older people are considered to be a disadvantaged group in terms of their ability to access food shops. Physical constraints (such as lack of access to a car), economic and budgetary constraints may affect older people's ability to conduct their food shopping. The availability and accessibility of food shops for older people requires more research to determine the extent to which changes in retail location have affected this consumer group.
CHAPTER 3 - LITERATURE REVIEW

Dietary Variety and Food Selection among Older People.

3.1 Introduction

Current UK Government health policy has highlighted the association between good nutrition and the maintenance of good health (DoH, 1999). Diet and nutrition are considered fundamental in the prevention of many diseases. The consumption of a varied and healthy diet is recommended by both the NHS Plan (DoH, 2000) and the National Service Framework for Older People (DoH, 2003). Both of these initiatives were established to present issues of reform and funding and to establish areas of priority with regard to health as a whole and for specific groups respectively. The consumption of a varied and healthy diet is recommended as a method by which individuals can maintain good health, help to prevent disease and increase the amount of time they spend free from illness.

Previous research in to the health and lifestyle behaviours of older people has observed that diet, alcohol consumption, smoking and exercise are influential in the maintenance of good health (Ginn et al, 1997; DoH, 2000) and that the consumption of a healthy diet is influenced by age (Cooper et al, 1999). The present study focuses on the potential barriers which may exist for older people in obtaining a healthy and varied diet. The study therefore examines access to food shops and attitudes to healthy eating of a sample of older people to ascertain whether these factors may influence dietary variety. The issues of access, mobility and retail development as potential influences on the shopping behaviour of older people were considered in Chapter 2. The following discussion focuses on the main factors found to affect the diet and food choices of older people.
Previous research has found that the nutritional needs of older people may differ from those of the rest of the population (Ahmed, 1992; Martin, 2000; Bernstein et al, 2002). With these differing needs in mind, the following section reviews the literature examining several aspects of diet and nutrition in relation to older people. The chapter considers nutritional assessment, dietary habits and potential barriers which may prevent older people accessing food, before considering food choice models and the Theories of Reasoned Action and Planned Behaviour in relation to older people.

3.2 Older people, diet and nutrition

Several previous studies have considered the diet and nutrition of older people (Bowmen et al, 1982; McIntosh, 1990; Ahmed, 1992; Charles, 1998). However, the biggest study to examine the diet and nutrition of older people in the UK was the National Diet and Nutrition Survey (Finch et al, 1998).

The National Diet and Nutrition Survey (NDNS) of people aged 65 and over (Finch et al, 1998, Wynne, 1999) examined the dietary intake and nutritional status of a representative sample of 1,275 free living and 412 institutionalised older people in England and Scotland. The survey, the first national survey of the nutrition status of older people in 20 years, used four day weighed records, body mass index, blood and urine samples and anthropometry as methods for nutritional assessment. Overall the survey observed a generally low prevalence of under-nutrition (identified using Body Mass Index) among the over 65s in England and Scotland. The survey found that in terms of macronutrients older people were generally well nourished (e.g. as a group those assessed met recommendations set by COMA (1992) for total fat intake). However, in terms of calorific intake and micronutrient intake the survey found that problems of under-nutrition existed. On average both male and female respondents consumed approximately 400 kilocalories per day less than the recommendations set for older people (COMA, 1992; Wynne, 1999), suggesting that on average older people in the sample were not consuming the optimum amount of energy, but that they were not significantly undernourished. In terms of vitamins, minerals and other nutrients, older people in the sample were identified as consuming below the
recommended intakes of Vitamins C, D, Magnesium, Potassium and Fibre. Fourteen percent of men and 13% of women were found to have low Vitamin C status leading to recommendations for older people to consume a variety of fruit and vegetables daily and public health initiatives to promote government recommendations of consuming at least five portions of fruit and vegetables daily (Finch et al, 1998; Wynne, 1999; DoH, 2000). In addition intakes for both men and women were below the recommendation of 18g/day for fibre. The survey reported intakes of 13.5g/day for men and 11g/day for women in the free living group, further emphasising the recommendation to increase public health messages to older people regarding fruit and vegetables intake as they are also a source of fibre in the diet.

Whilst the survey did not identify extreme problems of under nutrition it highlighted issues which may have implications for long term nutrition and health. The current life expectancy of a man in the UK is 75 years (80 years for women) and it is calculated that at least 15 of these will involve long standing illness or disability (DoH, 1999). Government recommendations for maintaining good health into older age suggest that older people would have a greater number of years free from illness as a result of good nutrition. This in turn could lead to the maintenance of independence into older age and a better quality of life as well as reducing pressure on an already overstretched health and social care system.

Finally, the survey highlighted a general lack of information regarding the food and dietary choices and nutritional intake of older people, an issue which has been raised as part of both dietary recommendations (COMA, 1992; DoH, 1999), government reports (Foresight, 2000) and previous studies regarding the dietary habits of older people (Hare et al, 1999; Bernstein et al, 2002). NDNS concluded that the survey had demonstrated a need to encourage older people to consume a healthy, varied balance of different foods in order to achieve optimal nutritional intake and therefore promote good health.
3.3 Factors affecting dietary intake and food availability in older people

Previous research has highlighted a number of factors that may influence an individual’s ability to purchase foods including geographical or physical access, mobility, attitudes and income factors (Age Concern, 1996; DoH, 1998; SEU, 1998; Department of Food and Rural Affairs, 2001. In addition, diet has been found to be strongly related to the availability of food and food choices (Lehmann, 1989; Herne, 1995; McKie, 1999) and in terms of more vulnerable consumer groups, which include older people (see chapter 2, section 2.2), consumption of a healthy diet may be related to an individual’s ability to purchase such goods (DoH, 1998; Cooper et al, 1999; Furey et al, 2001).

It has been suggested that the major influences which may cause poor nutrition among older people can be divided into two groups; medical and social causes (Lehmann, 1989; Ahmed, 1992; Bernstein, 2002). Medical causes (e.g. impaired appetite, oral problems or the affect of medication) have been found to affect an individual's ability to absorb nutrients from food efficiently. Social causes may include lack of knowledge regarding nutritional issues, poverty, social isolation, bereavement or lack of mental acuity.

Chapter 2 discussed older people as consumers and the potential factors which may influence their ability to reach food stores. The following discussion examines the concept of access and availability further, and from a public health nutrition perspective, by considering the potential barriers which previous research suggests may influence older people’s access to foods. Availability is defined as part of the present research as ‘the food an individual can obtain based on external or personal factors’ (Chapter 1, Section 1.2). The potential barriers to the availability of food have been identified as falling into several categories: Physical, Economic, Cultural and Personal availability (Herne, 1995; Martin, 2000; Bernstein et al, 2002).

Webb & Copeman (1996) noted that although in theory an older consumer has an almost total lack of restriction on the food selections they can make, in reality this is often not the case. Factors such as affordability, catering and geographical
availability can limit the choices available to an individual. Whilst there is a possibility that older people select foods as a result of differing influencing factors to other age groups, the emphasis should be on their heterogeneity as a group. As a result of this whilst older people are more likely to experience immobility, low income and a higher degree of dependence it is also true that many are healthy, active, highly independent and relatively affluent.

The economic availability of food was discussed in Chapter 2 (section 2.3.3) with regard to the potential for poverty or the rise of affluence in older age and the influence of these financial states on the availability of food. Personal availability will be discussed further in section 3.5 with regard to food choice attributes. The following review therefore considers previous research examining the physical and cultural availability of food with a focus on older people as a cultural group rather than specific cultural beliefs.

3.3.1 Physical availability of Food.

Physical availability can be considered to be a function of an older person’s access to stores i.e. the ease with which they can reach food shops. Trends with regard to food shopping have led to the development of out of town locations, with a significant reduction in local shops (Guy, 1994; see also, chapter 2). Research has found that many people find that physically obtaining food is the most difficult aspect of food shopping and spend considerable amounts of time getting to and around food stores (Davies, 1981; Bromley & Thomas, 1995; Miller et al, 1998; McKie, 1999; Wylie et al, 1999). Mobility has been found to be one of the most restrictive factors affecting older people’s ability to do their food shopping (Age Concern, 1996; Matheson & Summerfield, 1999; Herne, 1995; Wylie et al, 1999; Whelan, 2002).

Previous research into older people’s physical access to food shops is considered in more detail in Chapter 2 (section 2.3.1). However, there is also research which suggests that older people’s ability to reach food shops is dependent on their physical attributes, such as age, mobility and disability. For example, the ability to carry heavy loads due to low levels of strength and cardiopulmonary fitness may prevent
the purchase of desired items or an increase the number of shopping trips required to obtain food. Circulatory diseases such as angina, as well as arthritis and osteoporosis are more common in older people restricting individual mobility and the ability to carry goods. In addition to this mobility is further restricted by the fact that older persons are less likely to own a car (Age Concern, 2000).

Wylie et al (1999) recruited older people from a day centre to examine the health and social factors that influenced the subject's food choices. Of the twelve subjects interviewed eleven did their own food shopping, but only five travelled to the shops independently. Four respondents reported factors that they found made visiting food shops more difficult. These included: uneven paving (making walking difficult), lack of pedestrian crossings, bus drivers pulling away before they were seated and shortness of breath due to the exertion of walking to a shop. Inside the shop several other physically related problems were highlighted such as the height of shelves and trolleys, which were difficult to manoeuvre. These findings raise the issue of in-store access (i.e. the ease with which older people can manoeuvre around the store and obtain food), which was considered previously in Chapter 2 (section 2.3.2). However, the concept of physical availability primarily focuses on an individual's ability to reach food stores and the ease with which they could travel should they choose to. The research presented above, demonstrates how physical access to food shops may influence not only the store visited, but potentially the food available once a store is reached. The research of Wylie et al (1999) further emphasises previous research which has suggested that older people experience difficulties in reaching food shops and therefore find ways to access food shops in a way they can manage. The development of coping strategies may in turn lead to compromise in terms of food selection and consumption.
3.3.2 The influence of past behaviour

When examining the dietary habits of older people it is necessary to take into account the heterogeneous nature of a population with a wide age range and a variety of knowledge, attitudes and preferences (Morgan, 1992; Gunter, 1998; Finch et al, 1998). Tinker (1997) noted differences in the older population compared with younger groups regarding attitudes towards eating a more healthy diet and certain dietary behaviours have been found to be more prevalent among older people than younger populations (Cooper et al, 1999, DEFRA, 2001). The development of nutrition messages, the previous availability of foods and wider cultural changes in diet in the UK, are therefore considered as factors which may influence the availability of food to older people.

The potential differences that exist in the dietary habits of older people can in part be attributed to changes in the focus of nutrition education over the second half of the 20th Century (Webb & Copeman, 1996, DEFRA, 2001). These changes involved a shift from nutrition messages to ensure the consumption of an adequate amount of calories and nutrients, to recommendations that encouraged a reduction in dietary intake of specific elements in the diet in order to prevent the onset of diseases such as cancer, heart disease and non-insulin dependent diabetes (DoH, 1999). It is worth noting at this stage that nutrition knowledge is constantly developing and many of the links between diet and disease were not fully understood until older people had already established food selection and consumption patterns.

The present study examines not only dietary variety, but also the attitudes expressed by older people with regard to healthy eating. Research has found that food choices may be related to past behaviour (Shepherd, 1989; Povey, 1998) and that attitudes or behaviours may be formed as a result of previous restrictions or recommendations to their diets (Herne, 1995; Raats et al, 1995; Povey, 1998). Older people have been identified as a group who may rely on past behaviour to influence present dietary habits (Schlenker, 1984; McIntosh et al, 1990; Lilley et al, 1998). In general those over 70 have been found to be more likely to consume white bread, confectionery, full fat milk, sugar and salt (Department of Environment, Food and Rural Affairs,
The development of specific age related dietary habits in older people can be explained in part by the availability of foods and changes in societal attitudes over time. Examples of foods that have held particular meaning in society in the past and have therefore been found to influence their consumption among older people include white bread and butter. White bread was not widely available in the UK in the first half of the 20th Century and had therefore been considered a prestige food and whilst the consumption of wholemeal bread has steadily increased in the UK population over the last 10-15 years, encouraged by the emphasis of the benefits of dietary fibre in nutrition education older people remain among those who consider brown bread to be inferior and eaten by those who could not afford white bread (Webb & Copeman, 1996). Similarly, butter is one of several foods heavily rationed during the Second World War with the margarine available at the time being cheap and artificial. Following an increase in concerns regarding saturated fats and cholesterol, butter consumption decreased among the UK population as a whole, but older people have been found to have maintained the view that butter is preferable (Howarth, 1993; Lilley et al, 1998). The attitudes observed among older people reflect the influence of external factors on diet and food choice such as the opinion of others and societal norms. Krondl et al (1982) in considering factors influencing food choice among older adults found prestige to be the most important factor regarding food selection. Belief about the prestige level of foods caused people to purchase them, exerting a greater influence than price, convenience or health beliefs. Hence, whilst a food may be available in other respects, selection of this food may be susceptible to cultural factors some of which may be age related. The many aspects which may shape the food choices of older people will be considered in greater detail in section 3.5, expanding on the concept of economic, social, personal and psychological influences on food choice.
3.4 Dietary Variety

The present study considers dietary variety as a measure of nutritional adequacy among a sample of older people. However, prior to examining previous research regarding dietary variety with reference to public health nutrition issues such as nutritional adequacy and access to food shops, it is necessary to first define what is meant by dietary variety in the present study. The Penguin English Dictionary (2002) defines variety as 'the state of having different types (diversity)'.

With regard to nutrition, the concept of dietary variety involves consuming a wide range of diverse foods and has been adopted as a public health message as a method of maintaining good health (DoH, 2000). Therefore as part of the present study Dietary Variety is defined as: "the number of different foods consumed in a given time period" according to current government recommendations (COMA, 1992; DoH, 2000).

Dietary variety is considered to be one of the most important ways of ensuring a balance of nutrients for people of all ages. Research has suggested that a narrow range of food choices may lead to dietary inadequacies, of particular concern in older people (Bernstein et al, 2002). Current UK health policy recommends increasing the variety of foods in the diet in order to maintain good health (COMA, 1992; Department of Health, 1999). Past studies have found that nutrient intake is positively related to number of different foods consumed. In addition food choice research has found that older people who experience the greatest difficulties in food shopping are at the greatest nutritional risk (Herne, 1995; McKie, 1999) and would benefit from recommendations to consume a healthy diet, therefore demonstrating the continuing potential links highlighted in the present study between access, store choice and dietary variety.

Several studies have examined the relationship between diet and health among older people (see for instance COMA, 1992; Herne, 1995; Finch et al, 1998), most have used a nutrient-based approach, both to describe and quantify diet intake. Less attention has been given to dietary variety, which allows for the study of intake of
foods. As mentioned above, greater food variety has been found to contribute to greater nutritional adequacy in the sense that a wider variety of foods will provide a wider range of nutrients in the diet (Hodgson et al, 1994). In addition dietary variety has been found to

- dilute the effect of possible toxicants which would be consumed in smaller amounts if more food types were eaten.
- include a wider number of non-nutritional components (e.g. antioxidants) which can provide health benefits (COMA, 1992)
- take into account the variation in the properties of food resulting in different foods providing different nutrients (Drewnowski et al, 1997, Hodgson et al, 1994).

Previous studies have reported conflicting results with regard to the dietary variety of older people compared to other population groups. Krondl et al (1982) found that despite transport problems potentially affecting variety in diet, variety remained an important factor in food choice for people aged between 65 and 77 years. Similarly, Gregory et al (1990) noted that in The National Diet and Nutrition survey of British adults found that older people were more likely to eat a traditional diet (Gregory et al, 1990), for example, older people were more likely to eat non-fried potatoes and less likely to eat pasta or rice, but that this did not necessarily follow that their diets were significantly less varied. However, other studies have identified older people as a group that consumes particularly monotonous and nutritionally inadequate diets and that dietary variety declined with age (Kuczmarski, 1993; Drewnowski et al, 1997). Social isolation, low income, impaired health and low levels of physical activity have been found to affect eating habits and nutritional status among this group (Howarth, 1993; Drewnowski et al, 1997). Higher income and company at meals have been found to increase older people's dietary variety. Some research has observed that more varied diets often contain higher levels of energy, fat and salt (Krebs-Smith et al, 1987). However, given the kilocalorie intakes presented from the NDNS study (section 3.2) and research which has identified older people as a group who require more energy dense diets (Davies, 1981; Horwarth, 1989; Charlton, 1997; Food Standards Agency, 2002; DoH, 2003) over-consumption of energy is
considered a problem for only a small section of older people. In addition, current recommendations remain that older people should be encouraged to consume more varied diets in order to ensure adequate nutritional intakes (COMA, 1992).

Some research has been conducted examining the effect of gender on diet in older people (Donkin, et al., 1998; Johansson et al., 1999). Johansson et al. (1999) found that women generally consumed more healthy diets than men. A healthy and varied diet was found to be associated with both social status and lifestyle habits, which in turn may be related to income, physical access or nutritional knowledge. Men have been found to prefer more traditional English foods (Beardsworth et al. 2002) whereas women were more likely to eat fruit and vegetables on a daily basis and showed a greater inclination to consume nutritionally recommended foods to maintain good health.

Variation in diet has been promoted as a method of maintaining good health among older people, and studies have found that older people prefer consuming diets comprised of a variety of foods (Krondl, et al., 1982, McKie, 2000). McKie (1999) found that older people strove to eat a healthy, varied diet, but bought items such as ready meals knowing they were unhealthy, to avoid carrying bulky or heavy shopping. The apparent compromise in buying behaviour indicated by McKie's finding was supported by the fact that older people reported spending an increasing amount of time accessing food, developing support networks or coping strategies to allow them to maintain a level of independence by continuing to shop for themselves. These coping strategies included the adaptation of food preferences due to mobility or access problems. The research by McKie has re-addressed the concept that older people do not have equal access to healthy food in the same way as other age groups. As a result of this food choices and any adaptations to this behaviour may not be as a direct result of choice or intention, but as a coping strategy for obtaining food.
Dietary variety has become popular as a food-based method for the assessment of diet quality. As Bernstein et al (2002) note, the measurement of dietary variety provides the benefits of a straightforward method of dietary assessment, which could serve as a useful screening tool for identifying individuals at nutritional risk. However, as the above discussion demonstrates, there has been relatively little work examining the dietary variety of free-living older people, particularly with reference to aspects of accessibility and store choice, indicating the need for further research.

3.5 Food Selection and the Psychology of Food Choice

Examining the dietary behaviour of older people requires an understanding of the selection processes that drive food choices. A wide range of factors may affect an individual's dietary decisions. The present study focuses on the non-nutritional influences of food of access to food and the availability of food shops.

Previous research has attempted to organise and integrate the many factors that potentially influence food choices (Khan, 1981; Booth & Shepherd, 1988; Shepherd, 1989). Khan (1981) distinguished between a wide range of factors that may exert an influence on food choices (as shown in figure 3.1) suggesting that the food selection process was a complex phenomenon in which a large number of determinants existed which not only influenced food selection, but were also potentially interrelated. Not all of these factors will affect every individual and of those that do, not all will affect the individual at any one time, reflecting the diversity of influences on food choice. Herne (1995) suggested that whilst Khan's model has been shown to demonstrate food preferences in children or adults of varying ages, it is still equally applicable to older people. However, research into the food choices of more specific population groups has found that some elements of food selection models act as more significant drivers of food choice when lifestyle factors were taken into account. Some research has identified taste and preference as being the most influential factors on food choice (Krondl et al, 1982), whilst other studies have identified attitudes and knowledge, social support or physical and economic access as being the primary drivers of food choices (Khan, 1981; Howarth, 1993; Lang, 1995; McKie, 2000).
Howarth (1993) noted that in lower socio-economic groups, older people were more likely to use food and cooking as a means of social support, saving money and coping with loneliness or social exclusion. An overall pattern linking poverty to lack of choice has been highlighted in previous observational studies, noting that those with lower incomes living some distance from a supermarket or high street stores became more dependent on expensive local stores (Davies, 1981; Lang, 1995; Leather, 1992).

Khan (1981) suggested that levels of nutrition education had a significant impact on food selection processes. However, whilst those with higher educational levels ate healthier diets, it did not follow that those in lower social classes (or older respondents) had significantly lower levels of nutrition knowledge (Leather, 1992). Respondents of all ages and education levels were found to be willing to absorb and respond to nutrition messages (Herne, 1995).
Fig. 3.1 Khan’s model of factors influencing food preferences (1981)
Older people have been found to be more receptive to nutrition education messages that focus on them directly (Warshaw & Davies, 1985). Previous research has also noted a difference in attitude led to a difference in the diets reported by older people observing that those who believed nutrition to be important and considered themselves to have higher levels of knowledge in terms of nutrition ate better quality diets (Grotowski & Sims, 1978).

Shepherd (1985, cited in Shepherd, 1989) developed an alternative model of food choice to that of Khan (1981), which examined how food choices may be determined (Figure 3.2). Both Khan (1981) and Shepherd (1985) developed models examining the personal socio-economic and food related factors, however, whilst Khan (1981) focused on the impact of these factors on food preferences, Shepherd examined their influence on food choice and resulting food intake. In the context of Khans’ model (1981), given the influence of the ‘intrinsic’ and extrinsic’ factors, preference indicates a greater liking for one food over another. Alternatively, Shepherd (1989) suggests that the act of choosing (as opposed to preference) results from a combination of food, person or socio-economic factors. Shepherd’s model is distinct from Khan’s as it suggests that personal food preference (e.g. taste, hunger, appearance) in conjunction with the influence of external factors (such as health, price or social or cultural factors) influence the food choices available to an individual and therefore their food intake. Shepherd’s model (1985, cited in Shepherd, 1989) suggests that there is a greater distinction between food choice and intake than Khan’s model had observed and is therefore more closely aligned with the thrust of the present research, which suggests that access to and availability of food may influence store choice which in turn may affect store usage and therefore dietary variety. In addition the study considers that attitudes to healthy eating may affect the dietary variety of older people, indicating that person, socio-economic and food may all influence the store choice and dietary variety among older people.
Fig. 3.2 Factors Influencing Food Choice (Shepherd 1985; cited in Shepherd 1989)
3.5.1 Attitudes and Behavioural Intentions among Older People

Shepherd (1989) suggested that in addition to the primarily extrinsic factors that influence food choices, a deeper psychological influence also exist. These influences may include attitudes, belief, knowledge or social influences regarding food. Age has not been found to diminish an individual's susceptibility to nutritional messages and beliefs (Goodwin, 1999; Leather, 1992). However the targeting of health promotions may need to be different for an older person due to physiological changes as a result of age, which affect their requirements. Attitudes and beliefs may affect an individual's judgement regarding recommendations or their diet, which in turn may direct their behavioural intentions and consequently their behaviour.

Axelson & Penfield (1983) conducted a study to ascertain the food and nutrition related attitudes of older people, examining respondents' opinions of belief statements. The study found that whilst social isolation and lack of education affected the food choices of some older people, respondents were generally aware of nutrition messages and were willing to change their diets accordingly. Similarly, McIntosh et al (1990) studied the relationship between beliefs about nutrition and dietary practises of older people. Whilst beliefs concerning nutrition were found to influence dietary intake they were, for the most part, independent of social background characteristics and based on individual differences as opposed to group characteristics. Nestle et al (1998) examined the behavioural and social influences that affect an individual's food choices examining attitudes to food choice with regard to their social and societal influence. The authors concluded that a number of areas required further research including the development of understanding as to what food and food choice really means to consumers.

Shepherd (1989) recommended caution when considering the influence of attitudes and beliefs on dietary choices, suggesting that merely examining belief structures may be too simplistic and that many other factors presented in Figure 3.2 may also have a significant influence on food choice.
3.6 The Theory of Reasoned Action

The above discussion indicates that the food choices an individual makes are influenced by a wide variety of factors. Whilst these can be looked at in isolation it is likely that more than one such factor will influence a selection at any one time (Shepherd, 1989, Khan, 1981, Webb & Copeman, 1996). Following research such as that by Shepherd (1989) suggesting that the study of beliefs statements may be too simplistic when considering dietary choices, psychological models were adopted to examine the effect of attitudes and beliefs on the food selection behaviour of individuals. Two such models will be considered here, the Theory of Reasoned Action (Figure 3.3) and an extension of this model, the Theory of Planned Behaviour (TPB) (Figure 3.4). The Theory of Reasoned Action (figure 3.3) suggests that an individual’s intention to perform a behaviour can be determined by measuring their attitudes towards the behaviour, their beliefs with regard to the outcome of the behaviour and the influence of others. Specific definitions and discussion of the models are presented elsewhere (Chapter 5, section 5.7).

The Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1981) has, for the most part been extensively used in psychology to demonstrate relationships between belief, attitude and behaviour. More recently it has been applied to food choice research and found to be equally applicable in this area (Conner, 1995; Povey, 1998) establishing a relationship between food choices and the attitudes that lead to these choices. For example, Povey et al (1998) used this theory to compare older people's understanding of healthy or unhealthy foods. The study found that many older respondents perceived their diet to be more or less healthy than it actually was.

Criticisms to the Theories of Reasoned action and Planned Behaviour are discussed in section 3.6.1, however it is worth noting that whilst research has examined the potential of including factors such as moral dimensions of behaviour, habit or behaviour disposition in the TPB (Katz, 1985; Povey et al, 1998; Sheeran, 2000), Ajzen (1991) maintains that all potential influences on behaviour intention are considered in some form by the inclusion of perceived behavioural control in the Theory of Planned Behaviour.
Figure 3.2: Representation of the components of the Fishbein and Ajzen attitude model
Shepherd (1989) suggested that whilst the measures of attitudes and belief examined by the TRA were adequate for examining the psychological influences of food choice, other factors working independently of the model may also exist. These included habit and the individual's moral obligation to behave in a particular way. As a result of the TRA's inability to explain all those attitude or belief factors on which food choice may be dependent, several authors developed the TRA to include additional factors that may influence behavioural intention.

3.6.1 The Theory of Planned Behaviour

Research has identified difficulties in using the TRA with regard to determining food related behavioural intentions (Grube et al, 1986; Katz, 1985; Warshaw & Davies, 1985). Criticisms include potential relationships between the attitude measures and the strength of behaviour intention as an appropriate measure of behaviour. Ajzen (1991) began to examine the factors that could disrupt the intention-behaviour link. The author identified the necessity to determine why people hold certain attitudes and subjective norms, a measure that proved to be deficient in his earlier work with Fishbein (1980). Ajzen's adapted model, the Theory of Planned Behaviour is presented in figure 3.4

As in the original TRA model central to the framework of the TPB is an individual's intention to perform a behaviour. However in addition to attitude and beliefs towards the behaviour, perceived behavioural control is considered to be an equally important factor in the formation of intentions. Here, the more favourable the attitude and influence of others (subjective norm) with respect to a behaviour and the greater the perceived behavioural control is considered to be over this behaviour, the stronger the individual's intention will be to perform this behaviour. The model is discussed in more detail with reference to definitions and methodological considerations in Chapter 5 (section 5.7).
Since Ajzen's development of the TPB (Ajzen, 1991) nutrition research has adopted this model as a more appropriate basis on which to examine food choice. The rationale for this being that the potentially infinite number of influences on food choice can be structured more clearly if a respondent's perception of control over their behaviour intention were taken into account (Ajzen, 1991; Sparks et al, 1997, Raats et al, 1995).

Raats et al (1995) applied the TPB to measure attitudes towards the consumption of milks with differing fat content noted the potential benefits of close scrutiny of different attitudes. However, the inclusion of perceived behavioural control only increased the TRA's predictive power for intention to consume one type of milk. In addition to this the authors discussed the potential for a behaviour to be under volitional control, but embarrassing and therefore considered difficult to perform. As a result of this it is suggested that TPB needs clarification regarding the notions of difficulty and control. Other studies based on the TPB reported a different pattern of responses to what they termed perceived difficulty and perceived control (Sparks et al, 1997). One of the main problems with this type of questioning is the respondent's interpretation of control which the authors suggest needs to be taken into account and having adequate measures of perceived behavioural control may help to define this.

Ajzen (1991) concedes that problems still exist in the application of both TRA and TPB in research; however he disagrees with the suggestion that all beliefs about a given behaviour could be to obtain a single measure of behaviour disposition. His objection is based on the fact that the approach blurs the distinctions which exist between attitude, subjective norm, perceived behavioural control e.g. between personal evaluation of the behaviour, socially accepted behaviour and the level of control the individual feels they have over whether or not they conduct this behaviour.
Figure 3.4 - Schematic Representation of the Theory of Planned Behaviour (Aizen, 1991)
The development of the TPB took into account some of the criticisms of the TRA. However research has indicated that there may be other measures which need to be considered particularly in relation to food choices and several studies have considered the addition of further variables (Raats et al, 1995; Sheeran et al, 2000).

Potentially the most significant criticism of the TRA and TPB is that they do not consider past behaviour or habit. Budd et al (1984) found that past behaviour could act as an independent predictor of future behaviour. However Ajzen (1991) rejected the concept of habit suggesting that knowledge of past behaviour would not significantly improve the prediction of future behaviour and that the model contained all the potentially influential variables in a set of determinants and therefore account for all non-error variance in the behaviour. In terms of food choice issues, it may be that past behaviour, or more appropriately habit, has a greater role to play in forming behavioural intentions. Ajzen & Fishbein (1980) would argue that past behaviour or habit will inform attitudes towards a food and beliefs about it, therefore contributing to the formation of a behavioural intention regarding it.

On a more choice specific level, Shepherd (1989) also suggests that the difficulty with applying a general model of choice to food is that it fails to take into account the pleasure associated with eating.

**Conclusions**

A large number of factors have been found to potentially influence the food choices and dietary habits of older people. These include personal determinants of choice such as physical, economic, cultural and personal availability; all of which may also be influenced by the changes in retail development and location outlined in Chapter 2. In addition psychological factors may influence the food choices and dietary habits of older people in terms of their attitudes and beliefs with regard to diet related behaviours, as discussed in sections 3.5 and 3.6. The aim of the present research is to examine the dietary variety of older people in the context of previous research presented, with a view to determining the influence of the factors presented above.
CHAPTER 4

Discussion of Concepts leading to Hypothesis generation.

4.1 Introduction

The previous discussion (Chapters 2 & 3) explored the literature on which the present research is based, highlighting research into retail location, food choice, dietary variety and older people as consumers. A review of the literature has demonstrated the need for further work to examine the potential links between changes in food retail provision and the shopping behaviour of older people.

The concepts presented in the following sections discuss the proposed research with reference to the potential relationships to be examined between food shopping behaviour, attitudes to healthy eating and diets among older people. It provides both a rationale for the research and an explanation of the generation of the hypotheses to be tested by presenting a hypothetical model of the relationships to be tested.

4.2 Development of the Conceptual Model

Changes in retail provision in the UK have been documented in the literature review. It has been suggested that advances in the development of food shopping and the corresponding increase in edge or out of town stores and decrease in smaller local stores, has led to sections of the community being excluded from access to shops due to income or access problems (Guy, 1988; Bromley & Thomas, 1995; Social Exclusion Unit, 1998). Older people are considered part of disadvantaged groups due to a general decrease in mobility with age and an increase in carlessness with age. One in 12 men and one in seven women aged 65 and over are unable to get out by themselves (ONS, 2000a). The majority of these studies have been to examine disadvantaged groups as a whole, rather than examining the specific needs may exist among older people.
Several studies have attempted to determine what these needs may be for older people (Leighton & Seaman, 1997; Lilley et al, 1998; Hare et al, 1999). Previous research has mainly focused on access to stores due to changes in retail provision, which result in food choices. This study aims to examine how access to food may influence dietary variety. The focus of this work is nutrition, the types of food older people consume and whether this differs according to whether an individual can shop for themselves. The study also questions the way older people access food and whether this in turn affects dietary choices and therefore intake. In short, do those who do their own food shopping have better diets?

As mentioned previously, diet has been found to be strongly related to the availability of food and food choices (Herne, 1995; McKie, 1999). In addition, Lehman (1989) suggests that physical disability may prevent older people from accessing food and therefore affect their nutrition. However, whilst these studies examined issues of food choice and physical disability there remains a need to examine how the food shopping habits of older people may influence their dietary choices. Our Healthier Nation (DoH, 1999) emphasises the need to maintain good health in later life. Good nutrition is acknowledged as playing a fundamental role in ensuring that people live more years of their life in good health. Older people have expressed a desire to maintain their independence, both in terms of shopping for themselves and making their own food choices (McKie, 1999. Lilley et al, 1998). The development of edge/out of town supermarkets may have increased the challenge of maintaining this lifestyle among a population with reduced mobility, both in terms of access to cars and the ability to get 'out and about' (Age Concern, 2000).

Continued research into the habits and needs of older people as consumers may provide additional information which will be of use to retailers as they market to and provide for an increasing section of the population. In addition, examining the potential relationship between access, store choice and dietary variety will provide more data on this relatively under-researched population group. In addition, the study proposes to examine the knowledge and attitudes of older people towards
healthy eating as attitudes have been found to influence an individual's decision to purchase and consume foods (Khan, 1981; Shepherd, 1989; Raats, 1992).

4.2.1 Access to food shops and store choice

Shepherd (1989) observed that food choice is not a constant phenomenon. As a result of this, the availability of food can be examined for different groups with different needs. Morgan (1992) suggests that it is older people who are living independently who need more research as they are functioning within the retail sector in the same way as other age groups. Leighton (1996) found that older consumers had a limited store choice because of their lower income, which in turn led to reduced bargaining power for this section of the population.

Bromley & Thomas (1995) found carlessness to be strongly associated with grocery shopping locally rather than at a supermarket and therefore having a decreased food choice. Previous research has found that good access to a shopping outlet is an important choice factor for older people unless a wide product selection is available at a more distant store to which they are able to travel (Hopkin, 1978, Smith, 1988). However, it would be a generalisation to suggest that a lack of access exists for all older people. Leighton (1996) noted that in general, older people had few problems accessing food with many using supermarkets to do their food shopping. However, as Hare et al (1999) consequently pointed out, access to food is a question of necessity. Informal networks of support exist which disguise the problems of access and cause some older people to be more dependent than they would otherwise be, e.g. friends or relatives helping with food shopping. Without these networks, many older people would be forcibly constricted in their access to food, either by problems with mobility, transport or in terms of food choices. Previous findings regarding support networks and coping strategies have resulted from studies which have focused on shopping behaviours (Hare et al, 1999; McKie, 1999). However, this area remains relatively under-researched which may be due to the fact that older people have been found to have a propensity to accentuate positive aspects of food shopping rather than mentioning problems (Miller et al, 1998, McKie, 1999). This was found to be due to a desire present a public image of independence as opposed to
demonstrating a need to find ways in which to get around difficulties and develop coping strategies.

4.2.2 In-store access

There has been relatively little research into how the internal layout of a store affects older people's shopping decisions (Mason & Beardon, 1979; Hare et al, 1999). Individuals can and do access food on a regular basis. How they do this and the steps taken to make this process possible are the details that require consideration. An older person may be able to reach a store, but only one with poor internal provision. Hare et al found that internal lay out affected older people in terms of their ability to purchase the foods they desire. This research aims to expand on Hare et al’s (1999) work by considering whether store choice may be linked to physical access within a store.

4.2.3 Dietary Variety

Variety can be defined as “The state of having different forms or types; diversity” (Penguin, 2002). Current dietary recommendations endorse the consumption of a variety of foods in order to ensure good nutrition (MAFF, 1999; Food Standards Agency 2002). There have been relatively few studies looking at dietary variety specifically, however the concept is best defined as including foods from each major food group in diet (Krebs-Smith et al, 1987). The authors considered the major food groups as; fruits, vegetables, grain products, milk and milk products, meat and meat alternates and fats and sweets. The concept of dietary variety is explained in greater detail elsewhere in this study, however, it is necessary to reaffirm this definition when discussing dietary variety in older people. Drewnowski et al (1997) suggested that social exclusion and low income may affect dietary variety and thus factors which have been shown to influence dietary intake may also influence dietary variety. The present research aims to examine some aspects of social exclusion by considering the availability of food and how older people access food shops. In order to examine food choices more widely, the study also hypothesises that attitudes towards healthy eating may also influence dietary variety, acting independently of access issues.
4.2.4 Healthy eating - attitudes

In addition to physical access and socio-economic factors, which may affect shopping behaviour and dietary variety among older people, the study also examines the influence of attitudes and beliefs expressed by this group. The potential influence of attitudes and beliefs with regard to food choice is demonstrated by the person attributes presented in Shepherd's model of food choice (1989).

McKie (2000) investigated older people's perceptions of a healthy diet and healthy eating in older people in Scotland. The study found that respondents made references to food as a source of energy, but very few made the specific link between daily food intake and energy levels. Variety and eating in moderation were considered more important than a balanced diet or its nutritional content. Other studies have found similar results, with respondents focusing on a preference for ‘proper’ or ‘traditional’ foods (Grotowski et al, 1978; Povey et al, 1998; Lilley et al, 1998).

The present study takes into account the findings of previous research by examining the attitudes of older people with regard to healthy eating. The role of healthy eating, fruit and vegetables and traditional English foods are considered with reference to their influence on the dietary variety of a sample of older people. The study hypothesises that attitudes towards healthy eating may influence the dietary variety of the group interviewed.
Figure 4.1 - A hypothetical model presenting the potential relationships between access, store choice, attitudes to healthy eating and dietary variety among older people. (Previous research in each area is indicated by the first author and date.)

- Ability to do own food shopping (McKie, 1999; DoH, 1999; ACE, 1996)
- Amount spent on food (McKie, 1999; DoH, 1999; ACE, 1996)
- Income (DoH, 1999)
- Age (Bower, 1997)
- Marital status (DoH, 1999)
- Age (Bower, 1997)
- Ability to go out (DoH, 1999)
- Transport (DoH, 1999)
- Distance (DoH, 1999)
- Mobility (Bower, 1997; DoH, 1999)
- Frequency of shopping (DoH, 1999)
- Ease of access (DoH, 1999)
- Reason for store choice
- Store choice
- Dietary variety
- Attitudes to healthy eating
- Eating healthy
- Ability to do own food shopping

Older people's preferences in each area are indicated by the first author and date.
4.3 The present study

The discussion in section 4.2 presents the gaps in current research with regard to older people as consumers, their dietary variety and attitudes towards healthy eating. The areas lacking research were highlighted by the above discussion and assisted in the formation and development of hypotheses for the present study. In order to demonstrate the aims of the present study and draw together previous findings, the potential relationships between access, store choice and dietary variety, as well as the factors that may influence each individually, were incorporated to form a hypothetical model on which the present study is based (figure 4.1). All factors considered to have an influence on access, store choice or dietary variety were included in the model. The factor was annotated with the name of the first author of relevant previous research in that area. However the relationships suggested in figure 4.1 result from an examination of the literature and have helped inform the present study. The relationship between access, store choice and dietary variety has not previously been examined in this manor and it is primarily this relationship which is to be tested by the present research.

Store choice is presented as the central factor in the model as its role as a linking factor between access and dietary variety is to be tested as a part of the present research. As mentioned previously (chapter 1, section 1.2) the present research examines store choice primarily with a view to suggesting that those with restricted access would have constrained choices and therefore reduced variety in their diets. The present study therefore hypothesises that with reduced access, but a choice of stores an individual can maintain a higher level of variety in their diets (dependent on their attitudes towards eating more healthy foods). The greatest level of store choice is considered to be those who are able to choose to shop at a supermarket, given the greater range of goods, facilities and price benefits provided by such stores. In addition, supermarkets are considered in the present study to be representative of the type of food shops visited by most individuals with a higher level of choice (e.g. younger or with access to a car).
Store usage is considered to define the store visited as a result of store choice. By asking respondents their reason for visiting the store they do, a further aspect of store choice can be ascertained. For example, whether respondents feel they have a choice and whether restrictions or coping strategies exist which mean that they visit a certain store. Therefore store choice is the central factor to the model as opposed to store usage, although the later is taken into account.

As discussed in Chapter 1 (section 1.2), the present research outlines definitions for access, store choice, store usage and reason. The definitions of the major drivers of figure 4.1 are reiterated below.

**Access**

Access is defined as 'the ease with which a person could reach a given location or set of locations' according to Bowlby (1979). The present study aims to take into account the factors presented on the left hand side of the hypothetical model (figure 4.1) when considering access, namely method of transport used, how long it takes the person to reach the store, their mobility level and the distance from their home to the store. This will provide an overall picture of the level of access the person has to food shops and demonstrate whether one or more of the factors potentially store choice.

**Store Usage**

Store usage defines the store actually visited to conduct food shopping. For the present research this is the store most often visited to conduct the main food shop. Store usage is not shown on the hypothetical model (Figure 4.1), although it would occur between store choice and dietary variety. Store usage is not shown on the model as the study examines the potential influences on store choice. Whilst respondents are asked where they shop, the factors that lead to store usage drive the model.
Store Choice

Whilst store usage examines the shop actually visited, store choice takes into account the number of stores which could potentially be visited depending on access or availability. For example, an individual may choose to shop at a store for a number of reasons including access restrictions, transport, distance or lack of an alternative store.

Reason for choosing shop where conduct main food shop

The present study considers the reason given for store choice to be indicative of the factors which influence this choice. Therefore reasons will dictate store choice which will in turn influence the store visited (store usage). As a result of the potential influence of reason, it is considered to be a function of access and availability as well as store choice and is included both in the definitions given in Chapter 1 (section 1.2) and as a part of the conceptual model (Figure 4.1).

The above definitions qualify the hypothetical relationships suggested by figure 4.1 to be tested by the present research. However it is worth noting that whilst figure 4.1 suggests a number of factors which may influence access, store choice or dietary variety, the research also takes into account the potential relationships which may exist between these factors and acknowledges that interdependency may exist. The exception to the in Fig 4.1 is the relationship between access, mobility and the ability of an older person to do their own food shopping. Mobility has been found to affect older peoples' access to food stores (ACE, 2000), but also an individuals ability to shop for themselves at all (Herne, 1995, Matheson & Summerfield, 1999).

In addition it is worth giving consideration to the presentation of economic factors in the hypothetical model (figure 4.1). A number of previous studies have considered older people's economic access to food and shopping (Falkingham & Victor, 1991; Watts, 1994; Chung & Myers, 1999; Donkin, 1999). However, there is less research considering the influence of access on diet and dietary variety (McKie, 1999). The focus of the present study remains on physical access and the potential relationship
between access, store choice and dietary variety. As mentioned in chapter 2 (section 2.2.3) economic factors have been found to have a greater effect on the physical access factors influencing store choice than on store choice per se. Therefore whilst socio-economic factors will be considered as factors which may influence store choice (with reference to the work presented in figure 2.2.3) and whilst income and the amount spent on food are included in figure 4.1 they are not the focus of the main research model.

Figure 4.2 shows a simplified version of Figure 4.1. This model has been reduced to emphasise the main relationships to be tested by the current research and is drawn to suggest a linear relationship between access, store choice and dietary variety. The discussion in the literature review (chapters 2 & 3) indicated that the relationships may be more complex. However as mentioned previously, for the purposes of the present study, emphasis is placed on issues of physical access, which is considered to be the driving point of the hypotheses. Conceptualisation of the model (section 4.2.) did not suggest that all factors may be equally related, therefore the stronger relationships hypothesised are presented in a linear rather than triangular form to demonstrate the progression from issues of access to their potential influence on store choice and consequently dietary variety.

Another aspect of figure 4.2 which requires some attention is the hypothesised relationship between attitudes and dietary variety. The present study considers that older people’s attitudes towards healthy eating may influence their dietary variety. Attitudes are hypothesised as having an influence only on dietary variety as part of the present research. The study considers that any relationships which exist between attitudes to healthy eating and store choice, if of over-riding importance in store choice, would become apparent in the reasons given by respondents for choosing a particular store.

Having taken the above mentioned issues into consideration, the aims and hypotheses presented in section 4.4 reflect both the focus of the current research and the myriad factors which may play a part in influencing the relationship between access, store choice and dietary variety among older people.
Figure 4.2. Simplified model of relationships between access, store choice, dietary variety and attitudes to healthy eating among older people.
4.4 Aims & Hypotheses

Taking into account the above discussion and development the concepts that drive this study, the following aims and hypothesis have been generated in order to qualify the questions raised and give focus to the ensuing study. All hypotheses are based on the conceptual model presented in figure 4.1.

4.4.1 Objectives

1. To determine the food shopping behaviour of older consumers over 60/65 in terms of their access to and within food shops in Guildford Borough.

2. To examine the extent to which older people's ability to do their own food shopping and choice of store exerts an influence on their dietary variety.

3. To examine whether knowledge and attitudes to healthy eating may affect the relationship between access to food shops and dietary variety in older people.

4.4.2 Hypotheses

1. The food shop most often visited by an older person will be the food store nearest to their home.

2. An older persons’ food store choice will depend on their level of access (method of transport, travel time, distance, reason, perceived ease…)

3. Variety found in the diets of older people will be related to store choice, how they access the store they most often visit and their attitude to healthy eating.
4. Store choice is related to the internal layout of the store most often visited and facilities offered by this store.

5. Store choice and attitudes towards supermarkets are dependent on demographic factors such as amount spent per week on food, socio-economic classification, age, gender and marital status.
CHAPTER 5

Methodological Considerations 1 -
Focus Group interviews and development of a face-to-face questionnaire

5.1 Introduction

The present study proposes to use a combination of methods to attempt to answer the research objectives stated in Chapter 4. The combination of disciplines represented by this research requires a similarly combined approach to the methodology. This chapter and the next present the methodological considerations taken into account when developing the research. The individual research tools are examined in terms of their basis, development and implementation. Table 5.1 presents the methods adopted in order to examine each of the Hypothesis presented in Chapter 4 (section 4.4.2). All hypotheses were based on the conceptual model discussed previously (see chapter 4, figure 4.1) and their consideration required a number of different methodological approaches.

The methodology adopted used aspects of both qualitative methods, to determine the kind of issues present, and quantitative methods to determine the amount present (Silverman, 1998). The approaches chosen are discussed, examining both the qualitative methods of focus groups and the quantitative method of the development and analysis of findings from the analysis of findings following the implementation of a face-to-face questionnaire. Chapter 6 examines the methodology applied to examine dietary variety and intake among older people in Guildford. Dietary intake methods include a food frequency questionnaire (FFQ), the method used to validate the FFQ and the development of a dietary variety score. In addition, chapter 6 addresses sampling considerations.
Table 5.1 – The methods adopted to examine five hypotheses which consider the access to food shops and dietary variety among older people.

<table>
<thead>
<tr>
<th>HYPOTHESIS</th>
<th>METHODS USED TO DETERMINE HYPOTHESIS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The food shop most often visited by and older person will be the food store nearest their home.</td>
<td>Face to Face Questionnaire (postcode data), Guildford Borough Council EHO list of food shops (2001), <a href="http://www.mapquest.com">www.mapquest.com</a></td>
</tr>
<tr>
<td>2. An older person’s food store choice will depend on their level of access.</td>
<td>Face to Face Questionnaire Informed by focus group interviews</td>
</tr>
<tr>
<td>3. Variety found in the diets of older people will be related to store choice, how they access the food store they most often visit and their attitude to healthy eating.</td>
<td>Dietary Variety Score (from FFQ) Face to Face Questionnaire (Theory of Planned Behaviour)</td>
</tr>
<tr>
<td>4. Store choice is related to the internal lay out of the store most often visited and the facilities offered by this store.</td>
<td>Face to Face Questionnaire Informed by focus group interviews</td>
</tr>
<tr>
<td>5. Store choice and attitudes towards supermarkets are dependent on demographic factors such as amount spent on food per week, SEC, age, gender and marital status.</td>
<td>Face to Face Questionnaire</td>
</tr>
</tbody>
</table>
5.2 Methodological Approaches.

Due to the relative lack of research with regard to the shopping behaviour, store choices and dietary variety of older people, the research methods presented involve an exploratory theme. This was particularly the case for the focus group research which was undertaken partly to fulfil the initial requirement for this study, by establishing the main issues concerning food shopping for older people in Guildford. The initial requirements of the study necessitated an information gathering tool that would encourage discussion and allow respondents to freely express opinions regarding shopping habits and behaviours, as well as the changing food retail environment in Guildford. Morgan (1998) suggests that the most appropriate way of combining focus group work with individual interviewing is by using the former to enhance projects largely based on interviews, primarily by devising interview formats. The author also notes that this method is particularly useful when the topic or study population has not been extensively researched before, as is the case with this study. Initial focus groups ensure also that a topic is being researched from the participant's perspective not simply via previous theory or research. This is a method also reported by Kreuger (1994) who recommends the use of small scale focus groups as a preliminary or exploratory research tool designed to inform larger scale research.

One of the purposes of the focus groups was to highlight areas that were either problematic or of particular importance to older people in Guildford with regard to their food shopping experiences and establish areas which required further research. This ensured that questions asked as part of the more complex face-to-face questionnaire were of relevance to the older population of this area.
5.3 Focus groups

The basis of focus groups results from the concept of open-ended or non-directive interview procedures. In using this method, discussion is encouraged with planned topics or issues being introduced. Group members influence each other by listening and responding to the comments and thoughts of others during the discussion. The discussion environment is designed to be comfortable and non-threatening to encourage the participants to express their views. This is intended to create a more natural environment than the artificial isolation of single interviews.

When conducting focus groups, an awareness of the limitations of this method can be beneficial in removing potential constraints of the method. The environment in which the focus group takes place is often to all intents and purposes, artificial which may influence the type of responses given. In addition, previous studies have found that certain group members tend to dominate while others will refrain from entering the discussion (Mason, 2000). However, the presence and awareness of the interviewer can both guide and maintain discussion therefore pre-empting individual domination of the focus groups. The methods by which these problems were addressed are presented below.

Eight small-scale focus group style interviews were conducted in day centres in Guildford Borough to examine the views and perceptions of the shopping access of older people, to inform a questionnaire comprising one of the two main research tools for this study. The groups were kept to between three and five people owing to the day centre environment in which the interviews were conducted. The use of small groups for focus group interviews was based partially on previous experience by the researcher in conducting focus groups with older people. Large or conventional group sizes were found to exclude some individuals due to hearing difficulties or cause break away discussions within the group. The day centre environment meant that interviews often had to be brief and fit around other activities. In addition the researcher observed that
small groups ensured all respondents were included and given the opportunity to express opinions thereby broadening discussion whilst still allowing the interviewer to ensure discussion remained within the given topic. In a broader sense focus groups were considered more appropriate for several reasons. First, the established routine of the day centre prevented the movement of individuals, as did the decreased level of mobility in many respondents. Second, the size of the groups allowed established groups to partake in the study which reduced the artificial nature of focus groups suggested previously as a factor that may affect results. In addition the use of small groups of friends encouraged discussion amongst those initially unwilling to participate. Finally, this method was found to produce more discussion on the changes that have occurred in the retail provision of Guildford town over the past twenty to thirty years.

Five key questions were addressed to the respondents in order to obtain information on a variety of issues and maintain a flow of discussion. In addition three 'ending' questions were asked regarding shopping experience and to allow for any unprecedented comments, which arose in the course of the interview to be discussed fully.

**Key Questions:**

1. *What are your reasons for shopping where you do?*
2. *How do you get to your store?*
3. *What is restricting about where you shop?*
4. *What problems do you encounter whilst shopping?*
5. *What do you enjoy about shopping?*

**Ending questions:**

1. *What could improve your shopping experience?*
2. *Given 5 minutes with a supermarket manager what issues would you raise with him/her?*
3. *Have we missed anything?*
The informal nature of these questions aimed to encourage discussion between participants regarding their feelings and opinions on issues relating to food shopping.

5.3.1 Analysis of Focus Group Interviews.

The analysis of the focus group interviews used a method outlined by Burnard (1991), a thematic content analysis based on Glaser and Strauss' grounded theory. This is a stage by stage process, which allows a systematic analysis of qualitative data whilst acknowledging the difficulties that exist in understanding the perceptions of others.

Burnard (1991) recommended a combination of methods to allow an individual's views to be recorded without preconception whilst providing a framework in which to analyse the resulting data. The method is based on two major forms of qualitative analysis grounded theory and content analysis. Grounded theory, as developed by Glaser and Strauss (1967) is based on the concept that theory is generated through data collection and analysis. This is known as inductive reasoning, where a researcher will develop propositions or explanations from emerging analysis, having no preconceptions before the research begins. Alternatively content analysis allows for an element of pre-formed theory, based on previous research on which to structure further study.

The combination of grounded theory and content analysis was appropriate for the analysis of focus groups as part of the present study as it allows for the examination of respondents' comments without preconceptions, but also allowed for guidance of discussion and analysis through the use of preformed questions.

Burnard (1991) suggested analysis could develop the meaning of the transcripts so as to draw out their general themes. The analysis uses quotations for two purposes. Firstly to illustrate the issues raised during interviews and their analysis and secondly to apply any explanations given in a more immediate sense to the issues under examination. Burnard (1991) presented 14 stages of analysis which, if followed in this progressive form, will
demonstrate and develop themes which exist with the interview transcript. The stages of analysis followed are presented below:

1. Notes were made following interviews, which serve as memos for later categorisation of transcripts.
2. Transcripts were read through and notes made on general themes.
3. The transcripts were examined again and as many headings as possible are written down, which describe all aspects of the content.
4. A list of categories was compiled as a result of the headings formed in section three.
5. Any repetitious headings are removed.
6. A colleague was invited to generate individual category headings from the transcripts.
7. The two lists of categories were compared and a final list compiled.
8. Each transcript was worked through with categories highlighted as they occurred.
9. All items for each category are placed together, separate from the transcripts. Any dross was removed from quotations.
10. Sections were pasted onto sheets with appropriate headings and sub headings.
11. Respondents were asked if the meaning derived from the transcript was related to their opinion.
12. Sections were filed and copies of complete transcripts were kept.
13. The sections developed from the transcripts were written in a text form.
14. Each category was then examined and related to current literature in this area should it exist.

Each step in Burnard’s method was performed to ensure that despite lengthy analysis, the quotes drawn from focus group interviews correctly interpreted the responses of those interviewed. Analysis produced five categories identified as particularly affecting older people residing in Guildford Borough as part of their shopping experience. The results of the focus group analysis and discussion surrounding these findings are presented in Chapter 7.
5.4 Face-to-face questionnaire

Following the focus group interviews a more in-depth research tool for examining individual shopping habits was developed. In order to determine the best method to obtain this information both interviews and questionnaires were considered. The following discussion presents both positive and negative aspects of interviews and questionnaires, before considering the methods used for the present study.

5.4.1 Interviews

Interviews involve one to one contact between the interviewer and the participant and are particularly effective when the research requires numerous open-ended questions. This method allows respondents to freely give their opinion and do so with greater depth and spontaneity (Oppenheim, 1992). In addition interview settings allow a more thorough explanation of the study and encourage respondents to participate. However, interviews are also extremely time-consuming and generally work best as a method where a sub-sample is to be interviewed. In addition the time taken to conduct an interview is often considered a burden for respondents (Lehmann, 1989; Peace, 1990). Several authors recommend that interviews with older people last no longer than twenty to thirty minutes to allow for memory or concentration difficulties (Peace, 1990, Davies, 1981). Often eligibility for interviews is determined by whether the elderly person has good hearing.
5.4.2 Questionnaires

As an alternative to interviews, questionnaires are effective in gaining an overview of an issue. This is particularly the case with postal questionnaires where a large number of people can be questioned with little inconvenience. However, the difficulties lie with response rates to this type of method (Oppenheim, 1992). A general response rate of 49% has been considered acceptable in the elderly (Smith 1992); this is in comparison to response rates at ages 25-34 of 71-77% (Ebrahim 1996). However, the likelihood of low response rates is increased with the use of postal questionnaires and can be as low as 30% (Saunders, 1997), although some studies have found increased response rates with follow up (Cartwright & Smith, 1987; Finch et al, 1998). As a result postal questionnaires are not usually recommended for older populations.

The difficulty with the implementation of postal questionnaires and by association self-completing questionnaires for older people is not only that of topical relevance and interest. This type of questionnaire is not recommended for those with poor literacy, failing eyesight, or the very old (May, 1993; Oppenheim, 1992). Older people may have additional problems with filling in forms due to arthritis or associated mobility problems, which make completion difficult. In addition illiteracy rates are higher in older people when compared to other groups, particularly those over 75 (Age Concern, 2000).

5.5 Development of the face-to-face questionnaire

The study required a questionnaire structure that could be conducted in a short amount of time, but gain as much information as possible. Several authors have found evidence that people may be more willing to participate in a study and provide more in depth answers if the researcher is present to provide an explanation of the study (Gant 1997, Peace 1990). It was found during focus group interviews that more information was gained on issues affecting older people when discussion was allowed to continue. The method adopted for the present study was structured, but relatively open, with some
questions requiring only yes or no answers and others allowing for discussion if desired by the respondent.

The purpose here was to obtain information from all respondents on the same aspects of food shopping whilst maintaining the potential to gain more information should respondents wish to expand on the issues raised. In addition, the preset questionnaire allowed for more interviews to be conducted and increased replication providing greater comparison between responses (through coding) as well as ensuring all topics were covered. In addition the use of several fully structured questions which required only yes/no responses or provided answers, as was the case with more sensitive questions regarding age or amount spent on food reduced the administration time as well as avoiding the difficulty of asking direct questions about sensitive issues.

Coolican (1999) noted that whilst coded questioning allows for comparison between responses and all topics of interest to be covered it reduces the flexibility of the method and may limit results to generalisation. For this reason respondents were encouraged to expand on basic answers when they had further issues to raise. Despite the pre-coded nature of the questionnaire it was not shown to respondents and therefore could not influence their responses. The purpose of this coding was purely for data collection and analytical purposes and resulted from responses given during the focus groups and piloting. Space was left for alternative responses and whatever response was given was recorded. For questions involving more than one option e.g. strongly agree to strongly disagree, show cards were used from which the respondents could choose their answer. In addition, these were read out when shown to the respondents as a matter of course to avoid issues for those who were illiterate or those with poor eyesight. Questions on lifestyle were left until the end of the questionnaire having provided a context in which to ask questions about previous occupation, amount spent per week on food and age (Coolican, 1999). These more sensitive questions were asked using show cards with groups from which the person could state their age or spending, which allowed respondents to reply without being specific and reduced the potential sensitivity of the questions as suggested by Oppenheim (1992).
5.5.1 Pilot study

The questionnaire was piloted on 50 older people in a day centre in Guildford prior to its implementation as a research tool. This initial research found older people to be more responsive to the study when it was explained to them prior to interviews taking place, allowing them to ask questions or voice concerns. In addition this overcame problems of literacy or numeracy, immobility and fatigue - if respondents became tired the interview can be broken off and completed later.

Piloting the questionnaire established the time taken for completion and ensured that whilst the questions maintained their original structure they could effectively be asked as an interview. The questionnaire took on average 10 minutes to complete. The use of coding meant that responses could be recorded quickly and efficiently. In addition, when asked questions respondents often expanded answering several questions by stating where they shopped, how they got there and how often in one response. The pilot study established the difficulties of interviewing in a day centre environment due to the large number of activities available to visitors. However, all respondents completed the whole questionnaire and should they require a break due to tiredness or the onset of activities, the questionnaire was completed later that day. The coding used in the main study questionnaire (Appendix 1) was developed from focus group work and established by the pilot study. On final data collection, responses that were not stated could be eliminated from the analysis.

The pilot study established that some question formats were inappropriate for older people. In particular questions with regard to attitudes and beliefs are usually based around statements that the respondent indicates they agree or disagree with on a scale from favourable to unfavourable attitudes. However as the questionnaire was interview-administered and fully explained some respondents became confused when read a statement. The process of an interviewer reading the statement aloud led some respondents to believe that the interviewer was expressing a personal opinion as opposed
to asking them to evaluate the statement. As a result of this any attitude or belief statements were converted to question format.

In order to explain the questions included in the questionnaire and their basis in both the literature and group interview research conducted to inform this research method, the questions were broken down into sections which cover the main themes within the questionnaire. The full questionnaire can be found in Appendix 1; the food frequency questionnaire in Appendix 2

5.6 Shopping habits

The opening questions of the face-to-face questionnaire concerned food shopping behaviour. Respondents were asked whether they shopped for themselves and, if so, where and how they reached the store they visited most often. In addition questions regarding transport, time taken to reach the store and choice of store were asked. The purpose of these questions was to establish a picture of shopping patterns among the older people interviewed, but also to examine the relationships between the access and choice variables measured. The following discussion presents the questions asked as part of the face-to-face questionnaire and their background and justification for inclusion in the study.

*Question 3: Do you normally do your own food shopping?*

This first question with regard to food shopping habits established respondents’ basic ability to shop for themselves, indicating their level of independence. Those who did their own food shopping completed the whole questionnaire, those who did not answered only from question 29 onwards.
Question 4: How often do you shop for food?

Question 5: Why do you shop this often?

Question 8: How often do you visit the shop where you do your main food shopping?

Questions regarding how frequently respondents shopped were designed to examine overall shopping behaviours, reliance on others and the influence of social and physical factors. Responses from focus group and piloting suggested frequency of shopping was related to ability to carry goods, shopping with others and a desire for social interaction.

Question 5 asked respondents to give a reason for the frequency of their shopping trip to establish the main influences on this aspect of shopping behaviour.

Question 6: Which food shop do you visit most often to do your main food shop?

Question 8: Which town is this in?

Questions 6 & 8 established the food shop most often visited for main food shopping and where this store was located. These questions were used to address Hypothesis 1, which suggested that the food shop most often visited by respondents would be the shop nearest to their home.

Question 9: What is your main reason for shopping at the store you most often visit?

Respondents who did their own shopping were asked their main reason for shopping at the store they most often visited. This question was designed to examine the factors that exerted the greatest influence on store choice among this population of older people. Proximity, mobility and social interaction and reliance on others had all been mentioned by focus group or pilot interviews. In addition the need for social interaction and the use of coping strategies has been highlighted in previous research with regard to the shopping behaviours of older people (McKie, 1999).

Question 10: How do you get to the shop you visit most often? (most frequently used method of transport).

Question 11: On average how long does your journey to the food shop you most often visit take you?

Question 10 identified the main methods of transport used to reach food shops among the older people interviewed. Several respondents in the focus groups commented that they could not reach shops without a relative or friend to take them. Others stated that although they reached shops independently the method of travel raised problems.
McKie (1999) stated that older people spend increasing amounts of time accessing food in a way they can manage. By linking questions together as part of the overall structure of the questionnaire it was possible to explore the potential link between the distance an individual travelled to reach a food shop with the reason for using this shop and the mode of transport taken to give a broader picture about access to shops. Question 11 asked how long it took the respondent to reach the shop they most often visited, thereby adding the dimension of time to how respondent access food.

**Question 12: Do you find it easy to get to the food shop you visit most often?**

Question 12 related primarily to work conducted by Bowlby (1979). The author suggested that access should be measured as a function of potential mobility as opposed to actual shop choice. The questionnaire developed for the present study measured actual choice in terms of which shop was visited, transport and frequency. In addition it measured access by asking questions regarding reason for shopping at the store (Qn 9) and the respondents' perceived ease of access to food shops (Qn 12). Question 12 followed a different format to previous questions as it was considered to be a measure of an individual's perception of their ease of access. This response therefore included attitudes towards shopping as opposed to directly measurable factors such as where a shop was located. As a result, the responses for this question were provided in the form of a scale including an equal number of favourable and unfavourable responses from which the respondent selected their answer. Although it is usual that for this type of measurement or Likert-type scale that the respondent is asked to provide their opinion on a statement, this proved too complex for the population under consideration. As already discussed, piloting established that if respondents were presented with a statement that was read aloud as part of the questionnaire, they interpreted the statement as a belief held by the interviewer. To avoid confusion respondents were asked the statement in question form to which they selected the appropriate Likert scale response.
Question 13: Do you shop alone/with a friend, relative or partner?
Question 14: Do you find shopping with someone means you buy more? Why?

Questions 13 and 14 addressed the potential influence of others on the food shopping experience with particular reference to the social interaction it provided. Question 14 also asked whether shopping with others may affect the amount bought due to focus group responses which suggested those who shopped with others (particularly if they had access to a car) could buy more as the difficulty of carrying more shopping or heavy loads was removed.

Question 16: Do you use other shops for additional food shopping? Why?
The last question asked with regard to access and choice of food stores examined the concept of 'top up' or additional shopping. Focus groups established that some individuals may use a local store for basics such as bread or milk, or for particularly heavy items if they have some distance to travel in order to reach their main shopping. Some focus group respondents reported using local shops on a regular basis as they could not reach larger stores. For others, carrying heavy loads on a bus was more of a burden than using local shops even with the extra expense. In addition, those who shopped with friends or relatives were only able to get to larger stores on a weekly or fortnightly basis and so used local shops as an alternative.

Question 29: How do you get most of your food?
Question 30: Which store does this person use?
Question 31: Do you ask them to visit a particular store?
Question 32: Why?
Question 33: How much control do you feel you have over choosing the foods that are bought for you?

For those who did not do their own shopping, questions 29-33 were designed to determine their level of knowledge regarding which store their shopping came from and if it was specifically requested from this store. This would indicate the degree to which the person had control over where their food came from and whether their preference was taken into account by those doing their shopping for them. Question 33 asked about control of choosing foods as a way of examining whether dietary variety or attitudes to
healthy eating may be compromised by an individual's ability to choose the foods bought for them.

5.6.1 In-store facilities

Question 18-27: What is your opinion of the facilities inside the store you most often visit?
Trolley size, height of shelving, quality of lighting, labelling on shelves, width of aisles, length of queues, provision of toilet facilities, provision of cafeteria, range of package sizes and attitude of staff.

The basis of this set of questions was to examine the effect of in-store facilities on an older person's choice of where to shop. Respondents were asked their opinion with regard to the layout of the food shop they visited. All of these factors are based on Hare, Kirk & Lang's (1999) paper which asked for a shopping list of wants from older people visiting food shops.

The in-store factors found to be important were adapted to this questionnaire to determine whether they are applicable to older people shopping in Guildford. The work of Hare et al (1999) is in turn based on the work of Mason & Beardon (1979). The twenty year gap in research into this aspect of food shopping demonstrates a lack of research regarding internal facilities. Several of the factors included in the final questionnaire were highlighted by focus group respondents in Guildford as important issues when food shopping. In particular those who shopping in Guildford listed shelving height (too high or low), width of aisles, labelling and the provision of cafeteria as being important. Cafeterias provided a meeting place and a chance to rest after shopping.

These questions were included in the main research tool to determine whether opinions expressed in focus groups and previous research (Mason & Beardon, 1979; Hare et al, 1999) were relevant to a broader section of the Guildford population. Each factor was given a scale of very important to not at all important in the form of a Likert-type response. Responses were scored in terms of positive or negative attitudes to the internal factors and given 5 for the most favourable and 1 for the least favourable.
response. Those who had no opinion regarding these issues selected no opinion which was given a value of three falling between favourable and unfavourable in the scale. From this data an overall cumulative opinion could then be determined from the data as well as an overall opinion for each respondent. Piloting highlighted those who did not have the option to take advantage of some facilities in side the shop e.g. cafeteria or pharmacy, but if given the option with no restrictions to their shopping habits would prefer to visit a shop where they were available. Therefore whilst not all of these factors were available in every food shop, respondents could still express a preference.

Question 28: How much control do you feel you have over choosing a shop because of the above factors?

The last question asked with regard to the layout of the store examined respondents' ability to choose a store because of the way it was presented internally. This was to determine whether responses given with regard to internal layout influenced overall store choice.

5.7 Measurement of Attitudes and Beliefs

The exploration of older people's attitudes to and knowledge of healthy eating examines in more detail the choices people make about food. Information on a respondent's knowledge of healthy eating has the potential to provide information on whether these attitudes are fulfilled with regard to their diet. Initially respondents were asked for their personal definition of the behaviours on which their opinion would be asked.

Question 34: What do you understand by the term 'healthy eating'?

Question 35: What do you understand by the term 'traditional English food'?

Question 36: What do you understand by the term 'healthy fats'?

Question 37: How many meals do you have a day?

Question 38: What do you think is the most important thing to you when you are making choices about food?

Questions 34-36 were asked in order to allow for individual interpretation of a commonly used phrase and to examine the parameters within which older people perceive their diet. In addition questions 37 and 38 addressed individual dietary habits
and the respondent's priorities when choosing foods. These questions were designed to give a broader picture of dietary habits and to allow comparison with the dietary variety of individuals interviewed.

5.7.1 Theory of Planned Behaviour

In chapter 3 (section 3.5 & 3.6), the theories of reasoned action (TRA) (Ajzen & Fishbein, 1980) and planned behaviour (TPB – figure 5.2) (Ajzen, 1988; 1991) were discussed with reference to previous research into attitudes and beliefs in relation to food choice. As part of the current research, older people were asked about their attitudes and knowledge regarding food and healthy eating. In conjunction with a Food Frequency Questionnaire this gave a broader picture of diet and examined whether respondents applied their attitudes towards healthy eating to their diet. Five main behaviours in relation to healthy eating were examined: eating a healthy diet, eating fruit and vegetables, eating a low fat diet, eating traditional English food, and eating a diet containing healthy fats.

![Figure 5.2 The Theory of Planned Behaviour (Ajzen, 1988)](image-url)
The development of the Theory of Planned Behaviour (TPB) resulted from the theory that the best predictor of an individual's behaviour is his/her conscious intention to perform that behaviour (Shepherd, 1989). Ajzen (1988) suggested that it is rarely possible to measure behaviour directly as when observed an individual often changes their behaviour. The TPB provides a conceptual framework from which Ajzen (1988) suggested an individual's intention to perform a behaviour could be measured (figure 5.2). Behavioural intention is used as a proxy of performing the behaviour. The model shows that behavioural intention can be predicted from three major factors, attitude towards the behaviour, the individual's beliefs with regard to the outcome of that behaviour and the individuals perceived control over performing the behaviour. Whilst both the Theory of Reasoned Action (Ajzen & Fishbein, 1980) and the Theory of Planned Behaviour (TPB) (Ajzen, 1988) were discussed in Chapter 3 (section 3.5 & 3.6), the TPB was used to develop attitude questions for the face-to-face questionnaire as a result of the inclusion of perceived control.

5.7.2 Definitions of attitudes according to the Theory of Planned Behaviour

Ajzen (1991) suggests that despite not being able to observe an attitude directly it is possible to infer personality traits and attitudes from external observable cues. The most discernible of these are a person's behaviour and the context in which that occurs. Shepherd (1989) states that one of the major difficulties in examining the attitudes and behaviours of an individual are the number of definitions for these that exist. An attitude in this study was be defined according to Ajzen (1991) as:

"a disposition to respond favourably/unfavourably to an object, person, institution or event".

A characteristic attribute of attitude is its evaluative nature (good/bad, harmful/beneficial). However as attitude is a hypothetical construct which cannot be measured directly it must be inferred from measurable responses which may reflect an individual's positive or negative evaluation of the attitude object. Attitude relevant responses can be categorised into three subgroups which distinguish between the
influence of self and others, action or reaction to the object and emotions towards the object. These are termed cognitive, affective and conative attitude responses. The attitude subgroups are defined below followed by further explanation of the influence of subjective norm and perceived behavioural control on behavioural intention.

Cognitive responses

Cognitive responses are formed as a result of an individual's perceptions and information about the object requiring an attitude response. Responses of a verbal nature are expressions of beliefs that link the object with certain characteristics or attributes. Verbally expressed responses are preferable as the information provided by non-verbal responses tends to be indirect and open to inference and misinterpretation. Cognitive responses require a level of knowledge on which the attitude is formed.

Affective responses

Responses of this kind are those which involve an evaluation of or feelings towards an object which create an attitude regarding it. These may be expressions of admiration or disgust, like or dislike or factors that make the respondent feel good or bad about themselves.

Conative Responses

This type of response relates to behavioural inclinations, intentions or commitment towards the attitude object. This is primarily an intention response involving the respondents stating how they would act in appropriate circumstances. For example, those with a positive attitude to the object would indicate a positive attitude with regard to performing the related behaviour.
Subjective Norm

The second determinant of intention suggested by the TPB involves the individual’s perception of social pressure to perform or not perform the behaviour under consideration. Generally people intend to perform a behaviour when they evaluate it positively and when they believe that important others think that they should perform it. Subjective Norm as with other attitude measures is considered a function of belief, but the belief stems from a different influence. This involves the belief that specific individuals or groups either approve or disapprove of the behaviour which serve as a point of reference to guide the behaviour. These individuals or groups, known as referents, may be the individual's spouse, partner, friend, co-worker or an expert such as a doctor. Beliefs underlying the subjective norm are known as normative beliefs.

Perceived Behavioural Control

Two important factors distinguish the TPB from the TRA. First the TPB assumes that an individuals perceived level of control would affect their motivation and therefore their intention to perform a behaviour. Secondly, the model suggests a potential direct link between perceived behavioural control and behaviour. Ajzen (1988, 1991) suggests that perceived behavioural control may help an individual predict goal attainment independently of behavioural intention, to the extent that it can be used to directly predict behaviour as it is considered a partial substitute for actual levels of control.

Some personality dimensions can be considered to hold certain beliefs that encourage the individual to act in a particular way. These include optimism, idealism, open-mindedness and control. Perceived behavioural control involves the generalised belief that behavioural outcomes are under the control of the individual. The inclusion of control into the TPB has been found to increase the strength of the model in anticipating health related behaviours and reactions such as those being investigated as part of the present study.
Perceived Need and Perceived Ease

In addition to perceived behavioural control the present study examines two additional measures of perception which have been found to influence behavioural intention. Whilst this is not presented in the TPB per se the belief of perceived need is implied by attitudes towards the behaviour and increasingly considered (particularly with reference to food choice) to aid in determining behavioural intention (Raats, 1992; Povey et al, 1998). Perceived need relates to the concept of moral obligation (Ajzen, 1991) asking respondents the extent to which they feel they need to perform the behaviour. Ajzen (1991) suggested that feelings of 'moral obligation' or personal responsibility might influence behavioural intention. In the context of the present research perceived need may result from nutrition messages which have indicated that performing a particular behaviour may be beneficial. Perceived need measures both knowledge in terms of whether the individual feels they should perform the behaviour for reasons of health, but also measures whether the individual perceives some benefit from performing the behaviour which may influence their intention.

The second measure of perception included as part of the present study was that of perceived ease, which examines the likelihood of respondents performing a behaviour according to how easy they perceive it to be to perform this behaviour. In terms of the present study it is suggested that perceived ease may give a broader indication of the ease with which respondents find it to eat a healthy diet according to other potential restriction on their diet, including obtaining food.

5.8 Design of attitude questions

Ajzen states that the simplest procedure to ascertain an attitude or belief relating to a behavioural intention is to ask respondents to report directly on their own attitude or personality trait. The most commonly used form of measure is the multi-item measure, which provides a range of responses for the participant to select as representing their view or attitude.
As a measure of attitude, these consist of contrasting evaluative pairs, e.g. good-bad, harmful-beneficial, pleasant-unpleasant. Traditionally these differentials have a seven point scale on which the respondent marks their response to a statement as shown below. Healthy food is

\[ \text{Good :--:--:--:--:--:--:Bad} \]

Respondents are usually given a statement to which they are asked to respond, choosing from five alternatives in a Likert scale. E.g. strongly agree - strongly disagree. Positive responses (agreements) are scored five and negative responses (disagreements) 1. The total attitude score is determined by summing all scores relating to one item or belief.

Piloting the face-to-face questionnaire, of which these questions form a part established that a seven point scale was too confusing for most respondents who were less likely to choose a response when given more choice. However, according to Coolican (1999) five point scales are considered effective when examining attitude responses. In addition the statement and response format was not found to be effective in discerning older people’s attitudes and beliefs. The statements led respondents to believe that the interviewer was giving her opinion. Therefore attitudes were evaluating by asking questions to which respondents could reply they agreed/disagreed with on a five point scale. Examples of the questions asked are shown below.

Intention has been found to be closely linked to the time scale in which the questions are presented as intentions can change over time (Ajzen, 1988). The longer the interval between the stated intention and the behaviour, the greater the likelihood that unforeseen events will result in a change in behavioural intention. Due to the fact that prediction accuracy has been found to decline with time (Ajzen & Fishbein, 1980), all of the questions relating to the TPB were given a time scale of one month. For example one question asked, "Do you agree/disagree that you intend to eat healthily within the next month".
In addition, respondents were shown cards with graded responses e.g. strongly agree to strongly disagree. This added a further context to the responses and allows comparison between individuals when data is coded. An option where the individual expresses no opinion regarding the question asked is also included. Pilot studies found that the traditional method of reading a statement to which the respondent agrees or disagrees was less effective in this context. This is as a result of the method in which the questionnaire was delivered (as a face-to-face interview) where questions were more appropriate.

Five behaviours were measured as part of this section of the face-to-face questionnaire and were formed around the same seven questions based on the Theory of Planned Behaviour. The behaviours measured were: eating a healthy diet, eating a diet of fruit and vegetables, eating a low fat diet, eating traditional English foods and eating a diet containing healthy fats.

The seven questions asked with regard to each behaviour related to each section of the TPB (see figure 5.2) to ensure all predictors of behavioural intention were measured and to strengthen any associations found between attitudes and behavioural intention. The questions asked for each behaviour are presented below using the behaviour of eating a healthy diet as an example, the background and justification of the examination of each of the five behaviours is then discussed.

1. Perceived Need - ‘To what extent do you feel you need to eat a healthy diet in the next month?’
   (conative attitude)

2. Perceived Ease - ‘How easy/difficult would it be for you to consume a healthy diet in the next month?’

3. Affective Attitude - ‘How enjoyable/unenjoyable would it be for you to eat a healthy diet in the next month?’

4. Cognitive Attitude - ‘How harmful/beneficial would it be for you to eat a healthy diet in the next month?’

5. Subjective Norm - ‘How likely/unlikely is it that those who are important to you think you should consume a healthy diet in the next month?’
6. Perceived Control - 'How much control do you feel you have over choosing to eat a healthy diet?'

7. Behavioural intention - 'To what extent do you intend to eat a healthy diet in the next month?' (conative attitude)

Question 7 is designed as a direct measure of behavioural intention. It is from this that the influence of the other six questions can be derived. In terms of analysis, the first stage in examining the attitudes and beliefs of this group will be to examine the extent to which each of the remaining six measures of attitude influence an individual's intention to perform each behaviour. Behavioural intention therefore becomes the dependent variable.

5.8.1 Eating a Healthy Diet

Part of the implementation of UK health policy (DoH, 1999) is to encourage people to think about their dietary practises and to increase people's knowledge about maintaining a healthy life style, of which diet is a fundamental part. The questions regarding eating a healthy diet were designed to determine older people's attitudes and beliefs with regard to this behaviour, before ascertaining through the remaining attitude questions what they might consider to be healthy.

5.8.2 Eating Fruit and Vegetables

As a result of UK Government policy (DoH, 1999) and the COMA Report on Diet and Cancer (1998) fruit and vegetables have been highlighted as being an integral part of maintaining a healthy diet. The antioxidant properties found in many fruit and vegetables as well as their high micronutrient content has led to evidence that a diet containing significant amounts of fruit and vegetables may protect against heart disease and some stroke (DoH, 1999). The Government's promotion of fruit and vegetable consumption to prevent ill health and an increasing media interest in nutrition and healthy lifestyles may mean that older people have been more exposed to this concept as a way of maintaining a healthy diet. Questions with regard to eating fruit and vegetables were asked to explore whether older people considered their dietary and health needs by
following this dietary behaviour or whether fruit and vegetables consumption resulted from taste or preference. When examined with the food frequency questionnaire, dietary practice can be compared to the respondent's reaction to nutrition messages.

5.8.3 Eating traditional English Food

Several authors have reported that older people consider more traditional English meals to be healthier than so-called 'foreign' food such as pasta or rice (Herne, 1995; McKie, 1999). This may be as a result of habit or the availability of this type of food in the past. These questions therefore aim to establish not only nutritional knowledge to a certain level, but also preconceptions older people may have about unfamiliar food.

5.8.4 Eating a low fat diet

The questions regarding eating a low fat diet aimed to examine attitudes to unhealthy foods as well as healthy foods such as fruit and vegetables. An individual may be aware that increasing fruit and vegetable consumption has a potential positive effect on their diet as a result of the nutrition messages mentioned earlier. However the degree to which this person has nutritional knowledge may become clearer when they were asked about foods they should avoid. Government recommendations currently suggest that fat should contribute no more than 30% of an individual's daily diet. This is related to increased risks of obesity, cardiovascular disease and cancer (Bender, 1997). Whilst it is mainly saturated fats which contribute to this risk, the questions asked about attitudes to all fats to allow for varying degrees of knowledge and give an indication of attitudes.

5.8.5 Eating a diet containing healthy fats.

Current recommendations suggest that whilst saturated fat consumption should be reduced, Polyunsaturated fats and monounsaturated fats should be consumed in moderate amounts. Research has found that whilst most fatty acids (the components of fat) can be synthesised by the body some are essential in the diet (DoH, 1991). These are necessary for cell membrane function and the production of cellular energy and can be
found in oily fish, nuts seeds and some oils. As a result of this the idea of 'healthy fats' has emerged.

The behaviour of eating a diet containing healthy fats was included as part of the questionnaire to examine older people's knowledge and attitudes towards more recent nutrition and health promotion messages. The question examines whether older people take note of messages such as this and whether it may affect their dietary choices.

Research has indicated that older people are willing to change their diets as a result of nutrition and health promotion (Axelson & Penfield, 1983; Goodwin & McElwee, 1999). However, other work still maintains that older people are less adventurous in their food choices and that habit or preference developed in younger life remains influential (Lilley et al, 1998; Donkin, 1998). The questions posed with regard to attitudes towards healthy eating therefore examine not only each behaviour individually, but produce an overall broader picture of older peoples attitudes to their diets.

5.8.6 Attitudes towards supermarkets

The final section of questions asked as part of the face-to-face questionnaire examined older people's attitudes to supermarkets. These questions used a Likert scale to determine older people's opinions and perceptions with regard to supermarkets as a shopping destination.

*Question 46: Do you agree/disagree that supermarkets provide a range of foods to meet your needs?*
*Question 47: To what extent do you agree that supermarkets provide less expensive foods?*
*Question 48: To what extent do you agree that supermarkets offer more healthy food options?*
*Question 49: To what extent do you feel that shopping for a healthy diet means shopping at a supermarket?*

The aim of these questions was to determine whether older people perceive supermarkets as good sources of quality and value when buying food. In addition to this it allows the respondent to show whether they use supermarkets by choice or because there are few other food shops available to them. This section also explores whether
attitudes to supermarkets differ from other types of food shops. Respondents are asked if supermarkets provide cheaper food, more healthy option and whether they meet their individual needs. This allows the respondent to compare supermarkets shopping with other ways of procuring food regardless of whether they shop in a supermarket.

5.9 Socio-Demographic Information (Questions 50-56)

Socio-demographic questions were asked to give background information on the population involved in the study. Information obtained from this section of the questionnaire contributed to the development and analysis of Hypothesis 5. This hypothesis stated that choice of store and attitude to food shopping were related to demographic factors.

Age and gender (Questions 1 & 2)

Questions on age allowed comparisons between 'younger' and 'older' older people and male and female respondents. Age Concern England (2000) reported that the number of people able to do their own shopping decreases significantly over age of 80. The respondents were therefore asked questions regarding their age to ascertain whether access and mobility problems increased with age among older people in Guildford. With regard to gender, Donkin (1998) suggests men and women have significantly different diets and shopping patterns.

Hypothesis 1 suggested that the food shop most often visited by an older person would be the food shop closest to their home. As a result, respondents were asked their postcode to allow an examination of the food retail provision in the area in which the respondent's lived. In addition, the distance from home to the nearest store and store most often visited was measured.
Questions 51 and 52 asked about type of residence and whether the respondents live alone to determine whether this related to how they reached to food shops and how much they bought. The results of information regarding housing situation was then compared to the Food Frequency Questionnaire to examine whether there were any dietary differences between those that live alone and those that live with partners or family. In addition question 53 asked about respondents' marital status. Donkin (1998) found that men who lived alone had poorer diets than those who were married. This was due at least partly to the fact that roles within the household had meant the female prepared most meals. In addition to this there is evidence to suggest that the food choice and intakes of older people who have been bereaved differ from those who are still married (Herne, 1995; Johansson, 1998, Donkin, 1998). Question 54 provided additional socio-economic information. To ensure sensitivity respondents were given a choice of several different cost brackets to indicate how much they spent on food per week. In addition, the question made a point of emphasising that only the amount spent on food was required, thereby ensuring household products and additional purchases were not included in the estimation and falsely influence the responses recorded. Question 55 asked the previous occupation of the highest income earner in the household was asked to gain an indication of socio-economic class (SEC). Previous occupation was used as a proxy on which to determine SEC to determine. Classifications were calculated according to the ESRC and ONS Socio-economic classifications (ONS, 2000b).
Question 54: Is there anything else about your food shopping that you would like to tell me?

The final question of the face-to-face questionnaire asked respondents whether there were any issues relating to the topics under discussion that the respondent felt were not addressed. This gave the respondent's a chance to state their opinion on retail provision, price, quality, how they cope with food shopping or other issues they felt were important. Whilst opinions and ideas were encouraged during the questionnaire this allows more formal comments to be made.

As mentioned previously, the questionnaire took on average 10 minutes to administer, as completion time and respondent burden were greatly reduced by the face-to-face format and the pre-coded answers provided by focus groups and piloting. The format of the questionnaire allowed for breaks should respondents become tired or have other activities to attend. The questionnaire was designed to obtain a large amount of information on older people's shopping behaviour and their ability to reach food shops as well as their perceived level of access with regard to food shops. The quantitative nature of the questionnaire allowed for this large number of variables to be considered whilst minimising the amount of time taken to administer. This format made the questionnaire particularly appropriate for day centre environments where constant distractions and activities make the amount of time available with each respondents limited.

Whilst the face-to-face questionnaire provided information on the food shopping habits of the older people interviewed, a further questionnaire was required to examine the dietary habits and variety of the population. Chapter 6 discusses the methodology adopted for the purpose of measuring dietary intake and considers the sampling procedures undertaken for the study as a whole.
6.1 Introduction

In addition to the main research tool developed expressly for this research, a food frequency questionnaire was used to gain information on the diets of respondents. The following discussion focuses on the implementation of the food frequency questionnaire, to 112, day centre attendees in Guildford, considering the background and validation of the questionnaire as well as examining its potential effectiveness in measuring the diets of older people.

6.2 Background and Implementation of a Food Frequency Questionnaire

Bowman et al (1982) conducted an overview of the available methods for assessing the nutritional status of the elderly. In terms of dietary studies, the authors suggest that values from this group are incomparable to those of the rest of the population as a result of a greater heterogeneity and therefore range of values that exist amongst older people. At the time of publication the most commonly used method of determining nutritional status using dietary methods was the 24 hour recall. In this case the respondent was asked to recall all foods and drinks they had consumed in the last 24 hours to give a representation of dietary intake. This method could be repeated to examine habitual intake and give a more representative view of diet. However, Bowman et al (1982) pointed out that this method tends to underestimate energy intake. Moreover subjects tend to over/under report their intake according to their perception of what the interviewer thinks they should be eating.
Diet assessment relies on information supplied exclusively by the subject. In relation to this the assessment of current diet introduces self-awareness, which may in turn affect behaviour. All assessments are therefore susceptible to socially desirable response set bias (Geekie, 1999). Errors, which might affect the validity of the FFQ as an appropriate method, include problems with memory, inadequate food lists and inaccuracies in frequency of consumption and portion size (Geekie, 1999). Table 6.1 examines the advantages and disadvantages of FFQs based on previous research (Nelson & Bingham, 1997; Klipstein-Grobusch et al, 1998; Cade et al, 2002) which are relevant to the present study.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inexpensive</td>
<td>• Time consuming prep</td>
</tr>
<tr>
<td>• Quick, simple,</td>
<td>• Questionable validity</td>
</tr>
<tr>
<td>• Minimal subject motivation</td>
<td>• Under-reporting a</td>
</tr>
<tr>
<td>• Pre-coding possible</td>
<td>• Imprecise in estimating usual food consumption a</td>
</tr>
<tr>
<td>• Assesses usual intake</td>
<td>• Unreliable portion size estimation a</td>
</tr>
<tr>
<td>• Produces standardised results</td>
<td>• Coding a</td>
</tr>
<tr>
<td>• Allows classification of subjects</td>
<td></td>
</tr>
<tr>
<td>• Better than more burdensome methods if measuring foods or fewer nutrients</td>
<td></td>
</tr>
</tbody>
</table>

a Errors common to other methods of dietary assessment.

Table 6.1 The potential advantages and disadvantages of the use of Food Frequency Questionnaires as a method of measuring dietary intake.

The main disadvantage of using an FFQ is its reliance on memory for completion, although piloting demonstrated that when interviewer-led the respondent had more time to consider, did not feel rushed and was not concerned about completion of the questionnaire. Howarth (1993) examined the validity of using a short food frequency questionnaire on older people considering that the decline in short term memory with age made 24 hour recall unreliable. The study found that in a healthy Caucasian population the results obtained were within ten percent of those measured using a
recorded method such as a weighed food intake. In addition whilst the FFQ does not measure daily variations in diet the present study requires only a measure of habitual diet making the FFQ the most appropriate method.

The present study required information only on the habitual intake of foods to give an indication of dietary variety. The aim was to examine whether respondents ate foods according to their attitudes and beliefs regarding healthy eating as well as their access to food shops. As respondents were to be interviewed to examine their access to food shops (see chapter 5), a food frequency questionnaire (FFQ) was the most appropriate method of measuring dietary intake without additional respondent burden. The FFQ has many advantages over other methods, mainly that it is quick to complete which was a consideration when deciding to conduct both interviews at once due to recommendations on the burden of interviewing older people for more than twenty minutes (Davies, 1981; Howarth, 1993). In relation to this, the demand on the subject is limited, particularly when the questionnaire was interviewer led and limited numeracy skills are required by respondents. The interviewer-led questionnaire prompted the respondent into recalling their diet whilst reducing the burden of completing such a form. In the same way that the main questionnaire was conducted face-to-face, this method allowed those with poor eyesight, arthritis and varying levels of literacy to complete the FFQ.

The Food Frequency Questionnaire (FFQ) used for the present study was developed by Geekie et al (1999) at the Institute of Food Research. The FFQ was designed primarily to measure fat intake in the UK population, but also to be used as a widely applicable method across the UK population, allowing greater reproducibility and comparability among studies. The questionnaire contained 195 foods in 18 groups including bread, dairy products, fruit and vegetables, cakes and biscuits, breakfast cereals, spreads, composite meals and meat products. Respondents were provided with photographs demonstrating sample portion sizes from small to extra large from which they selected the portion most appropriate to their dietary habits and asked how often they ate each of the foods on the questionnaire.
6.3 Dietary Variety Score

Usual dietary intake was assessed by the FFQ developed and validated by Geekie et al (1999). Data was used to determine a food product variety score for each subject, where all foods from the designated food groups listed in the FFQ were recorded (see Hodgson et al, 1994). In addition, to take account of variety within groups, the identification of food types within these groups was undertaken, as an improvement in measuring variety was found when both major and minor food groups were included in the dietary variety score (Krebs-Smith et al, 1997).

Food groups were based on the format of the FFQ and included groups such as meat, fish, bread products, fruit, vegetables, meat and vegetables dishes, dairy products, cheese and poultry. Food types were then identified within each group. For example, within the food group bread, white bread, granary bread and crisp bread were considered individual foods potentially contributing different nutrients to the diet. Mixed dishes were scored as individual dishes as they are presented in the FFQ. This is a common method when examining variety (Hodgson et al, 1994; Drewnowski et al, 1997; Marshall et al, 2001). The sum of these food group scores gives a total variety score. The total food variety score derived from the FFQ was 81 (i.e. 81 food groups). The full list of food groups constituting the DVS in the present study can be found in appendix 3.

In previous research (Marshall et al, 2001), the DVS was defined as the total number of distinct food items consumed during the measurement period. This method was not adopted for the current study as the FFQ used measured the frequency of consumption on up to a monthly basis. Using one month as the time period would make the responses less reliable as individuals would be more likely to remember on a shorter-term basis. In addition other dietary variety studies have used a weekly measure allowing for comparisons between the present study and previous research. The variety in the diets of this older population was measured according to food consumed over a one-week period. Food portions were not measured.
Dietary variety scores are a qualitative indicator rather than a measure of diet. Each food eaten over the course of one week was given a score of 1. The food only needed to be eaten once to be included in the score and any additional consumption of this food type was not recorded, as it would not contribute to increased food variety.

6.4 Validation of the Food Frequency Questionnaire

Geekie (1999) validated the FFQ for adults aged between 16 and 64, but it has not previously been used on older people. Therefore in order to ensure the same level of accuracy and reproducibility, a validation study was conducted as part of the present research to ensure the FFQ is an adequate method for determining the habitual diets of older people in this sample. The method of validation was a weighed food diary, previously used by Geekie (1999) to validate the FFQ.

6.4.1 Methods

The method used for comparison was a four-day weighed food diary. Weighed food records are considered the most accurate in determining habitual food intake over a period of time (Bingham, 1994; Nelson & Bingham, 1997). The potential errors mentioned above become obsolete as the respondent simply weighs and records all food items eaten over a period of time. In addition the time period for which foods are recorded takes into account daily variety. Whilst seven day diaries are more accurate in terms of micronutrients (Nelson & Bingham, 1997; Finch et al, 1998), adequate information can be obtained on macronutrient intake over a four day period to compare the values from each method. Four day weighed intake methods have previously been used on older populations, where seven day diaries have been considered too great a burden for this age group. The extra burden of a seven day diary has been found to lead to difficulties in maintaining usual diet and respondents often change habits as a result of this (Anderson, 1995). The difference between information obtained between four and seven days recorded has not been found to affect the accuracy of the measure with regard to macronutrients among older people (Finch et al, 1998). The validation method
of the food diary was administered prior to the FFQ to as recommended by Geekie (1999). This was followed at least a month later by completion of the FFQ to allow for any changes in dietary habit and prevent respondents simply repeating previous responses.

In order to complete as many of these diaries as possible and gain larger numbers for validation, 12 of the questionnaires were conducted by older people outside of Guildford Borough. The present study required only macronutrient information for which four-day weighed food diaries were appropriate (Finch et al, 1998). Therefore to reduce respondent burden respondents were asked to complete four day food diaries (ensuring both week and weekend days were included) to allow for differences in diet.

The main focus of the FFQ in the current research was as a method of examining how actual diet links to food choices and beliefs. In combining the methods of determining food choice/attitude issues with actual diet intake the study proposed to examine how this potential link presented itself in the life styles of older people. In addition the validation of this method for use on older people will increase the reproducibility of the method.

6.4.2 Comparison of findings

20 respondents aged over 65 years (range: 67 - 93, 11 male, 9 female) completed both the four-day weighed diary and the FFQ over a two month period. Subjects were recruited through association with the researcher (n =12) or via the main research tool at day centres in Guildford Borough (n = 8). Previous validation of this FFQ had used 56 subjects aged between 16-64 years (Geekie, 1999). It was considered for the reduced age range and purpose of the FFQ in the context of the present research that 20 subjects would give and adequate indication of accuracy.
The data obtained from the weighed food diaries were analysed using the nutritional analysis programme Diet 5. Following dietary analysis the statistical programme SPSS 10 was used to calculate mean daily consumption of energy, fat and saturated fat for both the FFQ and diaries. These values were then compared using a paired t test (as the results for each were based on the same sample). Table A3.1 shows the results obtained from comparison of the two food intake methods.

<table>
<thead>
<tr>
<th>Total food energy (kcal)</th>
<th>Mean (range)</th>
<th>4 day diary mean (range)</th>
<th>% mean difference</th>
<th>T Test for association</th>
<th>Sig (2 tailed)</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFQ</td>
<td>1459 (1126-1792)</td>
<td>1573 (1314.9-1831.1)</td>
<td>-114.14 (-371.9-143.66)</td>
<td>-1.98</td>
<td>0.06</td>
<td>0.64</td>
</tr>
<tr>
<td>4 day record</td>
<td>1573</td>
<td>1684 (1397-1860)</td>
<td>0.45 (3.5-8.6)</td>
<td>0.37</td>
<td>0.71</td>
<td>0.55</td>
</tr>
</tbody>
</table>
| Mean values for the three nutrients measured showed that there was a good agreement between the two dietary methods. Pearson's correlation values ranged from 0.64 - 0.86 and all were significant. The correlation between the two methods proved to be more accurate for fat and saturated fat intake than for energy intake. Energy intake was only marginally at a level where the two methods agreed. However, this could be

Table 6.2 – Comparison between the daily energy (kcal), fat (g) and saturated fat (g) intake of two group of older people, as assessed by 4 day weighed record and FFQ (n = 20).
explained by discrepancies in recording foods such as over reporting or distortion of usual diet. Although there was a trend towards lower average values for the FFQ when compared to the diary, these differences did not reach statistical significance.

6.4.3 Discussion of findings

Validity can be defined as an expression of the degree to which a measurement is true and an accurate measure against which the measurement can be compared (Bingham, 1994). This small scale validation study has established that the FFQ developed by Geekie (1999) is suitable for use on older populations in terms of accuracy and validity. The study tested the FFQ as an interviewer-administered tool following evidence that outside of the 18-64 age range factors such as memory and conceptualisation skill may have an influence on an individual's ability to complete the questionnaire and its resulting validity (Bingham, 1994; Nelson & Bingham, 1997). In addition Cade et al (2002) noted that the presence of a nutritionist during completion of FFQs to probe for responses or to minister the FFQ reduces the chance of incomplete answers and increases agreement between FFQs and food records. Talking into account the above results it is recommended that the FFQ is an appropriate method for measuring the habitual dietary intake of people aged over 65.

6.5 Sampling Procedures

In considering the methods adopted as part of the present research the discussion has examined the use of focus groups, a face-to-face questionnaire, a food frequency questionnaire and the development of a dietary variety score. The final aspect of the methodological considerations to be discussed is that of the procedures used to access a sample of the population of older people in Guildford Borough.

The older people interviewed as part of the present research were accessed via three Age Concern run day centres within Guildford Borough. These centres were chosen due to
the fact that they were spread across the Borough and specific information on households containing people over retirement age was unavailable.

The Day Centres were located in the Send, Ash and Onslow wards. The day centres in Send and Ash were located in wards classified as rural (GBC, 1999) and centre in Onslow as urban. The geographical spread of the centres fulfilled the aim of accessing older people from wards across the borough and was partly due to the limited number of centres available for older people to visit, resulting in many attendees travelling some distance to reach the centres. Respondents who took part in the study resided in 15 of the 21 wards in Guildford Borough. In addition to the geographical spread of respondents across the Borough, the position of the three day centres also represented the hierarchical nature of retail facilities within the Borough. Onslow ward contains a large superstore (Tesco) and direct access to Guildford town centre, Ash Ward has a district centre and Send ward a local shopping centre. The definitions of district and local centres according to Guildford Borough Council (1999) are given below.

**District centres** – ‘Groups of shops, separate from town centres, usually containing at least one food supermarket and non-retail service e.g. bank, building society or restaurant’.

**Local Centres** – ‘Small groups of shops usually comprising a newsagent, a general store, a sub-post office and other shops of a local nature’.

The older population of Guildford Borough proved extremely difficult to access due to a lack of available information on the age of residents and very few facilities which catered for older people in terms of leisure activities. In addition, several groups who aimed at older people did not wish to be involved. Group leaders were offended that their members should be considered 'old' and were unwilling to participate as they did not consider themselves to have access issues which affected their food shopping. Several groups refused to participate despite the fact that the prerequisite for joining these groups was that individuals should be over retirement age. This response demonstrates further the heterogeneity of older people as a group, which was mentioned
in Chapter 2 and acknowledges the difficulties experienced when interviewing older people who do not consider themselves to have different experiences from the remainder of the population.

The sampling took into account the fact that some people may be more likely to visit day centres than others and that some older people may be housebound and unable to visit this type of facility. As a result of this the research may not have accessed housebound older people. However, all the day centres offered transport across the Borough for visitors to the centre. As a result of this the main bias which may be present relates to the type of person who would visit a day centre rather than potential respondents being unable to reach the centre. Previous research has observed that women are more likely to visit day centres than men (Ginn et al, 1997; Hare et al, 1999) which may be as a result of the greater life expectancy among women (80 years) compared to men (75 years). In addition some personality types may be more likely to visit a day centre as they desire a social environment with people of their own age (Donkin et al, 1998)

The only measures of eligibility used for this study were that respondents were over UK retirement age (60 for women, 65 for men), lucid and had adequate hearing to take part in the study. Lucidity was measured by a participant’s ability hear and respond to questions and to repeat the aims of the study back to the interviewer in their own words. Respondents were otherwise randomly recruited from within the day centre to ensure all those who attended the centre had an equal chance of interview.

**6.6 Data Analysis**

Results from the face-to-face questionnaire were analysed using SPSS 10. Cross tabulations. Chi Square and logistic regression were used to examine the potential relationships between access, store choice and dietary variety. The analytical methods of Chi square and logistic regression were selected as a result of the categorical nature of the research tool. By calculating the log value of the data entered, logistic regression can expose any associations between the dependent and independent variables which
may have be masked by other methods due to a small sample size or a large number of categories within a variable.

In addition stepwise multiple regression was used to analyse the attitude data, to determine the most influence attitudes with regard to behavioural intention. The FFQ was analysed using SPSS 10 and Dietary Variety Scores were calculated by hand from the FFQ. The findings of the analysis are presented in chapter 8 with regard to the five hypothesis on which this study is based (Chapter 4, 4.4.2).
CHAPTER 7

Analysis and Discussion of Focus Group interviews.

An exploratory study of the shopping behaviour of older people in Guildford was conducted using focus group interviews. Respondents were recruited from North Place Day Centre in Guildford. The day centre was located in the urban centre of Guildford (figure 1.3) and offered activities and services as well as lunch and snacks to independent older people living in Guildford Borough. The methods used for data collection and analysis are discussed in chapters 5 & 6. This chapter reports the findings of focus group interviews conducted during a one-month period in Guildford. These findings are discussed with reference to the themes that emerged through analysis, in addition to considering previous research conducted regarding the shopping behaviour of older people. The focus group interviews were used both to inform the development of the face-to-face questionnaire and to validate any findings as a result of the questionnaire.

7.1 Focus Group Findings and Discussion

Following focus group interviews, transcripts were analysed using a method developed by Burnard (1991) and discussed in full in chapter 5 (section 5.3.1). The purpose of the focus groups was to establish the main food shopping issues considered important by older people residing in Guildford. Eight focus groups were conducted to examine their views and perceptions. A total of 32 people took part in focus group sessions, ten male and 22 female. Respondents were aged between 65 and 91 years. The questions asked to direct discussion were:
Key Questions:
1. What are your reasons for shopping where you do?
2. What influences your decision to shop there?
3. How do you get to your store?
4. What is restricting about where you shop?
5. What problems do you encounter whilst shopping?
6. What do you enjoy about shopping?

Ending questions:
7. What could improve your shopping experience?
8. Given 5 minutes with a supermarket manager what issues would you raise with him/her?
9. Have we missed anything?

Analysis established five categories relating both to the questions asked and the respondents' comments regarding food shopping. These were: access to shops, access within shops, price, choice and social aspects of food shopping. The full transcripts of the focus group interviews can be found in Appendix 7.

7.2 Access to Food Shopping

The first of these issues was access to food shops and how easy it was to reach shops on a regular basis. As previously stated in Chapter 1 (section 1.2) following Bowlby (1979) access in the present research is defined as a function of an individual's 'potential mobility' if all other factors were equal. 'Actual mobility' or shop usage defines the method an older person used to reach the store they most often visit. The analysis of the interviews found that access and usage were linked for this sample with respondents indicating that although they could reach food shops they often experienced difficulties. This was a finding also noted by previous research (Herne, 1995; McKie, 1999). Some respondents would spend increasing amounts of time accessing food and have developed progressively more complex coping strategies in order to maintain independence via food shopping. Others, due to choice or restricting factors such as physical disability, took advantage of offers from friends and family, which eliminated this issue to a
degree. What was apparent was that many respondents felt they had a lack of choice in how they obtained food whether via friends, family or by independent means.

The main issue appeared to be that of physical mobility and overcoming these mobility (access) difficulties in order to shop on a regular basis. Those who were more mobile stated that the proximity of the store was an important factor in choosing where to shop as well as the importance of maintaining the active nature of their shopping experience. Responses included:

“I walk to the Sainsbury at the top of High Street....Well, it's close isn't it and it's good exercise for me” (1, I)

“I do all my own shopping and I'm 90 years old! I use the Dial - a -Ride service and they take me to Tesco's across the way once a week.”(4, G)

One coping strategy for those who experienced difficulties, involved shopping with relatives or friends to ease the burden of access and carrying heavy bags.

“As long as I can get the few bits I need...it does make a difference having someone to go with” (1, H).

“I only get to shop once a fortnight, but my friend takes me so it's much easier”. (4, H)

This did not always make shopping easier however and negative aspects of relying on others also emerged. A common response among this group was:

“I can only get to the shop once a fortnight, my friend takes me which is easier, I have to get enough to tide me over” (1, H)

“My niece takes me, so I just go wherever she's going”. (5, L)

Overall, attitudes to store access varied with mobility level, with several respondents who shopped in the town centre indicating the hilly topography of the town exacerbated an already difficult shopping experience. Seats had recently been removed from the High Street at the top of which is the only food store in town (a small Sainsbury) meaning respondents could not stop and rest. These changes in the retail centre with regard to food shops proved an additional worry for a group for whom the ability to 'get
out and about' appeared to be a defining factor with regard to food choices and quality of life. This was reflected in the following typical responses:

"I'm lucky, I can get to the supermarket easily" (I, J)

"We want another food store in the town [Guildford]. Sainsbury's is alright, but it means walking up the hill" (I, E)

"There used to be a big old market on north Street, it was wonderful, you could get everything you needed...it's changed absolutely" (4, E)

Wrigley (1998b) noted that constraints resulted from peculiarities of the local environment, so that food choice was exercised within budget constraints and had different characteristics according to the area examined and its retail provision.

Problems reaching food shops appeared to have been exacerbated for the older people interviewed for the present study by the changing retail landscape in Guildford, in particular in the town centre. Several respondents attributed their current difficulties in accessing food shops to the changes that have occurred in Guildford town as a food shopping environment. The responses demonstrated how the development of edge and out of town supermarkets (as discussed in chapter 2, section 2.2) had influenced the shopping environment and experiences of those who relied on the town centre.

"There used to be a Waitrose in Woodbridge Road" (1, A)

"And a Tesco in the centre, ideal, you could just get off the bus and walk in" (1, B)

"When they built the Tesco on the other side of town, they closed the one in the centre" (1, B)

"They took them all out of the middle and put them round the edge...what use is that to those of us who don't have cars?" (1, F)

The fact that access to food shops is a major consideration for older people is not a newly reported phenomenon. A report by the Age Concern Institute of Gerontology (Age Concern England, 1996) found that by the time people reached their mid-eighties the majority had difficulty doing their shopping due to not having access to a car and
problems with public transport. None of the respondents interviewed in the present study owned their own car or drove themselves to food shops, although several reported relying on others to be taken to food shops.

The number of older people able to do their household shopping on their own decreases dramatically for those over 80 years (Age Concern, England, 1996). The figure drops from 84% (60-79 years) to 58% in men and 74% (60-79 years) to 39% in women. Several authors (Herne, 1995; Age Concern, 2000) noted an increased dependency on local shops due to a lack of money, a car or increased levels of disability.

All those respondents interviewed had access to a supermarket with an established Dial-a-Ride service for those unable to rely on friends or relatives. McKie (1999) noted that older people develop coping strategies to enable them to access food more easily. It appears from the group interviewed in Guildford that the strategies used here were just that:

“Well, my friend ...she’s doing me a favour really so I just go where she does, no other reason [for choice of shop]”. (4, H)

“It’s the same for me I suppose, Dial-a-Ride only go to Tesco and because of that so do I!” (4, G)

“I can’t see very well at all anymore, but I like to do my own shopping. I find Burpham too big, its overwhelming. The Woking shop is a much better size and they’ve got friendly assistants. The narrower aisles mean that I can find things more easily and steer my trolley”. (5, K)

However, respondents reported that the Dial-a-Ride service had a long waiting list. Using supermarkets was preferable, due to the cost of local shops (see section 7.6) and many felt that they had the right to shop at supermarkets, but were left behind when the stores moved out of town, as mentioned earlier.

The difficulties faced by older people in accessing food stores have been highlighted by previous research (Lilley et al, 1998; Wylie et al, 1999; McKie, 1999). These issues
were identified in the responses given during the focus groups as a part of the present study. The responses of a sample of older people in Guildford indicated that accessing food shops was a source of difficulty, with many respondents having to adapt to alternatives or develop strategies by which to remain active and shop for themselves.

7.3 Social Aspects of Food Shopping

Previous research into the lifestyles and shopping habits of older people have identified that social interaction resulting from shopping was found to be fundamental to older people’s shopping behaviours and quality of life (Smith, 1991; Herne, 1995; McKie, 1999). On a more individual level social interactions have been found to influence food choices (Schlenker, 1984; Herne, 1995; Leighton et al, 1996). Smith (1991) found that social issues such as visiting friends or relatives were inextricably linked both to shopping and dietary adequacy. McKie (1999) noted that older people stated that maintaining their independence was a priority and often consciously developed strategies to overcome social isolation, such as shopping daily to hear local gossip or eating in a social setting e.g. cafes or lunch clubs. These findings were reflected in the responses from the focus group interviews in Guildford for the present study.

Respondents mentioned that shopping was part of a routine, maintaining independence and occupying themselves. The importance of these factors is shown in the following responses from focus group participants:

“Well, it [shopping] gets you out doesn’t it? ...it’s about keeping yourself occupied. I’ve been on my own for 15 years and I don’t see how you can get lonely if you’ve always got something to do” (5, G)

“The assistants always come up and ask how you are” (5, A)

Others, despite being dependent on facilities such as Dial-a-Ride or friends and relatives to shop, used the opportunity to increase their social networks.

“The [Dial-a-Ride] bus is always full, so it’s a good time to meet up with people” (5, G)

“I get to spend some time with my friend” (5, H)
“Because I go with my niece it’s more of a social occasion. We can chat and catch up as we go” (5, L)

Underlying this attitude however was a general feeling that shopping had become more difficult with age and a need to remain independent of others. Respondents mentioned being dependent on others to get shopping, whilst not wanting to be burdensome or cause inconvenience. Responses such as those below were common.

“I don’t really enjoy shopping very much it’s more of a necessity” (5, K)

“It’s a chore like any other” (5, M)

“My friend gets her shopping at the same time, so she’s doing me a favour really” (5, H)

“I’m grateful she takes me as I know she’s a very busy person” (5, H)

Schlenker (1984) noted that social isolation might also influence the variety of food eaten. Several respondents who did not do their own food shopping mentioned that their diets had become less varied as a result of carers purchasing their food. However, the feeling of dependence and not wanting to ‘cause bother’ persisted. Responses included:

“The girl that does mine she’s very good, she know pretty much what I like” (5, C)

“I’ve got a friend who does my shop and gets my pension... she does so much for me” (5, D)

Several respondents expressed regret that local shops no longer existed in their area, stating that they missed the social interaction these smaller shops provided at a community level and highlighting the changes that have occurred in the retail provision in Guildford. A typical response was:

“Burpham used to have a butchers, bakers and grocers all in a row... I was friends with the people who ran them and it meant I enjoyed shopping” (5, M)

However the respondents in the focus group conducted in Guildford did not appear to use local shops, either because the shops were no longer open, or because there was the opportunity to visit supermarkets which had a wider range of choice and were better
value. Those with supermarket access stated that they enjoyed the facilities provided by
a bigger store, including coffee shops to stop and chat to friends. As a result of this,
regardless of the type of store visited by the respondents, shopping was a vital aspect of
maintaining an active and social life style. Farquhar (1995) stated that life satisfaction
and self-esteem are two of the vital components in maintaining quality of life for older
people. One of the main reasons given for a reduction in quality of life for older people
was a reduction in social contact and the need to get out more. For those living at home
the most important factors were family contact and maintaining an active life style. It
appears from the analysis that shopping with the ability to make personal choices about
food, even if the choice of store is restricted, was a fundamental part of this aspect of life
for the older people interviewed.

7.4 Choice

This is perhaps the broadest category established as a result of these interviews.
However, most factors related to food shopping could in some way be linked to the
choices available of where to shop, what to buy and how to access food. Respondents
mentioned feeling constrained in their choice of food store. This was particularly the
case in terms of maintaining independence over where they shopped and the foods they
bought.

The questions asked during the focus group interviews did not directly address the issue
of food choice, but asked about influencing or restricting factors which affected
shopping decisions or problems which arose when shopping. Very little is known about
the food store and food purchase choices of older people. The questions were designed
to examine whether this issue was raised separately or in conjunction with factors which
affected access to or within stores. For the most part the concept of choice asserted itself
in terms of tangible choices experienced by the respondents when shopping. The
emergent themes were that of maintaining a level of control over shopping and the
choices made related to this. This was reflected in the following typical responses:
“My one pleasure is being able to choose what I eat for myself” (4, F)

“That’s what makes the difference [between enjoying shopping and not]. We’re still in control of those choices” (4, J)

The concept of choosing store and food differed for those who were not able to do their own food shopping with several respondents indicating a need to compromise when food was purchased for them.

“The girl that does my shopping is very good...sometimes she’ll bring things that I don’t want. Still, you’ve got to be grateful for what you can get” (4, D)

Several respondents spoke of the problems of large package sizes and would have preferred shops to cater more specifically for the needs of older people. Others mentioned how they had had to change their habits to maintain independence.

“I have to shop three times a week now....” (4, A)

“I have to think about the best way all round to get what I need” (4, G)

Choices appeared to be defined by respondents’ ability to access food shops. McKie (1999) noted that older people spend increasing amounts of time accessing food in a way they can manage. Although there are those that would argue that older people have increased time at their disposal and this is not an issue (Watts, 1994). Despite the fact that older people have extra time it should not be the case that they are willing to spend it in accessing food in a way that allows them to have the choices about food that the rest of the population enjoy. The purpose of further examining choices related to shopping and food in this study is to give this aspect of food shopping a greater focus.
7.5 Access within shops

Older people's opinion of facilities available once inside a food shop is the least researched area of the categories that became apparent during the analysis of the focus groups. However a question was specifically asked regarding in-store access to food as a result of the findings of studies which examined this area of shopping and resulting food choices (Mason & Beardon, 1978, 1979; Hare et al, 1999). Respondents were asked a question regarding the internal lay out of the store they most often visited to determine whether the inside of the store influenced their store choice.

In store access to food can be examined in two ways. Firstly, in terms of physical access to items; this can be affected by internal store attributes such as shelf height, aisle width, lighting, display and assistance (Mason & Beardon, 1979, Hare et al, 1999). The second way in which in-store access can be examined is in terms of the type of foods available in a particular shop. This includes price, quality, freshness and range as well as package size and accessibility of products on shelves. All of these factors can have a restricting influence on the choices available to the consumer. In addition to this personal perceptions on quality and freshness may prevent consumers from buying products, but they may not be able to get to an alternative store.

Whilst the issues raised here are relatively subjective, factors such as shelf height, aisle width and package size appear to have been repeatedly mentioned as a problem in shops (Mason & Beardon, 1979. Wylie et al, 1999, Hare et al, 1999). This was also an issue for many of the participants interviewed in Guildford as demonstrated by the following responses:

"The shelves are too high. I've hurt my shoulder ...so anything above shoulder height is impossible" (2, G)

"I'm too short anyway, but it seems to get worse as I get older!" (2, H)
"The shelving is either too high or too low; I can’t bend the way I used to” (2, K)

Other problems with the layout of the store included merchandising and having to wait in queues. Responses included:

"I never seem to be able to find things” (2, L)

"Putting stuff in one place would be a good idea, it would save time” (2, J)

"They try to fit so much in; they don’t think that people won’t be able to get to it” (2, G).

Hare et al (1999) found that customers felt dissatisfied with many in-store attributes, but felt they had to accept them because they felt their views would not make any difference. This did not appear to be the case in terms of those asked in Guildford. Several found shopping easier with the benefit of helpful staff and like other population groups; requirements varied according to the individuals needs. This was apparent when respondents were asked about the physical lay out of the store in particular.

"I can’t see very well....The narrower aisle mean I can find things more easily and steer my trolley” (2, K)

"For me, the aisles are too narrow” (2, J)

This was also apparent in the comments made about package sizing.

"I find the packaging a problem, I mean the size” (2, L)

"Me too, I mean how much do they think we eat?...it’s very frustrating” (2, J)

"They do individual packaging, but generally it seems to be getting bigger and bigger. It’s this catering for the family, but it doesn’t do the single person any good” (3, A)

The availability of smaller package sizes was highlighted as a problem in previous research. Mason & Beardon (1979) found signs were too small and packages too big, with too little attention paid to the needs of older people. Respondents in Guildford indicated they would like stores to cater more specifically for older people. Wylie et al, 1999) noted that these internal store factors had a significant influence on the food
choice of older people and may prevent them from consuming the optimum nutritional intake for their needs. This is an area that needs further research to establish the most restricting factors of those mentioned, with a view to encouraging supermarkets and smaller shops to consider all of their clients when merchandising stores and manufacturing products. The scale of the problems posed by internal factors within store needs to be established and relating to this, the extent of their influence on nutritional intake. The focus groups have indicated a need to include this aspect of shopping in the main research tool due to its clear links to other aspects of food shopping.

7.6 Price

The influence of price on older peoples' shopping behaviour has been raised in several studies whether to highlight the difficulties of living on a low income (Age Concern, 2000, McKie, 1999) or in examining the apparent new wave of wealthy older people (Gunter, 1998). Lilley et al (1998) identified several studies where price was a concern for older people or significantly affected the intake of healthier foods (Donkin et al, 1998). Lilley et al (1998) suggested that for less well off older people, price may override many if not all other influences on food purchasing.

Although the issue of price was established as important to the group of older people interviewed for the present study, it was mentioned to a lesser degree than the previous factors discussed here. The analysis of focus group interviews indicated that for those interviewed in Guildford, value for money was of greater importance than overall price. Several respondents stated that they felt that the increase in prices in local shops made them inaccessible and that supermarkets were better value. Responses included:

"Village shops are too expensive" (3, A)

"Marks & Spencer is far too expensive to do much shopping" (3, A & B)

"In Waitrose a tin of cat food is 29p, in the local Co-op the same food is 49p" (3, B)
Respondents in the present study highlighted quality and value for money as being particularly important in influencing their shopping decisions. However, not all respondents considered that supermarkets, were better value as often savings on bulk goods were of no use to older people (particularly those living alone).

"We lose out on value because we don't use as much" (2, G)

In addition, a number of respondents conceded that although local shops were more expensive they provided many other benefits in terms of proximity, social interaction and better quality foods. Typical responses were:

"I don't think these shops were cheaper necessarily, but I have no objection to paying for quality" (3, M)

Several comments were made with regard to the cost of food in the Marks & Spencer High Street store. This store offers food as well as apparel, but could not be considered to be primarily a supermarket. The analysis noted how this was the main shop of comparison for older people in Guildford, particularly when talking about price. Those who responded in this way tended to shop in town, where the alternatives to the small Sainsbury store were Marks & Spencer or a Budgens store, both of which were considered more expensive.

The attitude of respondents in the focus group interviews tended to reflect that of Dawson (1991) who found that both high and low income shoppers thought supermarkets offered lower prices with a wider choice, whereas local shops were more accessible, but also more expensive. In addition, Herne (1995) stated that the Health Education Authority had found those with little money bought routine foods and those that were affordable. Whilst the interviews under analysis did show people tended to make lists and buy similar foods each time they shopped, there was no evidence that this was due to income and not habit or preference.
In conclusion, although price appeared to be a factor considered by the respondents in the present study, access to food shops proved a greater issue. The older people interviewed as part of the focus group research appeared to be prepared to pay more provided the food was of a higher quality to warrant the price increase.

7.7 Conclusions

The analysis presented above indicates that for the group of older people interviewed and living in Guildford, the most important issues when food shopping were being able to reach food shops and the social contact that resulted from shopping for food. Respondents indicated that maintaining the ability to shop for themselves and maintain control over their shop or food choices was a priority. Many respondents reported feeling they had little choice over where they shopped. This was either as a result of a reduction in the number of shops in their area (for example in Guildford town centre), or because of reliance on friends or relatives.

As a result of these factors there was little choice relating to in-store issues for most of the people interviewed. Physically getting to the store was stated as a greater priority. Further interviews may demonstrate a preference for particular in-store features, were a choice available, but this was unclear in this analysis. Many respondents appeared also to feel cheated by the lack of retail provision in Guildford Town, suggesting that older people were not considered by planners or retailers and so were left out of the equation as far as retail development is concerned.

Issues raised with regard to the changes in retail location, particularly in Guildford’s town centre also identified the importance of social aspects of shopping. People spoke of getting out, spending time with friend or relatives, or simply being a part of an active society. Respondents expressed pleasure in being able to choose foods for themselves. Being unable to access a store may have drastically reduced social contact in many cases. In addition those unable to reach stores spoke of a lack of choice in buying food
related to this. The ability to choose was reduced resulting in the purchase of ‘fixed’ shopping baskets by friends, relatives or carers.

The analysis confirmed several issues raised in the literature as being relevant to older people in Guildford, namely the maintenance of independence and social inclusion, the importance of reaching food shops and the difficulties they experienced in accessing stores (McKie, 1999, Kang & Ridgeway, 1996; Westlake, 1995). The degree to which these factors affect their lifestyles requires more research. The purpose of these interviews was to explore the extent to which previous research reflected the shopping behaviour, needs and wants of older people in Guildford. This information was used to develop the face-to-face questionnaire (chapter 5, section 5.4). However, the issues raised by focus group interviews were also examined with reference to the findings of the face-to-face questionnaire to examine whether the opinions reported by a larger sample reflect those of the focus groups (chapter 9).
CHAPTER 8

Analysis and findings of the face-to-face questionnaire and food frequency questionnaire

8.1 Introduction

Focus group interviews (chapter 7) established the major factors affecting the food shopping of a group of older people interviewed in a day centre in Guildford town centre. Physical access, social inclusion and choice appear to have a notable influence on the food shopping habits of the older people interviewed. The findings presented in this chapter examine whether the factors identified as part of the focus group interviews were suggestive of the experiences of a broader population of older people residing across Guildford Borough. The results of analysis are considered with reference to the study hypotheses first presented in Chapter 4 (section 4.4.2) and reiterated below:

1. The food shop most often visited by an older person will be the food store nearest to their home.

2. An older person's food store choice will depend on their level of access (method of transport, travel time, distance, reason, perceived ease...)

3. Variety found in the diets of older people will be related to store choice, how they access the store they most often visit and their attitude to healthy eating.

4. Store choice is related to the internal layout of the store most often visited and facilities offered by this store.

5. Store choice and attitudes towards supermarkets are dependent on demographic factors such as amount spent per week on food, social group, age, gender and marital status.

Analysis of the results provided by the face-to-face questionnaire and FFQ used in the present study involved a number of methods including Chi squared analysis, multiple regression, logistic regression and dietary analysis.
In order to present results with greatest level of clarity the results section is divided into two parts. Firstly the retail provision available in Guildford Borough is examined demonstrating the level of potential mobility available to the study sample. Following this, the characteristics of the sample are considered in terms of the respondents’ ability to do their own food shopping and their shopping behaviour. Finally, the dietary variety of the population is considered. Having established the characteristics of the sample of the older people interviewed, the second part of this chapter considers the hypotheses presented above which examine the potential relationships between access, store choice, dietary variety and attitudinal factors.

8.2 Food Retail Provision in Guildford Borough

The present study considers how a group of older people residing in Guildford Borough access food shops. In order to examine the level of access to food shops among the sample interviewed (see chapter 1, section 1.2) it is necessary to examine the availability of food shops within Guildford Borough.

Figure 8.1 displays the food retail provision in Guildford Borough (Guildford Borough Council, Environmental Health Office (EHO), 2001). The map is based on Guildford Borough Council's Environmental Health Office list of food shops. This is reviewed on an annual basis, and classifies food retail provision as described in the key to Figure 8.1. A superstore, for instance, is defined as a shop with more than 3,000 square metres of floor space (GBC, 1999). There are two such stores indicated in Guildford Borough as presented in Figure 8.1. These are the Sainsbury store in Merrow & Burpham ward and the Tesco store in Onslow ward. A third shop worth noting individually due to the importance placed upon this store by focus group respondents is a smaller Sainsbury store located in Guildford town centre (Holy Trinity ward). This store at 720m², does not meet the criteria for defining a shop as a superstore set by Guildford Borough Council (1999), however, it is bigger than the other supermarkets presented and given its importance to focus group respondents is worth highlighting.
A food retailer is defined by Guildford Borough (EHO, 2001) simply as a retailer where food is available to purchase. According to the EHO (2001) list a food retailer may include garage forecourts, off licences or post office shops where food is not necessarily the main product sold by the shop. All shops provide basic food goods including bread or milk, but it is acknowledged as a part of the present study that limitations in the Guildford Borough EHO list (2001) mean that shops nearest to an individual’s home may not provide an adequate range of foods to complete a recommended weekly food basket of goods (SEU, 1998, Cummins & McIntyre, 1999). Whilst acknowledging that the definitions used by the Guildford Borough Council, EHO list are not those typically used in the retail literature (see for instance Guy, 1994), it nonetheless provides a measure of provision in Guildford Borough from a readily available and regularly updated source. In addition to the mapping of the food retail provision of Guildford Borough, the researcher visited a range of the stores across differing wards. All food stores located in the same wards as day centres were visited. The Sainsbury store in Guildford town centre was found to be frequently stocked out of basic goods such as bread, milk and fruit or vegetables. In addition the One Stop and All-days stores in Ripley and Ash were found to be lacking in fresh fruit and vegetables and stock whilst available was often left in the aisles in boxes as opposed to put on shelves. Several of these findings were echoed in additional comments provided by respondents as part of the face to face questionnaire (see appendix 6).
Figure 8.1 – Food Retail provision in Guildford Borough

Source: Guildford Borough Council, 2002
(retailer definitions used from Environmental Health Office)
8.3 Sample Characteristics

112 older people aged over 60 years were recruited to complete the questionnaires (see chapters 5 & 6) from three day-centres within Guildford Borough. Respondents who were interviewed resided in 15 of the 21 wards of Guildford Borough (see figure 1.3) taking into account the characteristics of the study area discussed in chapter 1 (section 1.3.4). Respondents were located at Day Centres in Guildford Borough and randomly selected for interview. The centres were located in the village of Ripley (Send ward), the Park Barn area on the edge of Guildford town, (Onslow ward) and in Ash ward. The sample characteristics including age, gender marital status and ability to do own food shopping of the 112 respondents interviewed are shown in table 8.2. Further characteristics of those who were able and unable to shop for themselves are considered in sections 8.3.1 and 8.3.2 respectively.

Age distribution

The age range of the sample interviewed was between 60 and 93 years of age therefore providing information on both ‘younger’ and ‘older’ older people whom previous research has indicated may have differing requirements in terms of access and mobility (Morgan, 1992; Age Concern England, 1996). Fifty one percent of the sample (n = 57) interviewed were aged between 65 and 74 years of age. Twenty six percent (n = 29) were between 60 and 64 years of age, all of whom were female and were eligible for inclusion in the present study due to the lower retirement age of women in the UK (60 years as opposed to 65 years for men). Finally 26 respondents (26%) were aged over 75. The age range of the sample of older people interviewed reflected the age range present in the UK population encompassing individuals from across the age group. In addition whilst projections for the fastest growing section of the older population remains those aged over 80 years (ONS 2003a), population information available from 1997 (Matheson & Summerfield, 1999) indicates that currently there are more older people aged between 60 and 74. The sample of older people interviewed as part of the present study generally reflect the greater number of ‘younger’ older people suggested by
national population information. However the sample is slightly skewed towards those aged between 60 and 74.

Table 8.2 Sample Characteristics from 112 older people visiting day centres in Guildford Borough; including age, gender and ability to do own food shopping, expressed as numbers and percentage of total sample.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Total</th>
<th>N</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>64 and under</td>
<td>112</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>65-74</td>
<td></td>
<td>57</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>&gt;75</td>
<td></td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>112</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td>91</td>
<td>81</td>
</tr>
<tr>
<td>Ability to do own food shopping</td>
<td>Do own food shopping</td>
<td>112</td>
<td>74</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Do not do own food shopping</td>
<td></td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>112</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td></td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td></td>
<td>87</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Divorced/Separated</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Living circumstances</td>
<td>Live alone</td>
<td>112</td>
<td>98</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Live with partner or family</td>
<td></td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Amount spent on food/week (£)</td>
<td>&lt;25</td>
<td>112</td>
<td>85</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>26-50</td>
<td></td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>&gt;50</td>
<td></td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Socio-economic Class (SEC)</td>
<td>1. Management &amp; Professional</td>
<td>112</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>2. Intermediate</td>
<td></td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3. Small employers &amp; own account workers</td>
<td></td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>4. Supervisors/craft related</td>
<td></td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>5. Working class</td>
<td></td>
<td>35</td>
<td>32</td>
</tr>
</tbody>
</table>
Gender

Whilst the number of men in the UK population outnumbers women until the age of 50, there is currently a larger female population over retirement age (60 for women, 65 for men) (Matheson & Summerfield, 1999). This gender imbalance is partly due to the longer life expectancy of women compared to men in the UK (75 for men and 80 for women (DoH, 1999). Population data in the UK has identified that whilst men outnumber women up until the age of 50, beyond this age there are increasingly more women than men (Matheson & Summerfield, 1999). The ONS (2000a) suggest that whilst the discrepancy in ages is gradually eroding over time, currently by age 89 there are around 3 women to every man in the older population. The proportion of women to men in the 112 people interviewed for the present study was slightly higher with approximately 4 women to every man (19% male and 81% female). However whilst acknowledging the limitations potentially imposed by the gender imbalances in the sample interviewed for the present study, there was no evidence that any patterns found were as a result of gender differences in accessing food. The difference in the proportion found could partially be explained by the fact that women are more likely to visit day centres than men (ACE, 2000). In addition single older people are more likely to visit day centres who for the reasons outlined above are also more likely to be women due to their higher life expectancy (Matheson & Summerfield, 1999). In addition, as noted below (see table 8.4), 98 of the 112 respondents lived alone.

Socio-economic classification.

Socio-economic classifications (SEC) were determined using the Social Classifications developed by the Economic and Social research Council (ESRC) with the ONS (2000b) by recoding the previous occupation of the respondents or their partner. The five categories are presented in table 8.2 and demonstrate that respondents interviewed represented all of the five SECs and were fairly evenly distributed between the upper
and lower SECs (41% in class 1 & 2 and 46% in classes 4 & 5, with the remaining 13% in the intermediate group of small employers or own account workers). SEC was not found to be related to respondent’s ability to do their own food shopping.

**Amount spent per week on food**

As mentioned in Chapter 5 (section 5.9) respondents were asked how much they spent on food per week to give and indication of socio-economic status. In the sample of 112 older people interviewed as part of the present study 85 respondents (76%) reported spending less than £25 per week on food.

**Marital Status and Living circumstances**

One hundred and one (90%) of the 112 respondents interviewed as part of the present research were single (87 were widowed, 11 were single and 11 were either divorced/separated). Compared to national averages (Matheson & Summerfield, 1999), more respondents in the sample of older people interviewed for the present study were widowed (77% in the present sample compared to the national average of 69% in 1997). The skewing of the population towards women makes comparisons to national averages challenging, however the marital status of the sample interviewed did not reflect findings of census information that indicated that more older men are married than women (68% of men aged over 60 compared to 41% of women (Matheson & Summerfield, 1999). Only 2 of the 11 men interviewed as part of the present study were married, (or the remaining respondents 7 were single, 11 widowed and one man was divorced). Nine of the women interviewed for the present research were married, 76 (83%) were widowed and the remaining 6 either single or divorced (see table 8.3).
Table 8.3 - A cross tabulation to demonstrate the relationship between gender and marital status among older people interviewed in Guildford Borough (n = 112).

Table 8.4 presents a cross tabulation to determine the relationship between gender and living circumstances among the 112 older people interviewed as part of the present research. Ninety eight of respondents interviewed (88%) lived alone, which was a higher figure than the 1997 national average of 69% (Matheson & Summerfield, 1999), reflecting the large number of widowed respondents in the sample interviewed.

Table 8.4 - A cross tabulation to demonstrate the relationship between gender and living circumstances among older people interviewed in Guildford Borough (n = 112).
8.3.1 Comparison of the focus group sample with the main study sample.

In order to demonstrate a fuller picture of the older people interviewed in Guildford as a part of the present study, the sample interviewed for the main study were compared with the sample interviewed for the focus group research therefore providing a picture of whether the two samples shared similar characteristics which allowed for further comparison during discussion of the study.

More men were interviewed as a part of the focus group research. Of the 32 respondents interviewed approximately 1/3 were men (n = 10). However the age ranges for both the focus group research and the main sample were the same (60 - 90 years of age). The larger proportion of men in the focus group samples may be as a result of the smaller overall number interviewed as opposed to reflecting a significantly different sample interviewed and serves to increase the representation of male respondents within the study. Both the focus group interviews and the main study sample identified individuals who were both able and unable to conduct their own food shopping although fewer respondents in the focus groups could not shop for themselves. The overall similarities between the samples suggest that the focus group responses could further inform the responses given by those individuals partaking in the face to face questionnaire.

8.3.2 Food shopping patterns for those who conducted their own food shopping

Having examined the sample population as a whole in terms of sample characteristics, table 8.5 considers the same characteristics for the sub-population who were able to conduct their own food shopping. It is interesting to note that none of the respondents aged below 64 shopped for themselves although there is no apparent reason why this should be. Respondents up to the age of 90 years continued to be independent in their shopping behaviour and were able to shop for themselves, although this may have
included relying on others to reach the store they most often visited. No other patterns in the sample characteristics were apparent which may have defined a respondents ability to shop for themselves.

**Table 8.5 - Sample Characteristics from the 74 older people visiting day centres in Guildford Borough who stated when interviewed that they were able to do their own food shopping; including age, gender and ability to do own food shopping, expressed as numbers and percentage of total sample.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Total</th>
<th>N</th>
<th>Percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>64 and under</td>
<td>74</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>65-74</td>
<td></td>
<td>23</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>&gt;75</td>
<td></td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>74</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td>63</td>
<td>85</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>74</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td></td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td></td>
<td>57</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Divorced/Separated</td>
<td></td>
<td>2</td>
<td>77</td>
</tr>
<tr>
<td>Living circumstances</td>
<td>Live alone</td>
<td>74</td>
<td>63</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Live with partner or family</td>
<td></td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Amount spent on food/week (£)</td>
<td>&lt;25</td>
<td>74</td>
<td>58</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>26-50</td>
<td></td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>&gt;50</td>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Socio-economic Class (SEC)</td>
<td>1. Management &amp; Professional</td>
<td>74</td>
<td>24</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>2. Intermediate</td>
<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3. Small employers &amp; own account workers</td>
<td></td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>4. Supervisors/craft related</td>
<td></td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>5. Working class</td>
<td></td>
<td>21</td>
<td>28</td>
</tr>
</tbody>
</table>
The majority of respondents routinely did their own food shopping (n= 74). 72 of the 74 respondents shopped in Guildford Borough. The two respondents who did not shop in the Borough shopped in Farnham and Farnborough just outside of the Guildford Borough boundary. Both respondents visited superstores to conduct their main food shopping and so for the purpose of analysis these respondents were considered as part of the group who shop at supermarkets. There was no evidence that mobility decreased or that a reliance on friends or relatives increased with age as suggested by previous research (Age Concern, 1996; 2000). Respondents across all age groups (see table 8.5) stated that they did their own food shopping demonstrating no reduction in ability to conduct food shopping with age.

The results presented in table 8.6 show that forty seven respondents (64%) reported shopping for their main food shop on a weekly basis whereas 24 shopped two or three times a week. No relationship was found between frequency of food shopping and age which may indicate that frequency of food shopping is influenced by other factors such as social interaction or coping strategies to carry goods as suggested by focus group interviews.

Of the 74 respondents interviewed, 47 respondents (64%) shopped in Guildford town and 14 (19%) in Burpham (where there is a Sainsbury superstore - Figure 8.1). 24 (32%) respondents stated they shopped at Sainsbury (either at Burpham or at the smaller store in the town centre) and 34 (46%) at Tesco (which is on the periphery of the main town). The remainder of those interviewed (17%) stated they shopped at smaller local shops within Guildford Borough (e.g. Lo-cost, Alldays, Budgens or One Stop) or in the case of two respondents at Supermarkets outside of the Borough (Sainsbury in Farnham or Asda in Farnborough). 61 of the 74 respondents who conducted their own food shopping travelled more than 500m (the maximum distance an individual should have to travel in order to reach a food shop according to the Social Exclusion Unit (1998).
Table 8.6 – Shopping behaviour characteristics of the 74 respondents who reported conducting their main food shop for themselves.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Total</th>
<th>n</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of transport</td>
<td>Public transport (e.g. bus)</td>
<td>37</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Private transport (e.g. drive/driver)</td>
<td>37</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>74</td>
<td>37</td>
<td>50</td>
</tr>
<tr>
<td>Perceived ease of access to food shop most often visited</td>
<td>Easy to get to shop</td>
<td>74</td>
<td>60</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>Difficult to get to shop</td>
<td></td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>Shop most often visit for main food shop</td>
<td>Shop at supermarket</td>
<td>74</td>
<td>59</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Shop at convenience store</td>
<td></td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Distance from home to food shop most often visited</td>
<td>Up to 500m</td>
<td>74</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>&gt;500 km</td>
<td></td>
<td>61</td>
<td>82</td>
</tr>
<tr>
<td>Frequency of visit to main food shop</td>
<td>Daily</td>
<td>74</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2-6 x week</td>
<td></td>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>week/fortnight</td>
<td></td>
<td>50</td>
<td>67</td>
</tr>
<tr>
<td>Shopping behaviour</td>
<td>Shop alone</td>
<td>74</td>
<td>39</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Shop with others</td>
<td></td>
<td>35</td>
<td>47</td>
</tr>
<tr>
<td>Reason given for using store most often visited</td>
<td>Proximity</td>
<td>74</td>
<td>34</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>Friend/relative shops there</td>
<td></td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Ease</td>
<td></td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Lack of choice</td>
<td></td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Use dial a ride</td>
<td></td>
<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>
The method of transport used to reach the store most often visited was divided into two categories; public transport (e.g. bus) and private transport (e.g. drive or are driven). Twenty respondents reported walking, 17 used bus services, 11 drove themselves, 18 were driven by a friend or relative and 6 used the Borough run dial-a-ride service. The dial-a-ride service is run by Guildford Borough Council and visits the edge of town Tesco store (see Figure 8.1). Respondents spoke highly of this service, but had to book some time in advance to ensure a place on the mini-bus. The service costs £2 a time and participants are taken "door to door" with help carrying shopping into the home if necessary. The dial-a-ride service was considered to be a private method of transport as it is not provided as a public service and although linked to Guildford Borough is primarily run by Day Centres. In addition this service had both a waiting list and an amount payable for its use. Interestingly no respondents used taxis to reach the food shop they most often visited.

Respondents were asked their main reason for shopping at the store they most often visited as an indicator of store choice and store usage. Thirty four respondents stated that the proximity of the store was the defining factor in choosing where they shopped. However, 18 respondents stated their main reason for choosing a store was because a friend or relative shopped there and 8 respondents reported a lack for shop choice which forced them to shop at a particular store as there were no other available in there are. All of these 8 respondents shopped in the Sainsbury in Guildford town centre (Onslow ward, figure 1.3).

Despite potential issues highlighted by a reliance on friends or relatives for transport, a perceived lack of shop choice and the fact that 30% of respondent travelled more than 2km to reach the food shop they most often visited, when asked how easy they found it to get to the food shop they most often visited, 81% of respondents (n = 60) agreed or strongly agreed that they found it easy to get to shops. Analysis of the hypotheses (section 8. 5) will further address the factors presented above which may affect access to food shops, store choice and ultimately store usage.
8.3.2 Food shopping patterns of those who did not conduct their own food shopping

Of the 112 respondents interviewed as part of this research, 38 (34%) reported that they did not normally do their own food shopping. Table 8.7 presents the sample characteristics of the sub group who did not do their own food shopping. Twenty five of the 38 respondents relied on a friend or relative to get their food shopping for them and 9 relied on a carer. No respondents used internet shopping or reported having access to a computer to do so. Three respondents used a home delivery service offered by Iceland stores. Using Iceland home delivery service involved receiving a catalogue from the company every six weeks. Respondents chose the foods they desired and telephoned for their delivery, they were informed of special offers when ordering and paid on receipt of their goods. Respondents reported that this system allowed them greater control over choosing foods, although the range of foods was more limited than visiting the store and relied on the shopper having a freezer. There is no Iceland store in Guildford Borough meaning the service delivers over a wide area and was considered an excellent service by those who used it. The importance of social interaction whilst selecting foods was reported as preferable to relying on others to get food as respondents reported feeling included in terms of both interaction with others and their own food choices.

Of those who did not use the home delivery service, 17 had their shopping purchased from a supermarket and 16 respondents did not know where their food shopping was purchased. When asked if they requested that their shopper bought food from a certain store all 35 responded no. The main reasons given were that they did not want to be any additional burden to the purchaser by asking them to visit particular stores, or that the purchaser already shopped at their store of preference. However certain food stores were stated as being preferred by some respondents due to food preference or reward schemes (e.g. preferred meat or bread from a particular brand or had a loyalty card for a store). In these cases a friend or relative bought the food and was often aware of these preferences.
Table 8.7 - Sample characteristics of the 38 of 112 respondents who reported being unable to do their own food shopping.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
<th>Total</th>
<th>n</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method by which obtained food.</td>
<td>Carer</td>
<td></td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Friend/relative</td>
<td>38</td>
<td>26</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Home delivery</td>
<td></td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Store the buyer used</td>
<td>Supermarket</td>
<td></td>
<td>17</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Convenience store</td>
<td>38</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Don't Know</td>
<td></td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>Asked buyer to visit a particular store</td>
<td>Yes</td>
<td>38</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td>35</td>
<td>93</td>
</tr>
<tr>
<td>Level of control over choosing foods bought</td>
<td>No control</td>
<td>38</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>A little control</td>
<td></td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Moderate control</td>
<td></td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>A lot of control</td>
<td></td>
<td>17</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Complete control</td>
<td></td>
<td>11</td>
<td>29</td>
</tr>
</tbody>
</table>

Despite many of the 38 respondents not knowing where their food was bought, the majority (76%) stated that they felt they had complete or quite a lot of control over choosing the foods which were bought for them. Among the reasons given for this perceived level of control were that respondents often provided a list from which their purchases were made, or that their shopper knew them and what they liked. Analysis of the Hypotheses (section 8.5) will examine whether the ability of the 112 respondents
interviewed to shop for themselves exerted an influence on their dietary variety or attitudes to healthy eating.

8.4 Sample characteristics - Dietary information

All 112 respondents completed an interviewer-administered food frequency questionnaire (FFQ). Table 8.8 presents the mean energy, fat and saturated fat intakes for the older people interviewed as well as the mean percentage of fat and saturated fat consumed as a percentage of total food energy. Food energy is used as opposed to total energy as the FFQ did not ask questions regarding alcohol consumption.

Table 8.8 - Energy, fat and saturated fat intakes of the sample interviewed (n = 112) calculated from a Food Frequency Questionnaire (according to Geekie, 1999).

<table>
<thead>
<tr>
<th>NUTRIENT</th>
<th>N</th>
<th>MEAN INTAKE</th>
<th>S.D</th>
<th>% OF TOTAL FOOD ENERGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY kcal</td>
<td>112</td>
<td>1216.7</td>
<td>552.9</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(490.2 - 3878.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAT g</td>
<td>112</td>
<td>44.4</td>
<td>24.3</td>
<td>32.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(12.7 - 164.2)</td>
<td></td>
<td>(19 - 48.3)</td>
</tr>
<tr>
<td>SATURATED FAT g</td>
<td>112</td>
<td>14.4</td>
<td>9.1</td>
<td>10.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.4 - 46.9)</td>
<td></td>
<td>(2.8 - 19.9)</td>
</tr>
</tbody>
</table>

The sample of 112 older people interviewed for the FFQ were considered as a whole for the analysis of dietary intake at this stage due to the fact that no significant difference was found between the intakes measured of the men and women observed during analysis and the small number of men (n = 21) in the sample as a whole.
The energy intake of the older people interviewed as part of the present research was on average found to be lower than current recommendations (COMA, 1992). However, the large standard deviation observed in the measurement of energy intake indicates that this population varied greatly in their energy consumption. Recommendations for people aged over retirement age have been set at 2330 for men (65-74) and 1900 for women (65-74). The wide range of energy intakes measured for the current study (490 kcals – 3878 kcals per day) are indicative of previous research which has noted the variation in energy intake among older people (Herne, 1995; Bernstein, 2002), however the lower end of the range is of particular interest in this case due to the very reduced number of calories consumed. Several respondents completing the questionnaire reported actively following what they considered to be ‘healthy’ lifestyles; namely attempting to consume fewer calories and reducing fat intake. However examination of the results in table 8.4 should be considered in relation to the FFQ from which they were derived. Although dietary diversity has been found to exist among the older population (Schlenker, 1984; Wylie et al, 1999) without anthropometric measures such as Body Mass Index it is not possible to draw any definitive conclusions as to the effect of the variation in energy intake found.

In addition, whilst FFQs have been found to be an appropriate measure of older people's diets (Howarth, 1989; Charles, 1998) any interpretation should allow for under reporting. In terms of fat and saturated fat intake recommendations are set as a percentage of food energy and do not differ from those set for the rest of the adult population in the UK. Recommendations suggest that fat intake should not exceed 35% and saturated fat no more than 11% of food energy. Table 8.6 demonstrates that for the sample under consideration neither average fat nor saturated fat exceeded the recommendations set as a percentage of food energy.

However, as noted with energy intakes, the range for both fat and saturated fat intake was quite wide indicating some respondents may have been at greater health risk due to excessive fat or saturated fat intake.
Using the dietary variety score (DVS), specifically developed for this study, the number of different foods consumed in a week were calculated for each respondent. The total number of food types included in the score was 81 (the breakdown of which can be found in appendix 3). The mean dietary variety score for this sample was 27.5, indicating that on average 27.5 different food types were consumed by respondents in a given week (range = 17 - 41). Women were found to have more varied diets than men (women - $\chi = 27.9$, range = 18-41, men - $\chi = 25.8$, range = 17-34) despite not consuming very different amounts energy or fat (Table 8.6). Logistic regression confirmed that gender exerted an influence on dietary variety ($p = 0.05$) and that women consumed significantly more varied diets (see section 8.7.1). With the exception of gender none of the other socio-demographic variables considered in the present study (Marital status, living/shopping alone or with others, amount spent per week on food and socio-economic class) were found to influence the dietary variety of the sample of older people interviewed when analysed using either Chi square cross tabulations or logistic regression.

It has been suggested that a food variety score of at least 15 foods over one week should be considered as a minimum for nutritional adequacy (Hodgson et al, 1994) provided that the majority of this variety comes from plant sources. In the present study, vegetable consumption was the largest contributor to dietary variety. The minimum variety score for this sample of older people was 17 suggesting adequate dietary variety and ensuring nutritional adequacy. Table 8.9 presents the mean Dietary Variety Score (DVS) for the sample of 112 older people interviewed as well as the mean score for each of the food groups included in the DVS (see appendix 3 for a list for foods in each group).
Table 8.9 – Mean dietary variety score for each of the food groups examined (including range, food group and total number of foods in each group) calculated from a food frequency questionnaire used to assess the diets of 112 older people residing in Guildford Borough.

<table>
<thead>
<tr>
<th>FOOD GROUP</th>
<th>TOTAL No. FOOD TYPES IN GROUP</th>
<th>MEAN No. FOOD TYPES CONSUMED PER WEEK</th>
</tr>
</thead>
<tbody>
<tr>
<td>BREAD</td>
<td>5</td>
<td>1.3 (0.8 - 1.76)</td>
</tr>
<tr>
<td>BREAKFAST CEREAL</td>
<td>3</td>
<td>1.0 (0.6 - 1.4)</td>
</tr>
<tr>
<td>FATS</td>
<td>1</td>
<td>1.0 (0.9 - 1.1)</td>
</tr>
<tr>
<td>FRUITS</td>
<td>10</td>
<td>2.9 (1.7 - 4.1)</td>
</tr>
<tr>
<td>DRIED FRUIT/NUTS</td>
<td>4</td>
<td>0.3 (0.0 - 0.8)</td>
</tr>
<tr>
<td>CHEESE</td>
<td>5</td>
<td>1.0 (0.6 - 1.6)</td>
</tr>
<tr>
<td>VEGETABLES</td>
<td>13</td>
<td>6.4 (4.4 - 8.5)</td>
</tr>
<tr>
<td>DRESSINGS/SAUCES</td>
<td>6</td>
<td>0.3 (0.0 - 0.9)</td>
</tr>
<tr>
<td>POTATO/PASTA/RICE</td>
<td>4</td>
<td>1.5 (0.7 - 2.2)</td>
</tr>
<tr>
<td>MEAT &amp; VEG DISHES</td>
<td>4</td>
<td>0.8 (0.0 - 1.9)</td>
</tr>
<tr>
<td>MEAT PRODUCTS</td>
<td>6</td>
<td>1.8 (0.9 - 2.7)</td>
</tr>
<tr>
<td>SUGARS/PRESERVES/SNACKS</td>
<td>4</td>
<td>0.9 (0.2 - 1.6)</td>
</tr>
<tr>
<td>FISH</td>
<td>3</td>
<td>1.3 (0.5 - 1.9)</td>
</tr>
<tr>
<td>MEAT</td>
<td>4</td>
<td>2.1 (1.1 - 5.0)</td>
</tr>
<tr>
<td>CAKES/BISCUITS</td>
<td>3</td>
<td>1.6 (0.8 - 2.4)</td>
</tr>
<tr>
<td>POULTRY</td>
<td>2</td>
<td>1.0 (0.7 - 1.3)</td>
</tr>
<tr>
<td>EGGS</td>
<td>1</td>
<td>0.8 (0.4 - 1.2)</td>
</tr>
<tr>
<td>DAIRY PRODUCTS</td>
<td>3</td>
<td>1.5 (0.9 - 2.1)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>81</strong></td>
<td><strong>27.5 (22.4 - 32.6)</strong></td>
</tr>
</tbody>
</table>
Foods were consumed from the majority of the food groups. However within the food groups, relatively few food types were eaten. For example, of the 112 respondents eating foods from the potatoes, pasta and rice food group, 77 ate only potatoes in the week during which diet was recorded. The biggest contribution to dietary variety was fruit and vegetables, with an average of 6.4 different vegetables (range = 4.4 - 8.5) of the 13 categories and 2.9 different fruits of a possible 10 food types consumed per week (range = 1.7 – 4.1). This provides this sample with an average weekly consumption of 9.38 fruits and vegetables per week. Current UK Government recommendations encourage the consumption of five portions of fruit and vegetables a day (DoH, 1999; 2000; 2003). This recommendation has been established as a result of studies to suggest that fruit and vegetables consumption can reduce risks of both cardiovascular disease and cancers (World Cancer Research Fund, 1997). The DVS of the sample of older people interviewed older sample indicate that on average respondents consumed 1.34 portions of different fruit and per day. Whilst dietary variety scores do not take into account the fact that the same fruit and vegetables could be consumed on daily basis, the ‘five a day’ health promotion schemes developed by the Government (DoH, 2000) recommend the consumption of a variety of fruit and vegetables in order to ensure the adequate intake of nutrients and maintenance of good health. The results from the present study indicate that the older people interviewed are currently consuming fewer fruit and vegetables than recommended and may benefit from health promotion to encourage the incorporation of fruit and vegetables into their diets on a daily basis.

However, despite the low fruit and vegetable consumption recorded for the sample interviewed for the present study (table 8.7) respondents did seem to be aware of the benefit of consuming fruit and vegetables as a part of a healthy diet. When asked how they would define healthy foods 95 respondents (85%) stated fruit and vegetables specifically as their definition of eating a healthy diet. Five respondents did not know and the remaining 12 respondents mentioned, healthy, fresh foods, eating in moderation, reducing fat or salt in their diet and the importance of eating what they like. The implications of these findings will be discussed further in chapter 9 (section 9.5).
8.5 Discussion of hypotheses

Five hypotheses were presented for investigation in Chapter 4 (section 4.4.2). The following discussion examines each hypothesis with reference to the sample of older people interviewed in Guildford Borough and the conceptual model presented in chapter 4 (figure 4.1). Discussion surrounding store choice will primarily be concerned with those who do their own food shopping. Whilst it is acknowledged that an inability to conduct food shopping should not deter from a respondent's ability to choose the shop from which their food was bought, 16 of the respondents who did not do their own food shopping did not know where their food was bought and few stated a preference.

8.6 Hypothesis 1 - The relationship between distance and store choice

Hypothesis 1 - The food shop most often visited by an older person will be the food shop nearest to their home.

Hypothesis 1 aimed to examine older people’s shopping behaviour and store choices with reference to distance travelled. The hypothesis postulates that older people will choose to shop at an outlet nearer to their home in preference to choosing a particular store regardless of its location.

The Social Exclusion Unit (1998) stipulated that all individuals should live within easy access (i.e. 500m) of a food shop at which they can buy a standard food basket comprising a range of foods for a weekly shop. The food retail provision in Guildford Borough was identified using an annual list produced by Guildford Borough Council's Environmental Health Office (EHO, 2001). The food shops were then marked on a map of Guildford Borough to give a visual representation of the retail provision available to respondents (see figure 8.1). Using a mapping web site (www.mapquest.com) and using road directions distance from respondent's homes to store most often visited was measured using postcode data. In addition the distance from respondents' homes to the
nearest food shop was also calculated, although the present study does acknowledge that the nearest store to a respondent's home would provide the range of foods that they either required or desired.

In order to address hypothesis one, two t-tests were conducted. The first to determine whether the store most often visited was that nearest to respondent's homes (giving an indication of store usage) and the second to examine whether those who did not shop at supermarkets shopped at the store nearest to their home; thereby taking into account the potential for more limited food choice for those unable to reach supermarkets and a reliance on local food shopping facilities. In the present study those who independently shop at supermarkets are considered to have the highest level of access due to store choice as well as range and price benefits. The results of both t-tests are presented in table 8.10.

Table 8.10 – The results of t-test analysis to determine whether the food shop most often visited was the food store nearest to respondents home (Hypothesis 1) (n = 74)

<table>
<thead>
<tr>
<th>SAMPLE GROUP</th>
<th>MEAN DISTANCE TO NEAREST STORE (KM)</th>
<th>MEAN DISTANCE TO STORE MOST OFTEN VISITED (KM)</th>
<th>T TEST</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESPONDENTS WHO DID THEIR OWN FOOD SHOPPING (n = 74)</td>
<td>0.443 (S.D - 0.31)</td>
<td>2.0 (S.D - 2.6)</td>
<td>t = 5.20</td>
<td>p = 0</td>
</tr>
<tr>
<td>RESPONDENTS WHO DID NOT SHOP AT SUPERMARKETS (n = 15)</td>
<td>0.5 (S.D - 2.7)</td>
<td>1.4 (S.D - 0.35)</td>
<td>t = 5.35</td>
<td>p = 0</td>
</tr>
</tbody>
</table>
The first t-test conducted to address Hypothesis 1 examined the relationship between distance to store and store choice among all those who conducted their own food shopping. The analysis in table 8.10 shows a statistically significant difference between the distance to a respondent’s nearest food store and the distance to the store they visited. As a result of this finding Hypothesis 1 can be rejected. Despite average distance to nearest store being less than half a kilometre away, this group of older people are travelling further (on average 1.6km) to conduct their food shopping. As mentioned in section 8.1 food shops are defined according to the Guildford Borough Council Environmental Health Office list (2001). Not all of these stores are supermarkets or grocers as any shop selling food must be registered with the EHO. However in acknowledging the limitations of the EHO list, the discussion also highlights the fact that older people may experience difficulties reaching a shop with a range of foods and therefore travel further to reach a shop with a greater range of goods. In relation, the second t-test conducted in table 8.8 indicates that there is a statistically significant relationship between the nearest shop and the shop visited most often even for those who do not shop at supermarkets. Despite the fact that the sample size (n = 15) reduces the reliability of this result, the t-test was highly significant. The mean distance to the nearest store for those who did not shop at supermarkets was 500m indicating food retail provision followed the SEU (1998) recommendations. However, the proximity of the nearest store did not mean that respondents would shop there indicating an element of store choice even among those who were considered to have a lower level of access by not shopping at a supermarket.

The findings of the two t-tests indicate that this sample of older people were choosing to shop at a more distant store regardless of the time take or the method of transport used, suggesting that other factors were exerting a greater influence on store choice. However, when asked the main reason for visiting a particular shop (or store usage) 34 of the 74 respondents who conducted their own food shopping (46%) stated that proximity to the store from their home was the most important factor. Whilst these two results appear to be contradictory, they do in fact take into account personal preference and how the older people interviewed defined food shops. However, it is not possible to
determine whether when reporting proximity as the main reason for choosing a store, respondents referred to the nearest store, the nearest store they could get to, the nearest supermarket or the nearest store of their preferred brand. In addition, previous research has suggested that a trade off may exist between distance and preference where respondents considered visiting a particular store to be more important than the distance they had to travel to reach it (Miller et al, 1998)

8.7 Hypothesis 2 - The relationship between access/usage and store choice

Having established in section 8.5 that respondents in the sample of 74 older people interviewed did not necessarily choose to shop at the food store nearest to their home for the group of older people interviewed, the following analysis extends the theme of store choice and examines the potential influence of access on store choice by addressing Hypothesis 2.

**Hypothesis 2 - An older persons’ food store choice will depend on their level of access (method of transport, travel time, distance, reason, perceived ease...)**

8.7.1 The potential relationships between access variables – time, transport, distance, frequency of shopping experience and perceived ease of access to a food store.

Prior to examining Hypothesis 2 and the potential influence of access variables on store choice (see chapter 4, figure 4.1), the present study examines the extent to which the access variables themselves may be related. A Chi square cross tabulation was conducted between the five main access variables considered by the present research; distance to the store, method of transport, time taken to reach a store, frequency of shopping trip and respondent’s perceived ease of access in reaching the store they most often visit. Examination of the potential relationship between these five variables will provide further information on overall shopping behaviour and addresses the concept that older people may have to develop alternatives (or coping strategies) to reach food
shops as well as acknowledging that in considering shopping behaviour it is unlikely that access factors exist independently of one another. The results of the Chi square cross tabulation are presented in table 8.11.

The original coding of the face-to-face questionnaire (Appendix 1) produced a large number of variables for several of questions. However, due to the small sample size categories were collapsed for analysis as shown in Figure 8.1. The null hypothesis for each cross tabulation was that there would be no relationship between the variables (significance level = 0.05). There is some discussion in the literature regarding the reliability of Chi squared. Cochran (1954) stated that no more than 20% of cells in the cross tabulation should have expected values of less than 5. However, whilst this rule still holds (Anderson et al, 1999) suggest that with sample sizes of more than 20, the results retain a high level of reliability and the test can tolerate expected frequencies as low as 1 or 2. The present study follows Anderson et al (1999) and considers a sample size of 74 to be adequate to demonstrate any relationships present with an appropriate degree of reliability.
Table 8.11 - Results of Chi Square cross tabulations to examine the potential relationship between the access variables of distance to the shop most often visited, method of transport, time taken to reach the store, frequency of shopping trip and respondent's perceived ease of access in reaching the shop they most often visit (n = 74).

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DISTANCE (KM)</th>
<th>TRAVEL TIME</th>
<th>PERCEIVED EASE OF ACCESS</th>
<th>FREQUENCY OF SHOPPING</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD OF TRANSPORT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$X^2 = 7.27$</td>
<td>$X^2 = 6.65$</td>
<td>$X^2 = 12.6$</td>
<td>$X^2 = 17.38$</td>
</tr>
<tr>
<td></td>
<td>$p = 0.054$</td>
<td>$p = 0.08$</td>
<td>$p = 0.05$</td>
<td>$p = 0.43$</td>
</tr>
<tr>
<td>DISTANCE</td>
<td>$X^2 = 0.001$</td>
<td></td>
<td>$X^2 = 4.56$</td>
<td>$X^2 = 11.07$</td>
</tr>
<tr>
<td></td>
<td>$p = 0.96$</td>
<td></td>
<td>$p = 0.10$</td>
<td>$p = 0.01$</td>
</tr>
<tr>
<td>PERCEIVED EASE OF ACCESS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$X^2 = 1.42$</td>
<td></td>
<td>$X^2 = 4.26$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$p = 0.49$</td>
<td></td>
<td>$p = 0.64$</td>
<td></td>
</tr>
<tr>
<td>TRAVEL TIME</td>
<td>$X^2 = 7.12$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$p = 0.68$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Three relationships were identified by the cross tabulations in table 8.9. Firstly, perceived ease was found to be significantly related to the method of transport used to reach the store ($p = 0.05$). Despite the fact that the majority of respondents reported finding it easy to reach the food shop they most often visited ($n = 60$), the method of transport used had a significant effect on the level of perceived degree of ease reported. Those respondents who drove themselves to food shops, reported the highest level of perceived ease compared to those who were driven, walked or used bus services.

However as shown in table 8.6 the majority of respondents reported finding it easy to reach the food shop most often visited in contrast to many of the focus group responses presented in Chapter 7. The dichotomy presented by conflicting answers will be discussed further in chapter 9, but it is worth noting when considering the results of the present study that previous research has observed that older people are likely to express differing opinions on coping with food shopping when in public and private (Miller et al, 1998).
The second association found was between method of transport and distance from respondents home to the store they most often visited to conduct their main food shop (p = 0.05). Those respondents who drove or were driven to stores travelled further than those who walked or used local bus services, a result which again raises the concept of coping strategies in relation to store choice, with those driving themselves having the greatest choice over how far they travel to reach a shop due to the fact they did not have to rely on others.

The final association found between the access variables measured was between distance travelled to the store and frequency of shopping trip (p = 0.01). Those who shopped with friends and relatives reported shopping less often and commonly at stores further from their home (85% of those who shopped with friends/relatives shopped on a weekly or fortnightly basis) whereas those respondents who reported shopping locally, shopped more frequently. Whilst frequency of shopping trip was examined in terms of its influence on overall access, it is not considered in Hypothesis 2 as a primary access variable which exerts an influence on store choice. Frequency of shopping trip is considered to be a function of store choice (e.g. due to reason for visiting, transport available or distance; as suggested by the above analysis) as opposed to being a major driver of store choice. Previous research indicates that social interaction is important for older people when food shopping and frequency of shopping trip is considered to be a method of countering social isolation (McKie, 1999) rather than a necessarily regular activity. The concept of shopping trip frequency as a coping strategy will be discussed in more detail in chapter 9.
8.7.2 Hypothesis 2

Hypothesis 2 postulated that factors influencing an individual’s access to a store would influence their store choice. The above discussion has established that not all of the variables considered are mutually exclusive. However, whilst the present study acknowledges that the access variables do not act independently as potential influences on store choice, for the purposes of analysis they will be considered in order to examine the degree to which each exerts an influence on store choice.

Three variables were considered as measures of store choice. These are:

- Store most often visited to conduct the main food shop
- Main reason given for shopping at the store most often visited
- Whether the respondents shops at a supermarket or convenience/local store

The main store most often visited was examined to establish whether access or usage directly appeared to influence store choice. In addition the reason respondents gave for visiting the store indicated why the store was chosen, but also whether other factors including social interaction and coping strategies were influential (as suggested in chapter 7). To examine the relationship between access and the main food shop visited in more detail and to consider the effect of choosing whether or not to shop at a larger supermarket, a dichotomous variable was created which made a distinction between whether or not respondents shopped at a supermarket; namely at the Tesco or Sainsbury superstore or the Sainsbury store in Guildford Town centre (Onslow ward – see figure 8.1). The present study therefore follows previous research has found that supermarkets provide a greater range of goods at lower prices than independent or convenience stores (SEU, 1998; DETR, 1999; Bromley & Thomas, 2002).
Table 8.12 – Results of Chi square cross tabulations to test for independence between four access variables; travel time, method of transport, distance to the store and perceived ease of access and food shop most often visited by respondents (n = 74)

<table>
<thead>
<tr>
<th></th>
<th>FOOD SHOP VISITED</th>
<th>REASON GIVEN FOR SHOPPING AT STORE</th>
<th>SHOP AT A SUPERMARKET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X²</td>
<td>P</td>
<td>X²</td>
</tr>
<tr>
<td><strong>TIME</strong></td>
<td>0.71</td>
<td>0.701</td>
<td>6.97</td>
</tr>
<tr>
<td><strong>TRANSPORT</strong></td>
<td>37.29</td>
<td>0</td>
<td>63.75</td>
</tr>
<tr>
<td><strong>PERCEIVED EASE</strong></td>
<td>15.92</td>
<td>0</td>
<td>31.85</td>
</tr>
<tr>
<td><strong>DISTANCE</strong></td>
<td>14.05</td>
<td>0</td>
<td>10.42</td>
</tr>
</tbody>
</table>

Following Chi Square cross tabulation analysis, table 8.12 presents the relationships found between access and the store choice variables. The relationships found are listed below for greater clarity. Time taken to reach the store was not found to be related to store choice.

- Method of transport and food store most often visited (p = 0).
- Method of transport and main reason for visiting the store (p = 0).
- Perceived ease of access to the store visited and the food shop visited (p = 0).
- Perceived ease of access to the store visited and the main reason given for visiting the store (p = 0)
• Perceived ease of access to the shop visited and whether or not the respondent shopped at a supermarket (p = 0).
• Distance to the store visited and the food shop most often visited (p = 0).
• Distance to the store visited and whether or not the respondents shopped at a supermarket (p = 0).

Method of transport and perceived ease of access were found to be significantly related to store choice. This finding is supported by the significant relationship found between method of transport and perceived ease of access (p = 0.05) discussed previously. Despite the fact that respondents did not shop at the food store nearest to their home, distance remained a significant factor in influencing the food shop most often visited (p = 0). Of the reasons given for choosing to shop at the store most often visited proximity and friend/relative/dial-a-ride visited were reported by 61 respondents, which may account for the results found. These results confirm the suggestion in the previous section that transport available is more indicative of store choice and therefore store usage than the distance to the store.

Distance was not significantly related to reason for visiting a store and therefore not the most important consideration. Given the fact that 34 respondents stated proximity as the main reason for visiting a store, this result was surprising. However, the concept of distance may be interpreted in terms of the transport available as opposed to the actual distance in km. In addition, the discussion of hypothesis 1 (section 8.6) indicated that store preference may be of greater significance to the older people interviewed than distance to the store.

Distance to the store and perceived ease of access were both found to be related to whether or not respondents shopped at a supermarket (p = 0). 59 of the 74 respondents who did their own food shopping shopped at supermarkets. The Chi square analysis presented above indicates that this may have been dependent on the transport available,
the proximity of the store and the individual's perception of the ease with which they could reach the store.

To examine the concept of store choice further a Chi square cross tabulation was calculated between the main food store chosen and the reason given for visiting this store. A significant relationship existed between food shop visited most often to conduct the main food shop and reason for visiting this store \( (p = 0.004) \). This finding confirmed the fact that the method of transport available (i.e. friend/relative to drive) and the proximity of the store in relation to transport are important factors in store choice for this sample and may be indicative of coping strategies which exist among the sample of older people interviewed.

8.7.3 Logistic Regression

Following the associations found using Chi square analysis, logistic regression was conducted to examine these relationships further (chapter 6, section 6.6). Only those who stated they conducted their own shopping on a regular basis were included in this analysis \( (n = 74) \). In order to test these potential influences the dependent variable used was whether or not respondents shopped at a supermarket as the study postulates that shopping in this environment would provide a superior shopping experience. The basis behind this assumption lies in the concept that supermarkets provide a greater variety of goods with a wider price range plus the addition of cafes and specialist outlets within the store, such as pharmacies.

Five independent variables were placed in the logistic regression model, all of which had been established by Chi square to influence store choice at some level. These were:

- method of transport,
- frequency of shopping trip,
- travel time to the food shop,
- main reason for choosing the store
- perceived ease of access to the store
- distance to the store
The Chi Square value for the current regression was 74.154 (p=0) suggesting that the model provided a significant improvement in predictive value than the use of averages from the sample. In addition, the -2LL = 0, which indicated the model had a perfect fit and took into account the relationships between the variables entered. However, none of the variables entered into the logistic regression equation proved significant in influencing the respondents' decision to shop at a supermarket when placed into the regression equation.

8.7.4 Logistic Regression using adapted variable categories

The logistic regression was conducted using a smaller number of categories for each variable to determine whether the large number of categories in the first equation (n = 25) had masked any associations present. Shopping at a supermarket was again selected as the dependent variable in the equation. Distance and travel time to store were not included in this second equation as they had not found to be significant, either before or after logistic transformation, in previous tests.

On entering the variables into the regression equation, the results did not differ greatly from the first calculation. However, some differences were notable. Method of transport and perceived ease of access to the store, were not included in the regression, but produced significant p values (p = 0). However, the standard errors for these B scores were still extremely high (233.14 - 1,860.84) and the -2LL (6.59) suggested the model did not fit well. However, the highly significant relationships found in the Chi square analysis presented in section 8.6.1 support the significant relationship noted as part of the logistic regression.

As a result of the findings presented above Hypothesis 2 can be accepted for the variables of transport, perceived ease and reason given for visiting the store. The analysis also suggested that distance and frequency of shopping trip may have exerted an influence on store choice, but only in the presence of the other access/usage variables.
8.8 Hypothesis 3 - Influences on dietary variety

Hypothesis 3 - Variety found in the diets of older people will be related to store choice, how they access the store they most often visit and their attitude to healthy eating.

Hypothesis 3 considered the factors that may influence dietary variety as presented in figure 4.1 (chapter 4). The hypothesis considers three main influences on dietary variety among the older people interviewed as part of the present research, these were:

1. Access
2. Store choice
3. Attitudes to healthy eating

The three potential influences on dietary variety will be considered individually for the purposes of analysis. The results of the FFQ and resulting Dietary Variety Score (DVS) on which the analysis in Hypothesis 3 are based, can be found in section 8.3

8.8.1 Hypothesis 3: Part 1 - The relationship between access and dietary variety.

For the purposes of logistic regression analysis (which requires a dichotomous independent variable) the sample of 112 older people interviewed with regard to their diet was divided into two groups, those who ate above and those who ate below the mean number of food types found. This was due to the fact that no respondents interviewed had a dietary variety score below the recommended value of 15 distinct foods per week (Hodgson, 1994) and government recommendations to consume a wide variety of foods regularly (DoH, 2000), the current analysis considered that those who consumed above the mean number of foods per week (27.5) would have a superior diet and a more adequate nutritional intake.
Dietary variety was cross tabulated with access variables and the results are presented in Table 8.13. Travel time was not included in this analysis as it had not been found to be associated to either store choice or any other access variable in previous analysis. Following Chi square analysis logistic regression was conducted to examine potential relationships further.

Table 8.13: Results of Chi square cross tabulations and logistic regression analysis to examine the relationship between mean dietary variety and access variables.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CHI SQUARE</th>
<th>LOGISTIC REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi Square</td>
<td>SIG</td>
</tr>
<tr>
<td>Do own food shopping</td>
<td>2.97</td>
<td>0.06</td>
</tr>
<tr>
<td>Transport</td>
<td>1.64</td>
<td>0.65</td>
</tr>
<tr>
<td>Perceived ease</td>
<td>1.44</td>
<td>0.49</td>
</tr>
<tr>
<td>Distance</td>
<td>0.72</td>
<td>0.45</td>
</tr>
<tr>
<td>Frequency of shopping trip</td>
<td>5.58</td>
<td>0.13</td>
</tr>
</tbody>
</table>

The results in Table 8.13 show that Chi square analysis found only one significant relationship between the dietary variety scores of the respondents and either measures of access or demographic variables. Whether or not a respondent's conducted their own food shopping was found to exert an influence on their dietary variety. However, this did not produce a significant result when put into the logistic regression equation as this variable acted as a constant and was removed by the calculation. The results indicate
that whilst access factors may affect the ability of the older people interviewed to reach food shops (see section 8.7), these same access factors (e.g. a respondent's ability to conduct their own shopping, the method of transport used and the distance to the store they visit) does not appear to exert an influence on dietary variety indicating that upon reaching the store other factors may become dominant. Hypothesis 3 (Part 1) considered that dietary variety would be influenced by the way in which an individual accessed the food shop they most often visited. This can be rejected.

A logistic regression analysis was conducted to examine the relationship between dietary variety and the demographic variables. Gender was found to have a significant effect on dietary variety ($p = 0.05$). However the small number of men in the sample (11 men, 91 women) reduces the reliability of the results. None of the remaining variables in table 8.11 was found to have a significant relationship on dietary variety.

8.8.2 Hypothesis 3: Part 2 - The relationship between store choice and dietary variety

The second part of Hypothesis 2 considered was to examine the potential relationship between store choice and dietary variety. As in previous analysis store visited was used as a proxy of store usage and the variables of shop at supermarket and the main reason for shopping at a supermarket gave an indication of store choice. The results of Chi square and logistic regression analysis to examine whether an individuals choice of store exerted an influence on their dietary variety are presented in table 8.14. As previously a dichotomous variable was used for dietary variety considering those with a DVS above the mean to have more nutritionally adequate diets.
Table 8.14 - Chi square and logistic regression analysis to examine the relationship between store choice and dietary variety (n = 112)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CHI SQUARE</th>
<th>LOGISTIC REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X²</td>
<td>SIG</td>
</tr>
<tr>
<td>Shop most often visited for main food shop</td>
<td>0.86</td>
<td>0.65</td>
</tr>
<tr>
<td>Shop at Supermarket</td>
<td>0.16</td>
<td>0.45</td>
</tr>
<tr>
<td>Main reason given for choosing store</td>
<td>3.51</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Neither store usage (p = 0.65) nor store choice (p = 0.45) for shop at supermarket and 0.47 for main reason) were found to be significantly related to dietary variety (see table 8.14). Respondents did not have significantly higher dietary variety according to the main food shop where they conducted their food shopping or because of shopping at a supermarket rather than a convenience store. The lack of significant association found indicates that the variation in dietary variety observed in the population interviewed results from other food choice related factors than access to food shops (see section 8.7) or the aspects of store choice and store usage measured. As a result of the findings presented above Hypothesis 3 (Part 2) can be rejected. Dietary variety is not influenced by store choice.
8.8.3 Hypothesis 3: Part 3 - Dietary Variety and attitudes to healthy eating.

The third part to hypothesis 3 examined whether older people's attitudes towards healthy eating influenced their dietary variety. Attitudes to healthy eating were measured using the Theory of Planned Behaviour (TPB) (chapter 5, section 5.7). The TPB examines the attitudes and beliefs that influence an individual to perform a behaviour. The analysis of dietary variety with regard to attitudes to healthy eating involved determining behavioural intention using the TPB. Intention to perform a behaviour is considered a proxy of performing that behaviour (Ajzen & Fishbein, 1980). The following discussion first considers which attitudes or beliefs had the most significant influence on intention for each of the five behaviours measured. Following this a logistic regression calculation examined the relationship between behavioural intention and dietary variety.

8.8.4 Attitudes as determinants of behavioural intention

The following section reports the findings of the analysis of older people's attitudes to healthy eating. Using the Theory of Planned Behaviour (Ajzen, 1991), five behaviours were examined to determine the effects of attitude on respondent's intention to perform these behaviours. Stepwise Multiple Regression was used to determine which attitudes were the most influential on intention to perform each behaviour.

The five behaviours examined were:
1. *Eating a healthy diet.*
2. *Eating a lot of fruit and vegetables.*
3. *Eating a low fat diet.*
4. *Eating a diet of traditional English food.*
5. *Eating a diet including healthy fats.*
Within each behaviour, seven questions were asked to determine attitudes towards the behaviour, these were perceived need, perceived ease, attitude (cognitive), attitude (affective), subjective norm, perceived control and behavioural intention (chapter 5, section 5.8). Respondents were asked to indicate a favourable or unfavourable response to each attitude measure on a five point scale. A response of 1 denoted a negative response and 5 a positive response towards the attitude or belief.

112 people over 60/65 years of age answered questions regarding attitudes to eating a healthy diet. The following reports the findings of this investigation, considering each behaviour individually. Respondents were asked to define the concepts of eating a healthy diet, traditional English foods and healthy fats to further inform the data attained. Brief frequency and descriptive statistics will be presented in order to demonstrate patterns that emerged among responses for each question. The findings of Stepwise Multiple Regression are then reported indicating the most influential of the attitudes measured on the intention to perform each of the seven behaviours. The results reported in the following section (8.8.4.1 - 8.8.4.5) provide further information on the sample of older people interviewed by presenting the factors which influence their behavioural intention.

8.8.4.1 Eating a Healthy Diet.

Of the 112 respondents interviewed 91% stated that they definitely or probably felt the need to eat a healthy diet within the next month (Probably need to, n = 46, definitely need to n = 56). Eating a healthy diet was defined by 79 of the 112 respondents (71%) as eating fruit and vegetables. The remaining 33 responses included eating low salt/sugar/fat foods, eating home made food and in moderation and enjoying foods (see Appendix 4). Five respondents stated that they did not know what was meant by eating a healthy diet. The majority of respondents had a positive attitude to eating a healthy diet. 88% considered it extremely or quite easy to eat a healthy diet within the next month (extremely easy n= 30, quite easy n = 58). Similar figures were obtained from other attitude measures. Respondents had a generally positive attitude towards the
behaviour of eating a healthy diet. However, the extent to which this positive attitude was presented depended on which question was being asked. Subjective norm produced the least positive response (mean = 3.9) indicating that the opinion of others was not as important to this group as their personal beliefs. Table 8.15 shows the mean responses (and standard deviations) for each question within the behaviour of eating a healthy diet.

Table 8.15 - Mean responses to attitude questions regarding eating a healthy diet in the next month (n =112)

<table>
<thead>
<tr>
<th>ATTITUDE MEASURE</th>
<th>MEAN RESPONSE (RANGE)</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>4.4 (3.7 - 5.0)</td>
<td>0.6</td>
</tr>
<tr>
<td>Perceived Ease</td>
<td>4.1 (3.3 - 4.9)</td>
<td>0.8</td>
</tr>
<tr>
<td>Attitude (Affective)</td>
<td>4.2 (3.4 - 5)</td>
<td>0.8</td>
</tr>
<tr>
<td>Attitude (Cognitive)</td>
<td>4.5 (4.0 - 5.0)</td>
<td>0.5</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>3.9 (3.1 - 4.7)</td>
<td>0.8</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>4.5 (4.0 - 5.0)</td>
<td>0.5</td>
</tr>
<tr>
<td>Behavioural Intention</td>
<td>4.0 (3.0 - 5.0)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

The standard deviations in table 8.15 demonstrate a degree of variation around the means, which represent the more positive or negative responses, noted in the frequency data. However the standard deviations are low reflecting the neutral to positive responses given by the respondents in the sample. No respondents gave negative answers with regard to the behaviour of eating a healthy diet.
In order to determine which of the attitude factors were most influential on the respondents’ intention to perform the behaviour of eating a healthy diet a stepwise multiple regression technique was used. The regression selected three of the potential six independent variables as having a probability of F being <0.050 (removing those where the probability of F = >- 0.100). This calculation acknowledges and eliminates the potential for multicollinearity between Independent variables (attitudes) within a behaviour measure e.g. where the variables may be interrelated. The F test is a test for overall significance to determine whether the slope of the relationship equals 0. The stepwise regression calculation was used to determine whether the addition of each variable in turn had an influence on both the correlation between the dependent and independent variables and the slope of that relationship. The results of the stepwise multiple regression for the behaviour of eating a healthy diet are shown in table 8.16.

Table 8.16 - Results of a Stepwise multiple regression to examine the effect of attitudes on behavioural intention for the behaviour of eating a healthy diet in the next month (n = 112).

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ADJ R²</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>p</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Attitude</td>
<td>0.50</td>
<td>0.49</td>
<td>36.30</td>
<td>0.00</td>
<td>3.09</td>
<td>0.003</td>
<td>0.29</td>
</tr>
<tr>
<td>Perceived Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.98</td>
<td>0.000</td>
<td>0.36</td>
</tr>
<tr>
<td>Perceived Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.21</td>
<td>0.002</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Three variables were selected for inclusion in the regression equation and were found to significantly influence respondents' intention to eat a healthy diet (table 8.16). These were cognitive attitude, perceived need and perceived behavioural control. The R Square of 0.50 suggested that the three belief variables account for 50% in the variation of intention to perform the behaviour
An Analysis of Variance (ANOVA) was used to examine the hypothesis that the slope of the relationship between the x (Independent) variables and the y (dependent) variable equalled 0 (i.e. there was no relationship between the variables). The model calculated an F value of 36.3 (p = 0) indicating that the variables were related. Three variables were found to have a statistically significant relationship with the dependent variable regardless of the presence of the others. Cognitive attitude \( t = 3.09 \) (\( p = 0.003 \)), perceived need \( t = 3.98 \) (\( p = 0 \)) and perceived control, \( t = 3.21 \) (\( p = 0.002 \)).

The strength of the variables in influencing behavioural intention is shown by the Beta weight. Perceived need has the highest Beta weight of 0.36, compared to cognitive attitude (0.29) and perceived control (0.23). This result suggested that perceived need was the attitude with the greater influence over intention to eat a healthy diet. However this effect only exists when the attitude is considered with the other two variables. Cognitive attitude also has a high weighting, which suggests it also has an impact on the intention to eat a healthy diet, but the affect is greater when it is considered alone or with perceived need than with the addition of perceived control. Therefore whilst perceived control is a contributing factor in influencing older people in this sample with regard to eating a healthy diet, knowledge regarding the benefits of eating a healthy diet and the extent to which this sample feel they need to consume a healthy diet are more important indicators.

8.8.4.2 Eating a diet with a lot of fruit and vegetables in the next month.

The second behaviour considered was that of intention to eat a diet with a lot of fruit and vegetables within the next month. As with the first behaviour measure 112 respondents were interviewed.

97% of respondents stated that they felt the need to eat a diet with a lot of fruit and vegetables in the next month, with only 2 respondents giving a negative response stating that they probably don’t intend to follow this behaviour. Responses to the indicators for this behaviour were generally positive (Table 8.17). This positive attitude to fruit and
vegetable consumption is further reflected in the affective and cognitive attitude responses. 109 of the 112 respondents stating they found it extremely/quite enjoyable to eat fruit and vegetables (extremely enjoyable = 57, quite enjoyable = 52) and 108 stating they perceived eating a lot of fruit and vegetables as extremely/quite beneficial (extremely beneficial = 71, quite beneficial = 37). As reported with regard to eating a healthy diet, this sample did not consider the opinion of others to influence whether or not they ate a lot of fruit and vegetables in the next month. In addition, all respondents felt they had a level of control over whether or not they chose to eat a diet of this type. The mean and standard deviation of responses for subjective norm (table 8.17) demonstrate the less positive responses this question elicited from participants.

Table 8.17 - Mean responses to attitude questions regarding the behaviour of eating a lot of fruit and vegetables in the next month. (n =112)

<table>
<thead>
<tr>
<th>ATTITUDE MEASURE</th>
<th>MEAN RESPONSE</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>4.5 (4.0 - 5.0)</td>
<td>0.5</td>
</tr>
<tr>
<td>Perceived Ease</td>
<td>4.3 (3.7 - 4.9)</td>
<td>0.6</td>
</tr>
<tr>
<td>Attitude (Affective)</td>
<td>4.4 (3.8 - 5.0)</td>
<td>0.6</td>
</tr>
<tr>
<td>Attitude (Cognitive)</td>
<td>4.5 (4.0 - 5.0)</td>
<td>0.5</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>3.9 (3.2 - 4.6)</td>
<td>0.7</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>4.4 (3.8 - 5.0)</td>
<td>0.6</td>
</tr>
<tr>
<td>Behavioural Intention</td>
<td>4.3 (3.6 - 5.0)</td>
<td>0.7</td>
</tr>
</tbody>
</table>
Table 8.18 - Results of a Stepwise multiple regression to examine the effect of attitudes on behavioural intention for the behaviour of eating a diet with a lot of fruit and vegetables in the next month (n = 112).

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ADJ R²</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>p</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Attitude</td>
<td>0.574</td>
<td>0.56</td>
<td>48.45</td>
<td>0.00</td>
<td>4.36</td>
<td>0.00</td>
<td>0.34</td>
</tr>
<tr>
<td>Perceived Need</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.14</td>
<td>0.00</td>
<td>0.39</td>
</tr>
<tr>
<td>Perceived Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.60</td>
<td>0.00</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Table 8.18 presents the result of a multiple regression analysis to determine the most influential predictors of respondents' intention to eat a diet including a lot of fruit and vegetables. As with the behaviour of eating a healthy diet, the regression calculation produced an adjusted $R^2$ which suggests a relationship between the independent variables and behavioural intention. Cognitive attitude alone produced an adjusted $R^2$ of 0.41 suggesting that this attitude accounts for 41% of the variance in behavioural intention. The addition of perceived need increased this value to 0.52 meaning an additional 12% of the variance was accounted for by this independent variable. The inclusion of perceived control appears to have a lesser effect accounting for 5% of variance. Analysis of variance confirmed this relationship between attitudes and behavioural intention, producing a highly significant F statistic ($F = 48.45$, $p = 0$). T-tests confirmed that the x and y variables in these models were linearly related ($p = 0$ for each attitude). The Beta weights show that perceived need had the greatest influence on behavioural intention ($Beta = 0.39$). However, cognitive attitude and perceived need were also significantly influential on behavioural intention. The analysis of the behaviour of eating a lot of fruit and vegetables produced very similar results to that of eating a healthy diet presented in section 8.8.4.1, with the same predictors of behavioural intention proving significant for both behaviours. The similarity between attitudes to
both behaviours may have resulted from the majority of respondents having defined eating a healthy diet as eating a diet of fruit and vegetables \((n = 79)\). In addition the mean response given when asked whether respondents intended to eat a healthy diet in the next month was that they probably did indicating that the two behaviours of eating a healthy diet and eating a lot of fruit and vegetables may be related in terms of the perception of diet among the sample interviewed.

**8.8.4.3 Eating a low fat diet.**

The third behaviour under consideration as part of this analysis was that of intention to eat a low fat diet in the next month. In contrast to the previous behaviours examined, the frequency and descriptive information suggests that this behaviour was met with a less positive response. The mean responses to the five attitude questions regarding the behaviour of eating a low fat diet in the next month are presented in table 8.19.
Table 8.19 - Mean responses for attitude questions regarding the behaviour of eating a low fat diet in the next month.

<table>
<thead>
<tr>
<th>ATTITUDE MEASURE</th>
<th>MEAN RESPONSE</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>4.1</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>(3.2 - 5.0)</td>
<td></td>
</tr>
<tr>
<td>Perceived Ease</td>
<td>3.6</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>(2.6 - 4.5)</td>
<td></td>
</tr>
<tr>
<td>Attitude (Affective)</td>
<td>3.3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>(2.2 - 4.4)</td>
<td></td>
</tr>
<tr>
<td>Attitude (Cognitive)</td>
<td>4.3</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>(3.7 - 4.9)</td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>3.9</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>(3.2 - 4.6)</td>
<td></td>
</tr>
<tr>
<td>Perceived Control</td>
<td>4.5</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>(4.0 - 5.0)</td>
<td></td>
</tr>
<tr>
<td>Behavioural Intention</td>
<td>3.5</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>(2.3 - 4.7)</td>
<td></td>
</tr>
</tbody>
</table>

96 of the 112 respondents (85%) felt that they definitely or probably needed to eat a low fat diet in the next month (Definitely do n = 40, probably do n = 56). 69 respondents (62%) continued to demonstrate a positive attitude to healthy eating by stating that they definitely or probably intended to eat a low fat diet in the next month (definitely do n = 30, probably do n = 35). However, 41 respondents (37%) stated that they didn't intend to eat a low fat diet in the next month, a much higher negative value for behavioural intention than for previous behaviours. Respondents did not consider this behaviour especially enjoyable. 45% of respondents (n = 51) stated that they would find it quite or extremely enjoyable to eat a low fat diet in the next month. This is compared to the 71% who found eating a healthy diet and 63% who stated eating a diet of fruit and vegetables would be enjoyable. The results of mean responses to questions regarding eating low fat diets reflected the more neutral response demonstrated above (Table 8.19).
As shown in table 8.20 stepwise multiple regression analysis produced only two variables that could be considered predictors of intention to eat a low fat diet in the next month. These were affective attitude and cognitive attitude. Affective attitude and cognitive attitude produce an adjusted R\(^2\) value to 0.64, therefore accounting for 63% of the variance in the equation.

Table 8.20 - Results of a Stepwise multiple regression to examine the effect of attitudes on behavioural intention for the behaviour of eating a low fat diet in the next month (n = 112).

<table>
<thead>
<tr>
<th></th>
<th>R(^2)</th>
<th>ADJ R(^2)</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>p</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Attitude</td>
<td>0.64</td>
<td>0.64</td>
<td>97.82</td>
<td>0.00</td>
<td>8.41</td>
<td>0.00</td>
<td>0.57</td>
</tr>
<tr>
<td>Cognitive Attitude</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.07</td>
<td>0.00</td>
<td>0.34</td>
</tr>
</tbody>
</table>

The high adjusted R\(^2\) value requires some consideration with regard to the behaviour of eating a low fat diet. Some research considers that an adjusted R\(^2\) of 0.7 or above indicates multicollinearity between the independent variables (Anderson et al, 1999) and any associations found should be treated with caution. The model in table 8.18 shows that two predictors of behavioural intention are attitude factors and may be related. However, the model produced a highly significant F value (p=0) indicating a relationship between the dependent and independent variables. In addition t-tests to test for individual relationships between the dependent variable and each independent variable also proved significant (Affective attitude, t = 8.4 (p = 0) and cognitive attitude, t = 5.07 (p = 0)) indicating that whilst a degree of multicollinearity may exist, both variables act independently in influencing an individual’s intention to eat a low fat diet in the next month. The above results imply that whilst affective attitude is the dominant
predictor of respondent's intentions to eat a low fat diet in the next month, cognitive attitude (or perceived knowledge regarding low fat diets) also played a significant role. The Beta weighting calculated for each model supports these findings. Affective attitude is the most influential of the two independent variables (Beta = 0.567) with cognitive attitude exerting a lesser influence (Beta = 0.342).

8.8.4.4 Eating a Diet of Traditional English Food.

The fourth behaviour examined in the course of the present research was that of eating a diet of traditional English food. Appendix 4 presents the definitions given for eating traditional English foods. Definition of traditional English food among the population of older people interviewed included roast dinners (40%), homemade foods (21%), meat and vegetables (12%). Overall the questions regarding this behaviour generated positive responses towards eating traditional English food. Seventy one percent of respondents stated they felt the need to eat a diet of traditional English food in the next month (definitely do n = 27, probably do n = 53). 100 of the 112 respondents reported finding it extremely or quite easy to eat this type of diet (extremely easy n = 31, quite easy n = 69). In addition, 87% of respondents found eating this type of diet extremely/quite enjoyable (extremely enjoyable n = 48, quite enjoyable n = 49). As with previous behaviours measured subjective norm proved to be less influential in terms of responses given (extremely likely that important others think they should eat traditional English food, n = 24, quite likely n = 50). However, 80% felt it was extremely or quite beneficial for them to consume this type of food (extremely beneficial n = 45, quite beneficial n = 45). 107 respondents (96%) stated that they felt they had complete or a lot of control over choosing to eat this type of food. Finally 90 respondents (80%) indicated that they definitely or probably intended to eat a diet of traditional English food in the next month (definitely do n = 36, probably do n = 54).
As the above results demonstrate the responses provided to this set of questions whilst predominantly positive tended to be presented in the quite/probably category of response suggesting a more neutral reaction to this behaviour (table 8.21). In addition a larger number of individuals responded with a neither or probably don't answer than in previous behaviours.

Table 8.21 - Mean responses for attitudes to the behaviour of eating a diet of traditional English food in the next month.

<table>
<thead>
<tr>
<th>ATTITUDE</th>
<th>MEAN RESPONSE</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>3.8 (2.8 - 4.8)</td>
<td>1.0</td>
</tr>
<tr>
<td>Perceived Ease</td>
<td>4.1 (3.5 - 4.7)</td>
<td>0.6</td>
</tr>
<tr>
<td>Attitude (Affective)</td>
<td>4.3 (3.6 - 5.0)</td>
<td>0.7</td>
</tr>
<tr>
<td>Attitude (Cognitive)</td>
<td>4.2 (3.5 - 4.9)</td>
<td>0.7</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>3.9 (3.2 - 4.7)</td>
<td>0.8</td>
</tr>
<tr>
<td>Perceived Control</td>
<td>4.4 (3.6 - 5.0)</td>
<td>0.6</td>
</tr>
<tr>
<td>Behavioural Intention</td>
<td>4.1 (3.3 - 4.9)</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Table 8.22 - Results of a Stepwise multiple regression to examine the effect of attitudes on behavioural intention for the behaviour of eating a diet of traditional English foods in the next month (n = 112).

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ADJ R²</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>p</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>6.95</td>
<td>0.59</td>
<td>53.66</td>
<td>0.00</td>
<td>6.95</td>
<td>0.00</td>
<td>0.47</td>
</tr>
<tr>
<td>Cognitive Attitude</td>
<td>0.59</td>
<td>0.58</td>
<td>53.66</td>
<td>0.00</td>
<td>4.53</td>
<td>0.00</td>
<td>0.34</td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>2.20</td>
<td>0.03</td>
<td>2.20</td>
<td>0.03</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8.22 shows the results of a stepwise multiple regression for the behaviour eating traditional English food. Three variables were selected for inclusion in the regression equation having been found to be associated with respondents' intention to eat a diet of traditional English foods in the next month. These were perceived need, cognitive attitude and subjective norm. The $R^2$ value for the regression ($R^2 = 0.59$) indicates a positive relationship between the three variables and respondents' intention to eat a diet of traditional English food within the next month. An F test proved highly significant ($p = 0$) confirming that there was a significant positive relationship between stated behavioural intention and the three independent variables and the hypothesis that the slope = 0 can be rejected. The t-test proved significant ($p = 0$), indicating that multicollinearity was not a complication in this instance.

Perceived need was found to be the most influential variable in predicting behavioural intention with regard to eating traditional English foods ($B = 0.47$), cognitive attitude was slightly less influential ($Beta = 0.34$). The Beta weight of subjective norm (0.16) reflects the t-test result, which suggested that this is the least influential variable on behavioural intention from those included in the regression. Therefore whilst opinion of others may exert some influence, perceived need and cognitive attitude were most influential predictors of behavioural intention.
8.8.4.5 Eating a diet including more healthy fats

The final behaviour examined as part of considering older people's attitudes to healthy eating was that of eating a diet including more healthy fats in the next month. The purpose of this was to determine whether older people were aware of more recent nutrition and health promotion messages. The definitions given for eating healthy fats are given in Appendix 4. It is worth noting that 49 of the 112 respondents (44%) stated that no fats were healthy and that 18 respondents stated that they did not know how to define healthy fats. However 29 respondents (26%) suggested that vegetable oils and margarine were healthier than what they called 'hard' fats such as lard and butter. This behaviour produced the least positive/favourable responses of all the behaviours examined (Table 8.23). Of the 112 respondents interviewed, 31 stated they felt they needed to eat a diet which included more healthy fats in the next month (definitely do = 3, probably do = 28). Neutral or neither responses were mainly reported for perceived need (n = 76), perceived ease (n = 75) and affective attitude (n = 88). As with the other four behaviours examined, the question regarding perceived control received a positive response. 60 respondents stated they felt they had complete control over choosing to perform this behaviour, 45 respondents reported that they felt they had a lot of control and 6 reported moderate levels of control. Subjective norm also produced more positive responses. 45% of the 112 questioned said they thought that it was either extremely or quite likely that those who were important to them thought they should eat more healthy fats in the next month (Extremely likely = 16%, quite likely = 29%). However, 54% felt it was neither likely nor unlikely that those important to them would think they should eat more healthy fats, demonstrating that the overall response to this behaviour is neutral as opposed to positive or negative.
Table 8.23 - Mean responses for attitudes to the behaviour of eating a diet with more healthy fats in the next month.

<table>
<thead>
<tr>
<th>ATTITUDE</th>
<th>MEAN RESPONSE</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Need</td>
<td>3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>(2.6 - 3.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease</td>
<td>3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>(2.6 - 3.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude (Affective)</td>
<td>3.2</td>
<td>0.4</td>
</tr>
<tr>
<td>(2.8 - 3.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude (Cognitive)</td>
<td>3.2</td>
<td>0.5</td>
</tr>
<tr>
<td>(2.7 - 3.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td>3.6</td>
<td>0.8</td>
</tr>
<tr>
<td>(2.8 - 4.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Control</td>
<td>4.4</td>
<td>0.6</td>
</tr>
<tr>
<td>(3.8 - 5.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural Intention</td>
<td>3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>(2.6 - 3.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean responses calculated for each of the seven behaviour questions reflect the earlier suggestions that responses were more neutral to the behaviour of eating more healthy fats than to any behaviour previously examined. In addition to this the standard deviations are lower indicating there is less variation around the mean values. Overall the response to questions regarding attitudes to eating a diet of healthy fat, were less positive among the sample of older people interviewed than for any of the other behavioural intentions assessed as part of the present study. The lack of positive or negative response given to the behaviour of eating a diet including healthy fats may be related to the responses given by participants when asked to define healthy fats and the fact that many either did not feel that fats were healthy (n = 49) or did not know whether such a food type existed (n = 18) (See Appendix 4). The results of a stepwise regression
to determine the best predictors of behavioural intention for the behaviour of eating a diet with healthy fats are presented in table 8.24.

Table 8.24 - Results of a Stepwise multiple regression to examine the effect of attitudes on behavioural intention for the behaviour of eating including more healthy fats in the next month (n = 112).

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ADJ R²</th>
<th>F</th>
<th>p</th>
<th>t</th>
<th>p</th>
<th>BETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Attitude</td>
<td>0.57</td>
<td>0.56</td>
<td>48.50</td>
<td>0.00</td>
<td>2.75</td>
<td>0.00</td>
<td>0.22</td>
</tr>
<tr>
<td>Cognitive Attitude</td>
<td>6.08</td>
<td>0.00</td>
<td>0.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Need</td>
<td>4.36</td>
<td>0.03</td>
<td>0.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The stepwise regression analysis (Table 8.24) selected three independent variables where the probability value for F <= 0.05 but did not exceed 1.00 (the selection criteria for inclusion in further analysis). The selected variables for inclusion were affective attitude, cognitive attitude, perceived need and perceived ease.

The adjusted R² figure (0.56) demonstrated a positive correlation between the dependent and independent variables. The F test demonstrated that there was a significant relationship between the respondents intention to eat a diet of healthy fats in the next month and the four independent variables entered into the equation (p = 0). The t-test produced highly significant results (p = 0) suggesting that both cognitive and affective attitude were good predictors of intention to eat a diet with more healthy fats in the next month.

However, perceived ease produced a t-test of much lower significance (p = 0.03) than any previous attitude or belief included in the stepwise regression model for the present study. The lower significance observed is reflected in the Beta weighting produced from
the estimated regression equation. Affective attitude has a high beta weighting, suggesting it is the most influential of the variables on behavioural intention. Perceived ease meanwhile is least influential variable. Indeed stepwise multiple regression produced a further model which included perceived ease. However inclusion of this whilst not affecting overall significance, affected the influence of individual variables, rendering need and ease insignificance. As a result of these findings it is only possible to say with certainty that affective and cognitive attitude have an independent significant effect on behavioural intention.

8.8.5 Conclusions

In conclusion, the analysis of the five behaviours demonstrated that the Theory of Planned Behaviour can be used to determine behavioural intentions, via a predictive process. However, the best predictor for each behaviour depended greatly on the respondents’ attitude and knowledge of the behaviour in question. The most influential predictor of behavioural intention for each of the five behaviours measured is summarised below (in order of decreasing influence according to Beta weight values):

1. Eating a healthy diet – Perceived need, cognitive attitude, perceived control.
2. Eating a diet with a lot of fruit and vegetables - Perceived need, cognitive attitude, perceived control.
3. Eating a low fat diet – Affective attitude, cognitive attitude.
4. Eating a diet of traditional English foods – Perceived need, cognitive attitude, subjective norm.
5. Eating a diet including healthy fats – Affective attitude, cognitive attitude, perceived need.

Overall a respondent’s belief in their knowledge to the harm of benefit incurred by performing the behaviour and their perceived need to perform the behaviour in question were consistently important and influential indicators of behavioural intention.
8.8.6 The relationship between dietary variety and attitudes to healthy eating

Having established the main predictors of older respondents' attitudes towards healthy eating, the following discussion addresses the third part of Hypothesis 3. This third part stated that there would be a relationship between the dietary variety of respondents and their attitudes to healthy eating. Namely that dietary variety would be dependent on attitudes to healthy eating. Stated behavioural intention was used as a measure of attitude to healthy eating for analysis. Table 8.25 shows the results of a cross tabulation between the categorical variables of behavioural intention for each of the five behaviours measured and the dietary variety scores above and below the mean score of 27.
Table 8.25 - A cross tabulation to demonstrate the relationships observed between behavioural intention (as stated by respondents) and their dietary variety score measured using the Food Frequency Questionnaire (n = 112).

<table>
<thead>
<tr>
<th>BEHAVIOUR INTENTION</th>
<th>CATEGORIES</th>
<th>DIETARY VARIETY SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&lt;27</td>
</tr>
<tr>
<td>INTENTION TO EAT A HEALTHY DIET IN THE NEXT MONTH</td>
<td>Definitely do</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Probably do</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Probably do not</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Definitely do not</td>
<td>-</td>
</tr>
<tr>
<td>INTENTION TO EAT A LOT OF FRUIT AND VEGETABLES IN THE NEXT MONTH</td>
<td>Definitely do</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Probably do</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Probably do not</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Definitely do not</td>
<td>-</td>
</tr>
<tr>
<td>INTENTION TO EAT A LOW FAT DIET IN THE NEXT MONTH</td>
<td>Definitely do</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Probably do</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Probably do not</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Definitely do not</td>
<td>-</td>
</tr>
<tr>
<td>INTENTION TO EAT A DIET OF TRADITIONAL ENGLISH FOODS IN THE NEXT MONTH</td>
<td>Definitely do</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Probably do</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Probably do not</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Definitely do not</td>
<td>-</td>
</tr>
<tr>
<td>INTENTION TO EAT A DIET CONTAINING HEALTHY FATS IN THE NEXT MONTH</td>
<td>Definitely do</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Probably do</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Probably do not</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Definitely do not</td>
<td>-</td>
</tr>
</tbody>
</table>

In order to statistically examine the potential relationship hypothesised between the categorical variables of dietary variety and behavioural intention Chi square analysis was performed. Following this a logistic regression was conducted. The results of analysis are presented in Table 8.26.
Table 8.26 - Chi square and logistic regression analysis to test for a relationship between dietary variety and respondent’s attitudes towards healthy eating (n = 112).

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CHI SQUARE</th>
<th>LOGISTIC REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X²</td>
<td>SIG</td>
</tr>
<tr>
<td>Intention to eat a healthy diet</td>
<td>6.75</td>
<td>0.03</td>
</tr>
<tr>
<td>Intention to eat a lot of fruit and vegetables</td>
<td>12.19</td>
<td>0.05</td>
</tr>
<tr>
<td>Intention to eat a low fat diet</td>
<td>14.06</td>
<td>0.03</td>
</tr>
<tr>
<td>Intention to eat a diet of traditional English food</td>
<td>2.34</td>
<td>0.50</td>
</tr>
<tr>
<td>Intention to eat a diet containing healthy fats</td>
<td>4.42</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Chi square analysis found that Dietary Variety was significantly related to three of the behavioural intentions measured. These were intention to eat a healthy diet (p = 0.03), intention to eat a diet with a lot of fruit and vegetables (p = 0.05) and intention to eat a low fat diet (p = 0.03). Those respondents who stated they intended to eat a healthy diet, eat more fruit and vegetables and consume low fat diets had a greater level of dietary variety that those respondents with a negative attitude to these performing these behaviours. Intention to eat traditional English foods and healthy fats were not found to be significantly related to dietary variety. Logistic regression did not find any association between dietary variety and any of the attitudes considered, the following discussion will therefore consider the Chi square results in more detail.
Measures of attitudes towards and intentions to consume a healthy diet and a diet of fruit & vegetables were found to be very similar. It is therefore not surprising that both of these behavioural intentions were related to dietary variety. This is evidenced by the fact that when questioned 95 of 112 respondents considered eating fruit & vegetables to be the primary definition of eating a healthy diet. However, this sample did not on average consume the daily recommended amount of fruit and vegetables (5 portions per day). This suggests that whilst knowledge of the benefit of consuming fruit and vegetables is apparent in this sample it did not necessarily drive the variation found in the diet of their diets. However, the significant result and the fact that the food group with the greatest food type variation found was vegetables (closely followed by fruit) demonstrate that fruit and vegetable consumption played an important role in the diets of this sample of older people.

It is interesting to note that whilst the dietary advice to eat a low fat diet had apparently reached this sample, the behavioural intention of eating a diet containing healthy fats was not found to be related to dietary variety. When asked how they would define healthy fats the majority of respondents stated that there was no such thing as healthy fat (n = 47). In addition, several respondents stated that they did not know how to define a healthy fat (n = 16). In addition those who identified, margarine and oils as opposed to butter or hard fats as being more healthy were not able to say why this was the case. Therefore whilst some nutrition messages appear to have penetrated the sample of older people interviewed, the results of section 8.8 indicate that further research into the attitudes of older people towards healthy eating behaviours may be beneficial in conducting health promotion among older people and highlighting further the influences on food choice among a free living population of older people.
8.8.7 Conclusions to Hypothesis 3

Hypothesis 3 - Variety found in the diets of older people will be related to store choice, how they access the store they most often visit and their attitude to healthy eating.

Dietary variety was not found to be related to store choice or access/usage variables, but was related to 3 of 5 behaviours with regard to healthy eating (healthy eating, eating fruit and vegetables and eating a low fat diet). The hypothesis as whole was therefore rejected with regard to access and store choice.

8.9 Hypothesis 4 - The influence of in-store factors on store choice.

Hypothesis 4 - Store choice is related to the internal layout of the store most often visited and facilities offered by this store.

Hypothesis four addressed the concept that older people's shopping behaviour is equally influenced by factors within the store as with factors which affect their ability to reach the store (Mason & Beardon, 1978; Hare et al, 1999). In order to address both the issue of internal layout and of facilities offered, two sets of analysis are presented. The first considers older people's attitudes towards supermarkets and the second their opinion of the internal layout of store.

8.9.1 The influence of internal layout of a store on store choice.

The 74 respondents who reported conducting their food shopping were asked their opinion on a variety of internal factors with regard to the food shop they most often visited (see Appendix 1). Previous research by Hare et al (1999), on which this section of the current study was based, indicated that one of the major influences on store choice in older people were the internal facilities available to older consumers. Respondents were then asked whether the availability and quality of internal factors affected their
choice of shop. Responses were again given on a scale of 1 (Very poor) to 5 (very good) with 3 denoting a neither or neutral response. The mean response for each in-store facility is given in table 8.27. The in-store variables were then analysed using logistic regression against a dependent store choice variable. The dependent variable used was that of whether or not respondents shopped at a supermarket, maintaining the emphasis on access in the present study, which postulates that those who were able to shops at supermarkets would have a greater access to food due to a wider range of choice and price and a variety of internal facilities. The results of analysis using logistic regression and are presented in table 8.27.
Table 8.27 - Results of logistic regression analysis to examine the relationship between in-store factors and store choice.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MEAN RESPONSE (RANGE)</th>
<th>B</th>
<th>S.E</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>TROLLEY</td>
<td>3.6 (2.9 - 4.3)</td>
<td>-1.54</td>
<td>0.81</td>
<td>0.05</td>
</tr>
<tr>
<td>SHELF HEIGHT</td>
<td>3.6 (2.8 - 4.4)</td>
<td>0.94</td>
<td>0.62</td>
<td>0.13</td>
</tr>
<tr>
<td>LIGHTING</td>
<td>3.8 (3.2 - 4.4)</td>
<td>-1.39</td>
<td>1.21</td>
<td>0.25</td>
</tr>
<tr>
<td>SHELF LABELLING</td>
<td>3.7 (3.0 - 4.4)</td>
<td>-1.47</td>
<td>0.87</td>
<td>0.09</td>
</tr>
<tr>
<td>AISLE WIDTH</td>
<td>3.8 (3.0 - 4.6)</td>
<td>0.89</td>
<td>0.82</td>
<td>0.28</td>
</tr>
<tr>
<td>QUEUE LENGTH</td>
<td>3.5 (2.6 - 4.4)</td>
<td>1.05</td>
<td>0.70</td>
<td>0.14</td>
</tr>
<tr>
<td>TOILETS</td>
<td>3.5 (3.0 - 4.0)</td>
<td>-4.07</td>
<td>1.89</td>
<td>0.03</td>
</tr>
<tr>
<td>CAFÉ</td>
<td>3.2 (1.6 - 4.8)</td>
<td>-2.4</td>
<td>1.33</td>
<td>0.07</td>
</tr>
<tr>
<td>PACKAGE SIZE</td>
<td>3.8 (3.1 - 4.5)</td>
<td>-0.66</td>
<td>0.64</td>
<td>0.31</td>
</tr>
<tr>
<td>STAFF</td>
<td>4.4 (3.8 - 5.0)</td>
<td>-0.38</td>
<td>1.41</td>
<td>0.79</td>
</tr>
<tr>
<td>PERCEIVED CONTROL</td>
<td>3.8 (2.8 - 4.8)</td>
<td>-0.94</td>
<td>0.63</td>
<td>0.13</td>
</tr>
</tbody>
</table>
The trolley size available and the provision of toilets and cafes were found to have a significant influence on store choice. (trolley size - $p=0.05$, toilet - $p=0.03$, café - $p = 0.07$). The mean responses reported for each of the in-store variables indicate a generally positive response to the internal layout of the stores visited. The staff in particular were considered to have a positive helpful attitude and were appreciated. The mean responses with the highest standard deviations were also those that were found to significantly affect store choice, namely trolley size, toilet and café facilities. The large standard deviation could be explained by the fact that all respondents who shopped for themselves were asked about all potential facilities, but not all of the stores visited offered trolleys, toilets or cafes e.g. those who visited stores where only baskets were reported trolley sizes as being neither good nor poor or as poor ($n = 22$) therefore demonstrating a weakness in the application. In addition, although 34 respondents stated they had no opinion on the presence of a cafeteria, either because they did not use it or because this facility was unavailable, six respondents specifically stated that the café provided was poor. This was due to the recent change in Sainsbury cafes leading to the presence of 'Starbucks' coffee shops instead of a Sainsbury's run café. Respondents reported their opinion that the new café format was more expensive and provided limited food options. Package size, staff attitude, shelf labelling, aisle width and queue lengths were not found to be associated with store choice in any way (see appendix 6 for additional comments).

The results presented above indicate that whilst the sample of older people interviewed reported experiencing difficulties once inside a given store (see appendix 6) in-store facilities are not major determinants of store choice. As a result hypothesis 4 that store choice is influenced by the internal layout of the store is rejected.
8.9.2 The influence of attitudes towards supermarkets on store choice.

In order to expand on the section 8.8.1 which examined the influence of internal factors on store choice, and to address the concept that the present study considers that the greatest level of potential mobility would be for a respondent to drive themselves to a supermarket, respondents were asked questions regarding their attitudes towards supermarkets. All 112 respondents reported having shopped at supermarkets at some point and it was considered that the opinion of those who did not currently shop for themselves was equally valid whilst acknowledging it may be some time since they have visited such a store (as a result of health or mobility problems).

Four questions were asked with regard to respondent's attitudes to supermarkets. Respondents were asked the extent to which they agreed with four statements. These were whether:

• *supermarkets provided a range of foods to meet their needs.*
• *supermarkets provided less expensive foods.*
• *supermarkets offer more healthy food options.*
• *shopping for a healthy diet means needing to shop at a supermarket.*

Responses were given from a five point scale of strongly agree to strongly disagree and scored accordingly with 5 the most favourable response and 1 the least favourable. Table 8.28 shows the mean response given for each attitude, where 1 denoted strongly disagree, 5 strongly agree and 3 a neutral or neither response. Logistic regression was conducted to examine whether attitude to supermarkets may have an influence on store choice.
Table 8.28 - Logistic regression analysis to examine the relationship between attitudes towards supermarkets and store choice (n = 112).

<table>
<thead>
<tr>
<th>VARIABLE VS SHOP AT SUPERMARKET</th>
<th>MEAN RESPONSE</th>
<th>B</th>
<th>S.E.</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wider range at supermarkets?</td>
<td>4.14</td>
<td>-0.406</td>
<td>0.50</td>
<td>0.419</td>
</tr>
<tr>
<td></td>
<td>(3.54-4.74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less expensive at supermarkets?</td>
<td>3.88</td>
<td>-0.398</td>
<td>0.50</td>
<td>0.427</td>
</tr>
<tr>
<td></td>
<td>(3.20-4.40)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthier food at supermarkets?</td>
<td>3.66</td>
<td>-1.082</td>
<td>0.39</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(2.93-4.39)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To eat healthily must shop at supermarket?</td>
<td>2.45</td>
<td>0.158</td>
<td>0.38</td>
<td>0.675</td>
</tr>
<tr>
<td></td>
<td>(1.57-3.33)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In terms of the four attitude questions asked only one proved to be significantly related to store choice (Table 8.28). The belief that supermarkets provided a wider range of healthy foods than other store types was significantly related to store choice (p=0.005), as shown by the negative B value (indicating a decreased odds ratio and lower predicted probability of association). The standard errors calculated were relatively small making the results obtained more reliable. Whilst the Chi square calculation suggested the model was appropriate in terms of its predictive ability ($X^2 = 11.65$, $p = 0.02$) the -2LL for this model was 65.6 suggesting that the independent variables may have been related. This result was not unexpected as the questions posed addressed differing aspects of the same issue. Additional comments made by respondents confirmed that the sample considered that supermarkets offered more healthy foods. Many respondents expanded on this response by stating that they believed the statement was true, but as suggested by the
mean response value (2.45), respondents did not agree that in order to eat a healthy diet they had to shop at a supermarket. However, the mean responses do suggest that respondents felt that supermarkets a range of goods that met their needs. In addition several stated that they thought supermarkets provided a larger range of goods in general than other stores as they were able to carry more stock due to a lack of size or cost restrictions. The range and choice available made supermarkets a desirable shopping destination.

8.10 Hypothesis 5 – The influence of socio-demographic factors on store choice and attitudes to healthy eating.

Hypothesis 5 - Choice of store and attitudes to healthy eating are related to socio-demographic factors such as amount spent per week on food, social group, age, gender and marital status.

Hypothesis 5 suggested that socio-demographic and economic factors may exert an influence on store choice and/or attitudes to healthy eating. The discussion of this hypothesis will be considered in two parts, first consideration will be given to the influence of socio-demographic factors on store choice and second, to an examination of socio-demographic factors on attitudes to healthy eating. As with previous analysis the associations were tested using Chi square analysis and logistic regression.

8.10.1 The relationship between socio-demographic factors and store choice

As suggested previously, this study considered that in terms of potential mobility (see chapter 1, section 1.2) an individual shopping at a supermarket would have a greater choice and range of goods and, with no limitations on their shopping experience, would therefore chose to shop at a supermarket. Whether or not respondents shopped at a supermarket was therefore used as a proxy of store choice in order to analyse hypothesis 5. The results of cross tabulations to explore the directional relationship between store choice and socio-demographic variables are presented in Appendix 5. Table 8.29
presents the findings of Chi square and logistic regression analysis with regard to store choice and socio-demographic factors.

Table 8.29 - Chi square and logistic regression analysis to examine the relationship between store choice and socio-demographic factors among a sample of older people interviewed in Guildford Borough (n = 112).

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CHI SQUARE</th>
<th>LOGISTIC REGRESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X2</td>
<td>SIG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S.E.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SIG</td>
</tr>
<tr>
<td>AGE</td>
<td>1.07</td>
<td>0.29</td>
</tr>
<tr>
<td>GENDER</td>
<td>0.99</td>
<td>0.29</td>
</tr>
<tr>
<td>SEC (5 CLASS)</td>
<td>0.695</td>
<td>0.952</td>
</tr>
<tr>
<td>AMOUNT SPENT ON FOOD/WEEK</td>
<td>2.34</td>
<td>0.31</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td>8.5</td>
<td>0.03</td>
</tr>
<tr>
<td>LIVE ALONE/WITH OTHERS</td>
<td>3.28</td>
<td>0.19</td>
</tr>
</tbody>
</table>

The Chi square analysis identified marital status as being related to store choice (Table 8.29). No other significant relationships were identified by the Chi square analysis. Logistic regression analysis did not find a relationship between marital status and store choice. Ten respondents interviewed as part of the present study reported being married, further research is therefore required with a larger married population to determine whether marital status may significantly affect store choice or whether the Chi square result was due to chance.
Logistic regression analysis identified the amount respondents spent per week as being related to whether or not respondents shopped at supermarket. Those who shopped at supermarkets generally reported spending less money per week on food. 89% of those who spent £25 or less per week shopped at supermarkets. Whereas 83% of those who reported spending £26-50 did not shop at a supermarket. Previous research has found that independent and convenience stores can be more expensive than supermarkets (SEU, 1998) and section 8.9.2 indicated that older people in the present study perceived this to be the case with regard to their shopping experience. No other socio-demographic factors were found to influence store choice in the logistic regression equation including age and gender which had previously been considered in section 8.3. By this token, Hypothesis five can be accepted with regard to one socio-demographic factor, namely that of the amount spent per week on food.

8.10.2 The relationship between attitudes towards healthy eating and socio-demographic factors.

The second part of hypothesis five considered that socio-demographic factors may influence attitudes towards healthy eating. Having considered the potential influences on behaviour intention during discussion of hypothesis 3 (section 8.8.4.1 – 8.8.4.5) behavioural intention was used as the independent variables. Chi square analyses were performed to determine whether any relationship existed. Both the dependent and independent variables were categorical meaning that logistic regression was not conducted. All respondents were included in the analysis due to the fact that all 112 respondents reported having shopped in a supermarket in the last 5 years even if they were unable to conduct their food shopping now. As a result of the large number of variables considered as part of this analysis only the significant relationships are shown in table 8.30. Cross tabulations of each of these socio-demographic measures and the indicators of behavioural intention are presented in Appendix 5 to demonstrate further the direction of the relationships found. No socio-demographic variables were found to be related to respondents' intention to eat traditional English foods or healthy fats in the next month.
Table 8.30 - The significant relationships found between socio-demographic variables and respondents stated attitudes to healthy eating (as measured by asking behavioural intention) (n = 112).

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>INTENTION TO EAT A HEALTHY DIET</th>
<th>INTENTION TO EAT A DIET WITH A LOT OF FRUIT AND VEGETABLES</th>
<th>INTENTION TO EAT A LOW FAT DIET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$X^2$</td>
<td>SIG</td>
<td>$X^2$</td>
</tr>
<tr>
<td>GENDER</td>
<td>8.38</td>
<td>0.01</td>
<td>7.87</td>
</tr>
<tr>
<td>SEC (5 CLASS)</td>
<td>8.5</td>
<td>0.38</td>
<td>22.26</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td>12.41</td>
<td>0.05</td>
<td>27.33</td>
</tr>
</tbody>
</table>

Three socio-demographic variables were found to influence older people's attitudes to healthy eating among the sample interviewed. These were gender, SEC and marital status. As stated previously some research has been conducted into the effect of gender on the dietary habits of older people. Those who were married were found to have more positive attitudes to healthy eating (Donkin et al, 1998). This finding was reflected in the current results, with regard to eating a healthy diet and fruit and vegetable consumption.

Gender was significantly influenced the behavioural intentions of eating a healthy diet ($p = 0.015$) and fruit and vegetable consumption ($0.049$), mirroring the findings of previous research which suggested that women are more likely to consume a healthy diet than men (Johansson et al, 1999). In the present study, gender was also found to influence attitudes towards eating a low fat diet ($p = 0.003$).
SEC was found to influence intention to eat fruit and vegetables. 95% of those who reported managerial or professional occupations (SEC = 1) before retirement probably or definitely intended to consume a lot of fruit and vegetables. However, 94% of those who reported working class occupations before retirement (SEC = 5) also stated they probably or definitely intended to eat a lot of fruit and vegetable. The three intermediate SECs were less likely to report an intention to eat a diet of fruit and vegetables (SEC2 = 66%, SEC3 = 80%, SEC4 = 75%). However as the percentages reported show, respondents demonstrated a generally positive attitude to this attitude.

In conclusion marital status and amount spent per week on food influenced store choice, whilst gender, marital status and SEC influenced attitudes to three behaviours regarding healthy eating. As a result it is not possible to reject Hypothesis 5.

8.11 Conclusions

The discussion of the five hypotheses highlights several relationships that influence the shopping behaviour, choice of store and dietary variety of the older people interviewed in Guildford. The main influences found to affect store choices were transport and perceived ease of access to the store. Although respondents were found not to shop at the store nearest to their home, distance did play a part in determining store choice.

According to the analysis of hypothesis 2, selection of the food shop and whether or not it was a supermarket depended on the distance travelled to reach the store. In addition, proximity was given as the main reason for choosing a store by 34 of the 74 respondents who conducted their own food shopping. Therefore, whilst respondents did not shop at the store nearest their home, the distance to the store they visited or would prefer to visit was significant. The greater influence of method of transport and perceived ease of access on store choice suggested that the stated importance of store proximity may be related to the method of transport available for many respondents.
Distance travelled was found to be related to method of transport \((p = 0.05)\), indicating that the availability of transport was an important factor in choosing the store. In fact, the distance travelled and perceived ease of access were the strongest factors influencing whether or not respondents shopped at supermarkets, particularly if the store was near or easily accessible via available transport. Overall, physical access to stores proved to be the most important driver of store choice. No in-store factors were found to impact on store choice and only the belief that supermarkets offered a wider range of foods influenced respondents’ likelihood to shop there.

Dietary variety was not found to be influenced by access to or usage of stores or by overall store choice. However, variety appeared to be influenced by attitudes to healthy eating namely a desire to eat a healthy diet including fruit and vegetables and a low fat content. These three significant behaviours were in turn found to be influenced by marital status, gender and SEC to varying degrees.

The results presented above indicate that whilst access, store choice and dietary variety are not related in the form suggested by figure 4.1 (chapter 4), significant relationships do exist which affect older people’s ability to reach food shops and their store choices as well as their dietary variety and attitudes to healthy eating. These findings will be considered with reference to Figure 4.1, previous research and implications of the present study in chapter 9.
CHAPTER 9

Discussion of Findings

9.1 Introduction

Current UK Government policy stipulates that a priority for modern society is the maintenance of the highest possible quality of life and the prevention of social exclusion in a rapidly ageing population (Foresight, 2000). The challenge is to maintain a viable working population who are able to support an increasing older population whilst ensuring that those in retirement are fully included in society, independence and better health.

The present study aimed to examine whether older people's access to food may influence their dietary variety, adopting a multidisciplinary approach to examine this relatively under researched area. In addition, examination of the potential relationship between access to food shops and dietary variety considered both the health and social implications of changes in food retailing on older people. Chapter 4 (section 4.4.1) outlined the aims of the current research. Examination of the literature concerning older people's shopping behaviour led to the development of figure 4.1 on which the hypotheses and current study were based.

The analysis presented in Chapter 8 indicates that figure 4.1 does not accurately represent the relationships that exist between access, store choice, dietary variety and attitudes to healthy eating among the group of older people interviewed. However, the findings from chapter 8 suggest that some access (or potential mobility) factors examined did affect store choice and therefore store usage. Analysis of the questionnaires established that the method of transport used, the distance from the respondents' home and the respondent's perceived ease of access to a store had a significant effect on their store choice.
In addition, but identified separately in analysis, a relationship also exists between attitudes to healthy eating and the dietary variety found in this sample of older people. The analysis was conducted using a wide range of methods and variables regarding food shopping behaviour, dietary variety and attitudes towards healthy eating of a sample of older people. Therefore whilst only simple associations were found the results of analysis provide a strong argument for further research. The following discussion examines the findings of the present study in comparison with previous research and the focus group analysis that formed the basis of the current research.

9.2 Discussion of Focus Group Research

The focus group research undertaken as part of the present study has been discussed with reference to previous research in chapter 7. The findings of the face-to-face questionnaire generated similar responses as those given as part of the focus group research, reflecting many of the opinions, issues and difficulties mentioned in Chapter 7 (namely the issues of reaching food shops and social interaction). As a result the focus group interviews will be referred to as a part of the wider discussion of the implication of the present study in order to further demonstrate the relationships identified and the affinity in results obtained from both the qualitative and quantitative methods used.

Due to the complex nature of the potential relationships presented in Chapter 8, the discussion of findings will be considered in two parts with reference to figure 4.1. The first aspects considered will be those of respondents' ability to reach food shops and the influences on store choice. This will include only those access and store choice factors found to be of significance to the sample of older people interviewed in Guildford Borough. Secondly, the relationship between attitudes to healthy eating and dietary variety will be discussed.
9.3 Changes in the food retail provision of Guildford Borough.

Mapping of the food retail provision of Guildford Borough (Figure 8.1) suggested that the study area is indicative of the 'multiple dominance' suggested by previous research (Guy 1994; Gilbert, 1999). This is evidenced by the fact that the main food provision in the Borough is in the form of two out of town superstores (Tesco and Sainsbury) and a small town centre supermarket (Sainsbury).

However as figure 8.1 (chapter 8) illustrates, a variety of other local shops and convenience stores as well as forecourts and post office stores still exist. Whilst there has been a move towards the development of off licences to include a convenience format (as discussed in Chapter 2, 2.2.5 and chapter 8 with reference to Guildford Borough) this is not the case in all stores. Some independent or smaller companies may not sell such a wide range of foods and whilst the food provision in garage forecourts is much improved (e.g. Tesco express can be found in Esso garages). As a result despite the apparent range of stores suggested by figure 8.1, the availability of foods in these stores can vary greatly.

This variation in in-store food provision and the influence of personal preference (Shepherd, 1989; see also chapter 3 – section 3.5) explains comments by older respondents that they shopped at particular stores due to a lack of choice in the provision available (chapter 7, section 7.2). However, 79% of respondents who did their own food shopping shopped at supermarkets, indicating that despite distance or the absence of a car respondents are shopping at larger out of town stores. The present study observed that older people preferred to shop at supermarkets, however for those who shopped in the town centre in particular, the availability of a supermarket did not diminish a perception that a lack of store choice existed. Marks & Spencer and Budgens were considered too expensive. Sainsbury was considered to provide better value for money, despite problems with stock levels and the hilly topography of the high street (section 7.2, 7.5). In addition respondents seemed to feel let down by the changes in the town
centre in particular (section 7.2, 7.4), recalling the closure of three supermarkets situated in the town centre in the last 15 years.

If the growth of the convenience sector continues as suggested by the literature (Keynote, 2002b; Birkin et al, 2002) this may have implications for the food shopping behaviour of older people indicated by the current research, by increasing the number of stores available in which it is possible to conduct a weekly shop (based on a shopping basket as defined by the Social Exclusion Unit, 1998. Focus groups suggested that whilst respondents were aware of convenience stores, they did not use them (section 7.3). Respondents in the present study (chapter 7, appendix 6) reported that the changes in store format meant that the social interaction they had enjoyed at independent stores did not exist in convenience stores. For some this led to a preference for supermarkets with café facilities or shopping with friends or relatives to make shopping a more social occasion. In addition the present study noted that in outlying villages such as Ripley and Ash convenience shops (One Stop and Alldays) were frequently stocked out, expensive and lacking in fresh produce. As convenience retailing continues to develop (particularly through supermarkets purchasing convenience chains e.g. Tesco buying the One Stop chain) further research is required to determine both the food retail provision in specific stores and whether older people would continue to shop at supermarkets given improved convenience retail provision.

There were no respondents in either the focus group or the main sample who could not reach food stores for any reason other than health and mobility issues. The issue relates more to availability and choice of food shops for the older consumers in Guildford than store usage. Guildford demonstrates the patterns in food retail provision which have emerged over the last 20 years (Guy, 1998) where a gradual growth of multiples has led to a decline in independent stores. Whilst local stores still exist, they tend to be represented by the convenience sector and the social aspect of shopping has declined (Baron et al. 2001). The difficulty for this group of older consumers appears not to be the physical availability of shops, but the level of access which exists (i.e. their ability to reach the store) allowing the group to make choices with regard to where they shop.
9.4 Factors influencing shopping behaviour and store choice.

The Social Exclusion Unit (1998) stipulated that all individuals should be within easy access of a food shop. Easy access was defined as within 500m from the home. This figure was later adopted and endorsed by the government as a part of policy aiming to ensure good health through available food for the UK population (DoH, 1999). In terms of the sample interviewed in Guildford, the distance from home to the nearest shop for these respondents was between 100m and 1.5 km (on average about 450m and within SEU guidelines). However analysis showed that the sample of older people interviewed as part of this study did not tend to shop at the store nearest their home (section 8.6), travelling up to 13.8km to reach the food shop they most often visited. As mentioned previously, the sample under study primarily shopped at supermarkets (59 of the 74 respondents who did their own food shopping reported shopping at supermarkets), either by preference or default as they shopped with others. Focus groups and additional comments would suggest that this sample of older people would demand access to the same shopping facilities available to other consumer groups (section 7.2, 7.4; Appendix 6). However, this level of potential mobility is not available to all older people (38% of pensioner households in Surrey have no access to a car (ONS, 1991). Lack of access to a car reduced respondents' store choices to those that could be reached by public transport or by visiting stores with others. Only 11 respondents interviewed drove themselves to a supermarket and were considered to be able to make store choices unrestricted by transport or access issues. The remainder of the respondents interviewed reported varying degrees of compromise as a method of obtaining food shopping. The concepts behind these compromises will be discussed with regard to access, store choice and social interactions.
9.4.1 The relationship between access and store choice

Previous research has considered older people to have different needs from other population groups (Gunter, 1998; Smith, 1991). However as Morgan (1992) observed it is difficult to generalise about the shopping behaviour of older people as this definition covers a wide age range within a heterogeneous group. Older people in the sample interviewed in Guildford appear to have conformed to Guy's observation (1998) of changing consumer lifestyles and the move towards one-stop shopping. Guy suggested that older people would be a part of the community inevitably left out as a result of the move of supermarkets to less accessible out of town locations.

In addition, previous research has highlighted older people as a group with particular restrictions in terms of their ability to reach food shops due to the lack of shops available in town centres, less transport being available to out of town stores and a decrease in personal mobility with age (Age Concern, England, 1996; Miller et al, 1998; Bromley & Thomas, 2002). As mentioned previously, Guildford town centre does support several food stores. However, the only supermarket is at the top of a steep cobbled hill and the bus station at the bottom. The removal of public benches from the hill leading to the supermarket has further reduced accessibility for some respondents and increased the feeling that older people are not catered for (see appendix 6). Whilst Guildford Borough Council provides a free shuttle bus to transport those less able to walk from the bus station to the supermarket, many respondents were not aware of it. In addition, those who were aware of the provision of the shuttle bus stated that it did not take them directly to the store instead going a longer route. The supermarket was often considered to be stocked out and, being small, had a much reduced choice compared to the larger out of town stores.
These comments raise the issues of time versus requirement. McKie (1999) found that despite having more time available in retirement older people do not necessarily want to spend more time accessing food in a way they can manage. However, respondents interviewed in Guildford continued to shop in the town centre and as Bowlby (1979) noted poor accessibility does not necessarily equate to non/reduced usage. This sample could be considered to have poor accessibility despite being able to reach a store to conduct their own food shopping (Bowlby, 1979, Westlake, 1995). Poor accessibility is defined as a lack of choice, poor transport provision and personal mobility issues.

Miller et al (1998) observed that older people often expressed differing opinion on their food shopping behaviour according to the environment in which they were interviewed. These opinions were divided in to ‘public’ and ‘private’ opinions where older people were found to be less inclined to admit to difficulties in accessing food shops in a public setting. Respondents in the sample of older people interviewed in Guildford did admit to some difficulties, but were quick to dismiss the notion that they were unable to manage or find a way round problems of transport or mobility. Despite the difficulties expressed with regard to reaching food shops, perceived ease of access was generally high among the sample of older people interviewed. 60 of the 74 respondents who shopped for themselves stated that they agreed or strongly agreed that they found it easy to reach the food shop they most often visited. The 59 respondents who could access supermarkets (whether the edge-of-town or out-of-town superstores, or the smaller Sainsbury store in the town centre) often considered themselves to be fortunate. The fact that 80% of respondents shopped at a supermarket indicates they were not directly disadvantaged in terms of shop usage and an ability to reach food shops. However, this does not consider whether they are disadvantaged in terms of store choice or preference or whether compromise is required in order to have this type of shopping experience. This issue of compromise will be discussed in greater detail further on.

Leighton et al (1996) suggested that older people could only be considered disadvantaged should support networks be unavailable. More research is required to determine the effect of the removal of support networks developed as strategies of
maintaining independence in terms of food shopping. In the present study, store choice was found to be affected by access issues such as method of transport, distance to the store and frequency of shopping trip. Respondents were found to be heavily reliant on support networks and coping strategies which allowed them to continue to shop for themselves. As mentioned in the focus group interviews (Chapter 7, section 7.4) the older people interviewed as a part of the present study felt that they had to find the best way to get what they needed and the pleasure in shopping was both the social interaction it allowed and the ability to choose foods for themselves.

Previous research has suggested that a true indicator of disadvantage, in terms of access to food shops, would not include those groups who could reach food shops with as broad a range as supermarkets offer (Bromley & Thomas, 1995). The above discussion and findings of both chapters 7 and 8 suggest that for those interviewed, older peoples' ability to reach food shops and ultimately their store choice is reliant on factors other than their personal preference for a store. Without the coping strategies and support networks which have been developed by the sample their access to food shops with a range and choice of goods would be limited. The present study considered that those with the highest level of access were those who could reach a store independently with no limitations on their store choice and examined access with regard to Bowlby (1979), who distinguished between access and usage. However, the present research does not agree with Bromley & Thomas' (1995) definition of disadvantage, as the sample interviewed reported restrictions in their store choice and shopping behaviour resulting in coping strategies. These included a reliance on friends or relatives, the necessity of more frequent shopping trips (in order to carry heavy goods) or shopping locally due to a lack of transport and resulting in an inability to reach a choice of stores. Whilst the majority of respondents interviewed shopped at supermarkets (n = 59) and their actual mobility (as defined in Chapter 1, section 1.2) did not appear to be affected, the study considers that potential mobility is the limiting factor. As a result when considering the older people's store usage the present study recommends that measures of access need to include the concept of coping strategies which can be masked by apparent an ability to reach supermarkets.
Bowlby (1979) suggested access research should consider physical distance to shops, transport, income and other influences on potential mobility, focusing on the definition of access as 'the ease with which a person could reach a given location'. The present study suggests that there is a distinction between access and availability. In Chapter 1 (section 1.2) access was defined as 'the ease with which a person can reach food shop/shops', whereas availability was defined as 'the food an individual can obtain based on external or personal factors'. The availability of food is considered to be determined by the food retail provision within a given area (500m as defined by the Social Exclusion Unit, 1998). This is linked to access by an individual's ability to reach a shop and their perception of ease in their ability to reach that store. Older people in the sample interviewed for the present research reported being able to reach shops, but felt they lacked choice in terms of stores available and their ability to reach them, a factor considered to be one of the main indicators of access. Further research is required to establish the extent of the relationship between the availability of food shops and older people's access to these shops.

Warnes (1982) suggested that planners are more concerned with car access and that whilst shopping activity may not change visibly, the distance travelled and amount of time spent accessing food in a manageable way does. McKie (1999), who referred to these as coping strategies designed so that older persons could maintain their independence, confirmed this. Previous work in Guildford on the mobility of older people (Hopkin, 1978) suggested that declining mobility could impact on later life and lead to disengagement from daily activities. Mobility problems still impacted shopping access, however, the number of food shops, particularly in Guildford town centre made them accessible by public transport with 88% of older people food shopping regularly and few relying on outside help. Bowlby (1979) suggested that those whose access to shopping is poor must find some alternative strategy for obtaining food. This means they will have to decide on transport type and the location of shops they will patronise as well as frequency of visit and size of purchase. Each individual may use different methods. Problems of access have not been directly apparent in the examination of the
food shopping behaviour of this sample, but as Bowlby (1979) notes, people's satisfaction and interpretation of experiences are strongly influenced by their expectations. In addition as previously mentioned older people have been identified as a group who present different opinions based on whether discussing shopping issues in public or in private (Miller et al, 1998). Focus group responses (reported in chapter 7) and additional comments made by respondents (appendix 6) indicated that the group of older people interviewed did not feel they were catered for as a consumer group (e.g. in terms of access to stores and package sizes available). Further research is required to examine the expectations of older people with regard to the facilities available when food shopping to determine not only the whether more specific requirements exist, but to further inform the factors which may influence the development of coping strategies by this group.

It has been suggested that older consumers do not differ so greatly from other age groups in terms of compromising to reach food shops (Hare et al, 1999). Other age groups have been reported as compromising in terms of time, available shops, price and choice (NCC, 1992). What is suggested is that the ability of older people to shop at supermarkets and the findings that they do not appear to differ from other population groups can mask accessibility problems and distinct shopping patterns which can be identified as coping strategies (Hare et al, 1999). The results from the current research suggest that some older people in the sample interviewed feel a need to compromise when food shopping. They do so in order to buy their own food and maintain important levels of independence and control over their food shopping experience. This need to compromise and development of "coping strategies" is perhaps not to be unexpected. Many of those who shopped at supermarkets stated that they primarily did so due to the fact that they relied on friends or relatives to reach food stores, and they visited the store the friend or relative did. Therefore as a result of finding alternative methods of reaching food shops, usage appears unaffected. Indeed coping strategies such as those suggested may in fact have improved usage compared to previous shopping experiences (in terms of respondent's ability to reach a supermarket). In addition, shopping with others may improve the shopping experience in terms of enjoyment and the ability to
purchase heavy goods, which would otherwise be difficult to carry. However, this may be at the expense of convenience, store choice or indeed food choice.

The issue of coping strategies may exist on more than one level. Not only is compromise driven by the location of a store, but by the internal layout of the store and a need for social interaction and potentially by income. Income is not considered a primary access issue among this sample. Store choice was unaffected by Social Economic Class or amount spent per week on food as variables.

9.4.2 Access within stores

In-store factors were not found to have a significant effect on the sample of older people interviewed as part of the present study. Respondents mentioned difficulties with shelf height and re-merchandising in particular, but this did not significantly affect their choice of shop.

Despite the fact that in-store factors were not found to significantly influence store choice focus group responses (chapter 7, section 7.5) and additional comments (appendix 6) indicated that in-store factors could make food shopping a more difficult experience. However it is possible that the relatively small sample reduced the significance of any problems found. Alternatively it may be that those shopping with friends or relatives overcame any problems. It is possible that respondents felt that in-store factors were less of a consideration, as physically reaching the shop appeared to have been a priority.

Alternatively respondents may simply have found methods of coping with in-store facilities which caused them problems. 71 of the 74 respondents who did their own food shopping stated that their opinion of the staff in stores was either good or very good. It is possible that using staff was a method of overcoming problems inside the stores. In addition 64 respondents reported moderate to complete control over choosing where to shop due to internal layout. This could be explained either by a desire to retain control
and independence or simply because respondents did not perceive a difference between the layout of stores which were available for them to visit i.e. all food stores have high shelves. Hare et al. (1999) conducted an in depth critical incident analysis to discern older consumers views of their food shopping environment. The study found that older people were dissatisfied with their shopping experience, but felt that their views would not make any difference in the store. This view is also suggested in the present study as respondents did not feel that older people were catered for in terms of their access to and within stores.

9.4.3 Social interaction and the maintenance of independence

One aspect of food shopping and diet, which was raised by respondents, was that of social interaction with others. Both focus group and questionnaire results indicated that social interaction was important for this group and several took advantage of shopping with others for this purpose. Cooper et al. (1999) noted that social support was important for maintaining health and dietary variety. Falk et al. (1996) found that meeting around food and social frameworks influenced both food choices and how much individuals eat. The social environment and purchasing of food in the company of others was considered to have affected dietary variety in the present study, increasing the number of foods eaten. This was primarily as a result of meals provided at day centres which encouraged not only the consumption of complete meals, but also provided a social context for eating considered important in maintaining nutritional adequacy (Falk, 1996; Marshall, 2001). In the case of the present research attitude to diet and meals with relatives are also taken into account.

McKie (1999) interviewed 152 older people in Scotland with regard to their opinions on accessing food and their diet. For this sample their first priority was to stay in their own homes and community. Respondents expressed concern at the potential loss of their independence. The second priority was to retain or improve that level of independence by remaining 'active'. Respondents expressed an awareness of the danger of becoming withdrawn and isolated from peers and the community. This feeling was reflected in
both the focus groups and main study in the present research. The concept of maintaining independence was revealed by the changes that some older people reported making to their shopping behaviours in order to maintain a level of independence and choice (chapter 7, section 7.4). This study would suggest that it does not follow that respondents would shop using their current methods were greater accessibility or choice available. Restrictions on this choice forced by compromise or finding ways to maintain independence may mean that changes to shopping behaviour have become necessary despite a lack of desire to make these changes.

An alternate, but equally important driver of store choice and changes to shopping behaviour, is that of maintaining social interaction and ‘getting out’. The sample interviewed for this research visited day centres on a regular basis, but despite regular interaction with their peers highlighted the need to prevent social exclusion as a driver of store choice. This was most prominent in the focus group work, but additional comments by respondents in the main study indicated a desire for social interaction. Supermarkets providing cafés were enjoyed by many of those shopping with friends or relatives and were reported as providing a focal point for interaction among those using dial-a-ride services. However, changes in the café in Sainsbury had emphasised the feeling of many respondents that older people were not taken into account as a consumer group. 11 of the 14 respondents who shopped at the Sainsbury superstore in Burpham mentioned specifically the changes in the café from a Sainsbury run café with a choice of breakfast foods and drinks to a Starbucks, which no longer provided meals. The feeling was the coffee was expensive and as food was unavailable they were uncomfortable there, stating they did not think the café was aimed at them.

The need for social interaction appeared to exert an influence on food shopping behaviour both in terms of the benefits of shopping with friends or relatives and in terms of the use of alternative services. One respondent mentioned the cost of the dial-a-ride service and how they would think twice about using dial-a-ride if others did not. Therefore whilst it appears that this individual uses the dial-a-ride service due to access issues, they do in fact primarily take advantage not only with the help carrying groceries,
but also the social interaction provided by the service. This demonstrates an awareness of methods available to obtain food and that choices may be made on the basis of preference. Several respondents indicated a preference for shopping with others as a method of relieving the stress of food shopping and maintaining social interactions (chapter 7, 7.3). Local shops, which used to provide such interaction, are considered either too expensive or lacking in choice.

9.4.4 Conclusions

It appears that the current research concurs with previous studies, which suggest that store choice among older people is not as simple as it would appear (Leighton et al, 1996; Hare et al. 1999, McKie et al, 2000). However, the level to which older people adopt alternative methods of acquiring food or develop strategies from which they can maintain independence and choice varies. As stated by respondents in focus groups, food shopping gets people out and about and their pleasure is being able to choose for themselves (section 8.4.1). However, not all respondents seemed to be as aware of their compromise.

There has been some discussion as to whether or not older people are aware of making changes to their shopping behaviour or whether routine and habit simply create a new shopping experience (Gunter, 1998; Smith, 1992). It may be that this experience is not considered as a 'coping' mechanism, but simply an alternative. Certainly the focus group research reveals some older people do have to think in detail about the best way to get what food they need and want (see also McKie, 1999; Leighton & Seaman, 1997). Even if respondents are taken to a particular store, this may not necessarily be their preferred shop. Others may find it beneficial to be able to shop only if taken by others as this provides them with greater choice or range compared to the shops they had visited previously.

The findings of this study suggest that the sample of older people interviewed in Guildford Borough have adopted coping strategies in order to acquire food and
maintain independence and freedom of choice. However it did not follow that respondents were unaware of the changes made in their shopping behaviour. These changes were incorporated into routine and often welcome as a way of easing the difficulties of shopping. Coping strategies for this group of older people primarily related to transport and mobility despite a relatively high level of perceived ease of access. However perceived ease may be influenced by expectations. In addition, results may be influenced by a desire to demonstrate a level of independence therefore preventing respondents from admitting to difficulties. Miller et al (1998) found that older people were often possessed of two opinions, a public and a private. In order to maintain independence older people would present themselves as managing their shopping experiences with greater ease than they actually felt. More research is required to ascertain the extent to which coping strategies influence shopping behaviour, the level of awareness older people have of these strategies and their feeling towards this potential need to compromise. In addition the concept of private and public opinions may help to inform the reality in which older people shop for food.

9.5 The relationship between attitudes and dietary variety.

The analysis presented in chapter 8 (section 8.7) found that older people's access to or usage of food stores and their resulting food choices did not exert an influence on their dietary variety. Older people in the sample interviewed in Guildford Borough consumed a wide variety of foods on a weekly basis (chapter 8, section 8.4). Three socio-demographic variables were found to influence three behavioural intention factors. These were: Socio-Economic Class (SEC), gender and marital status, all of which exerted a significant influence on respondents' intention to consume a healthy diet, a lot of fruit and vegetables and a low fat diet in the next month.

The findings of the present study are indicative of previous research with regard to the influences on dietary behaviour. The socio-demographic factors identified as influencing behavioural intention have previously been highlighted as factors that influence the health of older people (Ginn et al, 1997). Those living in lower incomes
have been found to consume less fruit and vegetables (Department of Environment Food and Rural Affairs (DEFRA, 2001; Whelan et al, 2002). However, the present study found that older people generally had a positive attitude to consuming fruit and vegetables, ate a variety of food types from this group and intended to continue to consume them in the future. Previous research has found that older people consume more fruit and vegetables than other groups (DEFRA, 2001) and noted the importance placed on eating fruit and vegetables with regard to maintaining a healthy diet and therefore good health and independence (McKie, 1999; Povey, 1998; Whelan et al, 2002. In addition research has found that pensioner households in the UK spend more per week on food than the national average (£18.88 per household compared to £17.64 for the rest of the population) (DEFRA, 2001; Whelan, et al 2002). The importance of quality and value for money was highlighted among respondents in Guildford. Respondents stated that they were willing to spend more to obtain good quality food (Appendix 6), (chapter 7, section 7.6). This response indicated the importance of maintaining standards in shopping behaviour and the focus on food quality highlighted as particularly important to a generation for whom this has not always been attainable (Webb & Copeman, 1996).

Women have been found to eat healthier diets than men (Donkin et al, 1998; Johansson et al, 1999). In addition, Donkin et al (1998) found that men who lived alone had poorer diets that those who were married. For many this was due to the fact that roles within the household had meant the female prepared most meals. In addition to this there is evidence to suggest that the food choice and intakes of older people who have been bereaved differ from those who are still married (Herne, 1995; Webb & Copeman; 1996, Donkin, 1998), with those bereaved consuming a lower variety of foods and generally lower intakes. Women were found to express more positive attitudes to healthy eating in the present study (Chapter 8, 8.8.6 & 8.10.2), but there was no significant difference in energy or fat intake between male and female respondents on analysis of the FFQ (Chapter 8, section 8.4). This may have been due to the small number of men in the sample (n = 11) making gender comparisons difficult.
9.5.1 Dietary Variety

Hodgson (1994) suggested that greater food variety provided greater nutritional adequacy within an individual's diet. The present study looked at variety based on an FFQ. Hodgson et al recommended the consumption of approximately 15 foods a week to ensure nutritional adequacy. These findings were based on an extensive review of available research, which utilised variety to measure nutritional adequacy. It is suggested that for optimum nutritional adequacy of approximately 30 foods per week would provide a wide ranging source of nutrients (Hodgson et al, 1994; Krebs-Smith et al, 1987). However, the variety in diet should be encouraged to come from plant sources and not from foods such as confectionery, biscuits, added sugar and beverages such as tea, coffee and alcohol as these groups were not considered to contribute to overall nutrient adequacy or benefit health.

In the present study the older people interviewed in Guildford Borough consumed on average 27 different foods per week. This suggests an average figure of approximately 4 distinct foods per day, in addition to those foods consumed on a daily basis and therefore only added to the DVS on one occasion. Therefore according to the criteria set by Hodgson et al (1994) this group of older people consume a diet with sufficient variation to ensure nutritional adequacy. This figure corresponds with that found by Drewnowski et al (1997) who found that over a three-day period older people consumed on average approximately 32 foods. The author suggested that older people consume less varied diets than other population groups, but later found this not to be the case. The differences found between the dietary variety of older and younger people were in the availability of food associated not with ageing per se, but with the health, social and economic factors which become apparent during older age. These factors have been mentioned as part of the present research into access to food shops. However whilst issues of access, store, choice and store usage have become apparent it does not appear to have had a significant effect on the dietary variety of this sample.
In terms of the types of foods consumed by this sample of older people, the pattern of consumption among the sample was similar to that found in other studies (Cooper et al, 1999, DEFRA, 2000) in that white bread, potatoes and sugar in tea were most frequently consumed. Certainly this group were less adventurous with mixed dishes such as curry and pasta meals which were eaten less frequently than plain meat products (chops, roast, casserole) and potatoes. 94 respondents ate between 2 and 4 distinct fruits a week, while 98 reported eating between 4 and 10 distinct vegetables per week.

Biscuits and confectionery were also eaten in large amounts with 110 of the 112 respondents consuming at least one option from cakes, puddings and biscuits per week. This is not an unusually high amount, but does not take into account the daily habitual consumption of such foods such as fruit or biscuits, as the DVS measure foods eaten more than once a week. The concept of development of a routine in the diets of older people has been highlighted as a coping strategy in terms of getting value for money, saving preparation and overcoming the potential problems of having food bought by others (Falk et al, 1996). Focus group respondents (Chapter 7, section 7.5) mentioned their frustration at some foods being available only in larger packets. The lack of availability of small portion sizes means foods (particularly fruit and vegetables) may go off before they can be consumed thus putting older people off buying them and leading to the development of routine consumption. Webb & Copeman (1996) suggested that the consumption of foods may be related to older people's perceptions of food, which makes them less likely to consume a variety of foods from one source due to a preference for more traditional foods and late exposure in life to some food groups. It is also necessary to take into account the fact that previous studies have found that older people tend to be less adventurous in their food choices (Drewnowski, 1997), often using a list from which to purchase food. However, routine consumption did not appear to be a major problem for the sample of older people interviewed given their high DVS (between 17 and 41 distinct food per week). Analysis of the FFQ showed that on average only 14 respondents ate biscuits on a daily basis. In addition the low consumption of confectionery and snack food in comparison to cereals, vegetables, fruit and bread demonstrate that this sample of older people consumed generally healthy diets.
The study examined dietary variety in relation to nutrient intake among older people and found dietary variety to be a useful measure of nutritional adequacy among older people. Whilst a greater variety of energy dense foods is associated with excessive energy intakes in many populations, the authors did not consider this to be a concern when discussing older people. The recommendation was to encourage older people to consume a variety of foods as the risk of excessive intake was negligible among this sample due to their generally lower food intake. The issue of attitudes to foods and changes in later life will be discussed with reference to the theory of planned behaviour in section 9.5.2.

Encouraging older people to eat a variety of foods is a recommended method to ensuring adequate nutrient intakes among older populations (Finch et al, 1998; Drewnowski et al, 1997; Marshall, 2001, Bernstein, 2002). The findings of the present study suggest that the group of older people interviewed in Guildford consumed a wide variety of foods indicating appropriate levels of nutrient intake. This is evidenced not only by the DVS, but by the average energy, fat and saturated fat intakes measured as part of analysis of the FFQ (Table 8.4).

9.5.2 Attitudes

In addition to examining dietary variety and its implications, this study also examined older people's attitudes to healthy eating and its influence on dietary variety. In general, the sample of older people interviewed for this study were aware of the necessity of eating a healthy diet and a diet including fruit and vegetables.

Eating a healthy diet, particularly a diet including fruit and vegetables, was important to this group of older people. 94 of 112 people interviewed mentioned fruit and vegetables specifically when asked what they considered to constitute a healthy diet. The attitudes towards healthy eating and fruit and vegetable consumption were therefore very similar. Belief regarding the benefit of consuming a healthy diet and fruit and
vegetables (cognitive attitude) was the most influential predictor of behavioural intention for both of these variables. Analysis of the FFQ and DVS suggest that this belief is in fact performed as a behaviour in terms of the level of fruit and vegetables consumption among this group. McIntosh (1990) suggested that popular health beliefs may be associated with an active awareness of disease, treatment and preventative health care practises. This may be the case with the sample of older people under discussion. Whilst no respondents suffered from a severely debilitating disease, several reported suffering from diabetes or hypertension and had been informed of the most appropriate foods to consume. Several respondents mentioned the need to consume five portions of fruit and vegetables a day to maintain good health. Consuming less fat and sugar were also considered beneficial. However as McIntosh (1990) further mentioned an awareness of disease and preventative health care may involve incorrect information. Whilst the older people interviewed in Guildford were aware of good eating practices and nutrition messages, when questioned further, there was a low level of awareness as to why these foods should or should not be consumed as part of their diet. These findings suggest that whilst in concurrence with Fernyhough et al (1999) in finding that this group of older people were open to nutrition messages and changes in their diet to a degree, it does not follow that these older people are aware reasons behind these recommended dietary changes.

Examination of attitudes towards low fat diets indicated that the older people interviewed in Guildford were also aware of the concept of low fat diets, with many suggesting that eating a low fat diet was important or reporting consuming low fat diets on recommendation from health professionals. Those suffering from medical conditions were particularly aware of need to eat low fat diets. Several respondents considered that consumption of any fat in the diet was harmful. These findings in conjunction with attitudes towards eating a healthy diet and fruit and vegetable consumption suggest that some respondents may have been more responsive as they had health issues which have required a change in diet. However, it is also necessary to take into account the fact that respondents may have been aware of dietary messages and consequently under or over
report their consumption of appropriate foods, when ordinarily they would not follow such dietary habits (Shepherd, 1989).

As an influence on behavioural intention, subjective norm only affected this group’s intention to eat a diet of traditional English food. This may reflect habitual consumption of ‘Sunday dinners’ with family. This belief did not affect intention to perform any other behaviour suggesting this sample did not rely on the opinions of others in order to decide on food choice related behaviour and make their own decisions regarding their diet. However, personal feeling (affective attitude) influenced intention to eat taste-orientated foods e.g. eating a low fat diet (fat makes food more palatable). Personal feeling towards the consumption of particular foods may also relate to habit or past behaviour (Raats et al, 1995).

One criticism of the Theory of Planned Behaviour is that it does not take into account past behaviour, although Ajzen (1991) argues that if all other factors stay the same over time, then behaviour will also remain stable. Ajzen suggests that although past behaviour may reflect the impact of factors that influence later behaviour, it cannot be considered to be a causal factor in forming behavioural intention. He states that only when habit can be examined separately from past behaviour can it be added as an explanatory variable to the TPB. Due to the fact that the TPB measures behavioural intention it cannot be said to predict behaviour itself. There are many factors that may affect the transition from intention to behaviour (e.g. preference, taste, and impulse) the absence of which should be acknowledged as a weakness of the model. Several authors also suggest taking into account the potential of ambivalent attitudes to influences behaviour (e.g. an individual may like chocolate cake, but be aware that it is bad for them) (Shepherd, 1989; Connor et al, 1998). The present study used the TPB to measure attitudes and beliefs towards larger concepts as factors affecting food choice including elements of moral dimension (perceived need) as well as examining perceptions of respondent ability to perform the behaviours (perceived ease). Inclusion of these additional factors increased the predictive power of the model by taking into account
additional potential influences on behavioural intention and therefore behaviour (Raats et al, 1995; Povey, 1998).

9.5.3 The relationship between access and dietary variety

Previous research has found that in the UK there is not necessarily a problem of undernutrition among older people as much as a general lack of information on foods consumed and attitudes to food (COMA, 1992; Finch et al, 1998; Hare et al, 1999). The present research has considered the knowledge and attitudes of older people with regard to particular nutrition messages and their influence on dietary variety.

In addition the study examined the secondary causes of potential undernutrition suggested by Lehmann (1989) including a potential lack of nutritional knowledge, social isolation and physical disability in terms of potential access to and usage of food shops. It has been suggested that individuals may be easily capable of informed choices, but lack the opportunity to act on them (Shepherd, 1989; Davies, 1981; Webb & Copeman, 1996). Taking into account dietary variety it is also worth noting that additional comments and focus groups conducted as part of the present research suggest that older people in Guildford feel a lack choice in where they shop, but this does not appear to affect their variety. However there was a sense that this group of older people felt excluded as they do not perceive themselves as having the same level of access and choice as those who own cars and can choose freely where to shop (chapter 7, section 7.2, Appendix 6).

The findings suggest that whilst access and store choice do not have a direct significant influence on dietary variety, there may be elements of the store choice process which impact diet. As mentioned above, this group of older people did not lack the knowledge regarding healthy food selection and the dietary variety of this sample is certainly adequate to maintain good nutrition (chapter 8, 8.4).
The concept of coping strategies could be expanded to include a preference for shopping at supermarkets to obtain healthy foods. Respondents demonstrated a positive attitude towards supermarkets particularly in terms of the range and choice available. The notion that respondents find ways of reaching shops with a wider choice in order to satisfy a desire to perform certain food choice behaviours, was not found to be present or significant in the present research. It is therefore outside of the remit of this discussion. However, further research may extrapolate the potential relationship between specific coping strategies and attitudes and give further explanation to shopping behaviours.

The findings of the present research suggest that whilst there appears to be a relatively simple relationship between attitudes towards healthy eating and dietary variety, many more complex factors may be involved. The relationship between attitudes and dietary variety needs to be examined further to determine whether attitudes are compromised or enhanced by coping strategies such as shopping with others. In addition the need to rely on other to purchase foods, income or access may create ambivalent attitudes from which the individual makes a cost benefit choice regarding their diet.

9.6 Limitations

The findings and discussion of this study begin to build a picture of how 112 day centre attendees in Guildford Borough access food shops. The methods by which they access these stores, their shop usage, attitudes and dietary variety are discussed in chapter 8 and the remaining sections of chapter 9. However, when examining these findings it is necessary to take into account the limitations that exist within this study. The following discussion examines the limitations posed by this study, their potential effect and what further research could be conducted.
Sampling Limitations

The 112 people interviewed as part of the main study were only a small proportion of the 22,776 older people residing in Guildford Borough at the time of the 2001 census (ONS, 2002). Whilst this is a relatively small sample size, the amount of variables measured has allowed for more in depth information to be collected from each individual.

The sample was accessed from day centres in Guildford Borough. The study acknowledges the potential effect of accessing a sample through day centres. Some individuals are more likely to visit day centres than others and the research did not manage to access those who did not want to or were unable to access day centres. However, the research topic focused on those who were free living and relatively active making day centres an appropriate medium. In addition, attempts to access other members of the older population in the area raised some concerns among older people that they should be considered 'old'. Members of active groups within the Borough refused participation on the basis that despite fitting the criteria for inclusion in the study (over 60/65 years of age) they considered themselves to be an active section of the community and to have no issues with regard to food shopping. The image that older people are disadvantaged, immobile or frail prevented these individuals from taking part in the research. Whilst the author stressed that as broad a cross section of older people as possible would be interviewed and emphasised the exploratory nature of the work, this group did not wish to be associated with a group who were perceived as 'old' and therefore inactive. This finding emphasised suggestions by previous research that older people are a heterogeneous group and required different levels of research according to their lifestyle (Morgan, 1992; Matheson & Summerfield, 1999). Extensive efforts were made to access older people from across Guildford Borough, thereby taking into account both, the rural and urban mix of the Borough and the variation in Jarmen Indices between wards. Ethical consent was obtained from the University of Surrey Ethics Committee (Appendix 8) to contact GP surgeries and request permission to use GP lists. However, following consultation with GPs, it was decided that to release the information
for the purposes of research would break patient confidentiality as in order to participate patients would have to be told they had been selected by their doctor (according to the age criteria) and their information passed on to an external source. Following these efforts, a micro marketing company (Experian) was approached to obtain information on residences containing those potentially eligible for the study (i.e. over 60/65 years of age). However, information from prepared lists proved to be inaccessible due to problems regarding data protection and the financial constraints of the present research.

**Limitations to the face to face questionnaire**

The present study aimed to examine a wide range of issues concerning older people; namely, food shopping behaviour, food retail provision, dietary intake, dietary variety and attitudes to healthy eating. In order to examine each of these factors and statistically discern any associations present quantitative methods were used (the face-to-face questionnaire and food frequency questionnaire). The use of questionnaires allowed for the collection of a larger number of variables involving a bigger sample size than qualitative methods such as case studies or interviews in the time available. However as the results of the study have demonstrated, whilst a greater amount of basic information was obtained to examine the potential association hypothesised (see Chapter 4, figure 4.1), this was at the expense of more detailed opinion based responses. In hindsight, more questions, using for example Likert scales, might have further highlighted the underlying issues of coping strategies and the difficulties experienced by the group of older people interviewed. In addition whilst the face-to-face questionnaire allowed for statistical analysis of the issues under consideration the qualitative research in the form of focus groups highlighted issues regarding access to food stores and the availability of food in more detail.
Limitations of the Food Frequency Questionnaire (FFQ)

Whilst recommending the FFQ for use on older people it is necessary to take into account the limitations of dietary assessment methods. Geekie (1999) observed that true objectivity in dietary measurement is not possible due to factors that introduce error into the measures (Table 6.1) (Geekie, 1999; Nelson & Bingham, 1997). In addition to the advantages and disadvantages presented, there are several additional potential sources of error that should be taken into account when implementing FFQs. The food list should be relevant to the aspects of diet under examination and conceptualisation skills including memory as well as the potential of response bias should be taken into account.

The validation of the FFQ for the present study used a weighed food diary for comparison. This is considered the 'gold standard' or most reliable method of measuring food consumption (the potential for under reporting should be taken into account). In addition the strength of correlation found is dependent on the range of values in a population (Cade et al, 2002). The population age range in this group was relatively small (a range of 26 years between 67 – 93 years of age), all respondents were Caucasian and living in Southern England making the population limited in terms of applications beyond these defining factors, but more reliable in terms of the purpose of this validation. Finally, validations do not measure agreement between the administration of questionnaires, only the degree to which they are related. However, as the purpose of the validation study was to examine whether the two methods produced similar dietary information the method of comparing dietary assessment methods presented is appropriate in this case.

Talking into account the limitations presented, the use of a reliable method of dietary assessment for validation and the fact that this method has previously been used to validate the FFQ, the results suggest a good degree of association between the results obtained from each method. As a result of this the FFQ can be considered applicable for use on the older population interviewed in Guildford Borough as part of the present research.
The above limitations demonstrate that despite some headway on the part of the present study there is a need for further development of quantitative methods to examine the access issues, store choice and dietary variety of older people. Recommendations for further research will be therefore be considered in chapter 10.
CHAPTER 10

Conclusions and recommendations

10.1 Conclusions

Older people have been identified as the fastest growing section of the UK population and are part of what is considered to be a global ageing phenomenon (Foresight, 2000). By 2007 the number of older people of pensionable age is predicted to exceed the number of children under 16 in the UK population (ONS, 2002). Previous research has identified a need to consider older people in terms of their needs, want and capabilities as a population group (Foresight, 2000). In addition, studies have suggested that a general lack of research exists with regard to shopping behaviour, attitudes to healthy eating and the dietary variety of older people (Finch et al, 1998; Webb & Copeman, 1996, Hare et al, 1999, McKie, 1999, Foresight, 2000).

The present study examined the shopping behaviour of a group of older people to determine whether access to or the availability of food shops exerted an influence on their dietary variety. The study concluded that:

1. **Older people in the sample were not found to shop at the store nearest to their home.**

2. **An older person's store choice is influenced by:**
   - the method of transport used to reach the store
   - the distance from the respondent's home to the store
   - the respondent's perceived ease of access in reaching the store.

3. **Older people in the sample interviewed demonstrated the development of coping strategies in order to reach food shops and continue to shop independently, demonstrated partly by their reasons given for store choice.**

4. **Access to food shops and store choice/usage were not influence the dietary variety of the population interviewed**
5. In-store factors were not found to affect store choice

6. SEC, gender and marital status was found to influence the behavioural intention of eating a healthy diet, eating a diet with a lot of fruit and vegetables and eating a low fat diet.

7. The behavioural intentions of eating a healthy diet, eating a diet of fruit and vegetables and eating a low fat diet were found to influence the dietary variety of the sample interviewed.

Some previous research has suggested that older people are a disadvantaged group in terms of their access to food shops (Guy, 1994; Bromley & Thomas, 2002; McKie, 2000; DoH, 1999). The present research has shown that older people can get to and use food shops, but that they do not feel that they have the same level of access as other groups. This would imply a more covert disadvantage than previously suggested. The majority of people interviewed as part of this research were able to shop for themselves and shopped at supermarkets. However the findings suggest that in order to continue to shop for themselves, older people had to consider alternative ways to reach food shops. The older people interviewed in Guildford were an adaptable group both in terms of accessing food and types consumed as well as response to nutrition messages.

The group of older people interviewed repeatedly stated that they did not feel they were considered in the same way as other consumer groups, mentioning particularly the difficulties experienced in reaching supermarkets without access to a car. Store choice was heavily dependent on the method of transport available and respondents' perceived ease of access in reaching the store. The overall suggestion was of this sample feeling they had been being sidelined in terms of access and transport. As a result, the group of older people interviewed had found ways of maintaining independence and the ability to use larger food shops by developing strategies around their constraints. These included shopping with friends or relatives, using smaller shops, utilising existing facilities despite extra cost (e.g. dial-a-ride) or travelling some distance on public transport to reach the type of shop they desired to visit. In addition, social interaction was expressed
as being of particular importance to this sample group, many coping strategies were related to 'getting out and about' and feeling a part of society.

Access to food shops and store choice did not affect the dietary variety of the sample interviewed. Dietary choices were more driven by attitudes towards healthy eating. The majority of respondents expressed knowledge of foods that were harmful or beneficial to their health and most reported an intention to perform healthy dietary behaviours, particularly with reference to consuming fruit and vegetables. Taste, value for money and variety were the most reported influences on food choice (Appendix 4). However, whilst diet was not directly related to store access many respondents reported difficulties in reaching food shops, which affected the foods they purchased.

The implications of this study are appropriate to food retailers, town planners, health promotion, local government and national government policy. Food retailers need to consider older people as a consumer group (accessing supermarkets and package size were expressed as particular problems). Town planners need to ensure that all population groups are considered in planning and are able to reach food shops. Local and national government initiatives should take into account older peoples’ desire to remain active, independent and included in society. People over 60/65 are becoming increasingly important as the UK Government reconsiders the retirement age in the presence of a dwindling younger and increasingly large older population (Foresight, 2000; IGD, 2001; ONS, 2003a). Older people remain a significant consumer group within the UK who according to this study wish to remain an active part of an accessible community. If this is to be the case more research is required into the needs and wants of this population. According to the present research the needs are quite simple, accessible food shops providing a range of goods, present and efficient public transport systems and the consideration of older people as a significant and marketable consumer group.
10.2 Recommendations for further research

The present study has begun to examine the factors influencing access to food shops, store choice and dietary variety among a sample of older people in Guildford Borough. Whilst highlighting a number of significant relationships, the study has also identified current gaps that remain with regard to researching foods hopping behaviour and dietary variety. In addition the present study has identified areas in which the current research could be developed to further explore the concepts explored.

The present study has highlighted the difficulties experienced by a sample of older people in accessing food shops and the consequent need to develop coping strategies. The concept of coping strategies requires further attention to determine the extent to which they affect the shopping behaviour and the implications of a reduction in social interaction and the provision of support networks for older people. Further qualitative research is required to obtain more detailed information on the factors that may aid or hinder older people's food shopping experiences. In addition the present study recommends further consideration of the expectations of older people when food shopping. Points of focus may include determining the services and facilities they require to explore methods of avoiding the difficulties expressed by respondents in the sample interviewed.

The measurement of dietary variety has proved a useful tool in the present study to broadly determine the food intake of a sample of older people. Previous research has also measured dietary variety among older people (Hodgson et al, 1994; Drewnowski et al, 1997; Bernstein et al, 2002). However, as observed by Bernstein et al (2002) whilst dietary variety has become a popular method for the assessment of diet quality, differences in the methods used have limited the comparability of dietary variety scores from different studies. The present study recommends the further use of dietary variety scores as a research tool and the development of a validated DVS for use on older
populations. It is also recommended that further research involving the examination of either food shopping behaviour or dietary variety takes into account the potential effects of past behaviour, routine and habit in more detail.

Time and financial constraints have prevented further exploration of a contrasting or alternative study area to that of Guildford Borough. The present study recommends the development of the face-to-face questionnaire and its application in conjunction with the Food Frequency Questionnaire in other study areas. This would allow a comparison of the findings in Guildford to determine whether or not the responses from older people in this area were representative of issues facing older people in general or unique to Guildford.

Finally, in examining the food shopping access and usage of older people in Guildford, the study did not directly measure economic indicators such as income. The study took into account socio-economic classifications based on previous occupation and the amount spent per week on food, but did not propose to examine economic factors per se. The remit of this study was to examine physical as opposed to economic access. However further research would involve economic access having identified the main physical access constraints. In addition, examination of an alternative study area e.g. one with a high deprivation index would take into account the effect of income on access and the issue of poverty among older people (McKie, 1999; Leather, 1992; Walker, 1998).
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RESEARCH QUESTIONNAIRE – LISA WILSON
ASSURANCE OF CONFIDENTIALITY

1. Which age group applies to you?
   - 60-64 □  1
   - 65-69 □  2
   - 70-74 □  3
   - 75-80 □  4
   - 81-85 □  5
   - 86-90 □  6
   - > 90 □  7

2. Gender
   - Male □ 1
   - Female □ 2

3. Do you normally do your own food shopping? (If NO □ 29)
   Yes □ 1
   No □ 0

IF YES:

4. How often do you shop for food?
   - Daily □ 1
   - Fortnightly □ 5
   - 2 times a week □ 2
   - Every 3 weeks □ 6
   - 3 times a week □ 3
   - Once a month □ 7
   - Weekly □ 4
   - Other □ 8

5. Why do you shop this often?

6. Which food shop do you visit most often to do your main shop?
   - Tesco □ 1
   - M & S □ 6
   - Sainsbury □ 2
   - Budgens □ 7
   - Safeway □ 3
   - Lo-cost □ 8
   - Somerfield □ 4
   - Cullens □ 9
   - Waitrose □ 5
   - Other □ 10

7. What town is this in?
   - Guildford Town □ 1
   - Pirbright □ 7
   - Burpham □ 2
   - Leatherhead □ 8
   - Woking □ 3
   - Ripley □ 9
   - Godalming □ 4
   - East Horsley □ 10
   - Farnham □ 5
   - Effingham □ 11
   - Haslemere □ 6
   - Aldershot □ 12
8. How often do you visit the shop where you do your main food shop?

Daily □ 1  Fortnightly □ 5  
2 times a week □ 2  Every 3 weeks □ 6  
3 times a week □ 3  Once a month □ 7  
Weekly □ 4  Other □ 8

9. What is your main reason for shopping at the store you most often visit?

Proximity (Closest) □ 1  Easy to Use □ 5  
Price □ 2  Choice/Range □ 6  
Friend/Rel shops there □ 3  Lack of shop choice □ 7  
Easy to get to □ 4  Other □ 8

10. How do you get to the shop you visit most often? (most frequently used method)

Walk □ 1  Friend drives □ 6  
Bus □ 2  Relative drives □ 7  
Drive yourself □ 3  Dial-a-Ride □ 8  
Taxi □ 4  Other □ 9  
Train □ 5

11. On average how long does your journey to the food shop you most often visit take you?

Up to 5 min □ 1  11-20 min □ 3  >30 min □ 5  
6-10 min □ 2  21-30 min □ 4

12. Do you find it easy to get to the food shop you visit most often............

Strongly Agree 1 2 3 4 5 Strongly Disagree

13. Do you shop alone/ with a relative or partner?

Alone □ 1  Friend □ 3  
Partner □ 2  Relative □ 4

14. Do you find shopping with someone means you buy more?

Yes □ 1  No □ 2

15. Why? ............................................

16. Do you use other shops for additional food shopping?

Yes □ 1  No □ 2

17. Why? ...........................................................................
Store Layout

We are talking about the store you visit most often when doing your main food shopping. I would like to ask you some questions on how you feel about the way the shop is laid out.

What is your opinion of the facilities inside the store you most often visit?

17. The range of trolley sizes available: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

18. The height of the shelving: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

19. The quality of the lighting: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

20. Labelling on the shelves: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

21. The width of the aisles: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

22. The length of the queues: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

23. The provision of toilet facilities: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

24. The provision of a cafeteria: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor

25. The range of package sizes: 
   - Very good
   - Good
   - Neither
   - Poor
   - Very poor
26. The attitude of staff....

<table>
<thead>
<tr>
<th>Very good</th>
<th>good</th>
<th>neither</th>
<th>poor</th>
<th>very poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. How much control do you feel you have in choosing a shop because of the above factors?

<table>
<thead>
<tr>
<th>No Control</th>
<th>a little control</th>
<th>moderate control</th>
<th>quite a lot of control</th>
<th>complete control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IF ANSWER TO QUESTION 3 WAS NO:

29. How do you get most of your food?

<table>
<thead>
<tr>
<th>Carer</th>
<th>Home Delivery</th>
<th>Friend</th>
<th>Other</th>
<th>Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 1</td>
<td>□ 4</td>
<td>□ 2</td>
<td>□ 5</td>
<td>□ 3</td>
</tr>
</tbody>
</table>

30. Which Store does this person use?

<table>
<thead>
<tr>
<th>Tesco</th>
<th>Budgens</th>
<th>Lo-cost</th>
<th>Cullens</th>
<th>Other</th>
<th>Don't know</th>
<th>M &amp; S</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 1</td>
<td>□ 8</td>
<td>□ 9</td>
<td>□ 10</td>
<td>□ 11</td>
<td>□ 12</td>
<td>□ 6</td>
</tr>
</tbody>
</table>

31. Do you ask them to visit a particular store?

Yes □ 1       No □ 0

32. Why?

..........................................................................................................................

33. How much control do you feel you have over choosing the foods that are bought for you?

<table>
<thead>
<tr>
<th>No Control</th>
<th>a little control</th>
<th>moderate control</th>
<th>quite a lot of control</th>
<th>complete control</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
</tbody>
</table>
EVERYONE:

I am also looking at the choices people make about food when they are shopping. The following questions ask about your attitudes to food and healthy eating. Firstly I would like to ask:

34. What do you understand by the term "healthy eating"?

35. What do you understand by the term "traditional English food"?

36. What do you understand by the term "healthy fats"?

37. How many meals do you have a day?

38. What do you think is the most important thing to you when you are making choices about food?

39. To what extent do you feel you need to eat: (perceived need)
   a. a healthy diet in the next month?
      Definitely need to (5) probably need to neither probably don't need to Definitely do not need to (1)
   b. a diet with a lot of fruit and vegetables in the next month?
      Definitely need to probably need to neither probably don't need to Definitely do not need to
   c. a low fat diet in the next month?
      Definitely need to probably need to neither probably don't need to Definitely do not need to
   d. a diet of traditional English food in the next month?
      Definitely need to probably need to neither probably don't need to Definitely do not need to
   e. a diet containing more healthy fats in the next month?
      Definitely need to probably need to neither probably don't need to Definitely do not need to

40. How easy/difficult would it be for you to eat ... (perceived difficulty)
   a. a healthy diet in the next month?
      Extremely easy (5) quite easy neither quite difficult extremely difficult
   b. a diet with a lot of fruit and vegetables in the next month?
      Extremely easy quite easy neither quite difficult extremely difficult
c. a low fat diet in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely easy</th>
<th>quite easy</th>
<th>neither</th>
<th>quite difficult</th>
<th>extremely difficult</th>
</tr>
</thead>
</table>


41. How enjoyable/unenjoyable would it be for you to eat (attitude - affective)

a. a healthy diet in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely enjoyable (5)</th>
<th>quite enjoyable</th>
<th>neither</th>
<th>quite unenjoyable</th>
<th>extremely unenjoyable (1)</th>
</tr>
</thead>
</table>

b. a diet with a lot of fruit and vegetables in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely enjoyable</th>
<th>quite enjoyable</th>
<th>neither</th>
<th>quite unenjoyable</th>
<th>extremely unenjoyable</th>
</tr>
</thead>
</table>

c. a low fat diet in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely enjoyable</th>
<th>quite enjoyable</th>
<th>neither</th>
<th>quite unenjoyable</th>
<th>extremely unenjoyable</th>
</tr>
</thead>
</table>

42. How harmful/beneficial would it for you to eat (attitude - cognitive)

a. a healthy diet in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely beneficial (6)</th>
<th>quite beneficial</th>
<th>neither</th>
<th>quite harmful/beneficial</th>
<th>extremely harmful</th>
</tr>
</thead>
</table>

b. a diet with a lot of fruit and vegetables in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely beneficial (5)</th>
<th>quite beneficial</th>
<th>neither</th>
<th>quite harmful/beneficial</th>
<th>extremely harmful</th>
</tr>
</thead>
</table>

c. a low fat diet in the next month?

<table>
<thead>
<tr>
<th></th>
<th>Extremely beneficial (5)</th>
<th>quite beneficial</th>
<th>neither</th>
<th>quite harmful/beneficial</th>
<th>extremely harmful</th>
</tr>
</thead>
</table>


43. How likely is it that people who are important to you think you should eat... (subjective norm)

a. a healthy diet in the next month?

Extremely likely (5)  quite likely  neither  quite unlikely  extremely unlikely (1)

b. a lot of fruit and vegetables in the next month?

Extremely likely  quite likely  neither  quite unlikely  extremely unlikely

likely/unlikely

c. a low fat diet in the next month?

Extremely likely  quite likely  neither  quite unlikely  extremely unlikely

likely/unlikely

d. a diet of traditional English food in the next month?

Extremely likely  quite likely  neither  quite unlikely  extremely unlikely

likely/unlikely

e. a diet containing more healthy fats in the next month?

Extremely likely  quite likely  neither  quite unlikely  extremely unlikely

likely/unlikely

44. How much control do you feel you have over choosing to eat... (perceived control)

a. a healthy diet in the next month?

No control (1)  a little control  moderate control  a lot of control  complete control (5)

b. a diet with a lot of fruit and vegetables in the next month?

No control  a little control  moderate control  a lot of control  complete control

c. a low fat diet in the next month?

No control  a little control  moderate control  a lot of control  complete control

d. a diet of traditional English food in the next month?

No control  a little control  moderate control  a lot of control  complete control

e. a diet containing more healthy fats in the next month?

No control  a little control  moderate control  a lot of control  complete control

45. Do you intend to eat... (behavioural intention)

a. a healthy diet in the next month?

Definitely do (5)  probably  neither  probably do not  definitely do not (1)
b. a diet with a lot of fruit and vegetables in the next month?

<table>
<thead>
<tr>
<th>Definitely</th>
<th>probably</th>
<th>neither</th>
<th>probably</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>do</td>
<td></td>
<td>do not</td>
<td>do not</td>
</tr>
</tbody>
</table>

c. a low fat diet in the next month?

<table>
<thead>
<tr>
<th>Definitely</th>
<th>probably</th>
<th>neither</th>
<th>probably</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>do</td>
<td></td>
<td>do not</td>
<td>do not</td>
</tr>
</tbody>
</table>

d. a diet of traditional English food in the next month?

<table>
<thead>
<tr>
<th>Definitely</th>
<th>probably</th>
<th>neither</th>
<th>probably</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>do</td>
<td></td>
<td>do not</td>
<td>do not</td>
</tr>
</tbody>
</table>

e. a diet containing more healthy fats in the next month?

<table>
<thead>
<tr>
<th>Definitely</th>
<th>probably</th>
<th>neither</th>
<th>probably</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>do</td>
<td>do</td>
<td></td>
<td>do not</td>
<td>do not</td>
</tr>
</tbody>
</table>

46. Do you agree or disagree that supermarkets provide a range of foods that that meet you needs in relation to your usual diet?

<table>
<thead>
<tr>
<th>Strongly agree(5)</th>
<th>agree</th>
<th>neither</th>
<th>disagree</th>
<th>strongly disagree(1)</th>
</tr>
</thead>
</table>

47. To what extent do you agree that supermarkets provide less expensive foods?

<table>
<thead>
<tr>
<th>Strongly agree(5)</th>
<th>agree</th>
<th>neither</th>
<th>disagree</th>
<th>strongly disagree(1)</th>
</tr>
</thead>
</table>

48. To what extent do you agree that supermarkets offer more healthy food options?

<table>
<thead>
<tr>
<th>Strongly agree(5)</th>
<th>agree</th>
<th>neither</th>
<th>disagree</th>
<th>strongly disagree(1)</th>
</tr>
</thead>
</table>

49. To what extent do you feel that shopping for a healthy diet means shopping at a supermarket?

<table>
<thead>
<tr>
<th>Strongly agree(5)</th>
<th>agree</th>
<th>neither</th>
<th>disagree</th>
<th>strongly disagree(1)</th>
</tr>
</thead>
</table>

I would now like to ask you a few questions about where you live.

50. Can you tell me your house number and postcode?

.................................................................

51. What type of residence do you live in?

- Owner occupied  □ 1  Rented (council)  □ 3
- Sheltered  □ 2  Rented (private)  □ 4
- Other  □ 5  .................................................................
52. Do you live with anyone?

Alone □ 1  With Friends □ 4
With Partner □ 2  Other □ 5
With Family □ 3  ...................................................

53. What is your marital status?

Single □ 1  Divorced/Separated □ 3
Married □ 2  Widowed □ 4

54. How much do you spend on food shopping per week (average)?

£5-£15 □ 1  £16-£25 □ 2  £26-£50 □ 3
£51-£100 □ 4  >£100 □ 5

55. What was the previous occupation of the main income earner in your household before retirement?

...........................................................................

a. Can you give me a description of your/your partners job before retirement?

...........................................................................

b. What Industry was this in?

...........................................................................

c. How many people were you/they responsible for/supervise? ......................

d. Do you/they have any qualification or apprenticeship? ..........................

e. IF SELF EMPLOYED - How many people in the company? ......................

f. IF CIVIL SERVICE/ARMED FORCES - What grade/rank? ......................
53. Do you have any of the following services to your home?

- Meals on wheels  ☐ 1
- Home help  ☐ 2
- Carer  ☐ 3

54. Is there anything else about your food shopping that you would like to tell me?

Do you have any questions about the study?

Would it be acceptable for me to contact you again to ask you about your diet?

- Yes  ☐
- No  ☐
Instructions for completing your food and drink questionnaire

This questionnaire is about foods which are eaten regularly. By answering every question we would like you to tell us what you usually eat. Please go through the questions fairly quickly, do not spend a lot of time thinking about each of your answers.

Each question refers to a different food item. Please answer every question indicating whether or not you usually eat the food, and what your portion size would be. For each food item a medium portion is described. There are pictures at the back of the questionnaire which show what many of these portions look like. Your usual portion size might be different from the suggested portion: use the medium portion to help you describe smaller or larger portions in the following way.

If your portion size is:
- similar to that in the picture please tick the M (medium) column
- about half as much as that in the picture please tick the S (small) column
- about one and a half times as much as that in the picture please tick the L (large) column
- about twice as much as that in the picture please tick the XL (extra large) column

Please indicate how often you usually eat the different foods listed. In the "How often?" column tick:
- per day if you eat the food daily
- per week if you eat the food weekly
- per month if you eat the food monthly, or
- rarely/never

Here is an example:

How often do you eat meat?

<table>
<thead>
<tr>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef (roast and/or steak, lean only)</td>
<td>4 thin slices, picture 2a or 1 small steak</td>
<td>per day per week per month rarely/never</td>
</tr>
</tbody>
</table>

This indicates that a large portion of beef (one and a half times the portion size in picture 2a), is eaten twice each month.

When you have completed the questionnaire, please check back to make sure that you have answered every question.

Thank you for your help.
**How often do you eat bread?**

<table>
<thead>
<tr>
<th></th>
<th>medium portion</th>
<th>your portion size</th>
<th>S</th>
<th>M</th>
<th>L</th>
<th>XL</th>
<th>How often?</th>
<th>per day</th>
<th>per week</th>
<th>per month</th>
<th>rarely/never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (white)</td>
<td>1 thick slice, large loaf, picture 1d</td>
<td></td>
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<tr>
<td>1 (brown, high-fibre and/or granary)</td>
<td>1 thick slice, large loaf, picture 1d</td>
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<tr>
<td>1 (wholemeal)</td>
<td>1 thick slice, large loaf, picture 1d</td>
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<tr>
<td>d rolls (white)</td>
<td>1 small roll, picture 1e</td>
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<tr>
<td>d rolls (brown)</td>
<td>1 small roll, picture 1e</td>
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<tr>
<td>d rolls (wholemeal)</td>
<td>1 small roll, picture 1e</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 bread</td>
<td>1 medium bread</td>
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<td></td>
<td></td>
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<tr>
<td>issant</td>
<td>1 small, picture 1f</td>
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<tr>
<td>pbread (e.g. Ryvita)</td>
<td>2 crispbreads, picture 1g</td>
<td></td>
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<tr>
<td>pbread (e.g. Cream cracker)</td>
<td>2 crispbreads</td>
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</table>

**How often do you eat breakfast cereals?**

<table>
<thead>
<tr>
<th></th>
<th>medium portion</th>
<th>your portion size</th>
<th>S</th>
<th>M</th>
<th>L</th>
<th>XL</th>
<th>How often?</th>
<th>per day</th>
<th>per week</th>
<th>per month</th>
<th>rarely/never</th>
</tr>
</thead>
<tbody>
<tr>
<td>on Flakes and/or Rice Krispies</td>
<td>5 tablespoons, picture 1a</td>
<td></td>
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<td></td>
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<tr>
<td>an Flakes</td>
<td>5 tablespoons, picture 1a</td>
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<td>essi</td>
<td>5 tablespoons</td>
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<tr>
<td>eetablk and/or Shredded Wheat</td>
<td>2 biscuits</td>
<td></td>
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<td></td>
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<tr>
<td>ridge (made with milk and water)</td>
<td>3 tablespoons</td>
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</tbody>
</table>

**How often do you eat butter, margarine and spreads?**

<table>
<thead>
<tr>
<th></th>
<th>medium portion</th>
<th>your portion size</th>
<th>S</th>
<th>M</th>
<th>L</th>
<th>XL</th>
<th>How often?</th>
<th>per day</th>
<th>per week</th>
<th>per month</th>
<th>rarely/never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margarine</td>
<td>2 teaspoons, picture 2e</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>(on bread, toast and/or rolls)</td>
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<tr>
<td>Margarine</td>
<td>2 teaspoons, picture 2e</td>
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<tr>
<td>(on vegetables and/or jacket potatoes)</td>
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<tr>
<td>Butter</td>
<td>2 teaspoons, picture 2e</td>
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<tr>
<td>(on bread, toast and/or rolls)</td>
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<td>Butter</td>
<td>2 teaspoons, picture 2e</td>
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<td>(on vegetables and/or jacket potatoes)</td>
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<tr>
<td>Margarine</td>
<td>2 teaspoons, picture 2e</td>
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<tr>
<td>(reduced fat, on bread, toast and/or rolls)</td>
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</tr>
<tr>
<td>Margarine</td>
<td>2 teaspoons, picture 2e</td>
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<tr>
<td>(reduced fat, on vegetables and/or jacket potatoes)</td>
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<tr>
<td>Spread</td>
<td>2 teaspoons, picture 2e</td>
<td></td>
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<tr>
<td>(very low fat, on bread, toast and/or rolls)</td>
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</tr>
<tr>
<td>Spread</td>
<td>2 teaspoons, picture 2e</td>
<td></td>
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<tr>
<td>(very low fat, on vegetables and/or jacket potatoes)</td>
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</tbody>
</table>
**How often do you eat fruit?**

<table>
<thead>
<tr>
<th>fruit</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S M L XL</td>
<td>per day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>per week</td>
<td>per month</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rarely/never</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 fruit,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>picture 9h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 fruit,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>picture 9g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ge and/or satsuma</td>
<td>1 fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>efruit</td>
<td>1 fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nana</td>
<td>1 fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nes</td>
<td>15 large grapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(tinned in syrup)</td>
<td>2 tablespoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>salad (homemade)</td>
<td>2 tablespoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>orange juice</td>
<td>1/2 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pear juice</td>
<td>1/2 glass</td>
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</tbody>
</table>

**How often do you eat dried fruit and nuts?**

<table>
<thead>
<tr>
<th>dried fruit and nuts</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S M L XL</td>
<td>per day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>per week</td>
<td>per month</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rarely/never</td>
<td></td>
</tr>
<tr>
<td>dates, apricots and/or figs</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sultanas</td>
<td>1 tablespoon,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 4c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cashew nuts</td>
<td>1 small packet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and/or cashew nuts</td>
<td>or 1 tablespoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 4e</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>brazil nuts and/or almonds</td>
<td>1 tablespoon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How often do you eat cheese?**

<table>
<thead>
<tr>
<th>cheese</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S M L XL</td>
<td>per day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>per week</td>
<td>per month</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rarely/never</td>
<td></td>
</tr>
<tr>
<td>eddar-type cheese (full fat)</td>
<td>a 'finger', 3cm x 2cm x 1/2 cm,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eddar-type cheese (reduced fat)</td>
<td>a 'finger', 3cm x 2cm x 1/2 cm,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>membrt and/or Brie</td>
<td>a 'wedge',</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inish blue and/or Stilton</td>
<td>a 'cube', 3cm x 2cm x 1 cm,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9e</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eam cheese (full fat)</td>
<td>1 dessert spoon,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eam cheese (reduced fat)</td>
<td>1 dessert spoon,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>picture 9d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fruitage cheese (full fat)</td>
<td>1 tablespoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fruitage cheese (reduced fat)</td>
<td>1 tablespoon</td>
<td></td>
<td></td>
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</tbody>
</table>
**How often do you eat vegetables?**

<table>
<thead>
<tr>
<th>Vegetable(s)</th>
<th>medium portion</th>
<th>your portion size per day</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td>age (boiled)</td>
<td>2 tablespoons</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>age (raw)</td>
<td>2 tablespoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>peas sprouts and/or broccoli (cooked)</td>
<td>2 tablespoons, picture 2d and 6c</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>oats (boiled)</td>
<td>2 tablespoons, picture 2c</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>oats (raw),</td>
<td>1 tablespoon, picture 7d</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>dates (raw)</td>
<td>1 medium, picture 3g or 4 cherry, picture 7b</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>dates (tinned)</td>
<td>2 tablespoons</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>nips, swedes and/or turnips</td>
<td>2 tablespoons, picture 6d</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>lettuce</td>
<td>4 leaves, picture 3f</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>umber</td>
<td>a 1 inch piece, picture 3h</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>ad In mayonnaise (e.g. coleslaw)</td>
<td>1 tablespoon, picture 3i</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>ad In reduced calorie mayonnaise (e.g. coleslaw)</td>
<td>1 tablespoon, picture 3i</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>cheese</td>
<td>2 tablespoons, picture 5c</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>onions (green and/or runner)</td>
<td>2 tablespoons, picture 7f</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>kidney beans</td>
<td>2 tablespoons</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>kntils (cooked)</td>
<td>2 tablespoons</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>kney beans (cooked)</td>
<td>2 tablespoons</td>
<td>S M L XL</td>
<td></td>
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</tbody>
</table>

**How often do you eat dressings and sauces?**

<table>
<thead>
<tr>
<th>Dressing</th>
<th>medium portion</th>
<th>your portion size per day</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td>mayonnaise</td>
<td>1 tablespoon, picture 3j</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>aiad cream</td>
<td>1 tablespoon, picture 3j</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>alad cream (reduced calorie)</td>
<td>1 tablespoon, picture 3j</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>alad oil</td>
<td>1 tablespoon</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>rench dressing</td>
<td>1 tablespoon</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>Tomato ketchup</td>
<td>1 tablespoon</td>
<td>S M L XL</td>
<td></td>
</tr>
<tr>
<td>Brown sauce</td>
<td>1 tablespoon</td>
<td>S M L XL</td>
<td></td>
</tr>
</tbody>
</table>
How often do you eat potatoes, pasta and rice?

<table>
<thead>
<tr>
<th>Medium Portion</th>
<th>Your Portion Size</th>
<th>Per Day</th>
<th>Per Week</th>
<th>Per Month</th>
<th>Rarely/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>as (boiled and/or baked)</td>
<td>the size of a hen’s egg, picture 6b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>es (mashed and/or instant mashed)</td>
<td>2 heaped tablespoons, picture 5b</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>es (roast and/or fried)</td>
<td>the size of a hen’s egg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fried)</td>
<td>3 heaped tablespoons, picture 6f</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>’oven’, reduced fat)</td>
<td>3 heaped tablespoons, picture 6f</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(reduced fat)</td>
<td>1 small packet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(white and/or green, boiled)</td>
<td>5 level tablespoons, picture 4f or 4 heaped forkfuls, picture 5d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(wholemeal, boiled)</td>
<td>5 level tablespoons, picture 4f or 4 heaped forkfuls, picture 5d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>white, boiled)</td>
<td>5 heaped tablespoons, picture 4a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>brown, boiled)</td>
<td>5 heaped tablespoons, picture 4a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How often do you eat meat and vegetable dishes?

<table>
<thead>
<tr>
<th>Medium Portion</th>
<th>Your Portion Size</th>
<th>Per Day</th>
<th>Per Week</th>
<th>Per Month</th>
<th>Rarely/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>herd’s pie</td>
<td>3 tablespoons or 1 individual, picture 7e</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gne and/or ssaka (vegetarian)</td>
<td>4 tablespoons or 1 individual, picture 7a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gne and/or ssaka (meat)</td>
<td>4 tablespoons or 1 individual, picture 7a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>y (vegetable)</td>
<td>3 heaped tablespoons, picture 4b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>y (meat)</td>
<td>3 heaped tablespoons, picture 4b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gneese sauce</td>
<td>4 tablespoons, picture 5e</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a sauce (tomato based)</td>
<td>4 tablespoons, picture 4g</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>li con carne</td>
<td>4 tablespoons, picture 5e</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>1/2 of a thin base, 10 inch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>che or flan</td>
<td>1/2 of a whole, picture 3a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ve-sausage and/or vege-burger (grilled)</td>
<td>2 sausages, 2 thin or 1 quarter pounder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ve-sausage and/or vege-burger (fried)</td>
<td>2 sausages, 2 thin or 1 quarter pounder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>orn</td>
<td>4 tablespoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>u</td>
<td>4 tablespoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(textured vegetable protein)</td>
<td>4 tablespoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How often do you eat meat products?

<table>
<thead>
<tr>
<th>Item</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>M</td>
</tr>
<tr>
<td>Beef (pork, fried)</td>
<td>2 large or 4 chipolata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (pork, grilled)</td>
<td>2 large or 4 chipolata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (beef, fried)</td>
<td>2 large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (beef, grilled)</td>
<td>2 large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (reduced fat, fried)</td>
<td>2 large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (reduced fat, grilled)</td>
<td>2 large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red meat</td>
<td>1 thin slice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and/or ox tongue</td>
<td>3 thin slices, picture 3b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or 1 thick slice</td>
<td>picture 3c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gosling (pork, grilled)</td>
<td>2 large or 4 chipolata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gosling (beef, fried)</td>
<td>2 large</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mince</td>
<td>1 slice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or 1 dessert spoon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sausage rolls</td>
<td>2 medium, picture 3d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crumpets</td>
<td>1 individual, picture 3c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flapjack</td>
<td>1 individual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pastries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burgers (grilled)</td>
<td>2 thin or 1 quarter pounder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burgers (fried)</td>
<td>2 thin or 1 quarter pounder</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How often do you eat sugar, preserves and spreads?

<table>
<thead>
<tr>
<th>Item</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>M</td>
</tr>
<tr>
<td>Sugar (in tea and/or coffee)</td>
<td>1 teaspoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar (on breakfast cereal)</td>
<td>1 teaspoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preserves and/or jam</td>
<td>1 heaped teaspoon, picture 1l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marmalade</td>
<td>1 heaped teaspoon, picture 1l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nut butter</td>
<td>1 teaspoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yeast extract (e.g. Marmite)</td>
<td>1 teaspoon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honey</td>
<td>1 heaped teaspoon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**How often do you eat fish?**

<table>
<thead>
<tr>
<th>Fish Type</th>
<th>Medium Portion</th>
<th>Your Portion Size</th>
<th>Per Day</th>
<th>Per Week</th>
<th>Per Month</th>
<th>Rarely/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cod and/or tilapia (fried in batter or crumbs)</td>
<td>1 fillet, picture 6b</td>
<td><strong>S</strong></td>
<td><strong>M</strong></td>
<td><strong>L</strong></td>
<td><strong>XL</strong></td>
<td></td>
</tr>
<tr>
<td>Cod and/or cod (grilled)</td>
<td>1 fillet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cod and/or cod (poached)</td>
<td>1 fillet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish fingers (grilled)</td>
<td>2 fish fingers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish fingers (fried)</td>
<td>2 fish fingers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haddock and/or sardines</td>
<td>2 small fish or fillets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onion</td>
<td>2 tablespoons or 1/2 of a tin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grilled salmon, please describe your portion size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grilled in bread crumbs, please describe your portion size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver kidney and/or heart, please describe your portion size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How often do you eat meat?**

<table>
<thead>
<tr>
<th>Meat Type</th>
<th>Medium Portion</th>
<th>Your Portion Size</th>
<th>Per Day</th>
<th>Per Week</th>
<th>Per Month</th>
<th>Rarely/Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef (roast and/or sirloin, lean only)</td>
<td>4 thin slices, picture 2a or 1 small steak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef (roast and/or sirloin, lean and fat)</td>
<td>4 thin slices, picture 2a or 1 small steak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roast casserole gravy</td>
<td>3 tablespoons, picture 6a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef mince</td>
<td>4 tablespoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pork and/or gammon ham and/or chops, lean only</td>
<td>4 thin slices or 1 large chop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pork and/or gammon ham and/or chops, lean and fat</td>
<td>4 thin slices or 1 large chop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rib (roast and/or chops, lean only)</td>
<td>4 thin slices or 1 large chop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rib (roast and/or chops, lean and fat)</td>
<td>4 thin slices or 1 large chop</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rasher</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rasher</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle bacon (grilled)</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle bacon (fried)</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streaky bacon (grilled)</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streaky bacon (fried)</td>
<td>2 rashers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Liver kidney and/or heart, please describe your portion size.
### How often do you eat cakes and biscuits?

<table>
<thead>
<tr>
<th>Your Portion Size</th>
<th>per Day</th>
<th>per Week</th>
<th>per Month</th>
<th>rarely/never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium Portion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olive and/or sponge cake (no filling or icing)</td>
<td>¼ of a cake, picture 10c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olive and/or sponge cake (filling and icing)</td>
<td>¼ of a cake, picture 10c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cake (rich)</td>
<td>1 medium slice, 3 fingers wide, picture 10c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cake (light)</td>
<td>1 medium slice, 3 fingers wide, picture 10c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pastry</td>
<td>1/6 of a gateau, picture 10c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essekake</td>
<td>1/6 of a cake, picture 8a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toffee</td>
<td>2 heaped tablespoons, picture 8b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pie</td>
<td>1/6 of a pie</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flan filling</td>
<td>1 individual or 1/3 of a tin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crème</td>
<td>2 scoops</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nish pastry</td>
<td>1 pastry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doughnut</td>
<td>1 doughnut</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate bar</td>
<td>1 bar</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate covered, e.g. Club, Penguin</td>
<td>1 biscuit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digestive, coated with chocolate</td>
<td>2 biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain, wholegrain, e.g. digestive</td>
<td>2 biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain, sweet, e.g. shortcake, Lincoln</td>
<td>2 biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain, semi-sweet, e.g. Rich Tea, Marie</td>
<td>2 biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet, filled, e.g. Bourbon</td>
<td>2 biscuits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How often do you eat poultry?

<table>
<thead>
<tr>
<th>Your Portion Size</th>
<th>per Day</th>
<th>per Week</th>
<th>per Month</th>
<th>rarely/never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium Portion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken (roast, including skin)</td>
<td>the edible portion of the thigh joint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken (roast, without skin)</td>
<td>the edible portion of the thigh joint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken casserole</td>
<td>3 tablespoons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicken (steaks, in bread crumbs)</td>
<td>1 large steak</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey (roast, white meat)</td>
<td>2 large thin slices, picture 2a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey (roast, meat and skin)</td>
<td>2 large thin slices, picture 2a</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### How often do you eat eggs?

<table>
<thead>
<tr>
<th>How often?</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>per day</td>
<td>per week</td>
</tr>
<tr>
<td>oiled and/or poached)</td>
<td>1 egg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>crumbled and/or omelette, with milk and butter)</td>
<td>1 egg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>crumbled without milk)</td>
<td>1 egg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fried)</td>
<td>1 egg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How often do you eat dairy products?

<table>
<thead>
<tr>
<th>How often?</th>
<th>medium portion</th>
<th>your portion size</th>
<th>How often?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>per day</td>
<td>per week</td>
</tr>
<tr>
<td>i.e. milk (on breakfast cereal)</td>
<td>1 cupful, picture 1b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-skimmed milk (on breakfast cereal)</td>
<td>1 cupful, picture 1b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skimmed milk (on breakfast cereal)</td>
<td>1 cupful, picture 1b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ole milk (in tea and/or coffee)</td>
<td>2 tablespoons, picture 1c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-skimmed milk (tea and/or coffee)</td>
<td>2 tablespoons, picture 1c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>skimmed milk (in tea and/or coffee)</td>
<td>2 tablespoons, picture 1c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ole milk (as a drink)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-skimmed milk (as a drink)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>immed milk (as a drink)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.e. milk (made with whole milk)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.e. milk (made with semi-skimmed milk)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.e. milk (made with skimmed milk)</td>
<td>1/3 of a pint or 1 glass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>double cream on fruit and/or pudding)</td>
<td>1 tablespoon, picture 8e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>double cream on fruit and/or pudding)</td>
<td>1 tablespoon, picture 8e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whipping cream on fruit and/or pudding)</td>
<td>1 tablespoon, picture 8e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk pudding e.g. rice pudding, semolina)</td>
<td>4 tablespoons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Custard</td>
<td>4 tablespoons, picture 8d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt (full fat, plain)</td>
<td>1 small carton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt (full fat, fruit)</td>
<td>1 small carton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt (low fat, plain)</td>
<td>1 small carton</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yogurt (low fat, fruit)</td>
<td>1 small carton</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 3

Food Groups within the Dietary Variety Score (DVS)

Based on the Food Frequency Questionnaire (Geekie, 1999) and Gregory et al (1990)

BREAD
- White bread, wholemeal bread, pitta
- Granary/high fibre
- Croissant
- Ryvita
- Cream Crackers

CEREAL
- Wheat based cereal e.g. corn flakes, shredded wheat
- Bran based e.g. bran flakes
- Oat based e.g. Porridge Oats

FATS
- Butter, margarine or spread

FRUIT
- Apple
- Pear
- Orange/Satsuma
- Grapefruit
- Banana
- Grapes
- Tinned fruit
- Fruit salad (home made)
- Orange Juice
- Apple Juice

DRIED FRUIT & NUTS
- Prunes/apricots
- Raisins/currents
- Peanuts/cashews
- Walnuts/brazil

CHEESE
- Cheddar
- Camembert/brie
- Danish blue/Stilton
- Cream cheese
- Cottage cheese
VEGETABLES
- Cabbage
- Brussels/broccoli
- Carrots
- Tomatoes
- Parsnips/Swede
- Lettuce
- Cucumber
- Coleslaw
- Peas
- Beans
- Baked Beans
- Lentils
- Kidney Beans

DRESSINGS & SAUCES
- Mayonnaise
- Salad Cream
- Oil
- French Dressing
- Tomato Ketchup
- Brown Sauce

POTATOES, PASTA, RICE
- Potatoes
- Crisps
- Pasta
- Rice

MEAT & VEGETABLES DISHES
- Shepherds pie/Chilli
- Lasagne/Moussaka
- Pizza, Quiche & Flan
- Vegetarian Products e.g. tofu/quorn

MEAT PRODUCTS
- Pork sausages
- Beef sausages
- Corned Beef/Beef products
- Ham/Tongue/Pork products
- Pate
- Other e.g. sausage rolls

SUGARS, PRESERVES, SNACKS
- Sugar
- Honey/preserves/marmalade
- Peanut butter
- Marmite/Bovril

FISH
- White fish
- Oily fish
- Scampi/prawns
MEAT
- Beef
- Pork
- Lamb
- Liver

CAKES, BISCUITS, PUDDINGS
- Cake
- Puddings/pies
- Biscuits

POULTRY
- Chicken
- Turkey

EGGS

DAIRY PRODUCTS
- Milk & Milk products
- Yoghurt
- Ice cream
**APPENDIX 4**

**DEFINITION OF A HEALTHY DIET**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit &amp; Vegetables</td>
<td>79</td>
</tr>
<tr>
<td>Low salt/fat/sugar</td>
<td>12</td>
</tr>
<tr>
<td>Eating in Moderation</td>
<td>5</td>
</tr>
<tr>
<td>Homemade Food</td>
<td>7</td>
</tr>
<tr>
<td>What you enjoy</td>
<td>1</td>
</tr>
<tr>
<td>Variety</td>
<td>2</td>
</tr>
<tr>
<td>Healthy eating brands</td>
<td>1</td>
</tr>
<tr>
<td>Don't Know</td>
<td>5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>112</td>
</tr>
</tbody>
</table>

*Figure A4.1 - Responses given to Question 34: What do you understand by the term Healthy eating?*

**DEFINITION OF A TRADITIONAL ENGLISH FOOD**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and vegetables</td>
<td>14</td>
</tr>
<tr>
<td>Roast dinners</td>
<td>45</td>
</tr>
<tr>
<td>No 'foreign' (pasta/rice)</td>
<td>3</td>
</tr>
<tr>
<td>Fry ups</td>
<td>7</td>
</tr>
<tr>
<td>Old fashioned e.g. puddings/pies</td>
<td>6</td>
</tr>
<tr>
<td>Homemade/Home grown</td>
<td>24</td>
</tr>
<tr>
<td>No such thing</td>
<td>5</td>
</tr>
<tr>
<td>Don't know</td>
<td>8</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>112</td>
</tr>
</tbody>
</table>

*Figure A4.2 - Responses given to Question 35: What do you understand by the term traditional English food?*
### DEFINITION OF HEALTHY FATS

<table>
<thead>
<tr>
<th>Definition</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>No fats are healthy</td>
<td>49</td>
</tr>
<tr>
<td>Eating a bit/moderation in fat</td>
<td>11</td>
</tr>
<tr>
<td>Vegetable oils/margarine</td>
<td>29</td>
</tr>
<tr>
<td>Oily fish</td>
<td>4</td>
</tr>
<tr>
<td>Don't like any fat</td>
<td>1</td>
</tr>
<tr>
<td>Don't know</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>112</td>
</tr>
</tbody>
</table>

Figure A4.3 – Responses given to Question 36: What do you understand by the term healthy fat?

### MAIN FACTOR CONSIDERED WHEN CHOOSING FOODS TO PURCHASE

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value for Money</td>
<td>14</td>
</tr>
<tr>
<td>Taste</td>
<td>43</td>
</tr>
<tr>
<td>Price</td>
<td>5</td>
</tr>
<tr>
<td>Healthy foods</td>
<td>7</td>
</tr>
<tr>
<td>Quality</td>
<td>6</td>
</tr>
<tr>
<td>Variety</td>
<td>16</td>
</tr>
<tr>
<td>What can get/Access</td>
<td>7</td>
</tr>
<tr>
<td>Advice from health professionals</td>
<td>1</td>
</tr>
<tr>
<td>What I like</td>
<td>1</td>
</tr>
<tr>
<td>Don't know</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>112</td>
</tr>
</tbody>
</table>

Figure A4.4 – Responses given to Question 38: What do you think is the most important thing to you when you are making choices about food?
<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shop around to get value/price</td>
<td>2</td>
</tr>
<tr>
<td>Gets everything at once</td>
<td>3</td>
</tr>
<tr>
<td>Can’t carry much</td>
<td>7</td>
</tr>
<tr>
<td>Routine</td>
<td>15</td>
</tr>
<tr>
<td>Use Dial –a-ride</td>
<td>5</td>
</tr>
<tr>
<td>Rely on friend or relative</td>
<td>23</td>
</tr>
<tr>
<td>Shop when need things</td>
<td>4</td>
</tr>
<tr>
<td>Uses local shops/shops are close</td>
<td>4</td>
</tr>
<tr>
<td>Social interaction</td>
<td>7</td>
</tr>
<tr>
<td>No reason</td>
<td>42</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>112</strong></td>
</tr>
</tbody>
</table>

*Figure A4.5 – Responses to questions 10: How often do you shop for food? Why?*
APPENDIX 5

Cross tabulations examining the influence of socio-demographic factors on store choice and behavioural intentions.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>14</td>
<td>3</td>
<td>11</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>19</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>NEITHER</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.1 Cross tabulations to demonstrate the relationship between 5 Class Socio Economic Class and respondents stated intention to eat a healthy diet in the next month.
Table A5.2 Cross tabulations to demonstrate the relationship between 5 Class Socio Economic Class and respondents stated intention to eat a fruit and vegetables in the next month.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>17</td>
<td>3</td>
<td>12</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>21</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>NEITHER</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.3 Cross tabulations to demonstrate the relationship between 5 Class Socio Economic Class and respondents stated intention to eat a low fat diet in the next month.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>6</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>13</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>NEITHER</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>20</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table A5.4 Cross tabulations to demonstrate the relationship between gender and respondents' stated intention to eat a healthy diet in the next month.

<table>
<thead>
<tr>
<th>GENDER</th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>5</td>
<td>51</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>NEITHER</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.4 Cross tabulations to demonstrate the relationship between gender and respondents' stated intention to eat fruit and vegetables in the next month.

<table>
<thead>
<tr>
<th>GENDER</th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>7</td>
<td>59</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>NEITHER</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### GENDER

<table>
<thead>
<tr>
<th>INTENTION TO EAT A LOW FAT DIET</th>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>-</td>
<td>30</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>NEITHER</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.4 Cross tabulations to demonstrate the relationship between gender and respondents stated intention to eat a low fat diet in the next month.

### MARITAL STATUS

<table>
<thead>
<tr>
<th>INTENTION TO EAT A HEALTHY DIET</th>
<th>Single</th>
<th>Married</th>
<th>Divorced/ Separated</th>
<th>Widowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>3</td>
<td>8</td>
<td>-</td>
<td>45</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>NEITHER</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.4 Cross tabulations to demonstrate the relationship between marital status and respondents stated intention to eat a healthy diet in the next month.
<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>Single</th>
<th>Married</th>
<th>Divorced/Separated</th>
<th>Widowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>1</td>
<td>8</td>
<td>-</td>
<td>57</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>NEITHER</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.4 Cross tabulations to demonstrate the relationship between marital status and respondents' stated intention to eat fruit and vegetables in the next month.

<table>
<thead>
<tr>
<th>MARITAL STATUS</th>
<th>Single</th>
<th>Married</th>
<th>Divorced/Separated</th>
<th>Widowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINITELY DO</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>PROBABLY DO</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>NEITHER</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>PROBABLY DO NOT</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>DEFINITELY DO NOT</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table A5.4 Cross tabulations to demonstrate the relationship between marital status and respondents' stated intention to eat a low fat diet in the next month.
APPENDIX 6

Additional Comments made by respondents to the face to face questionnaire:
(SM = supermarket, TC is town centre)

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The stores are often short staffed</td>
</tr>
<tr>
<td></td>
<td>Trolleys are heavy and difficult to manoeuvre</td>
</tr>
<tr>
<td>2</td>
<td>Can’t reach or see over shelves.</td>
</tr>
<tr>
<td></td>
<td>Independents can’t compete with SMs on price</td>
</tr>
<tr>
<td>3</td>
<td>Can’t reach shelves in SM, Burpham store too big</td>
</tr>
<tr>
<td></td>
<td>Wants small local stores – local shops are now a beauty</td>
</tr>
<tr>
<td>4</td>
<td>Salon, car park and estate agent. Losing local community</td>
</tr>
<tr>
<td>5</td>
<td>Stoke Road, removed bus service to town for 15 weeks due to road works and offered no alternatives. Had to rely on others to get shopping.</td>
</tr>
<tr>
<td>6</td>
<td>Shuttle bus in town is good; Aisles need to be wider in TC Sainsbury.</td>
</tr>
<tr>
<td>7</td>
<td>Misses local shops as was friends with owners</td>
</tr>
<tr>
<td>8</td>
<td>Misses out on special offers as portions to big</td>
</tr>
<tr>
<td></td>
<td>Very few choices in where to shop, but quite happy.</td>
</tr>
<tr>
<td>9</td>
<td>Seat have been taken out of High street, can’t stop for a rest.</td>
</tr>
<tr>
<td>10</td>
<td>TC Sainsbury is a dead loss, no room, poorly stocked.</td>
</tr>
<tr>
<td></td>
<td>Local shops are too expensive, can’t afford to shop anywhere else.</td>
</tr>
<tr>
<td>11</td>
<td>Shelves too high in SM. Daughter takes me wherever I want to go.</td>
</tr>
<tr>
<td>12</td>
<td>High shelves, but suppose have to fit everything in.</td>
</tr>
<tr>
<td></td>
<td>hard to get to SMs if don’t have a car.</td>
</tr>
<tr>
<td>13</td>
<td>3 for 2 deals older people lose out can share BOGOF with friends/relatives.</td>
</tr>
<tr>
<td></td>
<td>Guildford is badly planned with bus station at opposite end of Hill to SM.</td>
</tr>
<tr>
<td></td>
<td>Bus to Southway (local shops) hasn’t run for 10 years. Can’t get to shops, have to go to town or pay £3/4 for a taxi.</td>
</tr>
<tr>
<td></td>
<td>Older people living in Southway rely on local shops. Rely on Buses, but badly run and no seat/shelter.</td>
</tr>
<tr>
<td></td>
<td>Dial-a-ride is £2 wouldn’t use if others didn’t as pay more for the social aspects.</td>
</tr>
<tr>
<td>24</td>
<td>No real choice, local shops are too expensive, can’t get anywhere else.</td>
</tr>
<tr>
<td>33</td>
<td>Can get out to do own food shopping and likes comparing Prices/stores.</td>
</tr>
</tbody>
</table>
Comment:

Can pay for services (e.g. someone to take you shopping) but they are infrequent and expensive.

I get lost in a SM as they keep moving things. Don’t use cafe anymore as its changed and they only do coffee.

The one-stop in Ripley lacks variety and fruit and vegetables. Can’t get fresh meat, day centre shops are too expensive.

There are a lot of very poor older people in Ripley.

I use the Iceland catalogue. You can order one day and they deliver the next. They bring it to the kitchen as well.

I get potatoes, bread and butter from the milkman. I can’t get fresh fruit and vegetables unless my friend is going to Tesco, so I get frozen.

There are very little fruit and vegetables in the Londis store.

Local shops like green grocers and butchers are few and far between, this reduces choice a lot.

SMs have too many trolleys in the aisles. Its difficult if you’re in a wheelchair. The Sainsbury café has changed to Starbucks, the coffee is cold and expensive (~£1.75), it used to be 95p and we could get food.

SMs offer a bigger range and locals are too expensive.

Local shops are too expensive

Shelves are hard to reach. Packers at the till are good.

Sainsbury used to have a nice café, now it’s a Starbucks With horrible expensive coffee and no food.

SMs don’t cater for older people, the portions are too big and they always run out of things.

SMs are more convenient. Local shops have to charge more.

SMs should still be cheaper.

Shares BOGOF with daughter, enjoys coffee and a chat.

SMs offer a bigger range, but there is nowhere else anyway.

There are not enough deals or packages for older people at SMs

Local shops are more expensive, but they need to survive.

We need easier access to food shops.

The cafes are good as they make shopping less of a chore if you can go with friends.

The Sainsbury café is now a Starbucks which is expensive and sells horrible coffee.

The shelves are too high, but I can have a coffee and chat with the others using Dial-a-ride.

The Sainsbury café was good until it was replaced with Starbucks, now it’s expensive. I share deals with a friend.

Starbucks is expensive.

The shelves are too high I can’t reach up and down. The food is often not priced, especially frozen food. The SM is often stocked out and I can’t get what I need.

Local shops are very much more expensive than SMs.
Respondent: 85
Comment: The changes to SMs are bad. They are unfriendly. I use the fish man every Wednesday for fish, meat and fruit/vegetables.

88
Ash has a one-stop and an Alldays, but nothing to compare to as the prices are the same. I have to use my own trolley to carry baskets as they don't have trolleys. It’s difficult to reach some things. They could do with bread and meat in smaller portions.

93
Food is not cheap when you’re buying for one. Big packages are a waste. They say SMs are cheaper, but not if the food goes off before you can eat it.

97
Sainsbury has gone downhill since the café changed to Starbucks.

99
Trolley sizes are fine, but they’re hard to manoeuvre. The SM never opens additional till and there are always big queues. SMs are bigger, with more range and cheaper.

100
Budgens in Ripley has stopped doing one person packages.

102
One-stop in Ripley is often stocked out. They wash the floor in the middle of the day making it slippery and difficult to get around the shop.

104
Ripley has very poor provision; I would like to see more choice. When I first came to Ripley they had a butcher, baker and a greengrocer. One-stop is all that’s left and its poor with no fruit and vegetables or fresh food.

106
I like to be able to choose my own food. Asda have reasonably wide aisles and sell pretty much anything I want. There is a post office, chemist and café. The café is not as good now, but you can get fried fish and chips for £1.67. It’s very difficult to find packets for one person. With some food like bacon you can get a two pack and put one in the freezer which is quite good value.

109
Small SMs like Alldays are still more expensive than Sainsbury or Tesco. Deals aren’t aimed at older people and there’s very little fruit and vegetables. It’s hard to get round the shop as there’s always things in the aisles.

110
There’s not much choice in local shops.

112
I have coffee when I’ve done my shopping with the people on the dial-a-ride bus. It takes time to pick people up. You have to book in advance, it costs money and you can’t always get a place. Then my daughter has to take me.
Group 1

Rita and May (Sisters) and Pauline (A & B)

A respondent from the first set of interviews (Pauline) was also present and encouraged to comment if she thought of any issues she wanted to raise.

Interviewer: First of all tell me a little bit about yourself and where you shop.

May: This is Rita Hampshire and I’m May and we’re sisters. We don’t live together, Rit lives in Bramley and I live in Farncombe, we come here to meet up.

I can’t get to the shops now cos I’ve got sciatica and I can’t stand in queues so Rit goes to do the food shopping.

Interviewer: So, Rita, where do you shop and how do you get there?

Rita: I walk to the shops.

Interviewer: Any particular ones you use?

Rita: Sainsbury.

Interviewer: Which one is that?

Rita: The one up the High Street, I get the bus into town.

Interviewer: What are your reasons for shopping there?

Rita: There aren’t any others, not in Guildford only on the side of Guildford.

May: Then it means another bus you see. This is just the closest one from Bramley, the others are just too difficult to get to aren’t they?

Rita nods.

Rita: We have a small village shop, but it’s more expensive and they don’t sell things that they do in the big shops.

Interviewer: So, what do you find difficult about shopping?

Rita: Walking up the hill!
Interviewer: A lot of hills round here aren’t there? Anything else?

Rita: Well, it’s all right, I take my time, but I really just wish they had another shop nearer to the bottom of the town. I do some shopping down the hill in Marks & Spencers, but it’s far too expensive to do much.

Interviewer: Nice food though! So, how often do you shop?

Rita: Three times a week. I come here three times and do a bit each time.

Interviewer: Good idea. When you’re in the shop, do you have any problems getting what you need?

Rita: Not really.

Interviewer: What about things like packages are they the right size?

Rita: Not always no, they do do individual or smaller packaging, but generally it seems to be getting bigger and bigger! Its this catering for the family, but it doesn’t do a single person any good.

Interviewer: Do you find this has an effect on how much you buy? Getting the bus, it must be less convenient for you?

Rita: Well, this is why I have to go three times a week……

Interviewer: What do you like about when you go shopping, do you find anything enjoyable?

Rita: No, I used to enjoy it, but I don’t any longer it’s a chore.

May: Rita has to do my shopping too which makes it harder. She brings the shopping here and then we sort it out and I give her what I owe her.

Interviewer: What do you find the staff like? Are they helpful?

Rita: They’re very good really. The assistants at Sainsburys always come up to you and ask you how you are.

Interviewer: That’s nice isn’t it? What about things like shelving, people last week found it either too high or too low.

Rita: well, I’m tall so I’m alright with things like that.

Pauline: I’m not! I have to ask someone who’s passing if they can fetch things down for me!

Interviewer: What do you think of the idea that basic foods that everyone needs should all be found in one place in the shop?
Rita: I don’t have that problem, they don’t move things too often so I can generally find what I need quite easily, I just go to the same bits every week.

Interviewer: What could improve your shopping, making it easier or better for you?

Rita: Well, I don’t know, I mean I know where things are and they’re clearly signed.

Interviewer: Do you have a list which you follow and you go in and get that?

Rita: Absolutely!

Interviewer: Good idea, I should do that I always end up with 101 things I don’t need!

(Laughter).

Interviewer: So, if I put an idea to you. If you were given 5 minutes with a supermarket manager what would you ask them to change or improve?

May: I think it’s a real problem the cheque cards going through where the cash is.

Rita: Yes.

May: They ought to help you out.

Rita: They should have a till for cash only.

May: It’s a pain when you’re in a hurry, when there’s a couple in front of you with cheque cards it takes ages.

Interviewer: How did you find that with your sciatica?

May: This is why I don’t do my own shopping anymore. When it comes to the checkout I have to stand still and that makes my leg play up. I could do it if I walked straight through, but I still have to walk round the store and I can’t walk very far. I miss it.

Interviewer: Do you?

May: Well, I used to like walking around seeing what was going on and what was new, whether there was anything else I fancied, you know. I just can’t do it any more; it’s very difficult.

General Chat.

Rita: I tell you where I prefer shopping, that’s Waitrose, I sometimes go there when we need extra things and I’m not coming into town.

May: The aisles are bigger.
Interviewer: Where is this Waitrose?

May: Godalming. It is really better value I feel, because you may pay a bit more, but the quality is very nice, the vegetables and fruit are so much better. My friend goes in there to get me cat food as well. Do you know in the Waitrose, its 29p for a little tin and in the co-op round the corner, it’s 49p! And a couple of weeks ago they had an offer that if you bought a certain number (I think it was four or five) then you got 50p off. Sainsbury have stopped doing it, but it used to 39p in there, so Waitrose is definitely better.

Rita: There used to be a Waitrose in Guildford.

May: Yes, years ago that was.

Rita: In Woodbridge Road, where all those antique places are now.

May: And there was that Tescos as well, right in the centre. That was ideal, you just got off the bus and walked straight in, it was so near the bus stop. But of course when they built the shop the other side of Guildford they shut that one. That just leaves us with Sainsburys.

Pauline: And the nice Butcher is going up the hill as well, can’t afford it any more he said, so we haven’t got a butcher anymore.

May: Mind you we come in here and eat, Wednesday, Thursday, Friday so we only have to cater for ourselves over the weekend. Every other week I go over to Bramley and Rit comes to Famcombe. The tomorrow Rit’s over that way so we said we’d go to Godalming, then we can go to Waitrose! It’s so much better and of course they have that bar code reader thing, to make it quicker.

Interviewer: Do you use that?

May: Goodness no (laughs) wouldn’t know how to!

Interviewer: Its quite a good way of working out how much you’re spending as you go.

(Explains how they work and how to use them).

Interviewer: Well, thank you very much for your time ladies.

May: Is that everything?

Interviewer: Well, provided we’ve covered everything you want to mention.

Rita: Have you heard anything about that new bus stop? Its meant to be going up North Street.
May: That would be a great help, it’d go up the Street and would stop at the Sainsbury.

Interviewer: Is it just for the Supermarket?

May: I’m not sure, but if it went from the bus station that would be great!

Interviewer: Well I’ll try and find out a bit more about that. Anything else?

May: No I think we’ve exhausted this subject!

Group 2

Edith and Mary (C & D)

Interviewer: How do you get your food shopping?

Edith: Well, I’m 95 and Mary’s 94 so we can’t do any of that for ourselves, we both have someone who does our shopping for us.

Interviewer: Do you find that when someone else shops for you your choice is more restricted?

Edith: Well, you’ve got to have what they think you’d like. Now the girl that does mine, she’s very, very good. She knows pretty much what I like. Sometimes she’ll bring things that you don’t want. Still you’ve got to be grateful for what you get. You’ve got to be thankful for so many things now a days.

Mary; I’ve got a friend who does my shop and gets my pension on a Monday, she does so much for me.

(Thanks the group and moves on)
Group 3

Grace & Betty (E & F)

Grace: Before you say anything I’d like to say that we want another food store in the town. Lower down, because Sainsbury is right up the top and you’ve got to walk right up the hill, right up the end of the High Street and then bring all your shopping back. So we want another food shop, well it’s the only food shop we’ve got; we had ever so many once didn’t we? They’ve gradually taken them away one by one, they don’t tell you they’re going to either.

Interviewer: Do you shop at the Sainsbury at the moment?

Grace: Someone shops for me.

Betty: Me too.

Interviewer: Where do they go?

Grace: Sainsbury.

Betty: Tesco, women who does my cleaning she does my shopping for me.

Interviewer: How do you find it when someone else does your shopping for you? Do you get everything you need still?

Grace: Oh yes, they’re very good aren’t they?

Betty agrees.

Interviewer: What do you think about the quality of the food you get from these stores.

Betty: Oh very good, both Sainsbury and Tesco are good.

Interviewer: So, tell me about the changes that have happened in Guildford over the years.

Betty: Well, I’ve lived in Guildford all my life, I was born in Guildford. There’s been too much change. My sister said that when she came to stay. She said they’d ruined Guildford all together with all these offices they’ve put up and nobody wants them.

Grace: Its true it’s such a waste. And there used to be that lovely Tesco on the High Street, straight off the bus! And now there’s the friary and there’s nothing.

Betty: Well, they’ve taken them all out the middle and put them all round the edge as far as I can see. What use is that to those of us who don’t have cars? I can’t get out at all, I can hardly walk, hopefully they’ll put some shops back in.
Grace: I hope so too! The markets gone as well. There used to be a big old market on North Street it was wonderful. You could get nearly everything you needed. I’ve been here thirty years since 1969 and it’s changed absolutely. It’s not even the same place. It was a country town before wasn’t it?

Betty: Yes, I grew up in Chapel Street, I was born there and it’s all altered now. My house I was in, is now a wireless shop.

Grace: You see there’s still the Marks & Spencer, but that’s too pricey for us pensioners.

Betty: They’re expensive, I can’t afford them.

**Group 4**

**Nora, Pauline and May (G, H & I)**

So, I’m going to ask you a bit about your where you shop and why and you bring up anything you like to do with the questions ok?

First of all where do you shop for food?

_Nora:_ I do all my own shopping and I’m 90 years old! I use the Dial - a - Ride service and they take me to Tesco across the way once a week.

_Pauline:_ I only get to shop once a fortnight, but my friend takes me so it’s much easier and I can get enough to tide me over.

_Interviewer:_ Where do you go Pauline?

_Pauline:_ That big Sainsbury’s in Burpham I can get everything I need.

_May:_ Well, I only live round the corner (Haydon Place) so I’m practically on top of the Town Centre. I walk to the Sainsbury at the top of the High Street.

OK, so sounds like you’ve all got it organised! Can you tell me what your reasons are for shopping where you do?

_Pauline:_ Well, my friend goes to get her shopping at the same time and she’s doing me a favour really, so I just go where she does, no other reason.

_Nora:_ It’s the same for me I suppose, Dial – a – Ride only go to Tesco and because of that so do I! Mind you I don’t like Sainsbury, particularly the meat it’s very stringy so I would rather go to Tesco anyway.

_Interviewer:_ Right we’ll look at that again in a moment, but May what are you reasons for shopping where you do?
May: Well' its close isn’t it? And it’s good exercise for me.

Nora: She’s always on the go this one, rushing around!

May: Yes, well, it keeps me young doesn’t it?! (Laughs)

Interviewer: getting back to what you were saying Nora about your preference for Tesco, can anyone think of any other things which make you want to shop where you do or not shop somewhere else?

Pauline: To be honest it’s all pretty much the same isn’t it? As long as I can get the few bits I need it doesn’t make much difference to me. Although it does make a difference, having someone to go with.

Nora: Same for me, if I didn’t have to go to Tesco I probably still would, just for the meat.

May: Closeness is the only consideration for me.

Nora: When I was your age May, it was for me too, but now I have to think about the best way all round to get what I need.

(May excuses herself she has a previous appointment to deliver Meals on Wheels)

Interviewer: Right carrying on if we may, what about problems when you’re shopping? Do you find anything difficult?

Nora: The shelves are too high. I’ve hurt my shoulder and can only stretch up to here (lifts arm) so anything above shoulder height is impossible to get. I often have to ask passing people to help me. They try to fit so much in they don’t think that people won’t be able to get to it.

Pauline: I have the same problem, but for me its because I’m too short anyway! I always have been smaller, but it seems much more of a problem as I get older.

Interviewer: What about other aspects of you shopping and what you buy?

Nora: Well, I never understand these people who go on about package size. That’s what I like about these places, if I want one potato, I’Il buy one potato or if I wanted a bag of twenty there it would be!

Pauline: Exactly and the individual things are good enough value for money so you don’t feel like your wasting it which I would if they only had big bags.

Nora: And the staff are helpful if you can’t find anything, they actually take me to the section I need which makes it much easier. Basically we’ve got shopping down to a fine art!

Interviewer: I can see that! So, what do you enjoy about shopping?
Nora: Well, it gets you out doesn't it? Listen, on Monday I do my cleaning, on Tuesday I get my shopping, Wednesday I sort out my bills and do my correspondence, Thursday and Friday I'm here and on Sunday I do my washing. That's what it's about keeping yourself occupied. I've been on my own for 15 years and I don't see how you can get lonely if you've always got something to do. Sometimes its better than others. Pauline rings me, don't you?

Pauline: Oh I'm always on the phone me, I'm terrible!

Nora: And my children phone to make sure I'm OK, but they live abroad, my daughter in America (Chicago) and my son in South Africa in fact I'm going there for five weeks over Christmas!

Interviewer: Well, it sounds like you don't have a minute to yourself, but how does shopping fit into that?

Nora: Well, I have a nice man who picks me up at my door and then carries my bags out when I've finished and then takes me home and carries all my shopping into the house, its really no trouble, he's so helpful and nice. Plus the bus is always full so it's a good time to meet up with people. They've got a nice coffee shop too which sells that nice frothy coffee what do you call it?

Interviewer: cappuccino?

Nora: That's right, its lovely! So, I have my little routine to keep me occupied and shopping has become a part of that.

Interviewer: What about you Pauline?

Pauline: Well as I said I only go shopping once every two weeks, but I get to spend some time with my friend. The shop doesn't have a coffee place, but she's busy so we just shop and leave I'm grateful that she takes me as I know she's a very busy person.

Nora: Oh yes, you're always telling me about her rushing around. That's all people seem to do these days. I must tell you though about my experience with the fire..................

Talks about having a fire in her house and the fireman and police involved.

Interviewer: (after about 5 minutes) Sounds like an adventure! Can I just ask you a couple more questions about shopping though?

Nora and Pauline laugh!

Pauline: Well you're persistent I'll give you that! Go for it!

Nora: Fire away!
Interviewer: (laughs) I just want to ask what could improve your shopping experience?

Nora: Are you taking this back to the powers that be then?

Interviewer: Well, tell me what you need and you never know!

Nora: It’s not to do with food as such, but it’s a real pain that they don’t do some things in smaller packages. Things like batteries. Why should I need to buy four or even two if I only want one? It drives me mad!

Pauline: And bulbs! I always end up giving them to other people, as I don’t use them up very quickly. Or I forget I have them. It’s such a waste.

Nora: Soaps another one, five bars at once! It’s like one for the days of the week! And this three for the price of two is no good for us we just end up with mountains of things so we don’t bother. We lose out on the value, because we don’t use as much.

Interviewer: OK then keeping that in mind, if you have five minutes with a supermarket manager what would you say?

Nora: Well, the package size is down to the manufacturer isn’t it? Other than the problem with the shelf height, and there’s always helpful staff around to ask about that, they seems to have thought of everything.

Interviewer: There’s nothing you would want changing?

Pauline: I agree as long as I can get everything I need that’s all I ask for and there’s always plenty of staff around to ask.

Interviewer: Great thanks very much for you time ladies.

Nora: Is that everything?

Interviewer: Can you think of anything else that you’d like to bring up?

Nora: No, we’ve done pretty well I’d say.

Pauline: Yes.

Interviewer: Well, thanks again.
Sid, Betty and Sadie (J, K & L)

Interviewer: So, if you don’t mind I’ll ask some questions about your food shopping experiences?

Sid: What do you want to know?

Interviewer: Well, firstly where do you shop?

Sid: Up the road in the Sainsbury, I only live round the corner.

Interviewer: That’s the one on the High St?

Sid: Yes, I’m lucky I can get to the supermarket easily.

Sadie: I tend to go to the Larger Sainsbury in Burpham.

Interviewer: And what about you Betty?

Betty: Oh, I go to the Sainsbury in Woking, I don’t live in Guildford you see so it’s just as easy and I prefer it.

Interviewer: Can you tell me your reasons for shopping where you do?

Sadie: My niece takes me, so I just go wherever she’s going. I do like the Sainsbury’s though it’s got lots of choice and a good range of things.

Betty: My main reason is my eyes. I can’t see very well at all anymore, but I like to do my own shopping. I find Burpham too big, its overwhelming. The Woking shop is a much better size and they’ve got friendly assistants. The narrower aisles mean that I can find things more easily and steer my trolley.

Sid: Those aisles are the very reason I don’t like the Woking store! For me, the store is just easier to get to than any others are and it’s good exercise. Mind you I used to go two or three times a week, partly just for the walk, but now I find the walk up the hill a bit much so I only go once a week.

Interviewer: OK on a slightly different note, what problems do you have when you’re shopping for food?

Sid: Well, like I said the aisles are too narrow!

Betty, But that’s better for someone like me.

Interviewer: Well, that’s what I’m here for everyone has different needs and I want to find out how well, they’re catered for. What else?
Sadie: I find the packaging a problem, I mean the size.

Sid: Me too how much do they think we eat? I have to carry all these things and I can’t manage as much as I used too, it’s very frustrating.

Betty: I have that problem, I also find the shelving is either too high or too low, I can’t bend the way I used to.

The other two nod in agreement.

Interviewer: So what do you enjoy about shopping?

Betty: To be honest I don’t really enjoy shopping very much, it’s more of a necessity. I need food, so I go shopping. My one pleasure is being able to choose what I eat for myself.

Sid: That’s what makes the difference isn’t it? We’re still in control of those choices. I enjoy that.

Sadie: Yes, I find shopping slightly different. Because I go with my niece, it’s more of a social occasion. We try to go when it’s not so busy and she’s got some time and then we can chat and catch up as we go.

So, on that note what do you think could improve shopping for you?

Sadie: I would like them to cater more for specifically for older people. In mean like packaging and being able to get what I need more easily.

Sid: Exactly. And I’d like to be able to get to the stuff more easily, so I’m not always bending or twisting or standing on me head!

Interviewer: So, if you had 5 minutes with a supermarket manager what would you say?

Betty: I could do with some extra help packing at the pay place. Mind you they are ever so good. They help me take out the right money, because what with my eyes it can get a bit confusing.

Sadie: I never seem to be able to find things! Putting certain common foods which we all want in one area would be helpful, to save me trailing round to store.

Interviewer: Sid, anything to add?

Sid: No, they said it, putting stuff in one place would be a good idea. It would save time for us too, instead of hunting around!

Interviewer: Right, that’s it! Thank you very much for all your help.
Brief chat with a younger lady and husband before Bingo started.

Audrey (M)

Interviewer: Can I get you ideas and thoughts on a few questions to do with your food shopping?

Audrey: Absolutely, the project sounds interesting.

Interviewer: Firstly, where do you shop?

Audrey: The big Sainsbury over in Burpham.

Interviewer: What are your reasons for shopping there?

Audrey: Well, it’s convenience really. It’s easy to get to and they’ve got quite a lot of choice.

Bill: It’s got a good choice and range of things that we both like.

Interviewer: OK, so, what problems do you have when you are shopping?

Audrey: What apart from my husband? (laughs). I drive, so for me the main problem is lack of parking. Also the meat is very poor quality in that shop and the fish is very expensive. I get all my fish from a man who visits our street once a fortnight. Really it’s all expensive in these places.

Interviewer: What do you enjoy about it?

Audrey: Not a lot! It’s a chore like any other. I’d like the range if I thought the quality lived up to it.

Bill: It’s not so bad as we can go together, better to have someone to go with.

Interviewer: So, what could improve your shopping experience?

Audrey: I remember Guildford as it used to be. I much preferred it then. It was a real market town and you could get your groceries from the stalls you thought did those ones best. There was so much more choice and the quality was much better.

I remember also, Burpham used to have a butcher, bakers and grocers all in a row. I used to pop out for what I needed and settle at the end of the month. I could even phone in advance and they’d have my order ready.
I don’t think these shops were cheaper necessarily, but I have no objection to paying for quality. More than that I was friends with the people who ran them and it meant I enjoyed shopping.

At this point the interviewer ran out of time as other activities were beginning.
17 January 2001

Ms Lisa Wilson
PhD Researcher
School of Management Studies for the Service Sector
University of Surrey

Dear Ms Wilson

An investigation into the effect of food retail store location on food choice, access and diet in older people (ACE/2000/71/SMSSS)

I am writing to inform you that the Advisory Committee on Ethics has considered the above protocol and the subsequent information supplied and has approved it on the understanding that the Ethics Guidelines are observed.

This letter of approval relates only to the study specified in your research protocol (ACE/2000/71/SMSSS). The Committee should be notified of any changes to the proposal, any adverse reactions and if the study is terminated earlier than expected (with reasons). I enclose a copy of the Ethics Guidelines for your information.

Date of approval by the Advisory Committee on Ethics: 17 January 2001
Date of expiry of the Advisory Committee on Ethics approval: 16 January 2006

Please inform me when the research has been completed.

Yours sincerely

Catherine Ashbee (Mrs)
Secretary, University Advisory Committee on Ethics

cc: Professor L J King, Chairman, ACE
    Dr M Lumbers, Co-Investigator, SMSSS
    Dr A Alexander, Co-Investigator, SMSSS
I am a PhD student at the University of Surrey looking at how people over 65 in Guildford choose and buy their food.

My research asks people about their shopping habits and how easy they find it to get to food, as well as what they choose to eat. If you got involved in my project I would want to ask you questions like:

- How often do you shop for food?
- How do you get your food shopping?
- What is your supermarket like?
- Do you feel you eat healthily?
- What are your opinions on healthy eating?

My study would involve you answering two questionnaires, which together would take you just over 20 minutes to complete.

The first would ask you about your shopping habits, food choices and access to food and the second would ask you how often you eat certain types of food.

In addition I would ask a few volunteers to keep a diary of everything they eat for four days.

All information will be completely confidential and you would be free to withdraw from the study at any time.

I really hope that you will be prepared to help me. The report I will write will help to ensure that the needs of older people are catered for properly.

Lisa Wilson
Post Graduate Researcher
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