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Cranfield Institute of Technology

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A NUTRITIONAL QUALITY AUDIT FOR FOOD RETAILERS

DEPARTMENT OF SOCIAL POLICY

MPhil Thesis

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TITLE PAGE

CRANFIELD INSTITUTE OF TECHNOLOGY

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A Nutritional Quality Audit For Food Retailers

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ABSTRACT

There is increasing evidence that our diet is implicated in several common diseases including coronary heart disease, the single largest cause of death in Britain. The development and implementation of nutrition policies is seen as a way of modifying the diet of individuals and communities with the aim of reducing the prevalence of disease. To-date policy implementation has concentrated on health education aimed at the individual. The thesis suggests that this strategy has limited effectiveness and that health workers need to consider new strategies concerned with food availability.

The thesis proposes that the food retail sector is the 'gate keeper' of the nation's food supply and that, potentially it could do much to promote individual and community nutrition. After analysing the various issues involved the thesis suggests that retailers are not doing as much as they could be, and what they are doing might be ineffective. It is further suggested that a major obstacle to producing strategies aimed at retailers is that no method exists for quantifying their contributions.

It is proposed that a new research instrument is needed to enable health workers to develop such strategies and monitor their implementation. This research instrument would allow workers to undertake an objective, reliable and quantifiable method of analysing those areas that retailers are and are not using to promote nutrition. The thesis hypothesises that the ability to measure contributions might stimulate the retailer's competitive nature to do more.

The thesis therefore proposes and pilots a nutritional quality audit for food retailers. The audit is not a standard research instrument and therefore requires the development of new concepts and methods for its design. The thesis concludes by suggesting how this new instrument might be further developed and used to encourage food retailers to realise their potential for promoting individual and community nutrition.

CONTENTS

	Page
TITLE PAGE	
ABSTRACT	
CONTENTS	
INTRODUCTION	1
Chapter 1 - THE DEVELOPMENT AND STRUCTURE OF FOOD RETAILING IN BRITAIN	12
Chapter 2 - THE LINKS BETWEEN FOOD AND HEALTH	22
Chapter 3 - THE FOOD SECTOR'S RESPONSE TO THE NUTRITION DEBATE	38
Chapter 4 - METHODOLOGY AND DESIGN	52
Chapter 5 - A NUTRITIONAL QUALITY AUDIT FOR FOOD RETAILERS	79
Chapter 6 - PILOTING THE NUTRITIONAL QUALITY AUDIT	133
Chapter 7 - <u>THE AUDIT: POLICY IMPLICATIONS, EVALUATION AND USE.</u>	141
CONCLUSION	155
BIBLIOGRAPHICAL REFERENCES	160

INTRODUCTION

The recent interest amongst health professionals in the links between food and health reflects the growing national emphasis on disease prevention and positive health. It is now accepted that major improvements in health require the focus to be on preventive and not curative medicine which is suffering from diminishing returns (McKeown 1979).

Interest in the links between diet and health has shifted in emphasis over the last 25 years, from a concern with nutritional insufficiency to one of excess and imbalance. The last 5-10 years have seen an increased interest which is reflected by the media attention the subject now receives. The area of healthy food, once the domain of the 'crank', is now one of massive public demand. The issue has, however, attracted controversy, both professionals and the public have openly displayed the confusion surrounding the subject, Ford (1987) and Le Fanu (1987) being good examples. Whilst dietary habits change, they do so only slowly (MAFF 1987).

The need to develop a better national standard of nutrition is firmly founded in epidemiological science. Coronary heart disease (CHD) is the largest cause of death in Britain. In 1987 it killed over 150,000 people, many of these deaths were in the 50-65 age group (Health Education Council 1987). Whilst the problem is hardly confined to this country, Britain now has one of the highest rates of coronary heart disease in the world, furthermore this country is not experiencing the recent declines in the incidence of the disease which other industrialised nations have witnessed (Parish et al 1987).

Coronary heart disease is an active metabolic disease linked to the ageing process. Its etiology is not fully understood. It is known that the presence of certain risk factors is closely linked with an increased likelihood of developing the disease (Shaper 1987). These factors are numerous and include age, sex, obesity, smoking, total fat intake, genetic predisposition, social class and hypertension. Of the risk factors which can be modified by preventive medicine and health education, two seem to hold the best hopes of reducing the risk of the disease in the population:

1. The prevention of tobacco smoking.
2. The reduction in total dietary fat intake.

Whilst some of the evidence for risk reduction at an individual level is debatable, there is substantial agreement that health workers should be addressing these issues (Oliver 1987).

Death rates from coronary heart disease show a strong correlation to socio-economic factors. People belonging to social classes IV and V are likely to suffer from a higher incidence of the disease (DHSS 1980). As might be predicted this results in significant geographical variations in the disease's incidence. Poorer working class and inner city areas being more affected than better off rural areas. The reasons for this variation in incidence is not fully known but are closely associated with similar variations in the two important risk factors of smoking and diet. Whilst the last decade has seen changes towards healthier dietary patterns eg the use low fat products and high fibre foods, these changes have largely occurred in the better off sections of society (MAFF 1987). The reasons why this differentiation has occurred are multi-dimensional and have to do with availability, access, cost, beliefs, attitudes, motivation and social norms.

Whilst coronary heart disease may provide us with the most important epidemiological rationale for nutritional policy, there are others. Many of the so called 'western diseases of affluence', which include cancers, large bowel disorders and hypertension, appear to have nutritionally linked risk factors. Collectively this evidence provides health professionals with important evidence that by changing diet in certain directions it might be possible to decrease the incidence of a wide range of diseases (Health Education Council 1983).

Nutritional policy is seen as a means of changing nutritional behaviour and safe-guarding the nation's health. Interest in these policies has, perhaps naturally, taken place within the National Health Service but this action has come from individual district health authorities rather than from a national level. In 1982 Brent Health Authority devised a comprehensive nutritional policy for its district. Unlike previous policies which dealt with specific target groups such as infants, Brent developed a policy covering food and health in the community as a whole.

By late 1986 59% of health authorities had completed such policies and a further 32% were in the process of development (Gibson 1988). The introduction of these policies was made considerably easier by the publication of two major reports on dietary guidelines commonly referred to as the 'NACNE' (Health Education Council 1983) and 'COMA' (DHSS 1984) reports. The former was published by the Health Education Council and brought together the recommendations of a number of major reports on various aspects of nutritional goals. The latter 'COMA' report was sponsored by the DHSS and deals with changes in nutrition relevant to cardio-vascular disease.

The main emphasis in the new recommendations was a change in direction away from the concern about nutritional deficiency towards those diseases currently being linked with diet particularly coronary heart disease. The most important changes being the need to increase the intake of dietary fibre and decrease salt, sugar and fat intake and to moderate alcohol consumption.

East Surrey Health Authority (for whom the author worked 1987-1989) started developing its draft policy in 1984. A small team of officers working under the auspices of the Health Education Working Group drafted a document which was ratified by the Health Authority in December 1984. With the development of the East Surrey Health Promotion Service in 1987, the opportunities for policy implementation were re-assessed. In 1988 the Service, in conjunction with the Joint Planning Team for Health Promotion Services and the three local authorities within East Surrey launched the 'East Surrey Healthy Hearts Project' a long term project aimed at reducing the incidence of coronary heart disease risk factors in East Surrey. The continued implementation of the nutritional policy is seen as a major objective of the project.

East Surrey Health Authority's policy reflects the fact that district health authority food and health policies are usually complementary. Not only are they usually based on the above guidelines but they often have a similar focus for action in that they have several commonly stated features:

1. The policies aim to cover all major areas in the community where individuals are in contact with food.
2. The policies seek to involve the community and are not limited to the direct responsibilities of the National Health Service.
3. The emphasis is placed on ensuring all information about food and health is based on the agreed guidelines.
4. Their implementation involves all health workers.

Whilst it is clear that nutrition policies do not give an absolute blue-print for healthy eating, they do identify ways in which nutritional attitudes and behaviour can be influenced. In theory the implementation of these policies should take place at all levels where individuals and communities come into contact with food. However, in reality the focus of policy implementation has been restricted to certain areas only (Gibson 1988). The reasons for and problematic nature of these restricted implementation strategies are central to this thesis. What is clear is that the NACNE report and its local policy derivatives gave a clear mandate to those responsible for action, particularly

health promotion officers and community dietitians to find new and more effective ways of policy implementation.

One of the major developments in the field of preventive medicine over the last decade has been the evolution of the concept of health promotion. Traditional health education, requires change at an individual level through education and learning. Recent re-evaluation of preventive strategies has suggested that changes at an individual level must often be complimented by changes at a socio-economic level if they are to be effective. Health education without this consideration of the wider issues may be little more than 'victim blaming' (Draper 1977). Tones (1983) suggests that health workers should:

"generate public awareness about the social origins of health and illness and help people to take action to achieve the kind of health provision they would like to have".

The philosophy of health promotion recognises that the causes of disease must be looked at at a macro-level and can be defined as:

"..an umbrella term. It may refer to the marketing and advertising aspects of health education or to the political aspects of lobbying for changes in health policy or legislation or to changing health policy at a local level." (Ewles and Simmet 1985).

Today, strategies aimed at preventing HIV infection, tobacco related disease and stress all include components that aim to tackle socio-economic considerations as well as health education components designed to change attitudes and behaviour through learning.

Health workers concerned with implementing nutritional policy must, if they are to produce maximum gains towards the goal of better nutrition, identify those socio-economic factors that influence an individuals nutrition, and design interventions that are effective. The nature of these interventions would, however, require very different philosophies and methods:

1. Individual level - requires changes in the types of food brought and eaten by individuals. The major strategy for change is health education, which through the provision of information attempts to influence beliefs and attitudes through an educational process with the aim of facilitating the individual to undertake 'healthy' decisions and behaviours.
2. Socio-economic level - requires changes in the availability of food and the terms on which it is

offered for sale. Strategies will include fiscal, legislative and environmental and are not necessarily educational or aimed at the individual.

Nutritional policy is ultimately concerned with changing eating habits. Whilst it is clear that the food people eat is influenced by a multitude of factors including cost, availability and social norms, in broad terms it may be concluded that the purchase and consumption of food, as a commodity, is influenced by the economic dictates of supply and demand theory. The community will always require food (primarily a demand effect) and this will be provided by producers, manufacturers and retailers (primarily a supply effect). Theory suggests that economic forces operating in a free market economy will ensure that supply and demand will largely be in equilibrium. Variation in either will alter the equilibrium and result in a reactive change.

The emphasis of nutritional policy implementation programmes has largely been restricted to the demand side (Gibson 1988), the individual, and has relied on traditional health education practice, mainly because, health workers consider that these strategies are easier to implement. Generally it has been considered that interventions directed at the supply side, are outside the expertise, power, and authority of many workers.

Concentrating effort on changing the demand side might at first seem unproblematic. If market forces are effective and people, because of health education, wish to purchase previously unavailable foods, then retailers will provide them at a price consumers are willing to pay. Economic theory suggests that market forces such as these ought to work best in a highly competitive industry (Lipsey 1980). Innovations and change respond to economic incentives. New products and methods will be introduced if it is profitable to do so. The food retail sector, particularly the large 'multiples' (multi-branch food retailers) should respond quickly to changes in demand. Why then should workers concern themselves with the problematic supply side when they can concentrate on the relatively simpler demand side to the same effect? Two reasons can be identified:

1. Ethics - there is an ethical consideration. Is it ethical to encourage people to change their beliefs and attitudes in favour of better nutrition if the new products are not available at a price they can afford? It has already been mentioned that health education has, in the past, overamplified the individual behaviour change model of prevention. This, 'victim blaming' approach, has become increasingly negative. Many workers now consider it necessary to look at the wider issues and utilize other health promotion strategies (Tones 1981) (Labonte and Penfold 1981). Yet it is precisely

this requirement for individual change that the implementation strategies for most nutrition policies emphasise (Gibson 1988). Evidence from other health promotion programmes particularly Parish et al (1987) and Tones (1983) suggests that such strategies might be becoming sterile and ineffective; that the simple dissemination of knowledge is suffering from diminishing returns, and could even become counter-productive.

2. Effectiveness - health behaviour theories such as the 'Health Action Model' (Tones 1979) suggest that changes in attitudes, beliefs and norms are not enough to facilitate behaviour change. For example the aim of nutrition policy is to promote better nutrition. Yet theory suggests that if food products are not available at suitable prices, and people know this, then changes in the demand side will be ineffective. Put more succinctly it may not be possible to change health and nutrition behaviour until the alternative food products are available. In economic terms changes in food supply might need to be supply led.

The effectiveness of educational strategies is analysed by Thomas (1980) and Nicholl (1987) who concludes:

"There is evidence to suggest that this approach has not been entirely successful and that individuals experience difficulty in accepting responsibility for their own health".

It has already been noted that the educational approach may have proved moderately effective with certain sections of society, particularly socio-economic groups I and II. Whilst there are several reasons for this, Chin and Benne (cited in Nicholls 1987) argue that:

"Changes in normative orientations involve changes in attitudes, values, skills and significant relationships, not just changes in knowledge".

Consideration of Maslow's 'Hierarchy of Needs' (1954) helps to suggest why the relatively self-empowered, better educated middle-classes have found it easier to respond to nutritional messages. The Black Report (DHSS 1980) in discussing the reasons for socio-economic class differences in health throws further light on the matter.

From the above it can be safely concluded that nutrition policy implementation strategies that emphasise individual change only can not be fully effective. Another view compliments this conclusion. The World Health Organization's philosophy which suggests that the promotion of health is dependent on the development of an environment conducive to

health (WHO 1984). The Organization's strategy document for 'Health for All 2000' (WHO 1981) suggests that health education should:

"develop new strategies on various levels of action e.g. governmental, legislative, professional and community and take into account the social and environmental factors that influence health decisions".

In terms of nutritional policy implementation it is clear that the World Health Organization's 'social and environmental factors' equate with the 'socio-economic' considerations of Tones (1981) and Draper (1977) reviewed above. Both views require those concerned with nutrition policy implementation to consider new methods aimed at influencing the supply side of the food equilibrium as well.

Our national diet is determined by:

"the complex interaction of many interests sequentially linked in a food chain" (Winkler 1986).

The above analysis of the food chain suggests that producers, processors, manufacturers, transporters, distributors and caterers are all involved in determining the community's diet. Whilst Government has an important influence on this food chain by the use of agricultural subsidies and trade tariffs the British food supply chain is largely decentralised and left to the vagaries of laissez-faire economics (Passmore 1983). There is only ad hoc intervention by central agencies such as government departments and the EEC. Given this complicated and sophisticated system where should a health promotion strategy be targeted if it aims to influence food supply?

Ultimately it is the retailer who is the gate-keeper of the community's food supply, collectively they represent the end of the food supply chain and to an important extent dictate the price and availability of products. The retailers also have a major influence on the manufacturers and producers, firstly because of their position at the end of the supply side of the food chain and more importantly because of their buying power. In Britain the retail food sector is highly concentrated and as the Chairman of the Milk Marketing Board announced at the Board's 1985 AGM:

"I wonder, incidentally whether those who accuse our industry of rigging prices against the consumer have ever heard of the buying power of the supermarket. With that competitive strength against one, the boot is generally on the other foot" (cited in Lewis et al 1985).

It is therefore suggested that it is to the retail food sector that health workers should be directing strategies for change, but what are these strategies and why have they not been tackled before ?

Chapter one will review the increasing concentration of the retail food sector. A few of the major national 'multiples' largely dictate supply. It is suggested that retailers such as J. Sainsbury, Tesco, Safeway, Waitrose and Gateway are unlikely to be influenced by workers within one or even several health authorities using currently available methods of change which are either ineffective or unmeasurable because of the their: a) lack of targeting and evaluation, b) poor understanding of the retailer's organisational structure and culture. Any viable strategy designed to promote change must address these failings.

Economic theory suggests that oligopolies will engage in non-price competition. This is indeed the case with regard to the major food retailers, where competition is multidimensional (The Grocer 1987a). Whilst in oligopolistic competition the incentive to innovate is weak, competitors must follow innovation if they are not to lose market share. Food retailers compete at all levels including price, choice and environment. Over the last few years the rise in the community's awareness about the links between diet and health has resulted in 'health' itself becoming a marketable commodity (Marshall 1983). 'Health' has become a selling point and the major retailers compete to vend it more effectively than their competitors. Tesco have recently launched a national advertising campaign solely on its ability to contribute to better nutrition (Surrey Mirror 1987).

The ability of consumers to buy nutritionally desirable products at agreeable prices are, perhaps, the two most important factors for health workers to concern themselves with. However the provision of the commodities and price are only two dimensions of the health image that the retailers aim to create. Displays, labelling, the additives issue, advice, literature, and advertising, all do or could potentially play a part in influencing individual and community nutrition. Some of these factors directly influence the consumer, the food available to be purchased and consumed and price, will obviously influence nutrition. Other influences are more subtle, advertising and the positioning of products may not directly influence the consumers diet, but may influence more general attitudes and beliefs towards both the retailer and nutrition.

Attitude theory suggests that these various influences must be complimentary, conflicting messages may be useless or even counter-productive (Fishbein and Ajzen 1975). Health workers developing health promotion strategies aimed at

improving the contribution of retailers to better nutrition must consider all of these factors. It would be ineffective to deal only with availability or price. The overall 'nutritional ethos' of the retailer must be considered. Within this research this nutritional ethos is referred to as the retailer's nutritional quality, a concept that is more fully developed in chapter 4.

Chapter 3 will suggest that all retailers in Britain are now responding in some way to the current food and health debate, all however, are being selective about the areas they pursue, and all are incomplete in those areas which they have began to act. Thus, whilst retailers could play a major part in contributing to improved community nutrition by, providing new healthier products, modifying existing products, providing health education literature, introducing nutritional labelling and considering price differentials for healthy products, this potential is, to a large extent, currently unrealised. If the challenge is for health promotion to find strategies to mobilise the supply side, then an effective start would be to: a) stimulate retailers to realise and begin to develop their potential for improving nutrition, b) develop techniques for measuring change.

There are several ways that change could occur; national argument, public criticism and legislation could all possibly be effective. Another way would be by stimulating the retailer's competitive instinct. If health workers had the ability to measure the respective contributions of retailers to better nutrition, their nutritional quality, then this combined with economic theory suggests a health promotion strategy. The ability to measure, and thereby directly compare, the nutritional contributions of different retailers might stimulate their competitive nature, and encourage each firm to change its practices to match or keep ahead of its competitors. This strategy could raise substantially the contribution of the sector as a whole. The ability to measure nutritional contributions would also allow health workers to develop external methods of change by targeting and evaluating other health promotion strategies eg mass media approaches.

To-date retailers have, in general, not been much involved in the implementation of local nutrition policies (Gibson 1988). There have been a few notable exceptions, the work of the Heart Beat Wales Project with Tesco in Wales being a good example (Moore 1987). There are probably several reasons why this has not occurred more fully. Personal experience of trying to work with commercial organisations on health promotion would suggest that a blocking factor is often the inability to 'talk the same language'. A conclusion drawn from chapter 3 is that many retailers think that they are effectively responding to the food and health

debate. Whilst the production of the audit has a limited input from retailers for this very reason it is envisaged that the audit can be used as a common basis for bringing food retailers and health workers together.

The focus of this research is to design and pilot a method that will allow the above hypothesis to be tested. The thesis will centre on the production of a 'nutritional quality audit', that is a research instrument which can be used to measure the overall nutritional effort of the retailer, its nutritional quality - the degree to which an organization's actions influence the real, perceived or potential nutritional intake of an individual or community.

The research instrument produced, the nutritional quality audit, will be quantitative, reproducible and above all easily usable. It will enable the retailer's contributions to be objectively quantified. It will be designed to allow comparison between different retailers in the same areas, retailers in differing parts of the country and the same retailers over time. These comparisons can be then used to stimulate competition, target health promotion resources and assess the effectiveness of strategies aimed at changing the policies and behaviour of the retailing sector.

Chapter one reviews the structure of the food retailing sector in Britain. A brief history of retailing is presented because the structure of food retailing can only be understood in a historical context. Many of the conflicting interests and values which have produced the present structure of food retailing in contemporary Britain are still present. To understand the food retailing system, how it operates and its ability to change it is important to analyse these issues. It is particularly important to analyse how the food retail sector responds to change. Is it possible to identify historical trends that might influence the audit's design, use and effectiveness? The second half of the chapter looks in more detail at the great changes the sector has undergone in the last decade, particularly the rapid centralisation of food retailing with the development of the 'multiple' retailer and the new 'out-of-town' developments. This information will be important in the analysis of how retailers respond to change and will help answer questions such as; what are the contemporary motivating factors within the food sector, where does power lie and how are retailers likely to react to a motivational stimulus such as the audit? It is a prime tenet of health promotion theory that the nature of a strategic target is fully assessed before programme planning occurs.

Chapter two is concerned about the links between food and health. It looks at the history of these links up to the 1980s and the massive media and public interest in the current debate. The chapter also reviews the opposition to

dietary change and considers whether this is justified. By definition a nutritional quality audit must have some objective baseline against which the retailer's nutritional quality can be compared, a review of the current nutritional guidelines is undertaken so that this may be established.

Chapter three looks at how retailers have responded to the food and health debate over the years, and more particularly at their recent contributions to improving nutrition. The motivation of the retailers for being involved in the issues is commented upon. A review of how the retailers appear to be tackling the current health issues is undertaken, and the key areas of action and inaction are analysed. The chapter also indicates the role that the retailers themselves might play in the construction and development of the audit.

Chapter four introduces the methodology of the research. It looks at the terminology used - quality audit, nutritional quality, indicators and dimensions. It details the various indicators of quality and explains the rationale for their inclusion. The chapter then describes how the quality audit was produced using peer group measurement techniques devised for the task.

Chapter five presents the audit in its pilot form. Chapter six is a pilot study of three retailers within East Surrey. The conclusions produced by the audit are noted in each case. The use by Riverside Health Authority of a nutritional quality audit based on this research is noted.

Chapter seven undertakes an analysis of the potential impact of the audit. It reviews communication of innovation theory to ascertain whether predictions can be made about how retailers might respond to the audit. Following this the chapter investigates a number of ways in which the audit might be evaluated and used to stimulate and monitor change at a local level. Finally the conclusion draws together the research, comments on the success of the pilot study and suggests further developments.

CHAPTER 1

THE DEVELOPMENT AND STRUCTURE OF FOOD RETAILING IN BRITAINIntroduction

In this chapter the development of food retailing in Britain will be reviewed with particular attention being paid to the changes that have occurred over the last few years and possible future trends.

The procurement of food of desirable quantity and quality is a basic human requirement, it forms the base of Maslow's hierarchy of needs (Maslow 1954). A review of food supply is a review of society's changing values, beliefs and norms. The chapter will show that food retailing in its present form is the product of this century. Changes within this period have probably been greater than the sum of the changes up to the end of the 19th century. However, the processes of food production and purchase have been an important and integral part of the lives of men and women from the earliest times, and many of the issues which will influence the philosophy and methodology of a nutritional quality audit are consequences of historical development.

Many will suggest that current arguments (Murrey 1986) about whether retail food provision is demand or supply led are simplistic. In reality the philosophy and practice of obtaining food mirrors the interwoven and sometimes conflicting economic and social values of a changing society.

A key assumption throughout this research is that the nutritional quality audit will somehow influence change. The mechanisms by which it might do this or its effectiveness are unclear. These issues are however fundamental and will need to be considered in the audit's design. To answer these questions it will be necessary to look at change and innovation in the food retail industry. Are there trends that can be discovered that might be used to predict how effective the audit might be as a tool of change ?

The chapter will not directly concern itself with the modern concerns about the links between food and health, it will however set the context for the next chapter which will look at this issue in detail. The current concerns about individual and community nutrition cannot be clearly understood without a wider understanding of the nature of food supply. Concern about food is nothing new, the quality, quantity and price of food has, from the earliest times been of great concern to public, producers, sellers and authorities alike. Some of the earliest legislation passed

in the country was concerned with the food supply (Goodall 1977). The areas of concern change, as does the society within which they are set. The current food and health debate is only the current form of a concern that has been expressed for centuries. It will be seen that earlier concerns were seldom resolved by positive action from a single source, but rather by a combination of economic pressures, social values and consumer demands. If health workers are to effectively move the current nutritional debate to a satisfactory conclusion then it is important that the historical context is fully appreciated.

From antiquity to the middle ages the majority of people lived off the land, food was in the main caught, grown, reared or poached. Producers sold directly to consumers. By the 12th century however, the expanding population was increasingly depending on regular town and village markets for their food supply. With this organisation came opportunities for fraud and malpractice and it was not long before local and central government authorities found it necessary to intervene to protect food supply.

Fallows and Wheelock (1985) state that there are two fundamental objectives for direct government involvement in the system responsible for the supply of the nations food:

- a. To ensure that adequate supplies are available at appropriate prices.
- b. To protect the consumer from unfair trading practices and food related illness.

The importance of these aims is supported by evidence that the earliest food legislation appears to be an act dated 1266 which aimed to protect the purchaser against short measures of bread and the sale of unsound meat (Goodall 1977). The regulations of 'scot' and 'lot', which were certainly accepted by the 13th century (Davis 1966), decreed that if a trader had the good fortune to buy goods at a bargain price then he was bound to sell at bargain prices so as to pass the advantage on to others. He was only allowed to keep his 'fair and reasonable share'. This suggests that early legislation was based on contemporary religious norms.

The nutritional quality of food appeared not to be of great concern, only two things about meat interested the authorities. That it should be 'good to eat and wholesome' and that it had not come from a 'murrain' animal, that is one that had died of natural causes (Davis 1966). Present day environmental health and trading standards legislation is directly descended from these early laws and it is interesting to note that the legislative emphasis is still concerned with price, weights and measures (trading

standards) and the basic quality of food sold (environmental health).

This situation continued until the 17th - 18th century when because of the increasing size of towns, the development of the merchant class funded from overseas ventures and the wider range of foods available, various forms of specialism occurred. Middlemen known as grocers developed between producers and purchasers. The political climate of the times gave rise to the laissez-faire attitude of central government to nutrition, a philosophy that still exists today:

Whilst this policy:

"has been responsible for significant improvements in the availability and quality of food"

its commitment to laissez-faire principles has meant that:

"Consumers now have a very wide variety of foodstuffs from which to choose, the growth of large supermarkets has permitted the development of many more varieties of food than could possibly be displayed in a small local stores. The vast array of tempting foodstuffs has no doubt contributed to the major nutritional problems of the industrialised world" (Fallows & Wheelock 1985).

The shops of 1800 - 1850 were the accumulation of a trend which had lasted for two centuries. They were small, independent and run by the owner, branches were rare. However by 1850 food retailing started to move in two directions that seem at first to be contradictory. Firstly the process of shopkeeping started to become deskilled whilst at the same time the organisation of the retail trade started to become much more complicated. The two trends are of course connected, manufacturing started to take over much of the skilled work of the shopkeeper, because he didn't have to produce, package or price goods. Advertising too, had largely been taken over by the manufacturer. Shopkeeping however started to become big business, during the 19th century the population doubled. People moved to towns and a large stable working class developed. New forms of organization were developed to meet the needs of these consumers (Deane & Cole 1969). These trends are still continuing and have important implications for workers attempting to influence community nutrition. Food retailers became less concerned about the food they sold and more concerned about how they sold it. As the food chain evolved it was the manufacturers who became more and more responsible for the food sold through shops. Individual retailers probably had little influence over producers and manufacturers and the customers point of view carried little authority. Retailers could not, therefore, effectively

influence nutrition even if they wanted to, and the laissez-faire philosophy of 'customer choice' vis a vis 'retailer responsibility' was re-enforced. It will be seen in chapter three that this philosophy is responsible for some of the conservatism of contemporary retailers towards nutritional change.

One of the most influential developments in food retailing was the birth of the co-operative store. The famous shop of the pioneers in 't'owd lane', Rochdale was at first not significantly different from similar shops - dividends and cash payments were not new. What did bring them overwhelming commercial success were the innovations of vertical integration of wholesale and retail functions and the branch system. It is interesting to note that whether it was because of the possibilities opened up by this integration or because of its social views, the 'Co-op' was one of the first major retailers to consider its responsibilities for community nutrition.

The traditional grocer principally thought of himself as a supplier of delicacies to the middle classes. It took a new type of retailer to realise that the new working class wanted good, cheap basic provisions such as butter, cheese and eggs sold under one roof. The new concerns concentrated on this these basic provisions with no frills attached. They took small shops in working class districts and gave each one a standard appearance, stock and policy. The staff had little to do but sell. Everything was sold for cash, there were no bills, orders or customer books.

J.B. Jefferys, author of 'Retail Trading in Great Britain 1850-1950' (1954) writes:

"The typical multi-branch shop unit on the provisions side of the trade was not so much a shop as a simple structure for distributing a limited number of articles to the public in limited time and space...the mass distribution methods certainly lacked refinement and consumer choice and service was kept to a minimum. But thanks to these organizations and to other representatives of the new race of retailers, commodities such as butter, eggs, tea and bacon ceased to be luxuries on the working class table and could be and were purchased by the working class cheaply easily and regularly".

For some the new formula was very successful, Thomas Lipton opened his first shop in 1872, by 1900 he had 70 branches. John Sainsbury opened his shop in 1869, by 1891 he had 11 branches and by 1914 115 (Sainsbury's 1969). Newspaper stamp duties were abolished in 1860 and the new multi-branch retailers found that they could increase trade by

advertising. Lipton in particular developed elaborate methods to promote his stores. (Barker et al 1966).

For a while it would appear that the old and new existed side by side, the old served the middle class customers and the new 'multiples' catering for the working classes. However by the turn of the century both had started to compromise and the differences were narrower. In the first two decades of the century the new 'multiples', retailers having several branches under one name, increased apace, and many small traditional retailers could not compete in terms of product range or price (Jefferys 1954). But from 1920 growth slowed as competition from the small shop improved. One factor that may well have saved the small shop was the introduction of tinned and packaged provisions. Jars of pickles, sauces and jams could now be sold on equal terms with the 'multiples'. Another factor which helped was the need of the manufacturer to have as many outlets for his goods as possible, eventually the manufacturers had to step in and protect the interests of the small shop from the 'multiples'. By 1960 the share of trade was finely balanced between the 'multiples' with 25% of the market the co-ops with 25% and the small independents sharing the rest. (Harrison 1975) Interestingly grocery, which was originally one of the minor food trades had by the mid 19th century, overtaken all the food retailers including meat, fish and green-grocery, in terms of sales.

Over the last fifty years several interrelated trends have emerged which, collectively, have influenced the development of food retailing in this country; the introduction of 'self-service' shops and 'own-label' products, the move to 'out-of-town' shops and the concentration of the food retailing sector.

The first self-service shops were opened in the late 1940's in an attempt to increase throughput. Previous efforts to do this by enlarging shopping areas in conventional stores merely emphasized the counter as a barrier. In the US depression of the 1930's a primitive kind of self-service had involved in an attempt to reduce overheads and hence prices. Opened cases of goods were set out and customers helped themselves and paid on the way out. It is interesting to note that with the high unemployment of the early 1980's, particularly in the north of the country, there is a revival of these type of retailers. Shops such as Victor Value and Kwik Save sell a small range of products at a low price.

One of the earliest purpose built 'self-service' supermarkets in this country was the Sainsbury's store opened at Croyden in 1950 (Sainsbury's 1969). The idea caught on and within a decade retailing had radically changed. In 1953 Sainsbury's stopped the practice of delivering to domestic customers and closed their credit

facilities. Retailers tried to start operating on the lowest profit margin possible. They found that relatively small changes in either gross profit margins or selling costs made an enormous difference to net profit. Service was cut right down to reduce prices. The success of self-service supermarkets was based on a more efficient use of labour. As a result the shopper got more hygienic conditions, little or no waiting, a wide product choice and the opportunity for the first time of doing all the shopping under one roof. However the development of such shops also brought some disadvantages, food retailing was even further deskilled and communication between retailer and customer reduced. Both these factors are of some importance when considering the retailer's attitudes towards the promotion of nutrition.

Another major innovation first seen in the 1950's was the 'own-label' product - a product made on behalf of the retailer and carrying the retailers name. Sainsbury's earliest 'own-label' lines were its sausages made in the company's own kitchen from as early as 1890. They were followed by 'crelos' margarine in the 1930's and various other products under different trade names. However it was only in the 1950's that these old names were abandoned in favour of the firms name. By 1970 Sainsbury's had over 1000 own-label products. Most of the other big 'multiples' followed suit cautioned perhaps by John Sainsbury writing in 1965 that:

"Even greater skill is required to organize our own lines than is needed to buy branded lines" (Sainsbury's 1969).

Most of the major 'multiples' now produce 'own-label' products, they account for more than a third of sales. Sainsbury's and Tesco's 'own-label' sales account for more than 50% of turnover. Nowadays:

"Apart from offering higher margins, own-brands are increasingly being used to build consumer loyalty" (The Grocer 1987b).

The development of own-label brands could only occur because retailers were able to increase their authority vis a vis manufacturers through concentration. It will be seen in chapter three that the own-label product is now an important part of retailer's nutrition policies and an important issue for a nutritional quality audit to consider.

During the 1950's 'out of town' shopping took the USA and Canada by storm. It was realized that land is cheaper outside towns, access is easier and plentiful parking can be provided. Overheads are reduced and customers can be attracted by lower prices, longer opening hours and 'one stop' convenience. In this country out-of-town stores have

been the product of the last decade, they have without a doubt been the most successful and fastest growing formula of this period. All the major 'multiples' have some form of out-of-town policy. Linked to this growth has been the closure of many small 'high street' stores. The total number of food retailers has fallen by over 60% from 146,000 to 58,000 between 1950 - 1982. (Lewis et al 1985). A recent Minister of the Environment voiced a general disquiet over this problem:

"Over provision of shops on a large scale and the loss of trade by towns and district centres which at present are well served by public transport could change the character of these centres and has serious consequences" (Harrison 1975).

This trend also has nutritional consequences in that these large out-of-town stores are inaccessible to a proportion of the population, particularly the unemployed or elderly who do not own their own transport. As the retailers close more and more of their high street shops, particularly those in socially disadvantaged areas, these people are forced to shop at retailers who provide less choice at often, greater cost (Bellamy et al 1986).

Only now after nearly ten years of a laissez-faire attitude to out-of-town growth is central government beginning to show signs of wishing to restrict development. Draft guidance has recently been issued to local authorities and the large retailers which states:

"Large new stores should where possible be located where they can serve not only car borne shoppers but also those who rely on public transport or walking..modernisation and refurbishment of town centres is to be welcomed...large out-of-town centres will raise serious questions about the future of nearby town centres" (The Grocer 1987c).

The decline in the number of stores quoted above conceals the fact that the new stores being built are up to 10 times larger than the stores they are replacing. Overall, at a national level, the average size of grocery shops operated by the large 'multiples' increased by 300% between 1971-1981 whilst the average size of the independent remained virtually unchanged (Lewis et al 1985). The new out of town 'superstore' is expanding into areas traditionally the preserve of the specialist shop. These superstores now include in-store bakeries, wines and spirits sections, meat and toiletries. Quality (including nutritional quality), efficiency and situation have replaced cheap prices as the most important elements of shopping and there is every likelihood that the trend will continue. The independents that are left are having to adapt and evolve to meet the

needs of their community, increasingly they are becoming 'convenience stores', shops which are open for long hours and aim to provide facilities, not for a family's main shop but for 'topping up' excursions.

Meanwhile, amongst the big 'multiples' competition is producing concentration, the five largest companies now account for over 55% of all foods sales and 24% of all retail expenditure. There are now only 10 retailers with more than 1% of the market. The table below summarises the present share of trade between the 'big five' 'multiples' in 1988 figures (The Grocer 1988a).

Market Share 1988

Tesco	14%
Sainsbury's	13.5%
Dee Corporation (GateWay)	11.1%
Argyll (Safeway, Presto)	9.6%
Asda	7.4%

These figures are vary different if looked at regionally, Asda for example holds a far higher share of the northern counties whilst Sainsbury's and Tesco account for 59% of the London trade (Lewis et al 1985).

The other 45% of the food market is split three ways between, smaller 'multiples' such as Budgen, Londis and Spar (16.1%), the Co-operative Stores (12.1%) and the remaining independents (16.2%).

Sir Gordon Borrie, Director General of the Office of Fair Trading warned recently of the growing power of the large retailers and believes that 2-3 dominant chains could soon control food supplies in this country. He predicts that by 1995 Tesco, Safeway and Sainsbury's will account for 80% of all food sales as opposed to the present 10 chains that hold 70% (cited in The Grocer 1987d). From a nutritional perspective this continuing concentration has advantages and disadvantages. From a positive point of view it increases the opportunities of retailers to influence nutrition and clarifies the direction in which health workers should direct strategies, it does however, also make the retailers more able to resist change and promote monopolistic practices.

From the demand side, the food retail industry has and probably will be faced with a static or slowly growing market. Demand for retail products including food is determined by a number of factors, one of which is disposable income. Overall, whilst the level of disposable income has steadily risen since the 1950's, the proportion of it which is spent on retail goods has declined. In 1960 38% of the GNP was spent on retail goods by 1980 this had

fallen to 30% (Lewis et al 1985). The demand for food over the last 20 years has remained almost static, largely because the biggest single influence on demand, population growth has levelled off. The proportion of expenditure spent on food has rather declined from 22% in 1964 to 16% in 1984, this is probably due to two reasons, firstly as real disposable income increases the proportion spent on food does not increase to the same degree and therefore decreases in real terms, and secondly the recession of the early 1980's has clearly hit food spending in some groups.

The retailer's increasing emphasis on quality and the need to differentiate particular retailing images has permeated the entire business operation of major grocers. Against a static population it would suggest that food production and distribution would be a stable activity subject to only marginal change. Yet the market has shown a propensity to develop and diversify. It may be argued that a major part of the changes which have emerged may be traced to developments initiated by food retailers motivated by increasing competitive forces to identify and meet even the smallest consumer change. Increasingly retailers use market segmentation techniques to subdivide the market into a distinct groups of customers in order to get a clearer idea of which type of people make up their target customers. This enables the retailers to improve their marketing effectiveness and provide the type of store that market research shows the target customers would use. This has resulted in the major multiples having a number of different types of store, for example a high street based Tesco store would provide a very different type of service to a 'out of town' superstore solely because of the very different customer groups that each tries to attract.

This chapter aims to have shown that in the 1980's food retailing is very polarised. The large supermarkets look set for further competition, and concentration, the cut price warehouses pioneered in the 1930's operate successfully in the depressed North. The one man grocer still exists but has had to adapt by adding convenient opening hours to the previous advantages of positioning and personal service. The future is unclear, it may well be that in ten years time the large out-of-town stores will have upsurped all before them, however it is equally possible that technology in the form of personalised ordering through television or telephone will begin to make increasing inroads into traditional retailing. One thing is for sure, people are always going to need and enjoy food, therefore satisfying this need will always be big business.

The chapter has summarised the development of food retailing over the last century and attempts to analyse how this has led to the present system of food retailing in Britain through an interplay of society's values, legislation,

consumer pressure and non-interventionist economics. Throughout this history run concerns; concerns for the consumer about the quality, quantity and price of food available, concerns of the authorities who recognised the political nature of food and feared civil unrest and public health problems, and concerns for the retailer who wishes to maximise his profits. These interests are often conflicting, and at any period, whilst there might be a general equilibrium between the interested parties, one or two may hold greater power. Throughout this history it is possible, in broad terms, to identify 'buyers' and 'sellers' markets, as the balance of power shifts.

It was identified in the introduction to this chapter that a review of the history of retailing would be of importance and would raise a number of questions: Has change in the food retail sector been ad hoc or planned? Does change occur from within the industry or external to it? Who are the agents of change and how does the industry respond? Is the food retail sector innovative or conservative? These questions are of course crucial to this research. In general it would seem that the industry is inherently conservative and reacts only to a very limited set of stimuli. The internal stimuli for change are primarily market forces which stimulate change so as to produce short term profits. These changes may or may not be in the interests of the consumer. Externally produced change comes primarily from legislation aimed at protecting the rights of the consumer. Usually retailers have resisted this change, even if it may produce profits in the longterm - short term goals are paramount.

It is probable that if health workers are going to continue the present food and health debate then they should be looking to shift power away from the manufacturers and retailers to the consumer. Any consumer led pressure must, however take into account, the nature of the retail sector and the forces that have and still are influencing it. Perhaps the most significant factor which comes from this review is the competitive nature of the modern food retailing sector. Food as a commodity has a limited market, to increase their market share retailers must compete on price and non-price issues. Any health promotion strategy aimed at food retailers must recognise this and exploit it so that nutrition becomes a focal issue on which they compete.

CHAPTER 2

THE LINKS BETWEEN FOOD AND HEALTHIntroduction

An important premise of this thesis is that the supply of food available to consumers in an urban, industrialised society, and therefore the state of nutrition and community health depends to an extent on the actions of retailers. The production of an audit which aims to measure the nutritional quality of food retailers assumes, by definition that the actions of retailers can be judged against some agreed standard of quality. The concept of nutritional quality introduced in the introduction and developed in chapter 4 links this standard of quality to the contribution that an individual retailer is making to improve nutritional status.

This chapter will show that many of our contemporary views on nutrition have only been established in the last 10 years and are far from universally accepted. This has resulted in a contemporary debate which has major implications for the current attitudes of consumers, retailers, health pressure groups and government. If the nutritional quality audit is going to be a effective tool of change then it is vital that this research identifies and develops a standard that is credible to both health workers and retailers. An important aspect of the audit's design stage is the prediction of how retailers will respond to what is deemed 'nutritional quality', if the standard is set too high the audit will be condemned as unrealistic, too low and retailers will claim that their present actions suffice. What then, is an acceptable and viable standard ?

This chapter uses a historical review to investigate the links between food consumed and individual and community health. From this it will identify the driving forces behind the current debate and show how these have arisen from a historical context. From this review it will be possible to identify nutritional standards which can be used later in the audit's design. In deciding upon these standards an important aim is to minimize uncertainty and controversy which could be used to justify the nutritional inaction or inertia identified in the next chapter. Any such response would damage the audit's credibility with health workers and retailers and would affect its potential as a tool of change. The chapter's review of both the historical links between food and health and the contemporary debate will also suggest how health workers, food retailers and producers might respond to the subject of this thesis, an issue that is looked at again in chapters three and seven.

Historical Context

In looking at the historically perceived relationship between food and health it is important to remember that the contemporary perspective is very different from that of a hundred or five hundred years ago. Up to perhaps 30-50 years ago the major health problem related to nutrition was starvation and the nutritional deficiency diseases. Health largely depended on obtaining enough food. Concerns about the quality and types of food available only became apparent when a majority of the population had solved the problem of obtaining enough food. In chapter one it was noted that the period 1800-1850 was a time of change in the food retailing trade. It was a time when the foundations and structure of our modern food retailing system were laid. This was also a time of major change in the production of food in this country. The implications of these changes underlie many of the food and health issues which concern us today. It would therefore be a fitting time to start a more detailed look at the actual and perceived links between food and health. In particular it will be useful to identify parallels between historical issues and the current food and health debate - how did these issues develop, how was the scientific 'evidence' used to support and oppose the arguments, what methods of change and inertia were used and what were the outcomes.

The period 1800-1850 was a difficult time in Britain. Rapid population growth, 8,900,000 in 1801 to 18,000,000 in 1851, rapid urbanization, the Napoleonic wars and civil unrest culminated in a major recession in the fourth decade of the century known as the 'hungry forties' (Arkell 1973). Large sections of the population were either out of work or earning wages that could not support families. The industrial revolution had put many traditional workers out of work whilst the controversial Corn Laws pushed up the price of food. The Corn Laws of 1815 were designed to protect the land-holders and farmers, by keeping up the price of wheat in relation to wages. This strategy continues to be a central tenant of government food policy - the present Common Agricultural Policy, aims to do much the same by ensuring a fair standard of living for farmers through the stimulation of demand for domestic produce by export guarantees, subsidy and limitation of imports.

As more and more people, through better production and the benefits of the industrial revolution escaped the poverty trap, concern slowly shifted away from issues linked only with food availability. The new middle classes began to question the quality of the food they ate. In particular a controversy arose concerning the adulteration of food. This practice had a long history although in the first half of the 19th century it prevailed to an unprecedented effect and had far reaching social, economic and medical consequences.

Given these consequences it is worth looking at the debate in more detail - there are important lessons to be learnt which are clearly applicable to the current controversy.

The assize system which had been in operation from 1266 employed local inspectors to check food price and quality. This quality control which had been moderately successful for over 500 years was by the end of the 18th century becoming ineffective. The problem of adulteration seems to have increased with the development of urban society (Filby 1934). Before the rapid growth and urbanization of the 19th century most produce was locally produced, food was produced in the same village, street or even house. A fraudulent producer or retailer would soon be found out and punished.

With urbanization and the food shortages of the 1790's, complaints against millers, bakers and brewers increased. The situation came to a head in 1820 when Frederick Accum published his 'Treatise on Adulterations of Food and Culinary Poisons'. Accum's research disclosed that almost all the foods and drinks of the day were more or less adulterated. His treatise dealt with fraudulent practices of some two dozen common foods. Some of these practices were not too dangerous, the use of alum to whiten baker's flour, others were various threats to health such as the use of the poison 'cocculus indicus' in beer to produce intoxicating effects rather than expensive fermented malt.

Accum's revelations caused major public concern and although attempts were made by vested interests to silence Accum (he was driven from the country on dubious theft charges), economists, dietitians and others had at last been compelled to take notice of the problem. It is interesting to note the similarities of Accum's fate to the controversy surrounding the publication of the 'NACNE' report over 150 years later (Cannon and Walker 1985), both are a clear indication of how change can be resisted through the suppression or discreditation of the 'change agent'.

The growth of food adulteration at this time is difficult to explain and has no single cause, although clearly the geographic separation of producers, retailers and consumers was a major factor in that detection could be avoided. At the same time the medieval control over food standards by both local and national authorities came to be abandoned, the assize of bread was repealed in 1815 after over 500 years, partly because of the difficulty in now enforcing them; they were designed to cope with individual complaints against known producers, and partly because of the now firmly held conviction that market forces must prevail and not be interfered with:

"more benefit is likely to result from the effects of free competition than can be expected to result from any regulations or restrictions under which the bakers could possibly be placed" (cited in Burnett 1983).

An interesting effect of the abolition of the assize was that white flour became more attractive to mill and the price of white bread fell until in 1865 it became for the first time cheaper than wholemeal bread, a situation that still prevails and has obvious implications for nutrition (Horder 1954).

Adulteration in the 19th century was a major health problem, firstly many frauds consisted of replacing the proper constituents of food with cheaper substances often having no nutritional value. As these frauds often concerned the basic foods such as bread and ale, the result was a substantial lowering in nutritional quality which produced long term undernourishment, and the increased prevalence of disease. In particular children reared on a diet of adulterated bread and diluted milk were ill equipped to resist the infectious diseases that flourished in Victorian cities.

In 1852 the Lancet formed the 'Analytical Sanitary Commission' which for 4 years conducted a weekly survey of every major food and drink product and exposed the names of hundreds of traders. Whilst the attempts of the Commission did much to increase the quality of food in the more respectable establishments, the diet of many continued to be heavily adulterated until effective quality controls could be passed through Parliament. The House of Commons reported in 1856 that legislation must be considered, and in 1860 passed the 'Adulteration of Foods Act'. This rather ineffective act was amended in 1872 and became the 'Adulteration of Food, Drink and Drugs Act' and again in 1875 to the 'Sale of Food and Drugs Act' which forms the basis for present legislation. This act, within 10 years had stopped the worst of the problem and produced a remarkable improvement in the quality of basic foods. The act made any act of adulteration which was harmful to health a criminal offence. Enforcement of the act was by local government analysts who in 1874 formed the 'Society of Public Analysts'.

This Society was to play an important part in developing legislation to ensure the quality of margarine (1887), milk (1901) and butter (1902). In 1938 (amended in 1955) the 'Food and Drugs Act' gave Ministers the power to make regulations, and in 1953 the 'Labelling of Food Order' became the parent of our existing labelling laws. Thus quality control today is based on 100 years of piece-meal legislation, and attempt to uphold two basic principles, the protection of health and the prevention of consumer exploitation. Responsibility for upholding this legislation

is shared by the Department of Health and the Ministry of Agriculture. Practical implementation is the responsibility of local authorities through their Trading Standards and Environmental Health Departments.

The adulteration debate of the mid-19th century has therefore been central in determining today's legislative priorities - that is to ensure food is safe rather than healthy. Legislation did not come about immediately, it came in response to concentrated pressure from both individuals and organisations - the Analytical Sanitary Commission in particular. In particular public and media support were instrumental in encouraging political support for legislation - a lesson that the development of this research must note.

Whilst the turn of the century saw major improvements in the quality of food available, these improvements were not reflected in community health:

"The opening of the 20th century saw malnutrition more rife in England than it had been since the great dearths of medieval and Tudor times" (Drummond and Wilbrham 1957).

The published works of Booth and Rowntree had little direct effect on nutrition in this country. What did produce action was the admission by the Army Medical Service that they had had great difficulty recruiting sufficient healthy men for the Boar War. Over 40% of volunteers being rejected because of ill-health. This collective evidence, of the alarming extent of poverty and ill-health resulted in the Inter-departmental Committee on Physical Deterioration whose report published in 1904 led to the Education Act (Provision of Meals) in 1906.

The 1914 - 1918 war brought mixed costs and benefits, by 1916 prices had risen sharply and by 1918 rationing was brought in. However many people both in the forces and outside probably ate better than they did before the war. In 1916 the British Government's newly formed Ministry of Food published 'Feeding the Munition Worker'. This document laid down some important general principles:

"The human body calls for a constant supply of food, first for its growth, for the building up of tissues and for repair, and secondly, as fuel for the production of heat and energy. Both requirements are indispensable and absolutely necessary. You cannot get health, work and a reasonable output apart from good nourishing food; with increases in work there must be proportionate increases in quantity and nutritive value of the food eaten".

From 1930 - 1950 the main health problem associated with food even in Britain was, again, how to get enough of it, 'hunger in the midst of plenty' was a popular phrase of the time. Hence the advice in the 1930's was to eat a balanced diet to maintain nutrition and avoid deficiency disease. The only concern about too much food was obesity. John Boyd Orr was the most influential writer at this time, his 'Family Health and Income' (1936) identified large sections (some 10%) of the population as being chronically malnourished. This work was aided by the Technical Commission of the League of Nations which in that same year detailed how intakes of key nutrients were related to health. Boyd Orr's recommendations, were to:

"Have a great effect on future food policies in the United Kingdom and also a worldwide influence on nutritionists and economists" (Passmore 1973).

Boyd Orr's work stimulated a lot of interest in the relationship between food and health (Mc Carrison 1936) (Mc Gonigle 1936). For the first time the medical profession began to recognize the importance of good nutrition.

In 1939 only about 30% of the countries nutritional requirement came from home produced food. This was clearly of concern to the State and in September of that year a Ministry of Food was established (following the example of 1916). This Ministry was responsible for the complete food system in this country, for the first and only time, government took responsibility for the production, procurement and distribution of food. Both food supply and distribution were drastically altered. There were falls in the supply of all imported foods and fat, sugar and meat, these were compensated for rises in home produced produce particularly bread and potatoes. Food distribution was based on a compulsory rationing system, the equitable distribution of scarce foods being the responsibility of retailers through a 'coupon and points' system. Important concessions were made for infants and children. Many foods were however, not rationed eg bread and potatoes. Over the decade of rationing this resulted in the substitution of non-rationed products for rationed products. The five fold difference in milk consumption, between high and low income groups noted by Boyd Orr virtually disappeared. The price of food was not left to market forces but determined centrally by the use of substantial subsidies.

There is abundant evidence that the period 1939 - 1950 brought about a major improvement in community nutrition, for the first time the majority of the population were obtaining food of satisfactory quality and quantity. Much of this progress was continued after the decentralisation of food supply, by the introduction of the Welfare State and the general rising of the standard of living in the 1950's.

The Current Debate

Over the last 30 years the concerns about diet and disease have shifted. The majority of the population can afford food of an acceptable quantity and quality. Starvation and deficiency diseases are, to a large extent, a thing of the past. Current concern is about excess and imbalance and to understand them it is important that the changes in food consumption since the war are understood.

A regular theme throughout this thesis is that food purchase and consumption cannot be divorced from social trends, and it to these we must at first look. Over the last 30 years, the average family has decreased the proportion of its total income spent on food by 50% (Walker 1984). More women work and the number of meals eaten outside the home has increased considerably. Food is more processed and 'convenience foods' have meant that less time is spent in preparation.

These changes cannot have but affected the food we eat, changes that have occurred:

"in response to the demands of consumers, which suppliers have been able to meet, and were not the result of any national food policy" (Passmore 1973).

and a review of the changing diet highlights several key factors (Walker 1984):

1. An increase in the proportion of total energy derived from fat. This has risen from 35% in 1955 to 42% in 1976.
2. An increase in the consumption of refined carbohydrates especially sugars with a substantial decrease in unrefined carbohydrates and dietary fibre.
3. A smaller decrease in total energy consumption than would be required over the last 20 years to compensate for the decline of physically active employment.

The average contemporary diet is undoubtedly better than that of 50 years ago, but has not brought about the improvements in health that one might expect, average life expectancy has risen little over these years. Medical attention has focused on the so called 'western diseases of affluence', chronic diseases which are thought to be preventable, and whose occurrence might well be linked to various risk factors associated with life style. Not surprisingly diet is implicated as an important factor in many of these morbidities:

1. Obesity - the most common nutritional disorder in Britain today, 36% of the population are considered overweight. Obesity is an important medical problem in its own right and a risk factor for coronary heart disease and diabetes. Obesity is linked to dietary fat intake, and sugar consumption.
2. Cardiovascular disease - coronary heart disease (CHD) accounts for over 30% of all deaths, in the UK. It is the largest single cause of death, in 1987 it claimed over 150,000 people at a cost to the health services of over £500 million. Many of the deaths are in the 55 - 64 age group (HEC 1987). Due to the decline in the incidence of the disease in other western countries, England and Scotland now experience some of the highest incidence rates in the world (HEC 1987). Whilst the etiology of CHD is not known, a number of factors have been identified with its onset. These risk factors include smoking, obesity high blood pressure and diet. There would seem to be a direct relationship between total fat intake and increased risk of heart disease at a population level. Much of the evidence of links has come from studies showing a strong positive relationship between the proportion of saturated fat consumed and mortality due to CHD in different countries. Further possible dietary involvement concerns salt whose consumption is linked to increased blood pressure which is itself a major risk factor for CHD.

It has been estimated that up to 25% of all deaths from CHD are preventable, and whilst any prevention programme must deal with several risk factors, it is clear that diet is an important issue. It is perhaps the coronary heart disease issue that has, more than any other factor fuelled the present food and health debate.

3. Intestinal disease - During the last 30 years our consumption of fibre has decreased. At a population level a deficiency in fibre has been linked to several diseases, particularly those affecting the large bowel. Many support a protective role for fibre in diverticulosis disease and constipation. Further evidence suggests that fibre may reduce the risk of various cancers, gall stones and diabetes mellitus (HEC 1983).
4. Dental caries - A large number of factors are thought to influence the development of dental caries and any causative mechanism is far from simple. Nevertheless most workers would agree that total sucrose intake is an important risk factor.

5. Cancer - Doll and Peto (1981) estimate that up to 40% of all cancers are nutritionally related. High fat intakes and low dietary fibre consumption are probably risk factors for several types of cancer.

The above five diseases now account for the vast majority of morbidity and mortality in Britain. Unlike the infectious diseases of the past there is little immediate hope that medical science will produce specific cures. Most of the diseases are multi-causal, several risk factors for each have been identified, some of these such as age and genetic predisposition cannot be influenced at an individual level. Thus the focus is on those risk factors that can be altered, particularly those associated with individual behaviour. The fact that diet has been implicated in all the above diseases and is, perhaps, a risk factor that can be modified at both individual and community level has meant that public health in the 1970's was increasingly dominated by efforts to objectively determine what a 'healthy' diet should be. Whilst it was recognised that government, producers and retailers all influenced food supply, the main emphasis was to provide advice to the population on what diet they should adopt to reduce their own risks from the above nutritionally related diseases. This strategy via health education cannot be effective unless quantifiable goals are set.

In the last two decades most western governments have been concerned about establishing quantifiable goals concerned with nutritional quality. On the basis of current evidence many countries have now formulated specific recommendations on diet in relation to health. In 1968 the Swedish medical authorities produced a set of national dietary guidelines. Their numerical values were followed closely by the USA in 1977 when producing the influential Mc Govern report (Dietary Goals For The United States - a Committee Report). Following the Swedish and American recommendations most industrialised countries have since produced national guidelines on diet. Within Britain during the 1970's the dietary advice from central government avoided precise quantification and goal setting and instead indicated non-specific trends.

Whilst this imprecision can be attributed to the need to remove any remaining theoretical uncertainties in the evidence there is little doubt that vested interests particularly the farming and manufacturing industries have delayed progress. By the end of the decade reports from several countries had been produced. All the these documents broadly supported dietary change in the same direction. Their recommendations highlighted that diet, on average should contain less fat, less salt, less sugar and more dietary fibre. The reports stress that calories should be derived from unrefined carbohydrates particularly fruit and

vegetables. Where the reports differ is in their degree of specificity and quantification of advice.

In the UK the urgent need for an authoritative point of reference resulted in the formation in 1979 of the National Advisory Committee on Nutrition Education (NACNE) this group under the Chairmanship of Professor James produced a report that was published in 1983 by the Health Education Council. The NACNE report presented nutritional guidelines in quantitative terms and was specifically designed to aid nutritional education. The recommendations of the report were not unexpected, much of the work was concerned with drawing consensus from previous work. The recommendations would however if implemented have major implications for the agricultural, food processing and retailing industries. The report was first submitted to the DHSS in 1981, but was suppressed (Sunday Times 1983). Cannon & Walker (1985), regarded the British Nutrition Foundation, a independent body having close links (98% funding) with the food industry, as providing:

"much of the opposition to the report"

In April 1983 NACNE had produced its third version of the report, and still amid controversy, Professor James and the Health Education Council published a 'discussion document'. This document has never been endorsed by the DHSS. A summary of the report's major recommendations is presented below:

1. The reduction of fat in the diet to 30-35% of total energy.
2. A reduction in saturated fatty acid intake to 10% of total energy. To accomplish this dairy fat and meat consumption must be reduced.
3. A reduction in salt intake of 3 grams per day (a 25% reduction).
4. A reduction in sugar consumption to 55 grams per day (a 50% reduction).
5. An increase in dietary fibre to at least 30 grams per head per day (a 50% increase).
6. An increase in vegetable protein intake and a reduction in animal protein.
7. A reduction in alcohol intake.

The NACNE report was followed in 1984 by the Committee on Medical Aspects of Food Policy's 'Report on Diet and Cardiovascular Disease'. This was an official DHSS report and for the first time recognised the impact of nutrition in

the development of coronary heart disease. Although admitting that the evidence falls short of absolute proof this report confirms the opinion that changes in the national diet occurring in recommended directions are likely to bring about benefits in health. The quantitative recommendations set are broadly in line with those of NACNE, but are restricted to concern with coronary heart disease and hence concentrated on fat intake.

The work of COMA and NACNE was complimented by work in other countries and by the mid-1980's there was a general international consensus about the direction that changes in nutrition should take so as reduce the risk from the above diseases, CHD in particular.

It has previously been mentioned that one of the major aims of NACNE and related reports was to provide objective guidelines, so that clear advice could be given, via health education to the community. This however is only one strategy for dietary change. Winkler and Sanderson (1983), have identified five such strategies:

1. An educative strategy, which would aim to induce dietary practice, through the provision of advice and information.
2. A substitution strategy, would encourage people to use 'healthy alternatives' to standard products; the substitution of skimmed milk for whole milk is a good example.
3. A pricing strategy would encourage people to buy 'healthier alternatives' by making them relatively cheaper than standard products.
4. A provision strategy would effect consumption by modifying the food provided from the public sector, hospitals and schools for example. This would directly effect the consumption of many individuals as well as setting an example to other organisations.
5. A regulatory strategy would involve legislation, and intervene directly to control the foods available to the community.

The Government, and those organisations responsible for public health, the NHS, DHSS and Health Education Council (from 1988 renamed as Health Education Authority) have concentrated their efforts on the first of these strategies to the exclusion of the other four. There are several reasons for this all concerned with the fact that the first strategy requires action at a individual level, whilst the other four require action at social-political-economic level:

1. The laissez-faire politics that have prevailed in this country for two hundred years, encourage a reluctance for political intervention. The present Conservative Government (1979-), in particular has a firm commitment not to interfere with market economics.
2. The liberal-democratic tradition in this country avoids political intervention in individual decision making. It is the right of the individual to do as he wishes to long as it does not affect others. Only in certain cases such as the 'seat belt' legislation has Government intervened directly in personal choice.
3. The links between food and health are not absolute, cause and effect is seldom clear cut. The suggestion that changes in diet will reduce, at an individual level, the risk of disease is in some quarters a contentious issue. Governments seldom take difficult decisions in such circumstances but rather such decisions are left to individuals.
4. There are powerful vested interests ranged against any political intervention. The food industry has powerful links, many members of government are associated with food companies. The powerful Ministry of Agriculture, Food and Fisheries whose prime responsibility is the protection of food supply has a limited commitment for change and can often force compromise on the Department of Health.

Handicapped by these limitations, health education is the major emphasis in the current food and health debate and the onus for providing that information has, to a large extent, fallen on three differing bodies.

1. The media - the media in all its forms have quickly realised the enormous public interest in matters of food. Whilst much of the material published or recorded may be of a dubious scientific pedigree the media have been responsible for increasing the public awareness about food and putting the health issue firmly on the national agenda. In particular a few influential writers such as Geoffrey Cannon have played major roles (Cannon and Walker 1985 and 1987).
2. Health Authorities - NHS Authorities in the UK are only just realising their preventive responsibilities. Since 1984 the majority of the 198 health districts in England, Scotland and Wales have produced local food policies often with quantifiable goals based on the NACNE and COMA reports. Dietitians, Community Physicians and Health Education Officers are playing a key part in stimulating local interest, disseminating guidelines and facilitating compliance.

3. The retailers - as public interest in the food and health debate has grown, retailers have responded in several ways which will be looked at in detail in the next chapter.

The promotion of dietary guidelines is not universally accepted. The link between diet and disease is far from conclusive, the differences between cause-effect and association often unclear. Even if some links are suggested, there is little hard evidence that changes in diet will reduce risk at a population or individual level. Opposition to dietary change through health education comes in three forms:

1. Those who believe that the links between food and health are the results of poor science. They argue that the links between diet and health are not conclusive, and not scientific (Anderson 1987). Anderson, one of the foremost critics believes that the current debate is ill-founded and promoted by:

"Academic scientists with ambitions to political advisory posts or in search of research money following publicity, mundane journalists for whom food scares 'about our increasingly sick society' provide an easy source of revelatory stories, other politically motivated journalists keen to discredit 'capitalist' food producers, government funding bodies forever seeking to increase their perceived influence and consequent grant".

Many of these arguments appear well founded and have much to do with the need to simplify complicated research for health education purposes. Pickard (1987) severely criticises those who go 'beyond the evidence' in linking fat with heart disease, McNamara (1987) believes that the research confuses the links between cause-effect and association and Macdonald (1987) suggests that proposed dietary changes might have possible harmful side effects.

2. There are those concerned not so much with the science, behind the debate but rather with its ethics. They recognise the complex arguments supporting the links between food and health but argue that it is unethical to simplify this for health education purposes, and that this, ultimately will undermine the medical and nutritional professions.

"The public is being deceived by those who push a simplistic health message identifying good and bad foods in the name of science..there is no justification, scientific or otherwise for crude propaganda about

supposedly good or bad foods fired aimlessly at the population at public expense" (Anderson 1987).

3. The third group of critics are those who may or may not accept the evidence but question the right of intervention, even at a health education level.

"Those who have been persuaded by the false hopes of the healthy diet message may modify their diet. This will not influence their likelihood of suffering illness later in life,... but throughout the country, and under the guise of health education children are being taught that the foods they enjoy threaten their health... pleasure is sinful, self-denial virtuous...meanwhile important sections of the community have seen their livelihoods stigmatised" (Le Fanu 1987).

The principle argument against the setting of, and dissemination of quantitative dietary guidelines is that the theoretical knowledge is at present insufficient to specify which level of nutrients may be harmful. Since the levels recommended would be arbitrary it is argued that numerical values are nonsense and that dietary advice based on them would be incorrect and unethical.

It is probable that the various groups concerned with the food and health debate, supporters, sceptics and critics belong to very different paradigms. Kuhn (1970), identifies paradigms as shared beliefs amongst a scientific community. Members of particular paradigms hold the views of that paradigm, at the same time there might be other communities holding opposing views within their paradigm. Kuhn notes that a characteristic of paradigms is the inability of one to see or understand the views of another. Eventually one paradigm becomes more successful and overthrows the others, because it best explains reality. For the advocates of the food/health paradigm it is interesting to note that the scientific philosophies of Popper (1969) and Lakatos (1974) suggest that knowledge is 'theory led', that is theories must be proposed and accepted before they can be disproved.

It must be stressed that the critics and sceptics represent a minority with varying viewpoints. Few would suggest that the evidence for dietary change is conclusive and that it will positively prevent disease however supporters would argue that the consequences of the diet-linked diseases are such, that it is the responsibility of health workers and government to act on the best advice available. They would suggest that there is overwhelming evidence suggesting a causal relationship between food and health which is supported by the vast majority of the medical/scientific establishment. Furthermore the supporters of change would argue that a modified diet can only do good, so even if the

advice in the future turns out to be erroneous no real harm is done.

Any fair and impartial analysis of the food and health debate must conclude that there is a clear and authoritative consensus supporting the direction of dietary change and that there is widespread agreement on the quantitative changes required. Health workers concerned with implementing nutrition policy must however have an understanding and acceptance of the sceptics views, firstly they provide a salutatory lesson on the dangers of oversimplifying complicated messages so that they lose their scientific foundations and secondly so that inertia, which is often justified on the grounds of a division of accepted opinion can be understood. The real focus for the debate has now moved on from the nature of the changes needed to how the changes can be implemented. For the purposes of this thesis the following premises will be accepted:

1. There is a causal relationship between diet and disease.
2. The modification of diet is therefore a valid activity for health workers.
3. The 'NACNE' report sets accepted and quantified standards for a modified diet. An important aim of the chapter was to develop a nutritional 'standard' against which nutritional quality could be measured. It would seem reasonable that the qualitative and quantitative guidelines contained in the NACNE report provide such a standard.

This chapter has shown that the relationships between diet and health are not new and that many of the issues currently influencing the current food and health debate have their roots in historical developments of the 19th century. For example government intervention at present is largely restricted to ensuring that food is safe not healthy. This legislation is a direct result of concerns that arose in the mid-19th century regarding adulteration. Clearly types of, quality and quantity of food available has always, and always will determine the overall nutritional health of the population. Likewise the quality of food has always been linked with its means of production and retail. It is clear, however, that the issues have changed from one of dietary insufficiency to dietary imbalance. This is partly due to changed lifestyles, increased expectations about the quantity and quality of food available in this country, increased knowledge due to better scientific and epidemiological data, and to a real concern that disease prevention through changes, both in food supply and individual choice, is a legitimate and necessary priority for health workers and society as a whole.

The chapter in particular has looked at two particular areas of historical change, the adulteration scandal of the mid-19th century and the publication of the NACNE report over one hundred years later. Both have similarities, the role of individuals and pressure groups, the use of the media and public interest and the role of government legislation. These case studies can be used to produce generalities about the role of change in the food industry and how it is resisted by vested interests both in terms of inertia and discreditation of the evidence. These conclusions will obviously need to be taken into account when designing the audit as a tool of change and in predictions about how retailers will respond to its use.

Chapter Three

THE FOOD RETAIL SECTOR'S RESPONSE TO THE NUTRITION DEBATE

Introduction

The previous two chapters have looked at the development of food retailing in this country and the contemporary concerns about the links between food and health. This chapter aims to develop some the issues raised previously, the most important being the role of the food retailer in promoting nutrition. This is obviously important because a nutritional quality audit for food retailers must be based on a concise understanding of:

1. The factors that influence the nutritional status of individuals and populations.
2. What the retailers are already doing in terms of promoting, or hindering, better nutrition.
3. The areas of activity in which retailers could potentially make a positive contribution to the nutritional status of the community.

This chapter will analyse these areas of interest and provide an overall justification for the development of a nutritional quality audit aimed at food retailers.

The Retailer's Influence on Diet

Consumer studies and anthropological research (Yudkin 1956) (King 1980) on food purchasing habits have demonstrated an extensive range of influences, the most significant including:

1. Availability
2. Cost
3. Personal taste
4. Individual attitudes and values
5. Societal and cultural norms
6. Significant others
7. Advertising

Can retailers influence all these factors ? It might be argued that all are influenced to some extent, particularly in the long term. Three of these factors, however, relate specifically to the supply side and are clearly within the retailer's sphere of influence. These factors will be looked at in more detail.

Availability

Any attempt to quantify the relative importance of these influences is difficult, but it would be reasonable to suppose that availability is a key factor. Ultimately, if a product is not available it can not be eaten. It has already been suggested that the debate whether availability is supply or demand led is simplistic. It is not really important whether retailers supply the demand created by consumers or create demand, because consumers will buy what ever is available. This assumes a static model, and it is clear that this is not the case, availability is itself the result of many socio-economic influences. The retailers are, however, the gate-keepers of our food supply, and have a major influence on the food we buy and to an increasing extent, the manufacture of food.

Whilst manufacturers have responded to consumer and media pressure in their own right, either by realising the potential for promoting certain aspects of their foods, or by reformulating products, it is the retailers, particularly the 'multiples' who largely control the food that reaches the consumer. They have almost total control over the manufacturer of 'own-label products' which, as we have seen, account for an increasing percentage of the 'multiples' sales, and considerable influence over branded products by purchasing agreements.

Price

Economic history and consumer research (McKenzie 1980) suggests that the demand for basic food stuffs is relatively inelastic in both directions; there will always be demand, particularly for staple commodities, even at very high prices. It was discussed in chapter one that Britain, unlike many countries, does not centrally determine prices for the majority of foods but leaves price to market economics. The exceptions to this laissez-faire philosophy are foods coming under the influence of the European Common Agricultural Policy (CAP). Even so, CAP only sets the price paid to the producers and does not directly determine the retail price. The minimum price that a retailer may ask is determined by producers and wholesalers, but the maximum price is determined largely by the retailer, and is influenced by a number of factors such as supply and demand, profit margins and overheads.

Since the end of rationing in the early 1950's supply and demand have been more or less in equilibrium. The population is at present reasonably static and people do not tend to eat more food when better off and conversely, the physiological limits on eating suggest that consumption will not expand substantially even with real price decreases

(Walker 1984) (Lewis et al 1985). From 1980-1987 the percentage of total expenditure spent on food fell from 16% to 14% although food expenditure per household remained almost constant at £23 billion (Lewis et al 1985). Thus, economic theory would suggest that there is great pressure on the major food manufacturers and retailers to innovate and create demand (The Grocer 1987c). It has already been mentioned that most basic foods are relatively inelastic, other products are not so and may have a relatively elastic demand, particularly the so called 'luxury products'. A good example of this would be the 'creamcake' invented largely in the early 1970's and sold as a luxurious product with advertising catch phrases such as 'Naughty but nice' and 'Go on treat yourself'. It is therefore perhaps not surprising that Britain is witnessing increasing innovation in the food industry at a time of relative affluence, when a large section of the population has seen real increases in disposable income.

The pressure to innovate is reinforced by the structure of the food manufacturing and retailing sector in Britain. Chapter one has shown that the food retailing sector is moving towards oligopolistic domination by the largest of the 'multiple' retailers. Economic theory suggests that competitive oligopolies are forced to innovate to maintain and increase their market share. Thus the 'multiple' retailers are always looking to supply new demands and to create demand for new products. These products could be entirely new, in which case they would have a headstart on their competitors or they could alternatively be established products produced cheaper in order to raise profit margins.

As far as the consumer is concerned, two aspects of price are important:

1. Price differences between retailers - the same product will cost different amounts in different retailers. The consumer has to effectively undertake a cost-benefit analysis every time they purchase a product. Ultimately there is a price that consumers will not pay and they will go elsewhere. Often consumers have to decide upon the advantages of price vis a vis convenience, travelling distance, accessibility etc. Convenience stores such as the Co-op's 'Eight to Late' charge more for products, because of their local situation and long hours. The out-of-town superstores tend to be cheaper, because of low overheads and economies of scale.
2. Price differences between products - for many products the consumer is faced with a choice of alternatives, often at different prices. The consumer must decide which alternative they want and what they are willing to pay. For a basic product such as baked beans the consumer has a choice of up to 6 products, all at

different prices. Many of these options represent a 'healthier' alternative to the basic, standard product. They may, for example, contain less salt and sugar than the standard product. Often these products are more expensive than the standard product. This may be due to economic necessity because, as a minority product, economies of scale dictate the product must cost more. It might, however, cost more due to a policy decision that 'healthy' products should cost more because of their perceived 'added value'.

Advertising

Advertising is a subtle and powerful influence over what consumers purchase. In chapter one it was noted that advertising developed in the 18th century. This seems to have been a response to two factors:

1. The geographic separation of purchasers, retailers and producers.
2. The specialisation of food supply.

Advertising makes potential consumers aware of where products can be purchased and at what price. Over the last two hundred years advertising has become a major industry. In 1987 over £325 million (The Grocer 1987e) was spent on advertising food products within Britain. There are now short term and long term objectives for advertising. The most important short term objective is to increase the number of customers and sales volume. The success of any retailer depends ultimately on the number of customers it attracts. Loyalty is an important factor, and each year there is a certain amount of turnover among regular customers. Advertising aims to both promote loyalty amongst existing customers and tries to attract new customers away from competitors. With the community spending on food remaining reasonably static this is the principle way in which retailers can maintain or increase profits.

A major long term objective of advertising is to develop a positive image. This is one of the most important assets of any retailer. The number of customers who return to the store week after week is determined by the overall impression that the retailer communicates to the public. Food retailers emphasize such factors as :

1. Quality of merchandise - some stores make an all-out effort to attract quality conscious customers. Sainsbury's has always promoted itself as stocking only the highest quality foods and recently Tesco has been trying to shift its image upmarket away from its 'Get the tins in and stack 'em high' image of a decade ago (Moore 1987).

2. Availability of merchandise - the large 'multiples' attempt to offer the largest possible assortment of products to facilitate 'one-stop' shopping.
3. Low prices - Some retailers emphasis low price or discounts. Often adverts carry loss-leader merchandise. A decade ago many of the large 'multiples' considered cost to be a major factor on which to compete with rivals, today the emphasis is more on quality, or quality linked to low prices:

"..during the price wars of the late 1970s as Tesco with 'Checkout' and Sainsbury's with 'Discount' fought tooth and nail for customers money and equally fiercely against the upstart Asda with its policy of branded goods at cheap prices...the customer nowadays is wooed with the promises of quality, choice and additional services. The price advantages are implied rather than stated..price competition is increasingly becoming the weapon of..discount operators such as Kwiksaver and Lo-cost" (Hurst 1985).

These are only a few of the themes which might be emphasized. Other options include friendly service, convenient hours and of course 'health'.

The Retailer's Response to the Food and Health Debate

There has, for this century at least and probably longer, been, a specific demand from a minority of consumers for food products that were of a higher quality than those commonly available. Furthermore there have probably always been sections of the population that have, whether for medical, personal or religious reasons, been particularly concerned about the food they purchased and ate.

Throughout the history of food retailing described in chapter one, certain retailers probably were more concerned about the quality of their goods than others. People probably knew which sellers sold fresher meat or eggs, and the seller would probably take maximum advantage of this. Some retailers would also claim that their products, patent medicines usually, but sometimes foods, gave health giving properties.

Food retailers in particular, began to see the advantages of 'healthy products' in the food adulteration controversy of the mid 19th century. The League Bread Company advertised in 1848-50 :

"Bread of perfect purity, free from alum and other pernicious ingredients" (cited in Burnett 1983).

Over the last hundred years, retailers have responded to the provision of 'healthy' foods in two ways; the specialist and generalist approaches:

1. The specialist 'health food' shop - often small, 'over the counter' shops, these developed from the turn of the century. They sold to a minority section of the community. For most of century it has been a cottage industry with a rather cranky image. Traditionally these shops have sold 'whole foods', 'vegetarian foods' exotic foods and foods low in sugar and salt. Most sold dietary supplements, homoeopathic remedies, natural cosmetics and publications. The specialist market was reasonably static until 1980. At this time there were approximately 850 specialist health food shops (Euromonitor 1987). This number doubled within 5 years and by 1987 there were 2000 such stores. Growth within the sector is reasonably constant at 15-20% per year. In 1985 approximately £170 million pounds was spent on food in such shops (The Grocer 1987f).

Much of this growth has been due to consumer demand as well as reorganisation within the industry. It is unlikely that growth will continue at this rate for much longer. These specialist shops only account for approximately 0.5% of food expenditure (Retail Intelligence 1987) and consequently their role in promoting better nutrition is limited. Whilst they are often innovators and market leaders in some aspects of the food and health debate, they do not have the sales or the advertising power to influence community nutrition to a significant extent.

The major reason for this recent rapid expansion is that the specialist health food store has been able to exploit the recent rise in interest in diet, particularly the trend for low fat & high fibre products. As major food manufacturers adopt healthier practices and people are able to buy the products they want through supermarkets it is likely that the specialist shops will suffer and may have to discover new areas of growth.

2. The generalist food retailer - there is little evidence that the major food retailers had any real interest in the food and health issue until the early 1980's, this was why the small specialists were able to find and exploit a niche in the market. To the generalist grocer food quality was concerned with quantity standards and meeting the existing food legislation, mainly anti-adulteration legislation. Nutrition was not seen as a issue of concern, or more cynically, a possible selling point. The major selling factors for the 50 years up to 1980 were probably those concerned with 'value for

money', price, presentation and incentives such as the 'co-op divi' or trading stamps. However in the last 10 years the 'multiples' in particular, have recognised the increasing consumer demand for healthy food and are responding to it. This in turn has reinforced consumer demand, creating a 'health' spiral'. Most are now involving themselves in a whole range of issues related to the debate. It must be realised that it would be incorrect to consider all food retailers as a single entity. Each retailer has a very different customer profile and will try and meet the needs of their customers. For example Sainsbury's has by and large an 'upmarket' customer profile while Kwiksaver will provide more basic needs to 'working class' customers (Lewis et al 1985). Neither would particularly wish to compete with each other and encourage this differentiation. The response to differences in customer profile effect provision at a local level also. All five of the big five multiples have at least three categories of store aimed at different customer groups. These stores differ in many ways eg stocking, merchandising and promotional policies.

The Food Retailing Sector's Current Policies

At this stage it would be pertinent to develop the second aim of this chapter, an analysis of how the major retailers are responding to this increased consumer demand. Hopefully it will be possible to identify key themes which will form the basis of the quality audits design. Because 'health' has become an area of competition, the 'multiples' regularly publicise their activities in this area. A running record of these statements has been kept over the last two years and is summarised below. It must be stressed that these are 'expressed' claims which may or may not be true. It is where the retailers claim to be and shows the commitment to improving nutrition that the retailers would like the public to think they have. It is also probable that due to the consumer segmentation issue discussed above various stores within the different companies will respond in different ways. In general those aiming for a middle class customer group might be expected to respond more fully to developments listed below than a retailer aiming at a more working class client group, largely because market research suggests that interest in 'healthy eating' is linked to socio-economic class.

1. Presto - In 1985 Argyll launched an educational campaign designed to help customers make informed choices. Their Presto stores launched a policy that claimed to:
 - a. Stock healthy food products.
 - b. Provide clear and consistent nutrition information.
 - c. To invite suppliers to work with providing nutrition

information.

- d. To emphasis balanced meals.
- e. To instigate staff education and training programmes.
- f. To design stores to reflect the growing interest in food health.

In 1986 Presto published a list of over 150 'own-label' products that do not contain additives. In 1987 Argyll took over Safeway (see below).

2. Asda - in February 1986 Asda had few 'own-label' products but, following a revision of policy, had over 2000 by the end of 1987. Asda include some details of nutritional content on labels and packaging and claim to have removed unnecessary additives.
3. Bejam - following a consumer survey in 1986, Bejam produced 'Food Facts' a listing of nutritional information of over 300 products. Bejam claim to have a firm commitment to dietary change and are attempting to reduce the salt and fat content of various foods as well as removing unnecessary additives. The Bejam Healthy Eating Advisory Service invited members of the public to send in detailed accounts of food eaten in a week. Bejam claim over 4000 requests for this service in 1986.
4. Spar - in 1985 Spar launched a new range of additive free foods called 'Naturally Spar'. They claim to be actively reviewing policies on labelling and additives.
5. Tesco - in January 1985 Tesco launched their 'Healthy Eating Programme'. Tesco was the first major retailer to explicitly develop a nutritional policy for customers. They claim that the policy aims to give customers more information and provides an alternative to traditional foods. By the end of 1986 they had nutritionally labelled 1600 of their own-label products, by 1987 they claimed that all 2000 own-label products were nutritionally labelled. Tesco have produced a labelling scheme consisting of colour coded panels that often contain a statement explaining the key attribute of the food. In 1986 Tesco produced a series of 7 fact sheets on various aspects of nutrition, and the Tesco Guide To Healthy Eating. Between 1985-1987 they claim to have invested over £3 million in health education and provided more than 21 million free leaflets. Tesco also claim to have made significant developments in new products. Tesco claim that their policy of removing unnecessary additives has resulted in 400 additive free products being developed and further claims to be working with hospitals and child health organisations to continue development. Tesco report that buyers are given nutritional checklists to consider when developing new products and the company has established consumer advice

centres in the largest of their stores. Tesco have been a major contributor to the Welsh 'Heart Beat Wales' coronary heart disease project.

6. J.Sainsbury - campaign launched in March 1986. Sainsbury's claim to have reviewed the company's labelling policy and the use of additives. This appears to have led to the removal of additives from over 300 products during that year. Nutritional labelling was agreed for over 250 own-label products. The company produced a list of over 400 artificial colour free foods and fresh products. Sainsbury's also produced the 'Healthy Look at Sainsbury's Labels' and other nutrition education books, including a series of healthy eating cook books. Sainsbury's have negotiated with the Vegetarian Society the use of their symbol on organically grown products.
7. Safeway - in 1985 Safeway publicly took the decision to remove all unnecessary additives or where possible to replace them with natural alternatives. By March 1986 they claim to have done this for 500 products. A series of healthy eating booklets were published on additives and labelling. In 1986 Safeway appear to have decided to pre-empt government action and introduce a nutritional labelling scheme on over 1000 of their own-label products. The company experimented with a 'Natural Food' section as well as having products throughout the store. Safeway claim to have introduced several new own-label products such as canned fruit in natural juices and no-added sugar products.
8. Co-op - in April 1986 the Co-op publicly launched the second stage of its 'Eat Right - Eat Well' campaign which included a policy on nutritional labelling and food additives. Through its Nutrition Advice Centre, free leaflets and interactive video system the Co-op claims to have reached 8 million customers.

An analysis of actions of these eight retailers (which account for over 80% of all food sales) suggests that there are a number of key areas in which retailers are involving themselves:

1. Information - the retailers have responded in two ways:
 - a. Nutritional Labelling - It is only since 1973 that Government regulations have been in force regarding the type of information that must be given on food product labels (Bond 1985). The most recent attempt to clarify the issue has been the 'Food Labelling Regulations' act which became law in 1984 but operational in 1986. These regulations state that

food products must have the following information on a label:

- i. Name of food, the food must have a name.
- ii. List of ingredients, most labels must indicate the ingredients, in the correct order by weight. Additives must be listed by name and E number.
- iii. Minimum durability, commonly known as shelf life and is the date until the food retains its specific properties or starts to deteriorate.
- iv. Descriptions, there are restrictions on certain words in order to prevent the consumer being misled.
- v. Claims, the regulations contain requirements relating to dietary claims made on labels. Vitamins and minerals must not be claimed unless a daily portion of the product contains more than 1/6 of the recommended daily intake.

On March 27th 1985 the Ministry of Agriculture, Farming and Fisheries (MAFF) issued proposals for full nutritional labelling guidelines. These aim to ensure that nutrition information is given voluntarily in a standard format. The recommended groupings are energy, protein, carbohydrate, fat (with type identified) and dietary fibre. This list can be followed with minerals and vitamins. These proposals have been welcomed by the majority of retailers and manufacturers:

"The Food and Drink Federation has greeted the news with enthusiasm believing there is an urgent need for a uniform system of food labelling" (The Grocer 1987g).

and in May 1987 the Government announced that the scheme was ready for introduction with the support of statutory funding (The Grocer 1987g). Formal guidelines were issued in July 1988. However the new regulations have been criticised by consumer groups:

"Informed choice is only possible when consumers can see easily both what is in a food and how it was produced. For that reason we believe labelling could be judged on whether it clearly tells the consumer both these things and not just in words hidden away in a microscopically small ingredients

panel...the new proposals do not correspond with consumer needs" (The Grocer 1988b).

Retailers and producers of branded products are currently in the process of responding to the new guidelines, some, including Tesco already have a comprehensive system on their own-label products, whilst Sainsbury's are waiting to see the guidelines before committing itself. Most of the major retailers appear to view nutritional labelling as a key area of action. One of the consequences of the voluntary agreement is that retailers will continue to develop a variety of labelling schemes and be selective in their implementation.

- b. Nutritional Literature - most of the major retailers publish literature designed to support their nutritional programmes. The themes include guides to labelling, detailed information on dietary guidelines, healthy cooking and eating and nutritional guides to products.
2. Availability of new products - most of the major retailers have introduced new product lines, particularly new 'own-label' products. For example Tesco have since 1985 introduced over 500 new 'healthier' products, and British Home Stores has a 'Natural Foods' range. These new products, referred to in this thesis as 'healthy alternatives' are usually sold side by side with the original products.
 3. Modification of products - several of the major retailers and producers are undertaking a modification programme of existing products. Most are reviewing the use of additives as consumers have become increasingly worried about their use. Other modifications have included reductions in added sugar and salt. The additives issue in particular, deserves special attention. Over the last five years there has been a lot of publicity about the use of unnecessary additives in food manufacture and the possibility that some are potentially harmful. Maurice Hanssen's book 'E For Additives' was a major best seller in 1985. Nearly 75% of foods eaten in Britain are processed and contain some of the 3,500 permitted additives (Euromonitor 1987). Over the last five years two factors have raised public consciousness about the issue:
 - a. The advent of E numbers, since 1984 the British food industry has been developing the EEC standard system for identifying additives. From 1st July 1986 all additives must be listed by name and E number.

- b. The debate about the possible side effects of additives has increased, intolerance, resulting in allergies such as asthma and hyperactivity is now medically accepted as being linked to a small number of artificial additives.

Lack of firm evidence on the medical consequences of consumption, confusion about E numbers and the easy identification of products with additives has resulted in a number of consumers wishing to avoid additives when possible. Recent research (Bradford University Food Policy Unit 1985) has shown that over 80% of consumers would rather avoid additives if possible.

The majority of retailers are modifying their own-label brands and working with manufacturers to review branded products, with the aim of reducing additives:

"There is a traditional wisdom that you can't sell nutrition. Now healthiness is pushed just as fast as the 'no additive' stickers can be printed" (Round 1987).

Whilst there are obvious advantages to the consumer of the manufacturers and retailers new interest in health, concern has been expressed that the 'additives issue' has drawn consumers attention away from more important issues. (Euromonitor 1987).

This chapter has so far analysed the types of action that retailers could undertake to improve consumer nutrition and highlighted advertising, information, product policy and pricing as key areas. Following this, a brief review of the major retailers response to the food and health debate was undertaken and the major areas of action investigated in more detail. It would, perhaps now be prudent to ask several questions:

1. Have the retailers actually being doing what they claim? The claims are 'expressed' claims issued largely for publicity purposes. It is uncertain to what extent these claims are realised in practice and the weight they carry related to other potential developments. It is doubtful whether a retailer could afford to deliberately mislead consumers, some of the claims, could however, be open to subjective interpretation. Is a new 'healthy alternative' really a healthier product?

"The food industry has cashed in on the new health consciousness with a fairly cynical exercise in repackaging existing products without actually changing them" (Round 1987).

2. What have they not been doing? The retailers responses have been limited to three major areas, the provision of

nutritional labelling and information, new product ranges and alteration of existing products. There are however other factors that could be used to influence consumer nutrition, product positioning and price differentials for example. Why have retailers not involved themselves in these areas of action ?

3. How relevant is their activity to the issue of improved community nutrition ? The nutritional educational literature supplied in shops is nearly always produced by the retailer:

"Yet only one shopper in 40 considers the supermarket a reliable source of information. Yet 53% felt they could trust dietary information from primary health care workers such as their GPs" (Bradford University Food Policy Unit 1988).

4. What could a committed retailer do to improve community nutrition ? Linked to 2 above, food retailers need to respond to the issue in a sensible way - not by over-reacting to their perceptions of short term consumer demand. The areas already being worked need consolidating and evaluating. The retailers then need to work closely with the manufacturers and look at the other options open to them. Pricing, product availability, positioning, promotion, information and environmental strategies all may play a part in an overall, co-ordinated strategy.
5. Does the pattern of selected activities and omissions suggest anything about their motives ? Why are the retailers concerning themselves with the food and health issue ? One could suggest that the retailers are creating consumer demand and are not serious about the health issue in any altruistic sense but only on capitalising on certain areas which have the potential for commercial gain. Are the retailers encouraging the public to ignore dietary recommendations with their implications for the full range of foods we eat and instead concentrating on the fears about E numbers and additives ?

"The problem is that 'healthiness' is frequently marketed in ways which pull the wool over consumers eyes. Dubious ingredients stay put while the impression of goodness is given by entirely truthful claims of 'no salt' or 'no artificial colouring' (cited in Round 1987).

If this is the case the recent developments might actually detract from more serious fundamental issues. Yet does it matter what the retailers motives are ?

"Whether (Tesco's) motive is an entirely altruistic concern for the future health of its customers or whether the company is keen to compete with its upmarket competitors, is really neither here nor there..We don't really care whether its reasons are the same as ours" (cited in Moore 1987).

The reality is that the above five questions are vitally important to manufacturers, retailers, health workers and consumers. Clearly some progress has been made, and there is certainly, for what ever reason, some commitment for change and innovation. To implement nutrition policy health workers need to be in a position where existing efforts can be objectively analysed and evaluated. This however is a difficult task, neither retailers, consumers or health workers have the ability to analyse and co-ordinate the various contributions which the retailers could make to community nutrition. It is for these reasons that a nutritional quality audit for food retailers is required. Whilst, it will not by itself answer the above questions, it will provide an objective data-base which will enable informed debate to progress in well defined directions.

CHAPTER 4

METHODOLOGY AND DESIGNIntroduction

The nutritional quality audit for food retailers is a tool of measurement. It will enable health professionals and other workers to undertake an audit, a quantitative measurement at a specific point in time (Collins 1982). The audit will measure aspects of food retailer's policy and their actual contributions to improving individual and community nutrition. This chapter will develop the philosophy and methodology of the audit and describe the process of its design.

Research aimed at developing health promotion strategies for food retailers has been largely restricted to attempts at measuring the retailers contribution in terms of food availability, that is, whether a number of specific food items which the authors believe measure aspects of nutritional quality, are, or are not available. Other research has combined aspects of availability and price (Bellamy et al 1986). More qualitative work (Euromonitor 1987) has attempted a review of identified or expressed policies with regard to nutrition. These studies were often performed largely for academic research purposes or are marketing surveys. None attempt to directly influence the retailer's contributions to nutrition, although it is reasonable to suppose that some indirect influence has been exerted. Hanssen's review of retailer's policies on additives (Hanssen 1985):

"was at the vanguard of the current healthy eating boom which has seen manufacturers and retailers respond increasingly to consumer led demand for natural products" (The Grocer 1987h).

The aim of the nutritional quality audit is to provide an analytical tool that will determine how retailers are contributing to the food and health debate and by doing this, stimulate their competitive instincts to better their rivals.

To do this it is necessary to develop a more sophisticated approach to analysing the retailer's policies and actions than previous 'food availability' studies. It was identified in the introduction of this thesis that the retailers potential contribution to nutritional improvement was multi-dimensional and involved factors such as pricing, advertising, product positioning and information. Ultimately nutrition policy is concerned with individual diet. Health

education theory suggests that any explanation of individual health behaviour, must take into account a number of inter-related factors including beliefs, attitudes and cultural norms.

The most elegant of the various theories proposing to explain health behaviour is Tones' 'Health Action Model' (Tones 1979) which was developed from Fishbein's earlier work (Fishbein and Ajzen 1975). Using this model it is possible to identify food availability as a key 'facilitating/inhibiting' factor, but it only becomes important at a relatively late stage in an individual's decision to purchase a product. That is, an individual will, through a combination of various factors decide to undertake a particular behaviour, the purchase of a food product, but ultimately the facilitative factor of 'availability' must be present before a decision can occur. Any method that relies solely on product availability only explains a part of the complex inter-relationship between retailer and consumer. Closer examination of the Health Action Model suggests that health related decisions are no simple issue. A whole range of affective factors must be considered. Factors such as price, positioning, information and product policy influence the motivation, normative and belief systems and play a key role in the ultimate behavioural decision. To measure the nutritional contribution of food retailers it is necessary to measure more than just availability. It is necessary to measure all those factors that could effect an individual's decision to change their diet.

Nutritional Quality

The design of an audit which would measure the total contribution of a retailer to community nutrition required this concept of 'total contribution' to be more fully developed. It has already been suggested that this 'contribution' is multi-dimensional and may be positive or negative. A concept was therefore developed of a food retailer having an nutritional 'ethos', a whole range of inter-related positive and negative images, real or perceived that may effect an individual's decision regarding food purchase and consumption. To define this ethos the concept of 'nutritional quality' was devised. A food retailer's nutritional quality can be defined as the degree to which an organization undertakes activities which may influence the potential, perceived or real nutritional intake of an individual or community. Nutritional quality therefore, is something far more complex than simple food availability. It is hoped that one of the benefits of this research would be the adoption of this more sophisticated concept instead of the narrower food availability idea which, to date, has been the major pre-occupation of workers in the field.

The ability to define a concept does not ensure the ability to quantify it. For this to be possible it is necessary to determine what this nutritional quality is and how might it be measured ? Quality is an elusive concept. Quality is recognisable and perceived to be somehow linked to goodness, it satisfies most realist examinations, yet it can not be directly measured. Measurement can only be made of manifestations of quality. A quality audit may be defined as an official examination of excellence at a given point in time. This project attempts to measure nutritional quality. How excellent is a food retailers nutritional contribution ? Yet if quality is not measurable, then is a quality audit a contradiction in terms ?

Perception of quality is a personal issue, Pirsig in his inquiry into values (Pirsig 1972) suggests that quality differs according an individuals world view, or weltanschauungen. Perceptions of quality depend on personal objectives of the highest level, an individual's values. These differ from one individual to another and thus perceptions of quality differ. In large complex organisations, such as a major food retailer, quality is therefore a difficult concept to consider, there being almost an infinite number of objectives real or perceived held by the various groups and individuals within the organisation. For example Trade Unions and Management are often opposed because of different objectives, the provision of jobs vis a vis profit, therefore their perception of the organisations quality will vary considerably. Absolute quality can therefore not easily be determined. It may be considered to be a sum of the quality perceptions of all the differing individuals or more usually the quality perceptions of a powerful sub-group.

Adherence to various schools of thought suggests possession of similar weltanschauungen. Shared perceptions of quality might also be presumed. Health workers involved with nutrition policy implementation could be said to belong to a particular school of thought, one that accepts that the food people eat influences their health and that it is politically, morally and socially valid to attempt to influence community nutrition. Support for this school of thought imposes logic and rationality on food purchase and consumption. Health is a requirement that should precede all other goals either individual or corporate. Therefore quality from the food and health perspective is the extent to which an organisation acts towards objectives associated with better nutrition.

The identification of these objectives is important but is not enough. To perform an audit the objectives must be quantified, a baseline or target from which to measure individual retailers efforts - their nutritional quality must be identified. To find common quantifiable objectives

for the 'food and health school' is not easy. However the 1983 'NACNE' (HEC 1983) report provides for the first time, commonly agreed guidelines for nutrition in which the trends have been generally accepted by the majority of health workers. The 'NACNE' report has been developed by District Health Authorities around the country and is generally accepted as a standard for nutritional quality. Therefore for the purposes of the quality audit the main conclusions of the 'NACNE' report will be used as a baseline for nutritional quality. These conclusions were detailed in chapter 3.

Food retailers can therefore be deemed to be making a more effective contribution to nutrition as their policies and activities encourage trends in food consumption which equate with the current nutritional guidelines. Nutritional quality increases as food sold and consumed conforms more closely to the policy guidelines. Other factors relating to nutritional quality are determined on whether the retailers policy or actions encourage or discourage changes in diet in line with the guidelines. The progression towards these guidelines and their relationship with health may not be directly linked but they can be considered to move in basically similar directions. By using the guidelines suggested in the 'NACNE' report it is possible to develop the basis of a nutritional quality audit. Nutritional quality increases as food retailers influence food purchased and consumed in line with current nutrition policy recommendations.

Nutritional Dimensions

The next step in the methodology was to determine the nature of the audit. Audit as a concept has its origins in finance ie the verification of financial accounts. The term is however commonly used for certain types of quantitative analysis that measure some aspects of a defined population at a particular point in time. For example in the context of food retailers, audits are often used by market research companies to determine the number and types of retailers operating within a defined geographical area.

Another type of audit use a standard 'checklist', a range of questions that indicate the presence or absence of a factor is compared against a sample. For example if the audit was looking at aspects of 'quality' the auditor would examine the subject of investigation using a defined protocol, the answers to the various questions giving an indication of quality. In terms of nutrition, quality audits have been used mostly in the field of catering. John Rice of Wessex Regional Health Authority has compiled a series of audits concerned with good catering practice within hospitals (Wessex Regional Health Authority 1983). Rice's method is to compare what happens within the organisation under investigation with his own professional considerations of

what should be considered good practice . The audit is scored within sections such as colour, freshness and taste to give an overall indication of quality. This type of audit was investigated, but was considered too simple. The above discussion on the subjective nature, of organisational goals would suggest that any attempt to use a single individuals 'best practice' model for the audit would be flawed. Best practices are subjective. Whose best practice ?

One of the important functions of the nutritional quality audit is to provide an objective analysis of the nutritional contributions of individual retailers. A simple check list of whether a factor is or is not present does not suffice. Clearly the presence or absence of some contributions is a better indicator of nutritional quality than others, not all factors are equal. The quality audit would have to devise a system of weighting factors.

The audit must also cope with another problem that previous research has failed to tackle satisfactorily. That is the question of negative effect. If a 'healthy' product is available this is generally considered a good thing, likewise if an 'unhealthy' product is on sale this is generally regarded as a negative influence. But what happens if both are on sale, is this better or worse than neither being available ? How does this effect the consumer ? An audit must look at negative factors as well as positive ones. Before this, however it would be necessary to identify the specific areas of activity in which retailers could potentially make a positive contribution to the nutritional status of the community.

In chapter 3 and earlier in this chapter, several factors which do or could potentially influence consumers dietary behaviour were identified, these included availability, price, positioning and information. For the purposes of the audit it was necessary to formalise these areas, so that a retailer's total contribution to nutritional quality could be sub-divided into a minimum number of well defined, mutually exclusive dimensions. These areas were determined by the author and were the subject of a consultation exercise with Health Education Officers, Community Dietitians and other health workers in July 1987. The broad areas were called nutritional dimensions. Overall, 7 nutritional dimensions were identified and these are discussed below with brief indications of how retailer activity in these areas is relevant to nutrition. It should be noted that these categories do not claim to be mutually exclusive, they do however divide the scope of nutritional quality into manageable 'chunks' which can be more fully investigated.

1. Information

As identified in chapter 3, most of the major retailers consider the provision of information to be an important contribution to the nutrition debate. The aim of information provision is to facilitate informed choice, it is therefore a traditional health education strategy. The provision of information can be divided into two categories.

- a. The provision of literature designed, to inform customers about the retailer's nutritional policy and healthy eating guides. Many retailers have now developed some form of information service often through literature aimed at promoting nutrition or healthy products. In general there is considerable scope for developing these types of service. A crucial area of argument within this dimension is whether retailers are promoting 'healthy' foods, 'health foods' or nutrition in general. A retailer may emphasise the foods it considers nutritionally healthy but does it also draw consumer's attention to those products which are clearly nutritionally undesirable? In the last chapter it was noted that consumers are reluctant to accept nutritional information from retailers on the basis that it might be biased. This would suggest that a committed retailer might use independent publications within its shops. The information dimension should also look at other areas, new technologies for example, that retailers could exploit so as to provide retailers with clear, concise, unbiased information with which to learn and make decisions.
- b. The second important area within this dimension is the practice of labelling, and nutritional labelling in particular. Legislation now requires certain information to be detailed and the voluntary agreement reviewed in chapter 3 gives retailers the opportunity to develop a standard nutritional labelling scheme, particularly on their own-label products. A 1985 Gallup poll commissioned by Tesco showed that only 29% of consumers thought that sufficient nutrition information was given on food labels (Nutrition and Food Science 1985). Bad nutritional information can be harmful if it leads consumers to make inadequately informed choice. Nutritional labelling must be consistent and understood by all users. Information related to individual products could also be available at the point of purchase using shelf markers. American research suggests that the use of individual brand-specific self markers might be a more effective

method of delivering nutrition information to shoppers than the detailed educational leaflets that most retailers emphasis (Levy et al 1981).

An analysis of this dimension would ascertain whether the retailer presents a fair and balanced view and provides consumers with the means to make an informed choice.

2. Promotion

This dimension deals with the retailer's promotion and advertising policy. In chapter 3 it was noted that advertising is concerned with presenting the retailer with a positive image. This image is one of the many factors that influences consumer choice. It has already been concluded that retail competition is multi-dimensional and that this includes 'health'. Therefore retailers may advertise aspects of their nutrition activities to attract potential customers. An analysis of this advertising programme might provide an important insight into the retailer's actual or potential, contribution to better nutrition. Advertising is an 'outreach' service and can influence the community's attitudes and beliefs without individuals ever visiting the retailer itself. An analysis of this dimension would ascertain whether the retailer makes effective use of its promotional activities to inform potential customers about its nutrition programme. It should be noted that the term 'promotion' as used in this research is principally concerned with advertising policy and excludes more specific 'information' which is identified as a separate dimension.

3. Availability

It has already been discussed how, ultimately, availability is perhaps the single most important factor in influencing the food that the community purchases and consumes. Certainly the practice of purchase should be seen as the end result of a retailer's influence on nutrition. It was considered that choice is important because it allows customers to exercise informed decision making. Furthermore it might be proposed that retailers who provide a greater choice of products are inherently more attractive to customers. By attracting customers, through the provision of a choice of products retailers would have more opportunity to influence nutrition through other nutritional dimensions. It must however, be noted that market segmentation techniques attempt to subdivide the market into a distinct groups of customers in order to get a clearer idea of customer

needs. Retailers will not attempt to meet the market needs of all groups with regard to availability.

The other major aspect of the availability dimension which the audit would have to consider is the question of comparative availability as opposed to the absolute availability considered above. For example, there might be two complimentary products, one a standard product, and the other its 'healthy alternative'. It might be considered that their relative availability, the ratio of the amount of one product vis a vis the other could influence a customer's purchasing decision. An analysis of the relative availability of certain products would provide an insight into whether the retailer's claims about its nutritional policy are borne out in reality. An analysis of the availability dimension would indicate the range of foods stocked and hence the choice offered to customers, it would also indicate how the retailer does or does not use relative availability to promote better nutrition.

4. Product Policy

This dimension is concerned with analysing the retailer's nutritional quality through the products it sells. For the majority of retailers a division can be made between branded products, goods produced by manufacturers and sold to retailers, and own-label products, goods produced on behalf of the retailers and carrying their name. In chapter one it was noted that own-label products are accounting for an increasing proportion of total sales. Those retailers who have a own brand policy have considerable control over their nutritional specification. Whilst the composition of branded products is determined by the manufacturers, retailers particularly the 'multiples' carry considerable influence through procurement policy. A retailer's policies and actions towards the nutritional composition of its products are therefore an important determinant of nutritional quality.

5. Accessibility

This dimension is concerned with a retailer's accessibility and location. The decision to purchase or build a retailer at any given site is a complex one that needs to take into account a number of factors. Catchment areas, images and customer segments of existing stores, site characteristics, population data, economic bases, future competition, financial analysis of anticipated revenues, expenses and profits will all need to be carefully analysed. Does the demographic data suggest that there are enough of the right people around of the right type to make the store viable? Data firms

such as Pinpoint Analysis and CACI have computerised the 1981 OPCS census and can provide demographic data down to the electoral ward level. Other population data and geo-demographic clusters such as PIN and ACORN and the production of 'supportable store estimates' indicate whether there is enough potential spending for another store. A favoured method of determining this data is the 'Analogue Method', this procedure involves measuring the market share and catchment of existing stores and using this as an analogue to arrive at turnover estimate.

What determines the choice of locations at which a given consumer will purchase goods that are subsequently consumed given choice of retailer and location? Several complex theories have been put forward the 'single trip hypothesis' and 'nearest trip hypothesis' (Beacon 1987) transport opportunities, distance from population centres, value requirements of different goods, time, multi-purpose trips verse single trips. At a practical level these factors might include whether a store is served by public transport or whether the store aims to facilitate purchase by having a range of payment facilities.

From a 'health' perspective the use of customer segmentation techniques and the information gained from customer behaviour studies raise a number of issues. A particular concern is the possible neglect of minority groups. What happens if you are in a minority group in a area deemed suitable for an 'out of town superstore' and you are without access to private or public transport? Another issue might be how well a particular retailer has matched the needs of its potential customers. Often, particularly in inner-city areas there is very little choice, people often have to shop at small corner shops because there is no viable alternative and it is not profitable for anyone to provide such an alternative. The importance of these issues is seen upon consideration of the Health Action Model discussed earlier. Crudely it might be considered that it doesn't matter how good a retailer's potential contribution to nutrition is, if nobody shops there, because it is cold, unaccessible or people have to queue for hours at the checkouts. The indicators within the accessibility dimension therefore look at issues concerning accessibility, the environment and the needs of minority groups.

6. Pricing Policy

Price is obviously an important aspect of an individual's decision to purchase a product or even to shop at a certain store. For some sections of the community, the old or the unemployed it may be the major factor. In analysing the contribution of pricing issues to nutritional quality it is necessary to consider two aspects of price:

1. 'Absolute price' - the retailer's prices compared with those of its competitors. The decision to buy a product involves a whole range of factors such as how much the product is wanted and income available. Ultimately price plays an important part in this decision. If the price of the product is considered too high it will not be purchased. If the price of the product is substantially greater in one store there will be a tendency to shop elsewhere. Some retailers are, in general, more expensive than others, absolute price must therefore be considered important when determining a retailer's overall nutritional quality.
2. 'Relative price' - the differential between versions of the same product. Most products have alternatives. If there is no material difference between two products, and no other factors such as brand loyalty are considered, then price differentials are possibly all important. This is particularly important when considering nutritionally desirable products that often have standard alternatives. It might be that the nutritionally desirable product does not benefit from production economies of scale and is therefore actually more expensive to produce, often however it would appear that healthy alternatives cost more than standard products because health is seen as 'added value' and can attract a higher purchasing price.

The higher price may suggest that the 'healthier' product is somehow 'better' or it may put people off especially if they are trying a new product for the first time. Price differentials between 'healthy' and 'standard' products are therefore important. This is seen clearly in the case of milk. Low fat milk, a few years ago attracted a 2-3 p premium on whole milk, presumably because of economies of scale. Therefore people had to have a reasonable commitment to purchase low fat milk, more so if income was an important factor in purchasing decisions. Over the last few years the price of skimmed milk has come down to almost parity or in some cases even less than whole milk. This plays an important part in

reinforcing the trend away from whole milk. Likewise price is an important factor in encouraging people to try new products and whether a retailer uses price to improve nutrition gives us an important insight into its commitment to nutritional quality. The London Food Commission has found (Cole-Hamilton and Lang 1986) that the average cost of a healthy diet was some 35% greater than people on low incomes spent on food. A 1986 'Guardian Newspaper' survey found that a healthy food basket proved to be 29% dearer (cited in The Grocer 1986).

"So long as a price differential (between basic and healthy foods) exists there cannot be said to be a genuine freedom of choice for those on low incomes"

An analysis of this dimension will consider aspects of price and their relationship to nutritional quality.

7. Positioning Policy

This dimension is concerned with how products are presented within stores. Positioning plays an important part in influencing product purchase. The issues within this dimension therefore determine the retailer's contribution to nutritional quality as suggested by its policy on positioning products. One of the important areas to be addressed here is where nutritionally desirable products are placed. Are they in their own health food section or dispersed throughout the store? It is well known within the retailing trade that the location of different products in the shop influence their sales potential. 60% of all purchases in a supermarket are chosen after the customer enters the store (Progressive Grocer 1972). This type of consumer decision making is known as impulse buying, and retailers arrange displays and position products to increase the impulse purchases made by customers. For example, it might be logical for a retailer to position basic commodities such as bread, milk, sugar and eggs together so that customers can make quick purchases. Retailers in practice however, distribute basic products throughout their shops so that customers have to spend some time finding them. Whilst this is occurring the customer is exposed to numerous displays tempting impulse buying.

Certain areas of shops are more effective at promoting impulse buying than others. A large and potentially profitable display area is at the end of aisles. The sales potential of these areas is excellent because an average consumer may pass an end of aisle display several times in their visit. Likewise checkout stands

usually feature a wide range of impulse items such as magazines and confectionery products. Whether the retailer uses these important sites to promote healthy products is a important factor in considering the commitment to overall nutritional quality. The other issue within this dimension concerns the issue of the positioning of healthy products vis a vis standard products. The comparative availability of products has been addressed in the availability dimension, but the issue of positioning is also important. Two products may have equal availability but one may be positioned in such a way as to increase sales - the relative prominence of healthy and standard foods is an important aspect of nutritional quality. To a retailer these issues might seem commercially naive - their customer segmentation profiles would give them a clear idea of what products should be sold and how best they should be displayed for their target population. Their importance from a the nutritional quality point of view is that they firstly give a good indication of a retailer's commitment to nutrition vis a vis profit and secondly, that they have a significant effect on the purchases made by customers and as such could play a part in the promotion of healthy eating.

Key Food Groups

In the identification of these nutritional dimensions it was noted that some, namely the positioning, availability and pricing dimensions, appeared to relate more specifically to products than others. It was therefore decided to propose a system of key food products that would be applicable to these three dimensions. The key food groups that are central to this dimension were the subject of some consideration. The final list was produced by a 'peer consultation exercise' held in June 1987. 25 health workers who were au fait with the nature of the research were asked to nominate the 10 products they saw as key indicators in the monitoring of nutritional quality. This group which included Health Education Officers, Environmental Health Officers and Community Dieticians listed food products which were necessary, popular and had 'healthy' and non-healthy' alternatives. This list was then analysed - it was found that a majority of people (17/25) had each included nine products (the other eight people all chose at least 5 of the products):

1. Bread
2. Milk
3. Spreading Fat
4. Cheese

5. Rice
6. Breakfast Cereal
7. Coffee
8. Orange Squash
9. Wine

These key food groups contain staple and commonly purchased products. Few households do not routinely purchase products from each of these groups. The exception might be the final group, wine. This is included because it provides the audit with an important insight into how retailers rationalise promotion of alcohol with their nutrition policy. Each of the key food groups contains products which are monitored by the National Food Survey (NFS). This survey is the most comprehensive source of information on the food consumption patterns in Britain. The use by the nutritional quality audit of key products monitored by the NFS might, in the future be useful.

Each key product group contains a pair of complementary foods, one of which is a healthy alternative to a standard product. The term healthy alternative is used throughout this thesis and requires some definition. There is no clear definition as to what constitutes a 'healthy food', and some would argue that they do not exist, Moreton (cited in Birch et al 1972) suggests that the only viable definition of a health food is:

"anything sold by health food shops".

The British Nutrition Foundation seem to equate 'healthy foods' with organic foods (BNF 1971). Pyke (1968) suggests that 'healthy foods' have homoeopathic origins. Whitehouse (1968) suggests that 'health foods' must be additive free. Nowadays a clearer distinction is emerging between 'healthier food' and 'health foods' (The Grocer 19871). For the purposes of this research the following distinctions will be made. A 'healthy food' is not a health food in the it does not presume to promote health in itself. A 'healthy food' is a food that is nutritionally desirable in terms of the current guidelines and whose consumption can contribute to a better diet. Many standard food products such as bread, milk and spreading fat now contain both traditional standard products such as white bread, whole milk and butter and new nutritionally modified healthy alternatives such as wholemeal, skimmed milk and low fat spread. Usually but not always, the standard product outsells the healthy alternative. The promotion of healthy alternatives supposes that a trend towards their use would improve individual and

community nutrition. The list of healthy and standard food pairs used in the audit is detailed in the next chapter.

The Calculation Of Relative Price

One further major issue needed to be resolved before work could proceed with the construction of the audit itself. This was the question of how to objectively compare prices in different shops. The audit would have to define some standard against which all prices could be compared. Various alternatives were considered including the use of food wholesale prices contained in The Grocer journal. The use of this data was appealing because it would allow the retailers profit margin for various products to be calculated. Unfortunately this idea had to be discontinued due to operational difficulties. It was apparent that the pricing dimension was a product orientated one and would use the key product pairs described above. Some notional price had to be set so that the prices of these key product pairs, within various retailers could be compared. It was eventually decided that this notional price would be based upon the product price at one retailer. This method has been successfully piloted by previous researchers (Bellamy et al 1986). The notional or base prices as they will be referred to in this research are the product prices at the Tesco Superstore at Horley, Surrey during August 1988. There is one major advantage to this decision. The prices at a large out-of-town superstore are probably some of the lowest available and a recent survey (Sun 1988) calculates that Tesco has the overall lowest prices of any retailer. To set the baseline upon which other retailer's prices will be compared, on this store will mean that any comparison of 'absolute product prices' (the overall cost of one retailer compared to another) will have some realism.

The Audit's Design

In theory there were a number of research methods which could be used to measure nutrition quality, including traditional questionnaire and survey instruments. It was clear however that the audit would not be a traditional research tool but would be a hybrid of various techniques brought together for a specific purpose. Each of the proposed dimensions covers a wide variety of issues concerned with nutritional quality. It was therefore probable that the audit would be performed by a variety of techniques including interview, observation and possibly postal survey. The nature of an audit imposes certain practical constraints on design, particularly the number and complexity of the questions asked. There is no agreed way of measuring the concept of nutritional quality, in this position De Vaus (1986) proposes that if the concept is multi-dimensional (as nutritional quality is) then it is important to determine a wide range of indicators covering

all dimensions and subject these to some process to pick out those which are meaningful. Therefore the need was now to develop a limited number of questions, within each dimension, which collectively assess the nutritional quality of the retailer. These questions are referred to as nutritional indicators because each, in a small way indicates a small aspect of the retailers overall nutritional quality. De Vaus (1986) suggests that three questions need to be asked at this stage:

1. How many indicators should be used ?
2. How to develop the indicators ?
3. How to present them as questions ?

Firstly how were these indicators to be chosen, clearly it would not be possible within the constraints of an audit to measure every single issue which might reflect nutritional quality. It would be necessary to select those indicators which most accurately and fairly represent nutritional quality. Secondly, the need for a weighting system has already been mentioned, some indicators will better reflect nutritional quality than others. Thirdly, how could the indicators be developed into questions for the audit's required survey/interview techniques ?

Any selection and weighting system had to satisfy certain predetermined requisites:

1. It had to confer objectivity on the audit and allow quantifiable results which would be reproducible. Ultimately the audit must be able to produce a nutritional quality score for each retailer.
2. It had to confer credibility and validity.

The audit must ultimately be acceptable both to potential auditors and the retailers themselves.

An integrated selection/weighting procedure was therefore developed as follows:

1. The first step was to determine a list of the individual nutritional indicators that would reflect nutritional quality. The list of indicators was originally compiled by the author and included all factors that could be associated, positively or negatively with nutritional quality. The author would agree with Moser and Kalton (1971) that:

"question design is the survey directors most persistent headache particularly since it is so largely a matter of art than science".

No attempt was made at this stage to justify or weight the factors. Overall a list of over 200 indicators was produced. These were considered by the author and some 40 weeded out as being unsuitable, overall 164 were left after this exercise. The next decision revolved around how to develop this list of issues into the basis of the audit.

2. The selection/weighting procedure developed is related to classical attitude scaling developed by Thurstone (equal appearing intervals) and Likert (summated ratings). The methodology is based on the Likert modification of Thurstone's original approach (Likert 1932). It is recognised, however, that the indicators do not represent a true attitude scale, referring as they do to a combination of actions and policy statements.

Traditional social research suggests that research instruments should meet one or more of three different types of validity:

1. Criterion validity.
2. Content validity.
3. Construct validity.

Validity or the extent to which the indicators and therefore the audit measures what it purports to measure, that is, nutritional quality, is based on construct or logical validity. This is inferred from the manner in which the audit was constructed. If a panel of 'experts' evaluates the list of indicators on the chosen scale then a consensus of these individual, expert, evaluations directs the format of the audit in terms of the indicators actually appearing within it and the weighting factor that each carries.

3. Classical attitude scaling does not suggest that the judges need to be informed, however the relationship between the indicators and nutritional quality is often complex and needs informed decision making. It was therefore decided that a small panel of 'experts' would infer greater validity than a larger panel of non-informed judges as would be used in classical attitude scaling.
4. The selection/weighting scale to be used is a modification of Likert's 5 point scale. A seven point scale of -3 - +3 will be used for the following reasons:
 - a) It allows more scope for choice than a five point scale yet still allows a meaningful semantic scale to be attached.

- b) Classical attitude scaling methodologies use a larger panel of judges than that suggested above. A five point scale may more appropriate for larger panels. A smaller number of judges will need to consider selecting/weighting the indicators more exactly.

The scale relates to the indicators significance in terms of nutritional quality, that is, the contribution of the indicator to promoting nutrition.

- 3 Very negatively significant
- 2 Negatively significant
- 1 Slightly negatively significant
- 0 Neutral
- +1 Slightly positively significant
- +2 Positively significant
- +3 Very positively significant

5. A panel of 7 'experts' was used for the selection/weighting exercise which took place on 3rd June 1988. The group consisted of 2 Community Dietitians, 1 Health Education Officer, 2 Nutritionists and two Environmental Health Officers all of whom were familiar with the nature of the project. The question of retailer involvement was considered at some length - as it has been throughout this thesis. If a purpose of the research is to produce a tool that will allow retailers and health workers to 'speak the same language' then it might be considered that retailer input into the audit's design would be highly desirable if not essential. In practice however, this would be problematic. Bias and self interest would be expected to influence the views of retailers. No retailer could speak for all segments of the industry and resources. Furthermore, if the retailers, as chapter 3 suggests, think they are responding to the food and health debate in a comprehensive and co-ordinated way then what input could they reasonably give to a piece of research that suggests otherwise? Ultimately it is this inability to communicate that is a major *raison d'etre* of the audit. Whilst it was considered that the omission of the retailers at design stage might open the danger of a 'credibility gap' the decision was taken that the audit's design must be done from a 'health perspective' to avoid the danger of accusations of commercial naivety. It should however be noted that each of the 7 'experts' used in the audit's design have had experience of food availability and retailer audit activities.

The list of 'issues' was reformed, so that each issue was now a closed question. For example, 'staff uniforms' were considered a issue that may have indicated an aspect of nutritional quality. A question in the format 'Does the retailer provide uniforms for staff' was

devised, the closed answers being yes or no. Care was taken to keep the new questions neutral, unambiguous and not to impose subjective values. Therefore, after this exercise a list of 164 questions was produced. Each of these questions could clearly have two or more answers. In the simplest cases as above the answer could only be yes or no. Others required a more complex quantitative or qualitative answer involving several options. An exercise was therefore undertaken to produce 'answer options' for each question. A number of criteria were used in this exercise. The answer options must be unambiguous and mutually exclusive, they must cover all reasonable realities and yet should not be so numerous as to be confusing or impractical.

Following this exercise each of the 164 indicators had two or more answer options ie yes/no or 20%, 30%, 40%, a total of over 350 in all. Each 'expert' was asked to work their way through the list of indicators, 'scoring' each answer option individually on the above scale. The indicators were presented in simple checklist form. The 'experts' were asked to consider the concept/idea underlying the indicator. What does the practice or behaviour under investigation say about the policies or actions of the retailer with regard to nutrition? How might they influence consumers? For example; indicator 107 referred to a retailer's policy on staff uniforms. Whilst the link between whether a retailer provides staff uniforms and nutritional quality may be considered vague, it is possible that staff uniforms, which are concerned with corporate image, may be linked directly or indirectly with a certain customer philosophy which in turn may be linked to nutritional quality.

The checklist presented this indicator in the following format:

107. Does the retailer provide uniforms for staff ?

Yes
No

The expert would need to consider the two options, the significance of the retailer providing staff uniforms and the significance of the retailer not providing uniforms. Each option was where possible, considered independently but obviously consideration needed to be given to the question as a whole. After considering the question expert 'A' might consider that the fact that a retailer provides uniforms is important and score it +2. That is, s/he considers the fact that a retailer provides uniforms to be significant for nutritional quality. The expert might then consider that the fact that a retailer does not provide uniforms to be very

slightly negatively significant and score it -1. The indicator is thus scored:

107. Does the retailer provide uniforms for staff ?

Yes +2

No -1

The other 6 experts would consider the issue in turn.

6. The question of whether the indicator goes forward to be part of the audit depends on the views of the experts, that is the score each attaches to the checklist questions. Classical Likert type scoring uses two statistics to determine the importance of statements. One is the mean average of the scores the other is a measure of the variability between scores and is usually presented as the inter-quartile range. After consideration it was decided that the quality audit would not use a variance measure because of the relatively low number of 'experts' used. The mean would be used to determine the indicators score. Only indicators that were considered as 'significant' would be included in the audit. That is, indicators scoring between -1 and +1 were discarded as having no significance.

Thus the fate of the indicators and their answer options depended totally on the experts. Consider the previous example. The 'yes' option may have scored 1, 1, 2, 2, 2, 2, 1 - the mean average is 1.6. The 'no' option might score 0, -1, -1, 0, 0, 0, 0, - mean is - 0.3. In this case the 'yes' option would go forward and the 'no' option would be discarded. If both or all the answer options are significant they would all go forward, however some or all may be discarded.

Some indicators have several answer options eg

Less than 10%
10-20%
21-30%
31-40%
More than 40%

Whilst these answer options might be considered rather arbitrary having been developed by the author the experts had the opportunity to reject them during scoring. Only those answer options that were significant would go forward, to be included in the audit. The above example's answer options might have been scored as follows:

Less than 10%	+2.7
10-20%	+1.9
21-30%	+1.3
31-40%	+0.6
More than 40%	0

In this case only the first three options would be included in the audit.

From the selection/weighting trial a final list of indicators and answer options was then drawn up, neutral indicators and answer options were discarded. This left a total of 122 indicators and 169 answer options. As a result of this process each indicator's answer options had a score of between -1 and -3 or +1 and +3 attached. These scores which had been used as part of the selection procedure were now the weighting factor attached to each indicator's answer options.

The method of designing the audit produced a number of consequences, two of particular importance being:

1. Closed Questions

Standard questionnaire design usually ensures that all questions can be answered positively or negatively. A question in the most simple format might require either a 'yes' or 'no' answer. It would be answered, irrespective of which answer was significant. Many of the audit's indicators suggest a positive or negative response eg Does the retailer.....? Yes/No. A consequence of the audit's methodology is that only significant answer options are included in the audit. Thus an indicator may only have a 'yes' answer option. If the 'no' answer option is missing, it is because it is not significant. It would be valid to include the 'no' option for the auditor to answer only to find its score is not significant (these answer options could be given a nominal scores of zero). There does, however seem no valid reason why this is necessary:

- a. Many indicators are not answered by a yes/no format, they might refer to percentages eg 10% - 20%. Not all the possible answer options are included for these indicators, only the significant ones.
- b. To include spurious answer options, would make the audit considerably longer, and waste the auditors time, answering and scoring 'zero' scores.

2. Non - Response

The reason why many questionnaires or interview schedules include a 'closed' answer ie a question that must be answered positively or negatively is to counter the problem of 'non-response'. Often a non-response is unsatisfactory, particularly so in survey work based on sample populations, where a non-response is itself significant. By not including all the answer options, problems are often encountered. Non-response might occur in three ways:

- a. The indicator is not applicable. The audit is designed for use in all retailers (see below). Clearly not all indicators will be applicable to all retailers. The methodology of the audit requires only those indicators which are applicable and can be answered, to be completed.
- b. Some indicators will be applicable, but the audit will identify a non-significant answer option, that is one not included in the audit. In this case the indicator would be ignored.
- c. The indicator may be applicable, and there may be a significant answer option which is also applicable. The auditor may not answer correctly out of error eg the indicator may be overlooked.

Once the audit is completed and scored, it would be impossible to tell whether the 'non response' was due to a, b, or c above. Obviously a and b are valid reasons for non-response whilst c is not. The most effective way of discriminating between these types of non-response is to require the auditor to note (by marking its number) each indicator attempted, irrespective of whether this is applicable (a) or has a significant answer option (b). Indicators in a completed audit that do not have a circled number must be, by definition type 'c' non-response and must be further investigated.

Types of Retailer

A question arising at this point was the nature of the food retailers to be audited. Was the audit designed for:

1. All retailers selling food ?
2. All retailers whose main business is to sell food ?
3. The large 'multiple' retailers only ?

It was noted in chapter one that there are a wide variety of types and sizes of food retailers in this country. To be

useful and accomplish its aims the audit must be able to be used with a wide variety of retailers, certainly those retailers whose main business was the selling of food products and shops such as departmental stores who have a separate food section that competes with food retailers. The audit should also be applicable to specialist food establishments such as health food shops.

Could the audit work with every food retailer, that is every retailer selling food, would it be possible to design an audit that would work on a large out-of-town hypermarket as well as a small independent store? It was obvious that some of the indicators proposed would not be suitable for differing types of retailers, one would expect a supermarket to provide some written literature supporting a nutrition policy, a small corner shop might not.

Considerable time was spent on this problem. There are a number of different ways of classifying food retailers, from simple judgements of large, medium small to complex analyses involving floor space, turnover etc. Most classifications are based on the Government's biennial inquiry 'Retailing'. 'Retailing' provides the base for much broad quantitative research but increasing diversification by retailers has led market researchers to find the Government's classification scheme as wanting. Several of the major market research organisations have therefore developed their own systems. For example 'Euromonitor' have used the Inquiry as a fixed point of reference but have expanded the classification to cover new areas. Whereas the Inquiry segments all grocery retailers into large and other depending on whether turnover (based on 1986 figures) is greater or lessor than £9 million, Euromonitor divides retailers into; Grocery retail multiples, Symbol Grocery retailers, Specialist Food Stores, Independent Food Retailers, Freezer Food Retailers and Health Food Shops. 'Retail Business' published by the The Economist Intelligence Unit classify stores as either major chains, Cooperative Societies and smaller operators. Mintel use a self classification scheme which includes Supermarket Chains, Independents, Co-operatives, Convenience Store etc. A similar classification scheme has been developed by A.C. Neilsen.

A food retailer being audited would have to be 'classified' and indicators within the audit would be marked as being applicable only to certain classes of store. Therefore a small retailer could do well and score highly on its indicators, whilst a large supermarket would have to be judged against a larger number of indicators. Realistically it would only be possible to compare like with like. To compare the nutritional quality of a 'multiple' supermarket with a convenience store might be unrealistic but the convenience store could be measured against other convenience stores. The scores would obviously be different,

but if converted into percentage terms ie the score against total possible for the class of retailer, then some comparability would be introduced. The audit might suggest that a corner shop is doing better vis a vis other corner shops compared with a supermarket that might be lagging behind its competitors.

The use by the audit of a classification method was finally discounted for the following reasons:

1. Practically it made the audit more complicated and introduced a another potentially subjective component. Whilst market research companies might be able to classify all food retailers into mutually exclusive classes, could this feat be undertaken by a health worker undertaking the audit ? The erroneous classification of a retailer and the application of wrong/inappropriate indicators would severely undermine the credibility of the audit. Various methods of classification were experimented with using potential users of the audit, the rate of erroneous classification was high enough to cause concern. Basically simple classifications often led to some subjective interpretation whilst more complicated ones which ensured mutual exclusivity often could not be applied by a lay audit user.
2. The prime rationale for treating the various types of food retailer differently is to ensure a valid analytical interpretation of the audit's results. It was however realised that one reason to structure the audit for differing classes of retailer was a concern that small retailers might be discriminated against. Throughout the consultation stage and the selection/weighting trial it was felt that small retailers, often the mainstay of the community, particularly in socially deprived areas would score poorly on the audit. They would effectively be discriminated against because they were small and could not hope to compete with the resources of the larger retailers. This was eventually seen as a suspect argument. Firstly there was no evidence that small retailers would do poorly vis a vis larger shops. To design the audit on this presumption would be to preempt results and be unsound practice.

Secondly, if small retailers did score badly was this problematic? Should not consumers be informed which retailers have the highest scores in terms of nutritional quality so they can make the best choices open to them ? There are many factors that influence a retailer's nutritional quality, why should size be made a special example ? An audit is a tool like a performance indicator, it provides information but does

not attempt to explain or to justify it. That is the role of the auditor.

The audit is thus designed to be used on a wide variety of food retailers and it is recognised that not every indicator will be applicable to every type of food retailer. This decision will clearly have implications for the interpretation of the audit results. Chapter 6 discusses these implications in detail. It is recognised that the issue of classification is vitally important to ensure 'fairness' and credibility and that further work might be eventually necessary in this area.

Operationalising the Indicators

The basis of the audit was now formed. It consisted of a list of indicators that a panel of experts considers to reflect the nutritional quality of a retailer. The next step was the production of the final audit form from the indicators and the operationalisation of those indicators. Firstly the question of operationalisation; the aim of the audit was to be as objective as possible, yet most of the indicators contained potentially subjective elements. An indicator might be of a form 'is a product available' ? But what does 'available' mean to different people, does a product have to be visible to be available ? Considerable thought was given to the problem of making the indicators as objective as possible, without the indicators becoming too complicated. It was also recognised that any alteration of the wording of the indicators or their answer options might seriously undermine the 'validity' conferred by the 'expert group' scoring process. A review of the 122 indicators with the 'expert group' which undertook the scoring process found that the subjective or ambiguous elements largely concentrated on various key words such as 'visible', 'availability' and 'literature'.

The 'Key Word' system was thus devised. The key words are underlined throughout the audit. When the auditor comes across a indicator with a key word they have to look up the operational definition of this word which is contained in the key word list which prefixes part one of the audit. The key word list either defines or expands the original term so that the auditor can objectively answer the indicator.

The next decision needed was whether to keep the indicators with their dimensions or to develop the audit in the most 'user friendly' way possible and only reform them at the analysis stage ?.

The deciding factor was that some of the indicators required a different approach to others in order to be answered. Basically there were three types of indicator:

1. Indicators that can easily be answered from observation within stores, such as those concerned with the availability of literature. These indicators were basically concerned with visual inspection.
2. Indicators that depend on local store policy and require the questioning of staff or management, these might include indicators concerned with a retailer's local policy on advertising.
3. Indicators that could only be answered following calculations using data collected by observation, this applied particularly to indicators within the pricing dimension.

Furthermore it was clear that some indicators should naturally be located together within the audit. About half the indicators fell naturally into their dimensions, the other half, whilst relating to dimensions mostly concerned the nine identified key food groups. Thus it seemed obvious to include all those indicators that related to one key food together.

It was therefore decided that the audit would firstly be split into two parts. The first part would contain the 84 indicators that could be best answered within their dimensions. Thus Part One consists of:

1. Indicators 1 - 35 are contained in the Information Dimension.
2. Indicators 36 - 48 are contained in the Promotion Dimension.
3. Indicators 49 - 60 are contained in the Product Policy Dimension.
4. Indicators 61 - 70 are contained in the Accessibility Dimension.
5. Indicators 71 - 79 are contained in the Pricing Dimension.
6. Indicators 80 - 81 are contained in the Availability Dimension.
7. Indicators 82 - 83 are contained in the Positioning Dimension.

The other half of the indicators are contained in the 'Key Food' sections. Thus Part Two consists of:

1. Indicators 84 - 89 are contained in the 'Bread' section.
2. Indicators 90 - 93 are contained in the 'Milk' section.
3. Indicators 94 - 99 are contained in the 'Spreading Fat' section.
4. Indicators 100 - 103 are contained in the 'Cheese' section.

- section.
5. Indicators 104 - 111 are contained in the 'Rice' section.
 6. Indicators 108 - 111 are contained in the 'Breakfast Cereal' section.
 7. Indicators 112 - 114 are contained in the 'Coffee' Section.
 8. Indicators 115 - 118 are contained in the 'Orange Squash' section.
 9. Indicators 119 - 122 are contained in the 'Wine' section.

It was now decided that a further categorisation was needed to reflect the differing styles of data collection needed to answer the various indicators. After review, indicators were divided into three types:

Type A - Indicators that required visual inspection to be answered. Some indicators in this category, required data to be collected and some calculations to be carried out, for example, those in the pricing dimension.

Type B - Indicators that require information from the shopkeeper, member of staff or manager of the retailer. A few of these indicators may possibly be answered by prior knowledge or observation but most relate to the retailer's policy that may not have easily visible results.

Type C - These are intermediate indicators. They may be answered by observation during the audit. However, a member of staff or management may be consulted to verify the answer to the indicator. The auditor should, where ever possible ensure that the observation and questioning of staff verify each other before answering the indicator.

There seemed no reason why type A and C indicators should be separated within the two parts. Type B indicators on the other hand clearly should be separately listed to ensure ease of answering. It was therefore decided that the indicators would not be separated within the two parts, but that each indicator number would be prefixed by a symbol that designated its type. Type B indicators are also contained within the major parts of the audit, but are also drawn together in part 5 of the audit. The idea behind this being that type B indicators are not answered within part 1 or 2. But that part 5 is used as the basis of a 10-15 minute interview schedule with an appropriate member of staff. The indicators are answered in part 5 but the results transferred to the actual indicator within part 1 and 2 for scoring. Thus ease of answering and ease of scoring are facilitated, without making the audit unduly complicated.

Within the audit type B indicators are prefixed * and type C indicators (*). Type A indicators are not prefixed.

Scoring System

The final part of the audit's production was the scoring system. Part 3 was designed to contain a list of the indicator's answer options and their respective scores as determined earlier in the selection/weighting exercise. Part 3 also contains information enabling the auditor to analyse the results. The first half of this part contains a list of the 122 indicators with the various answer option scores attached. The indicators are listed in straight numerical order, with the answer options appearing in exactly the order they do in part one and two. The auditor is required to transfer the results of the audit to the scoring sheet by circling the appropriate score.

The auditor is now referred to the analysis section of part three. The first step is to add up all positive scores and all negative scores and subtract the latter from the former. This gives the total score for the retailer. The scores for each of the 7 dimensions are now calculated. The indicators within the 'key food' sections are assigned to their original dimensions. The total scores for each of the dimensions are noted.

Part three, contains the maximum and minimum scores for each dimension. These are the scores that a retailer could theoretically obtain on the audit. For example, total scores could be within the range -101.4 to 267.6. The auditor is now asked to relate the retailers actual score to the theoretically possible maximum.

$$\text{Percentage Score} = \frac{\text{score per dimension}}{\text{maximum possible score per dimension}} \times 100$$

Part 3 also contains a brief section on drawing conclusions from these results. Finally the section contains an 'Audit Summary', which should be used to summarize and store the results of the audit.

The completed draft audit form is presented in Chapter 5. In its operational form it is suggested that the audit's five parts are printed on differing colour paper for ease of use. It was in this form that the audit was piloted. It was recognised that at this stage the audit may or not have been entirely practical. Whilst its design conferred validity it was likely that any piloting process would throw up anomalies, inconsistencies and practical difficulties that would need to be addressed. The brief pilot study undertaken as part of this research is described and analysed in chapter 6.

CHAPTER 5

A NUTRITIONAL QUALITY AUDIT FOR FOOD RETAILERSInstructions For Use

1. The audit contains 122 indicators which relate to some aspect of a retailer's policy or actions with regard to nutrition. Collectively they measure nutritional quality which relates to the total contribution of a retailer to improving individual and community nutrition. The indicators are divided into 7 dimensions of nutritional quality:
 1. Information
 2. Promotion
 3. Product Policy
 4. Accessibility
 5. Pricing
 6. Availability
 7. Positioning
2. The audit can be used with all retailers whose primary purpose is the selling of food, or with retailers that have a separate department whose primary responsibility is the selling of food products.
3. All indicators should be attempted and their number ringed after consideration. The applicable answers should also be ringed. If an indicator is not appropriate or cannot be answered it should be left uncompleted. Some of the indicators may have more than one relevant answer. In these cases all applicable answers should be ringed.
4. Words which are underlined are 'key words', please check on their definition by referring to the 'key word' list which prefixes part one.
5. The audit is presented in five parts. The first part relates to the 7 dimensions of nutritional quality. The second part relates to the 9 key food groups. The key food groups contain a variety of indicators which are brought together because they relate to certain food products. All the key food group indicators within part two are assigned to dimensions, this information is used in scoring. Part three contains details of how to score the audit and interpret the results. Part four contains a list of key product base prices, this information is needed to complete indicators within the pricing dimension. Finally, part five contains a list of

indicators which appear separately in the audit but are brought together because they require special treatment as detailed in 7.3 below.

6. The indicators are listed in numerical order, although there is no reason why indicators/dimensions need be answered in this order so long as all are attempted.
7. There are three different types of indicator, marked *, (*) or left blank. These differences relate to how the indicators are answered.
 - 7.1 Indicators which are not marked by * or (*) should be answerable by auditor observation. If the indicator cannot be answered by observation it should be ignored. Some indicators may require observation followed by simple calculation.
 - 7.2 Indicators marked (*) may be answered by observation during the audit. However, a member of staff or management may need to be consulted to verify the answer. The auditor should, where possible, ensure that observation and interview verify each other before answering the indicator.
 - 7.3 Indicators marked * require information from the shopkeeper, or a member of staff/management. The auditor would normally ask for a 10 minute interview and ask all * marked indicators in one go. The auditor should, whenever possible be confident that the question is being truthfully/correctly answered. Examples may be asked for to verify the response. For convenience all * marked indicators are listed in part 5. This list should be used as the basis of an interview schedule. The indicators in part 5 should be answered, the answers should then be transferred to the indicators within the main audit (Part 1 and 2) for scoring.
8. When all the indicators have been answered the auditor should refer to the scoring sheets contained in part three of the audit. The summary sheet should then be completed. Part three also contains guidelines on interpreting the audit's results.
9. The audit is undertaken at a specific point in time, and the retailer's response to indicators may vary depending on the time and day of the week. It is suggested that the audit is only undertaken once but that the auditor takes reasonable precautions to ensure that the audit measures the 'average' nutritional quality of the retailer. It is suggested that audits are not undertaken within 2 hours of either the retailers opening or closing times or on half-days.

Key Word List

<u>Advertise</u>	See <u>Advertising Programme</u>
<u>Advertising Programme</u>	A retailer's publicity designed to encourage sales.
<u>Advisory Service</u>	A system by which customers can receive nutritional information from the retailer.
<u>Availability</u>	One or more examples of the product could be purchased at the time of the audit.
<u>Branded Product</u>	A food item manufactured by a food producer, it will usually carry the producers name. These products are usually available in a wide range of retailers.
<u>Checkout Area</u>	The area adjacent to the till. Displays may be aimed at customers who are queuing to pay for their purchases.
<u>Disposal Policy</u>	A retailer's commonly accepted and identifiable plan of action concerned with getting rid of surplus or out-of-date products.
<u>Health Policy</u>	A commonly accepted and identifiable plan of action concerned with promoting and maintaining the health of customers.
<u>Healthy Alternatives</u>	A product similar to a commonly used <u>standard product</u> but one that has been modified to increase its <u>nutritional desirability</u> . For example semi-skimmed milk is a healthy alternative to whole milk.
<u>Healthy Choice</u>	A product purchased on nutritional grounds. A healthy choice is usually the purchase of a <u>healthy alternative</u> vis a vis a <u>standard product</u> .

<u>Labelling</u>	See <u>Nutritional Labelling</u>
<u>Literature</u>	Any written or printed material. For example leaflets, booklets, and information sheets.
<u>Local Media</u>	Newspapers, magazines or radio programmes which do not have national circulation. May perhaps be city, county or regionally defined.
<u>Minority Group</u>	A group differing racially, politically, ethnically or religiously from the larger group of which they are a part.
<u>National Media</u>	Newspapers, magazines or radio programmes which have national circulation.
<u>Nutrition Policy</u>	A retailer's expressed intent on nutritional matters. This may or may not be written. A nutrition policy must be a commonly accepted and identifiable plan of action concerned with promoting and maintaining the health of customers through the promotion of better nutrition.
<u>Nutritional Characteristics</u>	The product's composition from a nutritional point of view.
<u>Nutritional Desirability</u>	The tendency towards better nutrition, as defined by the current nutritional guidelines.
<u>Nutritionally Desirable Characteristics</u>	A product has nutritionally desirable characteristics when its properties comply with or tend towards the current nutritional guidelines. Most <u>healthy alternatives</u> have nutritionally desirable characteristics.

Nutritionally Undesirable Characteristics

A product has nutritionally undesirable characteristics when its properties are considered not to reflect the current nutritional guidelines. For example it may contain unnecessarily added sugar or salt or have a high fat content.

Nutritional Education

The process of acquiring or imparting nutritional knowledge. This may be informal or formal.

Nutritional Information

Any information related to nutritional or dietary issues.

Nutritional Labelling

Any material attached to a product with the aim of identifying it or its contents.

Nutritional Profile

A detailed analysis of a product's nutritional characteristics. A nutritional profile should include a full list of contents listed in terms of percentage content.

Outreach Service

Any service provided to the community by the retailer where the service provided is external to the store itself.

Own-Label Product

A good produced by the retailer or on its behalf, the product will usually carry the retailer's name and is sold only in the retailer's shops.

Physiological Testing

Participative procedures designed to test aspects of physical health.

Pseudo-Price

Price reductions involving coupons, money off next purchase vouchers or saving stamps.

Point-of-Purchase

The area immediate to where a product is located.

Policy

A retailer's expressed and identifiable intent on an issue. A policy may or may not be written.

<u>Positioning</u>	The use of a product's position within the shop or within a display for promotional purposes.
<u>Product Labelling</u>	See <u>Nutritional Labelling</u> .
<u>Product Range</u>	The total goods sold by a retailer.
<u>Promote(d)</u>	To raise consumer knowledge, to change attitudes or influence practice with the aim of increasing product sales.
<u>Promotions</u>	The use of positioning, advertising or price or any other factor to raise consumer awareness about a product. The ultimate aim of promotions is to sell products.
<u>Saturated Fat</u>	A type of fat, high dietary intakes of saturated fat have been associated with an increased risk of disease, particularly coronary heart disease.
<u>Special Arrangement</u>	These may include a number of factors designed to facilitate purchase including delivery schemes, concessions, and creches.
<u>Standard Product</u>	The commonly accepted product alternative, often the most popular. For example whole milk is the standard product when compared to skimmed-milk. See <u>healthy alternative</u> .
<u>Supported</u>	Financial backing, or approval.
<u>Targeted</u>	The process by which information is aimed at customers. An average consumer within the target group should be expected to identify that the retailer is specifically directing information towards them.
<u>Train</u>	An individual or group is subjected to an educational experience designed to improve their knowledge attitudes or practices with respect to nutrition.

Visibly

An average consumer could be reasonably expected to perceive (it) without undue effort.

Yellow Spreading Fat

Butter, margarine and their low fat alternatives.

Part One - The Nutritional Dimensions

INFORMATION

1. Does the retailer visibly provide any literature designed to inform customers about nutritional labelling ?

Yes

2. Does the retailer visibly provide any literature designed to promote its nutritional policy ?

Yes

3. Does the retailer visibly provide any literature designed to promote aspects of nutrition which is not produced by the retailer itself ?

Yes

4. Does the retailer visibly provide any literature, designed to promote any aspect of nutrition, which is produced by:

The Retailer ?
An Independent Organisation ?
A Health Organisation ?
A Patient Pressure Group ?

5. Does the retailer visibly site any literature, designed to promote any aspect of nutrition, by the:

Check Out Area ?
Exit to Shop ?
Entrance to Shop ?
Point-of-Purchase ?

6. Does the retailer visibly provide any nutritional literature targeted specifically at one or more minority groups?

Yes

7. Does the retailer visibly provide any literature designed to promote aspects of health other than nutrition ?

Yes

8 Does the retailer use any form of video, computer or electronic method to promote any aspect of its nutritional policy ?

Yes

9. Does the retailer have an in-house advisory service, for members of the public, that deals with nutritional information ?

Yes

(*)10. Does the retailer have an external advisory service, for members of the public, that deals with nutritional information ?

Yes

*11. Does the retailer train its shop floor staff in any aspect of nutrition ?

Yes

No

*12. Does the retailer train its staff in any aspect of nutrition education ?

Yes

No

13. Does the retailer have any means by which customers can sample products of choice before purchase ?

Yes

14. Is any aspect of the retailers nutrition policy visibly promoted through a snack/coffee bar ?

Yes

No

*15. Does the retailer train its management in any aspect of nutrition ?

Yes
No

*16. Does the retailer have a policy on nutritional labelling ?

Yes
No

*17. Does the retailer have a policy on nutritional labelling for its own-label products ?

Yes
No

(*)18. Does the retailer ever modify the labelling of branded products so as to increase nutritional information ?

Yes

(*)19. Does the retailer have a policy of product labelling so as to emphasise nutritionally undesirable characteristics ?

Yes
No

(*)20. Does the retailer use product labelling to emphasise nutritionally desirable characteristics ?

Yes
No

21. Find the baked beans product with the greatest shelf space, are the following detailed anywhere on the label ? (See indicator 23)

Fat Content
Sugar Content
Fibre Content
Salt Content
Additive Content

(*)22. Is the retailer responsible for any product labelling that suggests how the product can be cooked in a nutritionally desirable way ?

Yes

23. Locate the baked bean product with the greatest shelf space, on the front of product visible to the purchaser at the moment of selection is there any information on its nutritional characteristics ?

No information

Some information concerning the nutritional characteristics of the product

A complete nutritional profile

24. On the shelf below products or in the adjacent sales area is there any information which describes the nutritional characteristics of the product ?

Yes

25. Is there available, anywhere in the shop literature which explains the system of nutritional labelling in use ?

Yes

No

26. Is there any other form of information/advice available in the shop which explains the system of nutritional labelling eg audio/visual display ?

Yes

27. Are either of the following used to promote any information associated with the promotion of nutrition ?

Carrier Bags
Posters

- (*)28. Does the retailer provide any form of physiological testing for the following ?

Fitness
Height/Weight
Blood Pressure
Blood Cholesterol

- (*)29. Does the retailer provide any of the following outreach services ?

Cookery Demonstrations
Schools Lectures
Community Lectures

30. On which of following subject areas does the retailer have literature available ?

Company Nutrition Policy
General Nutrition
Diet-Related Health Problems
Healthy Living
Slimming/Weight Loss

- (*)31. Does the retailer produce any video programmes associated with any aspect of nutrition policy ?

Yes

- *32. Does the retailer employ nutritionists to advise on nutrition policy ?

Yes
No

33. Select at random 10 own-label products. On how many does the label provide a nutritional profile ?

5 or less
10

34. Inspect the sales areas for fruit and vegetables. In the area for these bulk food is there any information which describes the nutritional characteristics of some or all of these product ?

Yes

35. Inspect the sales areas for meat. In the area where this bulk food is sold is there any information which describes the nutritional characteristics of some or all these products ?

Yes

PROMOTION

- (*)36. Is any part of the retailers advertising programme directed around its nutritional policy ?

Yes

37. Does the retailer visibly have promotions of certain foods which it appears to consider nutritionally desirable ?

Yes

No

- (*)38. Does the retailer use any form of competition to promote its nutrition policy ?

Yes

- (*)39. Does the retailer use any form of free gift to promote its nutritional policy ?

Yes

- (*)40. Does the retailer make use of any forms of logo or slogan to promote its nutritional policy ?

Yes

(*)41. Does the retailer advertise any aspect of its nutritional policy using national media ?

Yes

(*)42. Does the retailer advertise any aspect of its nutrition policy using local media ?

Yes

(*)43. Does the retailer make use of either radio or television to promote any aspect of its nutritional policy ?

Yes

(*)44. Does the retailer advertise its nutritional policy in sections of the media targeted at particular minority groups ?

Yes

*45. Has the retailer ever supported a local health promotion initiative not originating from itself ?

Yes

*46. Has the retailer ever supported a nutritional initiative originating from a national organisation ?

Yes

*47. Does the retailer allow its local management discretion when dealing with local initiatives, concerned with promoting nutrition ?

Yes

48. Is there any promotion taking place within the store which promotes a product or product group principally because it is nutritionally desirable ?

Yes

PRODUCT POLICY

*49. Does the retailer's nutrition policy influence its product range ?

Yes

No

*50. Does the retailer have a health policy on alcohol sales ?

Yes

*51. Does the retailer have a nutritional policy for its own-label products ?

Yes

No

*52. Does the retailer have a nutritional policy for its branded products ?

Yes

No

*53. Does the retailers nutritional policy influence its purchase of branded products ?

Yes

No

*54. Does the retailer have a policy of liaising with manufacturers of branded products with the aim of modifying products so as to increase their nutritional desirability ?

Yes

No

(*)55. Does the retailer have a policy of presenting a clear choice between a standard product and its healthy alternative ?

Yes

No

56. Does the retailer always visibly promote a healthy alternative product when there is a choice ?

Yes

57. Does the retailer visibly appear to promote certain products irrespective of whether it is a healthy alternative to a standard product ?

Yes

58. Does the retailer promote its own-label products only if it is a healthy alternative ?

Yes

*59. Does the retailer have a policy of developing its own-label products to increase nutritional desirability ?

Yes

No

60. Does the retailer display, any form of health warning at the point-of-purchase for alcohol ?

Yes

ACCESSIBILITY

61. Does the retailer have an adequate car park (At the time of visiting was it possible to park within 25 metres of the entrance) ?

Yes

62. Can shopping trolleys be wheeled directly to cars ?

Yes

63. Does the retailer provide any form of free transport to and from the store ?

Yes

No

64. How many hours a week is the retailer open ?

61-70 hours
71 + hours

65. How far is the retailer away from the nearest area of residential population ?

Less than 800m

66. Does the retailer visibly cater for the elderly or disabled ?

Yes
No

67. Does the retailer visibly cater for young children ?

Yes

(*)68. Does the retailer have a delivery service ?

Yes

(*)69. Are there any special arrangements to facilitate shopping by the following groups ?

Elderly
Unemployed
Disabled
Mothers and Children

70. When/if you had selected your purchases how long did you have to wait at the check out for service ?

10 + minutes

PRICING POLICY

The majority of the price indicators are contained in the part 2 (key food groups). Part 2 must be completed before some of the indicators within this section can be answered. The indicators require some calculation. The necessary formulae are detailed below:

The audit uses a system of calculating and comparing 'relative' and 'absolute' price. Price calculations are related to a 'notional price' which is calculated by comparing actual purchase price with a nominal price based on the product price at the Gatwick Tesco Superstore in August 1988. The base prices are listed in part 4.

Five terms are used in this dimension:

1. BP - Base Price, a nominal price based on the product price at the Horley Tesco Superstore on 1st August 1988.

2. NP - Notional Price, this is the relationship between actual purchase price and base price, it is calculated by:

$$NP = \frac{\text{Actual Price} \times 100}{\text{Base Price}}$$

3. DNP - Delta Notional Price, This is the relationship between the Notional Prices of standard and healthy alternative product pairs. It thus relates to the relative expense of healthy alternative products vis a vis standard products.

$$DNP = \frac{NP \text{ of Healthy Product}}{NP \text{ of Standard Product}} \times 100$$

4. ANP - Average Notional Price, this the average of the Notional Prices of the 18 key products. ANP-'health' and ANP-'standard' are also calculated. These are the average NPs of the 9 standard and 9 healthy alternative products respectively. ANP is thus a indicator of the overall cost of a retailer's products.

$$ANP = \frac{\text{Total NP's of all 18 products}}{18} \times 100$$

5. DANP - Delta Average Notional Price, the relationship between ANP- 'health' and ANP- 'standard'. This value gives an indication of the relative costs of healthy alternative products within each retailer.

$$\text{DANP} = \frac{\text{ANP-'Health'} \times 100}{\text{ANP-'Standard'}}$$

71. ANP = Cheap <110%
111% - 120%
Expensive >121%

72. ANP-'Health' = Cheap <110%
111% - 120%
Expensive >121%

73. ANP-'Standard' = Cheap <110%
111% - 120%
Expensive >121%

74. Delta-ANP = Cheap <90%
91 - 110%
Expensive >111%

- (*)75. Is price used to promote the purchase of healthy alternative products ?

Yes
No

- (*)76. Is price used to promote healthy alternative branded products ?

Yes
No

- (*)77. Are pseudo-price reductions used to promote healthy alternative products ?

Yes
No

*78. Do local managers have the authority to vary prices for promotional purposes ?

Yes

No

(*)79. Is there any arrangement by which either the unemployed or the elderly can purchase healthy alternative products at discount prices ?

Yes

No

AVAILABILITY

Most of the indicators concerned with availability are contained in part 2. Part 2 must be completed before indicator 80 can be answered using the information from indicators 85, 91, 95, 101, 105, 109, 113, 116 and 120.

80. Total availability of 40 products

21 - 30

31 - 40

81. Is there any difference in the retailer's disposal policy for standard and healthy alternative products ?

Yes

POSITIONING

Most of the indicators concerned with positioning are contained in part 2.

82. Are healthy alternative products stocked in their own section or dispersed amongst other items in the store ?

Dispersed

83. Is the check out area used to promote confectionery ?

Yes

No

Part Two - The Key Food Groups

KEY FOOD - BREAD

Price

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Prices of the two bread products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 85 as minus nine.

Purchase Price - NP
(enter here)

White large sliced loaf
Wholemeal large sliced loaf

84. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

85. Identify whether the retailer stocks the following bread products (the items must be available at the time of the audit).

White large sliced
Wholemeal large sliced
French Stick
Wholemeal Babs
Pitta Bread
High Fibre White Bread

Bread (total 6 products), number available
=

86. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

White large sliced loaf
 Wholemeal large sliced loaf

More than 200%
 100% to 200%
 Less than 100%

Positioning

87. Look at bread. Does positioning present a clear choice between wholemeal bread and white bread ?

Yes
 No

88. When the following pair of healthy alternative and standard products is displayed side to side which is the most prominent ?

White large sliced loaf
 Wholemeal large sliced loaf

Information

89. Inspect the sales areas for unwrapped bread. In the area for these bulk products is there any information which describes the nutritional characteristics of some or all of these products ?

Yes

KEY FOOD - MILK

Price

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 5 to determine the Notional Price of the two milk products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 91 as minus nine.

Purchase Price - NP
(enter here)

One pint fresh skimmed milk
One pint fresh whole milk

90. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

91. Identify whether the retailer stocks the following milk products (the items must be available at the time of the audit).

One pint skimmed (fresh)
One pint whole (fresh)
One pint semi-skimmed (fresh)
One pint skimmed (longlife)

Milk (total 4 products), number available =

2
3
4

92. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

One pint whole milk (fresh)
 One pint skimmed milk (fresh)

More than 200%
 100% to 200%
 Less than 100%

Positioning

93. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

Fresh skimmed milk
 Fresh whole milk

KEY FOODS - SPREADING FAT

Price

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two products (see note in part 4). Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 95 as minus nine.

Purchase Price - NP
(enter here)

Margarine (soft) 250 grams
Sunflower margarine 250 grams

94. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

95. Identify whether the retailer stocks the following fat products (the items must be available at the time of the audit).

Margarine (soft) 250 grams
Sunflower margarine 250 grams
Flora 250 grams
Butter 250 grams
Gold 250 grams

Fat (total 5 products), number available ?

3
4
5

96. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

Margarine (soft) 250 grams
 Sunflower margarine 250 grams

More than 200%
 100% to 200%
 Less than 100%

Positioning

97. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

Margarine (soft)
 Sunflower margarine

98. Look at yellow spreading fats. Is positioning used used to promote healthy alternatives vis a vis standard products ?

Yes
 No

Information

99. In the manner of a customer requesting information approach a member of staff or the shopkeeper with a yellow spreading fat which includes the word saturated fat on the label. Ask what this means. Is the answer ?

Don't Know
 Inaccurate Answer
 Accurate Answer

KEY FOOD - CHEESE

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two cheese products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 101 as minus nine.

Purchase Price - NP
(enter here)

Cheddar 1 lb
Low fat Cheddar cheese 1 lb

100.

For product pair above DNP=

Cheap - Less than 90%

90-100%

Expensive - More than 110%

Availability

101.

Identify whether the retailer stocks the following items within the cheese product group (the items must be available at the time of the audit).

Cheddar
'Low fat' Cheddar cheese
Cottage cheese (tub)
Edam
Brie

Cheese (total 5 products), total available
=

3

4

5

102. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

Pre-packed Cheddar
 Pre-packed 'Low fat' Cheddar cheese

More than 200%
 100% to 200%
 Less than 100%

Positioning

103. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

Pre-packed Cheddar
 Pre-packed 'Low fat' Cheddar cheese

KEY FOOD - RICE

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two rice products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 105 as minus nine.

Purchase Price - NP
(enter here)

White rice 500 grams
Brown rice 500 grams

104. For product pair above DNP

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

105 Identify whether the retailer stocks the following items within the rice product group (the items must be available at the time of the audit).

White rice 500 grams
Brown rice 500 grams
Basmati rice 500 grams

Rice (total 3 products), number available =

2
3

106. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

Brown rice
 White rice

More than 200%
 100% to 200%
 Less than 100%

Positioning

107. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

White rice
 Brown rice

KEY FOOD - Breakfast Cereal

Price

Determine the cost of the cheapest brand of the two products listed. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two cereal products (please note comments in part 4). Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 109 as minus nine.

Purchase Price - NP
(enter here)

Muesli 680 grams
'No added sugar' muesli 680 grams

108. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

109. Identify whether the retailer stocks the following items within the cereal product group (the items must be available at the time of the audit).

Alpen muesli
'No added sugar' muesli
Cornflakes
Allbran
Weetabix

Breakfast Cereal (total 5 products), number available =

4
5

110. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

Muesli
 'No added sugar' muesli

More than 200%
 100% to 200%
 Less than 100%

Positioning

111. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

Muesli
 No added sugar muesli

KEY FOOD - COFFEE

Price

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two coffee products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 113 as minus nine.

Purchase Price - NP
(enter here)

Instant coffee 100 grams
Instant decaffeinated coffee 100 grams

112. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive - More than 110%

Availability

113. Identify whether the retailer stocks the following items within the coffee product group ? (the items must be available at the time of the audit).

Instant coffee
Instant decaffeinated coffee
Filter fine decaffeinated
Filter fine coffee

Coffee (Total 4 products), number available
=

3
4

114. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

Instant coffee 100 grams

Instant decaffeinated coffee 100 grams

More than 200%

100% to 200%

Less than 100%

KEY FOOD - ORANGE SQUASH

Price

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 4 to determine the Notional Price of the two orange squash products (Please note comments in part 4). Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 116 as minus nine.

Purchase Price - NP
(enter here)

Orange squash 1 litre
'Additive free' squash 1 litre

115. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive More than 110%

Availability

116. Identify whether the retailer stocks the following items within the orange squash product group (the items must be available at the time of the audit).

Orange squash
'Additive free' orange squash
Fresh orange juice

Orange Squash (total 3 products), number available =

117. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf Space devoted to healthy alternative product x100
Shelf Space devoted to standard product

Orange squash one litre
 'Additive free' orange squash one litre

More than 200%
 100% to 200%
 Less than 100%

Positioning

118. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

Orange squash
 'Additive free' orange squash

KEY FOOD - WINE

Determine the cost of the cheapest brand of the two products listed below. Use the formulae on pages 96/97 in part one of the audit and the base prices contained in part 5 to determine the Notional Price of the two wine products. Calculate the Delta Notional Price (DNP) and score the indicator. If the healthy alternative product is not available then ignore this section, but remember, when scoring to score indicator number 120 as minus nine.

Purchase Price - NP
(enter here)

White wine 75 cl
'Alcohol free' white wine 75cl

119. For product pair above DNP=

Cheap - Less than 90%
90-100%
Expensive More than 110%

Availability

120. Identify whether the retailer stocks the following items within the following product groups (the items must be available at the time of the audit).

White wine
'Alcohol free' white wine
Red wine
'Alcohol free' red wine

Wine (total 4 products), number available =

3
4

121. For the below alternatives use your judgement to estimate the ratio of standard to healthy alternative product shelf space.

Shelf space devoted to healthy alternative product x100
Shelf space devoted to standard product

White wine
 'Alcohol free' white wine

More than 200%
 100% to 200%
 Less than 100%

Positioning

122. When the following pair of healthy alternative and standard products are displayed side to side which is the most prominent ?

White wine
 'Alcohol free 'white wine

Part Three - Scoring And Analysis

The scores which are attached to the various answer options are detailed below. Go through the completed audit and identify those answers which you have ringed. Identify the appropriate answer options within the indicators below. The indicators and their answer options are listed below in exactly the same order that they appear on the audit form. Ring the appropriate scores. When you have scored all the appropriate indicators then refer to the instructions at the end of this section.

1.	Yes	1.8
2.	Yes	1.6
3.	Yes	1.1
4a.		1.0
4b.		1.1
4c.		2.1
4d.		1.1
5a.		1.6
5b.		1.0
5c.		1.1
5d.		1.1
6.	Yes	1.0
7.	Yes	1.0
8.	Yes	1.4
9.	Yes	1.9
10.	Yes	1.7
11.	Yes	2.3
	No	-1.0
12.	Yes	2.4
	No	-1.3
13.	Yes	1.3
14.	Yes	1.6
	No	-1.1
15.	Yes	2.3
	No	-1.6

16.	Yes	2.6
	No	-1.9
17.	Yes	2.3
	No	-1.9
18.	Yes	2.0
19.	Yes	2.3
	No	1.1
20.	Yes	1.6
	No	-1.4
21a.		1.1
21b.		1.8
21c.		1.8
21d.		2.0
21e.		1.7
22.	Yes	1.3
23	a.	-1.6
	b.	1.0
	c.	2.3
24.	Yes	2.0
25.	Yes	1.9
	No	-1.1
26.	Yes	2.1
27a.		1.0
27b.		1.2
28a.		1.0
28b.		1.0
28c.		1.0
28d.		1.0
29a.		1.9
29b.		1.9
29c.		1.9
30a.		1.4
30b.		1.6
30c.		1.0
30d.		1.3
30e.		1.0
31.	Yes	1.8

32.	Yes	2.5
	No	-1.2
33.	5 or less	-1.5
	10	2.5
34.	Yes	2.0
35.	Yes	1.8
36.	Yes	1.6
37.	Yes	2.4
	No	-1.1
38.	Yes	1.4
39.	Yes	1.0.
40.	Yes	1.1
41.	Yes	1.4
42.	Yes	1.6
43.	Yes	1.7
44.	Yes	1.1
45.	Yes	2.0
46.	Yes	2.0
47.	Yes	1.3
48.	Yes	1.9
49.	Yes	2.3
	No	-1.7
50.	Yes	1.7
51.	Yes	2.3
	No	-1.7
52.	Yes	2.1
	No	-1.7
53.	Yes	2.4
	No	-1.9
54.	Yes	2.3
	No	-1.1

55.	Yes	1.7
	No	-1.1
56.	Yes	2.0
57.	Yes	-1.6
58.	Yes	1.9
59.	Yes	2.3
	No	-1.6
60.	Yes	1.3
61.	Yes	1.1
62.	Yes	1.1
63.	Yes	1.4
	No	-1.0
64.	a.	1.3
	b.	1.9
65.	Less than..	1.4
66.	Yes	1.6
	No	-1.3
67.	Yes	1.1
68.	Yes	1.7
69a.		2.3
69b.		2.3
69c.		1.8
69d.		1.6
70.	10+ mins.	-1.6
71.	a.	2.0
	b.	0
	c.	-2.0
72.	a.	2.5
	b.	1.2
	c.	-1.2
73.	a.	1.5
	b.	0
	c.	-1.5

74.	a.	2.5
	b.	1.2
	c.	-1.8
75.	Yes	2.7
	No	-1.6
76.	Yes	2.4
	No	-1.6
77.	Yes	2.6
	No	-1.7
78.	Yes	1.7
	No	-1.0
79.	Yes	1.9
	No	-1.3
80.	a.	1.3
	b.	2.7
81.	Yes	1.8
82.	Dispersed	1.5
83.	Yes	-2.3
	No	1.0

Part 2 -----

84.	a.	2.5
	b.	1.2
	c.	-2.2
85.	5	1.6
	6	2.5
86.	a.	2.6
	b.	1.9
	c.	-2.6
87.	Yes	1.9
	No	-1.6
88.	a.	-1.8
	b.	1.8
89.	Yes	2.2
90.	a.	2.5
	b.	1.2
	c.	-2.2

91.	2	1.6
	3	1.6
	4	2.6
92.	a.	2.6
	b.	1.9
	c.	-2.6
93.	a.	2.2
	b.	-2.0
94.	a.	2.5
	b.	1.2
	c.	-2.2
95.	3	2.7
	4	2.7
	5	2.7
96.	a.	2.6
	b.	1.9
	c.	-2.6
97.	a.	-1.6
	b.	1.8
98.	Yes	2.0
	No	-1.4
99.	a.	-1.6
	b.	-2.2
	c.	2.5
100.	a.	2.5
	b.	1.2
	c.	-2.2
101.	3	1.9
	4	1.9
	5	2.1
102.	a.	2.6
	b.	1.9
	c.	-2.6
103.	a.	-1.8
	b.	1.8
104.	a.	2.5
	b.	1.2
	c.	-2.2
105.	2	2.3
	3	2.3

106.	a.	2.6
	b.	1.9
	c.	-2.6
107.	a.	0
	b.	2.0
108.	a.	2.5
	b.	1.2
	c.	-2.2
109.	4	2.3
	5	2.3
110.	a.	2.6
	b.	1.9
	c.	-2.6
111.	a.	-1.5
	b.	2.3
112.	a.	2.5
	b.	1.2
	c.	-2.2
113.	3	1.8
	4	1.8
114.	a.	2.6
	b.	1.9
	c.	-2.6
115.	a.	2.5
	b.	1.2
	c.	-2.2
116.	3	1.6
117.	a.	2.6
	b.	1.9
	c.	-2.6
118.	a.	-1.3
	b.	1.3
119.	a.	2.5
	b.	1.2
	c.	-2.2
120.	3	1.8
	4.	1.8

121. a. 2.6
 b. 1.9
 c. -2.6
122. a. 0
 b. 1.5

Scoring Analysis

1. The first step in the analysis is to calculate the total score for the retailer:
 - a. Add up all positive scores.
 - b. Add up all negative scores and subtract this from the above figure.

Note the total score for the retailer and mark this on the audit summary (page ???).

2. The scores for each of the 7 dimensions now need to be calculated. The indicators within each of the dimensions are detailed below. Calculate the total scores for each dimension by subtracting the total negative score from the total positive score. Fill in the audit summary for each dimension.
3. Check that the total scores of the 7 dimensions equals the total audit score. If there is a discrepancy then check the calculations.

4.1	Information:	Indicators 1 to 35, 89 and 99.
4.2	Promotion:	Indicators 36 to 48.
4.3	Product Policy:	Indicators 49 to 60.
4.4	Accessibility:	Indicators 61 to 70.
4.5	Pricing Policy:	Indicators 71 to 79, 84, 90, 94, 100, 104, 108, 112, 115 and 119.
4.6	Availability:	Indicators 80, 81, 85, 86, 91, 92, 95, 96, 101, 102, 105, 106, 109, 110, 113, 114, 116, 117, 120 and 121.
4.7	Positioning:	Indicators 82, 83, 87, 88, 93, 97, 98, 103, 107, 111, 118 and 122.

5. In theory a retailer could score a minimum score of -101.4 and a maximum score of +267.6 The maximum and minimum scores for each dimension are detailed below:

5.1	Information	+98.4 to -19.5
5.2	Promotion	+21.1 to -1.1
5.3	Product Policy	+44.6 to -9.4
5.4	Accessibility	+21.4 to -3.9
5.5	Pricing	+30.7 to -31.8
5.6	Availability	+37.7 to -23.4
5.7	Positioning	+13.7 to -12.3

6. Compare the scores that have been entered on the summary sheet with the information above. Calculate the below percentage for each dimension and the total and add this to the audit's summary.

$$\% = \frac{\text{score per dimension}}{\text{maximum possible score per dimension}} \times 100$$

7. The total percentage scores for each retailer may be compared. The score is an objective estimate of the retailer's nutritional quality. In general the higher the score the higher the nutritional quality. That is, retailers that score highly are doing more to promote nutrition and are therefore being a greater positive influence on customers.

Comparison of dimension scores will give an idea of a retailers strong and weak points. It will suggest those areas in which the retailer should be concentrating on to improve nutritional quality. It also suggests issues to which health workers should be directing local health promotion programmes.

It must be remembered that the nutritional quality audit is an analytical tool. It produces information to help health promotion workers direct their resources and retailers to consider their activities. The scores are largely meaningless without interpretation. Many factors will influence a retailer's score, for example attitudes, behaviour, size, client group and location. The fact that retailer 'a' scores a total of 45% and retailer 'b' 12% suggests that retailer 'a' has a higher standard of nutritional quality. However, the nature of the retailer must be considered.

In the above example retailer 'a' might be an out of town superstore, that has a relatively low score compared to other, similar retailers. Retailer 'b' might, however, be an inner city convenience shop, many of the indicators would not therefore have been applicable. Yet it actually scores very highly compared to other similar shops. Thus relatively, retailer 'b' is actually doing better than retailer 'a'. A research instrument is a tool that enables a job to be done but can't dictate how well it is undertaken. The nutritional quality audit enables the determination of information. How this is used and interpreted is the responsibility of the auditor.

Nutritional Quality Audit Summary

1. Name of auditor
.....
2. Date of audit
.....
3. Name of retailer
.....
4. Address of retailer
.....
.....
.....

5. Results
 - 5.1 Information.....%
 - 5.2 Promotion.....%
 - 5.3 Product Policy.....%
 - 5.4 Accessibility.....%
 - 5.5 Pricing.....%
 - 5.6 Availability.....%
 - 5.7 Positioning.....%
 - 5.8 Total Score.....%
6. Comments.....
.....
.....

Part Four - Base Prices For Key Food Products

(Gatwick Tesco - August 1988)

1. *	Bread - Large Sliced Wholemeal Loaf	52p
	Bread - Large Sliced White Loaf	42p
2. *	1 pint Fresh Skimmed Milk	23p
	1 pint Fresh Whole Milk	25p
3. *	250 grams 'Sunflower' Margarine (1)	24p
	250 grams Soft Margarine	18p
4. *	1 lb 'Low Fat' Cheddar Cheese	139p
	1 lb Cheddar Cheese	135p
5. *	500 grams Brown Rice	61p
	500 grams White Rice	53p
6. *	'No Added Sugar' Muesli 680grams (2)	99p
	Muesli Cereal 680grms	89p
7. *	100 grams Instant Decaffeinated Coffee	145p
	100 grams Instant Coffee	79p
8. *	75cls 'Alcohol Free' White Wine	179p
	75cls White Wine	170p
9. *	1 litre 'Additive Free' Orange Squash(3)	67p
	1 litre Orange Squash	54p

Note 1 Sunflower margarine may be marked as such or labelled 'high in polyunsaturates'.

Note 2 If 680 grams size is not available, use 500 or 750 grams and calculate price of 680 grams.

Note 3 Additive free orange squash must be clearly marked as such on the label eg 'Contains no artificial colours or flavouring'.

Part Five-Indicators Requiring Interview With Shop Personnel

*11. Does the retailer train its shop floor staff in any aspect of nutrition ?

Yes
No

*12. Does the retailer train its staff in any aspect of nutrition education ?

Yes
No

*15. Does the retailer train its management in any aspect of nutrition ?

Yes
No

*16. Does the retailer have a policy on nutritional labelling ?

Yes
No

*17. Does the retailer have a policy on nutritional labelling for its own-label products ?

Yes
No

*32. Does the retailer employ nutritionists to advise on nutrition policy ?

Yes
No

*45. Has the retailer ever supported a local health promotion initiative not originating from itself ?

Yes

*46. Has the retailer ever supported a nutritional initiative originating from a national organisation ?

Yes

*47. Does the retailer allow its local management discretion when dealing with local initiatives, concerned with promoting nutrition ?

Yes

- *49. Does the retailer's nutrition policy influence its product range ?

Yes
No

- *50. Does the retailer have a health policy on alcohol sales ?

Yes

- *51. Does the retailer have a nutritional policy for its own-label products ?

Yes
No

- *52. Does the retailer have a nutritional policy for its branded products ?

Yes
No

- *53. Does the retailer's nutritional policy influence its purchase of branded goods ?

Yes
No

- *54. Does the retailer have a policy of liaising with manufacturers of branded goods with the aim of modifying products so as to increase their nutritional desirability ?

Yes
No

- *59. Does the retailer have a policy of developing its own-label products to increase nutritional desirability ?

Yes
No

*78. Do local managers have the authority to vary prices
for promotional purposes ?

Yes
No

CHAPTER 6

PILOTING THE NUTRITIONAL QUALITY AUDITIntroduction

The nutritional quality audit presented in the previous chapter was piloted in August 1988. This chapter details and analyses the process and conclusions of this pilot study. The chapter also makes suggestions on the future development and use of the audit for health promotion purposes.

The Pilot

The nutritional quality audit was piloted by two processes:

1. The methodology of the audit, the checklist of indicators, and eventually the audit itself was the subject of various expert seminars throughout 1987/1988. These seminars were either concerned with the evaluation of nutrition policy or had been called specifically to discuss the development of the audit. They were attended by Nutritionists, Dietitians, Health Education Officers, Environmental Health Officers and Community Physicians. All were attending because of experience and interest in the process of measuring nutritional quality. The major consultations took place in April and June 1987, and April and June 1988. Every effort was made to obtain constructive comments on the philosophy and methodology of the audit.

The nutritional quality audit, therefore has a reasonable degree of professional peer support. The one interested group who have had little input into the development of the audit are the retailers themselves. Potentially a critical group, it was felt that it would not be appropriate to introduce the project at too early a stage. Informal comments and previous responses to surveys, looking mainly at availability and price were, however, taken into account.

2. The completed draft audit as presented in chapter 5 was piloted in August 1988 in East Surrey. A Health Promotion Officer with the East Surrey Health Promotion Unit, who was responsible for nutrition policy implementation within the district was asked to jointly pilot the audit. The Officer had little previous knowledge of the audit and thus could be considered a typical user-auditor.

The auditor and the author selected, at random three different types of retailer belonging to the following groups:

- a. A large 'out-of-town' superstore.
- b. A high street supermarket.
- c. A 'convenience' store.

The following shops were chosen as typical examples of the above genre:

- a. Tesco Superstore, Horley.
- b. Budgens, High Street, Reigate.
- c. Londis, Brighton Road, Redhill.

The audits were undertaken on the same day, in mid morning and mid afternoon. The author accompanied the auditor to obtain feedback, but did not intervene in the audit itself.

Following the three pilot audits the author and auditor undertook a debriefing exercise. The major points that arose were:

- 1. The time taken to undertake the audit varied between 60 - 90 minutes. About half this time was taken within the shop itself and the other half was needed to complete the various calculations and score the audit.
- 2. It was considered that an auditor who was more familiar with the audit could probably reduce this time by 30%.
- 3. Familiarity with the store was equally important, often time was lost hunting for key food products, or assuring oneself that an indicator was not applicable.
- 4. In general the smaller the shop the quicker the audit.
- 5. The auditor found the instructions for the audit 'reasonably clear', a new auditor should probably try out the audit informally a few times and be au fait with the process before undertaking a serious audit.
- 6. Part one was reasonably easy to complete, the 'key word' system seemed to make the indicators fairly

unambiguous, the auditor was, however, concerned that personal interpretation of some indicators was still needed. This personal judgement might, however, be deemed to be informed decision making.

7. The pricing dimension in part two, was easy to complete but the availability section took some time. The 'use your judgement' indicators caused some concern but could generally be answered with reasonable confidence. This difficulty was largely associated with inexperience with the audit. The auditor felt that:

"it would be easier next time because I would know what I'm looking for".

8. The part 5 questions, those indicators that required a member of staff to be approached caused some difficulties. Staff, particularly junior and shopfloor staff were suspicious of unsolicited approaches. Most were, however, helpful when the nature of the situation was explained.
9. Each of the three shops audited presented rather different problems:
 - a. The Tesco Superstore - this store is always busy, and employs a lot of junior shopfloor staff who were unable to answer policy questions. The management were helpful once they had been located and the situation explained. It would probably be necessary to make an appointment with a manager at a quiet time to ensure the indicators are answered. A further option would be to undertake the audit and then to ask the part 5 questions by post. This would have the advantage that a written request would often find the right 'level' of manager easier. There seemed to be real advantages for undertaking the main audit first and then dealing with part 5. Information gained in parts 1 and 2 could be used to clarify and validate the answers to part 5.
 - b. Middle sized retailer such as Budgens, often have a single manager responsible for the whole shop. Things seemed to be rather less hectic than in the larger store. Most of the policy questions could be answered, although a lot would probably depend on the experience of the manager, or how confident they were to make statements on behalf of the company. There were a few 'don't knows', which meant the indicators were unanswered. To some extent the auditor had to use their judgement about the credibility of the interviewee, and

decide whether to refer the part 5 indicators to a more senior manager, probably by post.

- c. Convenience stores, such as Londis are often staffed only by junior employees, often the owner is absent. The situation seemed more relaxed and informal. The 'ownership' of these type of shops is often complicated and auditors might have to undertake some detective work to ascertain a suitable person to ask part 5 questions.
10. Many retailers have a rather negative view of commercial market researchers and effectively 'ban' them from their establishments. This could of course pose a serious threat to the operation of the audit. On the other-hand Environmental Health Officers or Trading Standards Officers have a statutory right of entry to food premises. The experience of previous 'availability' studies linked to nutritional policy implementation suggests that most retailers would take a sympathetic view to an audit being taken by a 'health worker' for non-commercial gain. The situation might of course change if retailers fully understood the purpose of the audit or after 'bad' publicity. It would however seem that local Health Authorities have a fair amount of credibility and good will is often extended further than to commercial organisations.

During the pilot nobody took much notice of the auditor. It was obviously more difficult to be inconspicuous in a smaller shop. The auditor would have to use some judgement about whether to approach a member of staff before undertaking any part of the audit. In general it would not seem expected or necessary except in the smallest of shops, which might often be staffed only by the owner.

- 11. The auditor felt that about 100 of the indicators could be answered or were clearly not applicable. Another 10 presented some problems largely associated with subjective interpretation. The auditor believed that some of the problems were connected with the new experience of auditing in general, and the nutritional quality audit in particular. The remaining indicators were problematic, either they were ambiguous, or difficult/impossible to answer. The auditor did, however, believe that more experience was needed with the audit before any changes were considered.
- 12. The calculation of the NP, ANP, DNP and DANP price indicators was reasonably straight forward. The auditor was able to do this without help. Obviously

the first calculations were rather slow, but after this the auditor thought they presented no problems and produced interesting information which perhaps was not totally reflected by the scoring system.

13. The scoring system itself was easy, an electronic calculator was obviously needed, both to add up the scores within the dimensions and to calculate the various percentages.
14. The audit scores obtained are detailed below. They are presented as percentage scores of total possible scores for each dimension.

Results of Pilot Audit

	Tesco	Budgens	Londis
1. Information	40%	3%	-4%
2. Promotion	28%	5%	-5%
3. Product Policy	33%	10%	-22%
4. Accessibility	38%	10%	16%
5. Pricing Policy	42%	35%	4%
6. Availability	50%	46%	10%
7. Positioning	2%	15%	3%
8. Total	37%	16%	1%

There are clearly differences between the retailers audited. What exactly are these 'differences' and is it justified to ascertain these, to differences in nutritional quality? To a large extent the differences are caused by the nature of the retailers; all three being very different types of retailer having very different customer profiles. It would be expected that they would vary greatly in their stocking, merchandising and promotional policies. The audit, however, is to a large extent designed to identify these very differences, or at least those differences that have a impact on nutrition. Other contributions to the overall 'scores' come directly from factors that might not be expected to vary with customer profile or size, the provision of health education materials for example. The results of the pilot may be considered to have a commonsense validity. Tesco as identified in Chapter 3, might be

considered the leading retailer in terms of an expressed response to nutritional quality. It scores relatively well on most dimensions, the availability and pricing dimensions are strong, whilst its positioning and promotion dimensions bring down its overall score. It is interesting to note that on no dimension does the retailer score over 50%.

In comparison Londis operate largely as a convenience store which opens long hours. Nutrition is not an expressed priority. Their score is considerably lower overall, and the differentials between the two shops for the various dimensions vary considerably. The Londis store is considerably more expensive, makes no effort to health educate customers yet competes with Tesco in terms of 'accessibility'. The poor pricing and availability scores support previous research (LFC 1985) which suggests that the socially disadvantaged for example the elderly and unemployed, are less able to purchase nutritionally desirable food, because they are forced to shop at small local stores and do not have access to the large out of town stores such as Tesco.

The audits results for Budgens fall, nearly uniformly between Tesco and Londis. This might be expected. It is not large enough to compete with Tesco in terms of price or availability, yet considering it promotes itself as a 'modern' retailer it scores poorly on dimensions such as product policy, promotion and information. Budgens makes some attempt at nutritional labelling but highlights the problems that can beset a retailer who undertakes such labelling for the wrong reasons. For example, it labels its own-label baked beans with fat, protein, fibre and carbohydrate content but does not mention sugar or salt, and it labels its green peas as 'preservative free', but only produce a version with added salt and sugar.

The results of the pilot both show the usefulness and the limitations of the nutritional quality audit. Single audits of individual retailers are useful, in that they suggest how well a retailer is performing in terms of nutritional quality. They also suggest the relative contribution of the retailer to each of the 7 dimensions of nutritional quality. Comparison between retailers is interesting, it shows relative performance and can indicate which retailers are making useful contributions to the promotion of nutrition and which are not. There is obviously a multitude of factors which could explain the differing scores. More useful would be the comparison of similar retailers and a larger data base would facilitate interpretation.

The pilot study helped to resolve one major outstanding issue regarding the use of the audit. This was the issue of when and how often it should be used to obtain a fair analysis of nutritional quality. It would be expected that

nutritional quality could vary throughout the working week, anybody who shops will soon know that availability often declines later in the day and at busy times such as weekends. Literature that may be there in plenty on a Monday morning is gone by Friday afternoon. It is quite conceivable that two audits on the same retailer might produce very different results depending on the time of day and week. The auditor thus has two options:

- a. Accept the audit as a true audit taken at a random time on a random retailer. Assume that the auditor is a customer that would be influenced by the stores nutritional quality. This hypothetical customer could not be influenced by the fact that the retailer had plenty of leaflets last week but has now exhausted its supplies. Many other audits work in similar ways. The Consumer's Association in their 'Which' reports only investigate items or services once. The inherent unfairness with this system is seldom complained about. It is a system of equal unfairness.
- b. To be fair to a retailer it might be decided to undertake the audit several times at differing times of day and on different days of the week. The scores for each visit would then be averaged out, to give an average result. The main problem of this is firstly how many times must the audit undertaken to be fair? If all retailers are to be audited twice must visits to other retailers be undertaken at the same two times? What time should elapse between audits? The other major problem is time. It would take the auditor considerably longer to undertake an audit.

It was originally proposed in chapter 5 that the audit would be undertaken once for each retailer but that commonsense is applied. Retailers should not be visited within two hours of opening or closing nor at weekends which may be considered atypical. The pilot study supports this decision. If this policy is adopted then the auditor should not be accused of unfairness. Only in cases where it is obvious that a visit is atypical should a revisit be made.

All the above comments and issues were considered. The audit would seem to be a viable analytical tool which provides useful information. Following more extensive auditing it is probable that some revision to the audit, as it is presented in Chapter 5, would be made. It is however unlikely that these changes would need to be substantial. The audit as presented must however be considered to be no more than a draft. It will have to be used many times and carefully refined before it could be considered a methodologically sound research instrument. The purpose of this research was to provide the philosophical and

methodological base for a nutritional quality audit not the finished article.

In 1988 Riverside Health Authority undertook a nutritional quality audit of retailers in selected areas of Victoria, Hammersmith and Fulham. The research is supported by a research grant from North West Thames Regional Health Authority. Three areas of Riverside were selected for different population characteristics as measured by Jarman 8 scores for socio-economic factors. In each area, the food retailers would be surveyed using a nutritional audit, which accounts for differences in price, availability and other factors. The research is part of Riverside's continued implementation of its nutrition policy.

The audit was conducted during the summer of 1988. This research did not use the nutritional quality audit as presented in chapter 5 but is based on earlier work associated with this research. The Riverside research uses many of the key features of the proposed audit and may be considered to be an effective large scale pilot for a nutritional quality audit, based upon the philosophy and methodology developed in this research. The results of the Riverside research are awaited with interest and may well have implications for the continued development of the nutritional quality audit presented in the previous chapter.

CHAPTER 7

THE AUDIT: POLICY IMPLICATIONS, EVALUATION AND USE.Introduction

The introduction to this thesis describes the nutritional quality audit as a potential tool for promoting change. At a simplistic level it is envisaged that its use will facilitate retailers to develop nutritional quality. The catalyst for this change being:

- a) The stimulation of competitive instinct. The introduction to this thesis suggests that the ability to measure nutritional quality via the audit will encourage retailers to use nutrition as a non-price competitive dimension.
- b) The ability of health workers to develop baseline measurements, target health promotion resources and evaluate strategy.

Contemporary epistemological thinking suggests that such a hypothesis can only be evaluated through an extensive use of the audit. The evidence, however, both from economic theory and the historical review of past reactions of retailers to change stimuli presented in chapter one suggests that the hypothesis rests on reasonable assumptions. This chapter takes a more detailed look at the potential reactions of retailers to the audit and the implications for changing their nutritional status. It then goes on to look at the ways in which the audit's use might be evaluated and the audit's possible use at a local level.

Policy Implications

It is reasonably obvious that the audit might be used in a number of different ways and its subsequent effect on the policies of retailers with regards to nutrition will vary. In general there is no 'right way' to use the audit, different objectives and local circumstances will influence use and effectiveness. These issues are looked at later. For the purposes of this section of the thesis it is assumed that the audit is principally an agent of change and that the long term aim of health workers is to encourage retailers to develop policies which increase nutritional quality.

There are three major ways in which the audit's potential effectiveness as a tool of change might be predicted:

1. By an analysis of the predictive views of those responsible for policy and strategy in the major retailers. It might be possible to interview senior policy makers and ask them to predict their organisation's likely response to the audit. Would they take a cooperative or antagonistic stance to the audit's use ?
2. By consideration of the impact of previous 'audits' on policy change. Market research may or may not be a tool of change in itself. Often change does however occur both directly and indirectly as a result of such research. In some cases change might be predicted and calculated. Health workers might for example use an audit of restaurant hygiene measures to directly produce the desired change. Other types of audit, the Consumers Association 'Which' reports, for example, often produce indirect change - they are primarily used to inform readers of research results but often produce changes in the organisation being researched.
3. By an analysis of theories that make general assumptions about the impact of change agents such as the nutritional quality audit.

The first approach is problematic. The issue of retailer involvement in the development of the audit has already been discussed. It is not a question of the ability to access policy makers or their willingness to give a view on the likely impact of the audit, it is a question of how predictive these views would in, reality be. There are a number of issues involved in this analysis.

1. Chapter three suggests that many retailers believe that they are responding to the nutritional debate in a positive way. The chapter, does however highlight that this response is far from ideal and in some cases represents a cynical exploitation of the nutritional debate. The question of whether the retailers recognise this is of course crucial.
2. The historical relationship between health education and promotion specialists and commerce does not suggest a willingness for trust and co-operation. This is often a fault on both sides. Health workers often use mass media approaches to rally public and political support against commercial organisations that contribute to ill health eg the tobacco and alcohol industries. In turn, health workers are often viewed with suspicion and labelled cranks by organisations such as the Tobacco Advisory Council and the Meat Marketing Board which represent commercial interests. It is therefore unlikely that retailers would react positively to the audit until

such a time that they consider it in their interests to do so.

3. It would be almost impossible, in the context of this research, to interview a representative sample of policy makers. Chapter one shows the food retail sector to be extremely diversified, chapter three details the varied response to the nutritional debate. Different retailers will respond to the audit in different ways. Unfortunately those policy makers most easily accessible would be those most likely to be sympathetic to the nutritional quality audit's cause. This would obviously distort any assumptions made as to the likely effect of the audit. Those discussions with managers and policy makers that have occurred, eg during the audit's pilot described in chapter six, show a huge variation in views and significant differences between 'official' and 'off the record comments'.

Overall, it has to be concluded that whilst the assessment of the predictive views of policy makers would be highly desirable they are, for all intensive purposes impractical to obtain. Whilst certain uses of the audit do not require the explicit support of retailers, it is obvious that more can be accomplished by working closely together. It might be expected that initial resistance would reduce when retailers see that the methodology is fair and accurate and, possibly in their interests.

Does then the second method of prediction detailed above hold out any more success? The use of market research as a direct and purposeful tool of change would appear to be limited. Audits are usually carried out to obtain quantitative data for research, planning or monitoring purposes. There are however, in the field of health education/promotion examples of audits being used primarily as tools of change. There is certainly a commonly held view that the asking of the right questions often initiates change. An example of this approach is the University of Southampton's 'monitoring' of non-smoking policies in the NHS (Batten 1988). A questionnaire concerned with the practical implementation of non-smoking policies is sent to all Health Authorities. The Health Authorities are then awarded a 'star' rating which is published. The survey is then repeated 2-3 years later. From a personal and subjective view this approach has certainly produced local change; it enables managers to directly compare their performance with others and often 'shames' them into action. Similar approaches have been used with a wide variety of subjects including alcohol policy (HEA 1988a) and the provision of resources for drug education (HEA 1988b). Clearly some of these examples have been more effective than others and it would be valid to ask the question 'what makes some audit style approaches produce change and others

ineffective'? The simple (but commonly held view) that it is a matter of asking the right questions at the right time is clearly of no help in predicting the likely impact of the nutritional quality audit. This response might however, be predicted by application of theories that attempt to explain change such as the 'communication of innovation theory'. To do this the theory will be reviewed and then applied to the nutritional quality audit.

The development of nutritional quality can be seen as a innovative in that it requires new beliefs, attitudes and practices. It is generally accepted that innovation responds to economic incentives. New products and methods will not be introduced unless it appears profitable to do so but competitive firms must innovate or they will lose out to their competitors. The rate of take up of any innovation may be explained by 'communication of innovations theory' which consists of generalisations about the factors which affect the communication and diffusion of new ideas and practices. These generalisations were originally made in the 1960s and were later refined by Rogers and Shoemaker (1971). The theory examines how innovations are communicated over time among members of a social system. At an individual level the process of adoption of an innovation is considered to cover a number of stages:

1. The awareness stage - where individuals become aware of the innovation eg retailers must be aware that 'nutritional quality' is an issue and of the factors that influence it.
2. The interest stage - where they actively seek information eg retailers, before they decide whether 'nutrition' is a sound business proposition will need information and advice.
3. The evaluation stage - where individuals assess possible benefits eg it would be realistic to expect retailers to undertake market research to ascertain how cost effective 'nutrition' could be.
4. The trail stage - where individuals experiment with the innovation eg retailers will experiment and evaluate.
5. The adoption stage - where the individual rejects or accepts the innovation eg retailers will ask is 'nutrition' cost effective? Will it allow a retailer to increase profits and or market share?

Looked at as a function of time the adoption of an innovation by a social system forms a typical 'S' shaped curve. This is the result of not all the individuals within that system adopting an innovation at the same time. Rogers and Shoemaker suggest that individuals can be identified as:

1. Innovators - whose interests and social links usually lie outside their own social system. They are adventurous and enterprising.
2. Early adopters - whose links and social standing are within their own communities. They can often be used as change agents.
3. Early majority - who follow but rarely lead. They are an important link in the process of legitimating an innovation.
4. Late majority - who adopt new ideas later than the average member of the social system, often out of necessity and in response to increasing social pressure.
5. Laggards - who are the last to adopt. They are conservative and hold to traditional values.

In the case of this research the 'innovation' is the adoption of nutritional quality. The case studies in chapter 3 clearly identify the innovators and early adopters of change. The state of the retail industry with regard to take up of the innovation is that take up is still led by a minority and that take up rate has not yet reached the curve of the 'S' where the early and late majority take up the innovation. The reason why 'innovation' appears to be stuck can be identified by further application of 'change theory'.

Rogers and Shoemaker identify a number of factors which influence the rate of adoption of innovations.

1. The perceived attributes of the innovation. These include relative advantages, compatibility with existing practice, the complexity of the innovation and how easy is it to trial. 'Nutritional quality' has previously been identified as a complex issue. Retailers are constantly innovating to increase profit and market share. A typical case might be the introduction of EPOS check outs. The introduction of EPOS allows a more effective and efficient service and is welcomed by staff and the majority of consumers alike. It is an identifiable entity whose advantages and disadvantages can be easily analysed. The same can not be said for nutritional quality. An important aim of the the nutritional quality audit is to facilitate the identification of the issues involved.
2. The communication channels, ie whether mass media or interpersonal channels are used. Interpersonal channels of communication are seen as highly influential in the adoption stage. This is because of the importance of group norms and the limitations of mass media approaches which can be more effective in terms of 'agenda setting'

at the adoption stage. The audit will facilitate both mass media and interpersonal channels of communication. Whilst the initial construction of the audit has not involved retailers intimately for the reasons cited previously it is expected that retailers will be closely involved in the audit when it is conducted at a local level.

3. The nature of social system, ie whether the social system has modern norms favourable to change or conservative values. It is difficult to assess whether retailers belong to a conservative social system. Certainly chapter one suggests that significant changes often come from external sources and that retailers resist these often until legislation intervenes. Food retailers are however highly competitive and will adopt innovation when it is in their interests to do so.
4. The extent of the change agent's promotional efforts. Of particular importance is the influence of opinion leaders who others turn to for advice. Linked to this notion is the concept of homophily which is defined as the degree to which certain individuals share similar attributes. Rogers and Shoemaker show that more effective communication occurs when source and receiver are homophilous. There are many facets of the 'health debate' where the agents of change and their targets are not homophilous, for example, health educators and the tobacco industry. It is probable that the same could be said for food retailers and health educators. Health educators require change for the sake of the public's health whilst retailers are primarily concerned with the profit motive. One of the aims of the audit is to allow health educators and retailers to 'talk the same language' and approach nutritional quality in a realistic way. Where homophily does not exist it is important that the source of change and receiver have high empathy that is the change agent can project itself into the role of the receiver. Use of the audit by health educators would be expected to increase empathy.
5. The theory states that an innovation may originate within a particular social system as a result of a need that the members themselves may recognise, or come about as a result of an external change agent. The theory suggests that innovations are most likely to be adopted when need is recognised within the social system ie the retailers and least likely when it has been recognised externally ie health educators. In the case of nutritional change in the retail sector recognition for need for change is largely external and the agents of change are health educators and to some extent the public at large.

Does the above review suggest how retailers are likely to respond to the use of the audit ? The fact that homophily does not exist at present and that the change agent will be seen as external to the social system within which the retailers exist makes some hostility seem likely. Nutritional quality will also suffer from being a complex issue which might not be seen to be cost-effective. Yet the fact that retailers have started to compete in terms of nutrition and see this as a way of increasing market share and possibly as a public relations exercise suggests they might welcome an innovation that facilitates further development. The audit's effectiveness will depend on how it is used. Used badly it could easily be dismissed by retailers as unrealistic, unfair and impractical - it could be discredited with relative ease. Used effectively by a health educator who understands the driving forces behind innovation in the food retail sector it could be of immense use. Effective use would need to make careful use of mass media and more intimate approaches to both carrying out the audit, interpreting the results and deciding on follow up.

It is however perhaps worth noting that often in the field of health education activities are undertaken on the basis that any effect in broadly the right direction is desirable and is thus worthwhile. Whilst this non-targeted 'throw the mud against the wall and see if any sticks' approach is spurned by many as inexact and difficult to evaluate it can often break situations of inertia and produce unexpected spin-offs. A 'quick and dirty' audit of a number of retailers would probably be of some professional and media interest, whilst this would be easily attacked by retailers the 'they would say that wouldn't they' tack could be used in defence. Public support, pressure and media interest could force change with or without retailer support. This tactic is often used by both sides in the health - tobacco and alcohol debate. On the other hand, the audit could be used in full collaboration with the retailer, both for the retailer to review policy and for the health educator to target resources. If the audit had credibility and seemed effective then retailer might consider that for either economic or public relations reasons collaboration to raise nutritional quality would be desirable. It is a old adage of health promotion that it can only be effective if 'the right methods are used at the right time in the right place'. The audit should be considered another tool for the health educator who might use it in different ways in different circumstances.

From the above analysis, use of the audit may result in change in the short, medium and long term. It must be noted, however, that communication of innovation theory suggests an ordered and rational response to change stimuli. Actual responses may vary considerably from those predicted. In particular it is likely that different sections of the food

retail industry will react in different ways - a key factor being the extent to which the audit is compatible with their competitive strategies. Another key issue is of course the response of health workers to the audit. It has always been a major consideration and a prime reason why other health education and promotion specialists have been involved at all stages in the audit's design. It is fair to say that the audit has been broadly welcomed by fellow workers, largely because the need for such a analytical tool is so keenly felt. Positive responses have also been received from the Health Education Authority, who are obviously in an unique position as a national body. The Health Education Authority are currently funding developmental work based on the application of this research.

1. Short term change - in the short term change is most likely to occur through two processes:
 - 1.1 The realisation by some retailers that it would be in their interests to work with health workers. Effectively the locus of change would move from the external to the internal. The reasons why this might occur are several, it might be that development of nutritional quality is seen as beneficial in competitive terms or there may be some genuinely altruistic element in the decision. The close collaboration between Tesco in Wales and the Heart Beat Wales Project is a good example of a close and mutually beneficial relationship (Moore 1987).
 - 1.2 The use of the audit in a 'quick and dirty' way might provoke certain beneficial responses from retailers. This might for example be the sudden provision of literature or the revision of price differentials between healthy and non-healthy food options. This method might be more effective with small local retailers who might find it necessary to respond to local community pressures. The support of local media would probably be a key feature of this strategy. Change will it might occur could possible be shortlived. It is also quite possible that 'negative' use of the audit could blight more productive long term partnerships with retailers. The limitations of mass media approaches to change have already been mentioned. They seldom result in effective long term change. They are however an effective form of 'agenda setting' which may the be followed up by more personal approaches (McCron 1981).
2. Medium term change - will partly follow on from the above. Any change in a positive direction should be positively followed up by health workers. Use of the audit could be negotiated with retailers on a planned

basis in terms of timescale and geography. The retailer should be encouraged to have ownership of the audit and the results should be discussed positively. It might be possible to encourage retailers to subscribe to the audit and use it internally for competitive assessment. Health workers could then help the retailer to develop its nutritional quality in agreed directions - the supply of appropriate educational literature for example. The audit's dimension scores will in effect produce a work programme for change. Depending on the type of retailer some dimensions might be easier to influence than others. A small retailer in an inner city area could for example be encouraged to develop information, promotion and other non-price dimensions. Partnership with the large multiples might on the other hand produce results similar to the 'Heartbeat Wales' work on labelling, advertising and price differentials.

3. Long term change - in the long term the hypothesis which is central to this research predicts that competitive nature will be simulated. This might occur because of the audit being used in any of the ways mentioned above. Innovation of Change theory suggests that change will be more effective if the impetus of change comes from within the retailers and that the change agent is seen as homophilous. Long term use of the audit by health workers might then be most productive if used to encourage mutually beneficial partnerships with retailers. Whatever the means, the end result of the audit's use should be a measurable and sustained increase in nutritional quality at both a local and national level.

Whilst the audit is primarily aimed at retailers its use may have policy implications elsewhere. In particular it may well facilitate the development of local nutrition policies. Policies will now be able to target resources more effectively and evaluate outcomes. This in itself could encourage agencies such as Health Authorities to further fund policy implementation.

Evaluating the Audit's Effectiveness

Whilst the audit's use might promote nutritional quality proving this is another issue. It would seem reasonable to look for ways of measuring whether change occurs or not over time. This of course involves comparison and brings in the issue of sampling.

A survey is a form of planned collection of data for the purpose of analysing the relationships between certain variables. In the case of the audit these variables are use of the audit against nutritional quality. To be meaningful the evaluation must exclude as many other factors as

possible so that cause and effect can be inferred ie the use of the audit has increased a retailers nutritional quality. A survey of this kind can not prove cause and effect but only a positive or negative association. Survey design must separate those 'experimental variables' that are being studied from the 'controlled variables' that are trying to be eliminated. These variables can be controlled by either excluding them (for example by auditing only retailers of the same size and therefore excluding size as a variable) or by controlling them (for example by undertaking the audit on the same day of the week for all retailers and thereby excluding the day of the week as a variable or by randomization so that the influences of other variables are presented equally to all retailers and can therefore be excluded. There will also be a large number of uncontrolled variables over which there can be little control for example local media interest in nutrition. Whilst an ideal evaluation design would have no uncontrolled variables in practice the best that can be done is to minimize their effects through randomization.

The evaluation of the audit's effect on nutritional quality would best be performed by use of a longitudinal or 'before and after' design. In this type of design a set of measurements is taken of a respondent(s) which is then subjected to the experimental variable and afterwards measured again. In its most simple design the audit would be undertaken and then undertaken again at some future point in time. The use of the audit itself is the experimental variable and the reauditing of the same retailers would limit other variables. It is not possible, of course, to attribute all differences in nutritional quality to use of the audit until it can be shown that such changes would not have occurred anyway due to the influence of another variable. In general the longer the passage of time the greater the chance of this happening. Media interest, legislation and 'food scares' such as the 1989 'eggs and salmonella' controversy could all effect nutritional quality. A common cause of such differences is the 'Hawthorne Effect' that is that mere participation in experimental designs often produces certain changes. In the case in question it is of course this very thing that is being measured. To avoid these problems it is necessary to have a 'controlled' sample that is subject to all variables except that being measured. The function of the control group is to show what would have happened to the experimental group if it had been subjected to the experimental variable.

In terms of the audit this would all suggest that two retailers or groups of retailers must be found which are closely matched and influenced by similar variables. The audit would be carried out on one retailer or group. This would be repeated after a period of time. The difference

between the experimental and control group could be reasonably attributed to the audit. At first sight it might be realised that it is the use of the audit itself which is the experimental factor and thus such a design would either have to subject both control and experimental group to the experimental audit or have a control which has no 'before'. It is however not the undertaking of the audit which is the experimental factor but the use to which the information is put. A controlled design might therefore look like this. Retailer 'A' and 'B' are both audited, the results of retailer 'A' are made public and used for health promotion purposes. Retailer 'B's data is not published, indeed retailer 'B' must not be aware that an audit has been undertaken. At some point in time both audits are undertaken again. The percentage increase or decrease in the audits scores is therefore the result of - retailer 'A' the audit and other variables, retailer 'B' other variables. The significance of such a design depends on the control of these other variables. Chapter 4 details many factors which influence nutritional quality many of these are uncontrollable but common to all retailers eg legislation. Other factors can however be controlled and taken into account eg size and type of retailer.

Chapter 4 has already discussed methods of classifying retailers by type, size and turnover. By using one of the market research classification systems these could be controlled so that the audit can compare like with like. Another variable factor which would need to be considered is that of the target population of the retailer. All retailers have different customer profiles. In chapter 2 the nature of retailing structure was looked at, from this it is clear that retailers do not necessarily compete for the same market segments. Tesco and Sainsbury's do not compete with Kwik Save and Victor Value, they have very different customer profiles. Likewise even the same firm might differentiate its shops to cater from different markets thus the large multiples classify their shops into at least three different types, this in turn will effect many factors such as product policy which will in turn influence nutritional quality. Given these variables how can a experimental design be produced which will evaluate the effect of the nutritional audit ?

Basically it is necessary to identify two groups of one or more retailers having similar characteristics. For example an 'out of town' Tesco superstore in Surrey might be expected to be very similar to an 'out of town' superstore in Hampshire, same company, same classification (type), similar size, similar customer profile and similar policy on nutrition. An audit of both these stores would be expected to have similar results, any major difference would need further investigation and would question the validity of the audit. Local action would result from the publication of the

results of one audit whilst the other would be for control purposes only. The audit would be repeated after, say, one year. The % change in audit results being attributable to the audit with due regard for those other variables that might have effected the experimental retailer and the control. One particular problem with this design would be that if both retailers belonged to the same company 'top down' national action might result from the audit might effect both retailers. If possible it would be better to match two retailers belonging to different companies. Likewise similar 'small' or 'medium' sized shops could be monitored. Ideally a design should include a stratified sample of several different types of retailers so that the effects on each and the whole could be determined. By careful experimental design of this type the success or otherwise of the audit could be establish and some tentative decision made as to the validity of the central hypothesis.

Possible Use at a Local Level

It might be decided that the audit's use as a tool of change would best be served by its extensive use nationally. Used to undertake a nationwide census the audit's measurement of nutritional quality might influence a) retailers via their competitive nature b) consumers via their interests in healthy eating c) health workers via their ability to measure nutritional quality, target health promotion resources and evaluate action. The census would provide a catalyst for the development of nutritional quality. Whether this would, in reality happen or not depends on the retailers response to the audit as an agent of change.

In the introduction to this thesis it was emphasised that action was initiated by workers operating at District Health Authority level. Health Districts are discreet geographical areas usually servicing a population of between 100,000 - 300,000 people. Given a modicum of theoretical and experimental support for the effectiveness of the audit its use would require an evaluation of a less rigorous nature. At the simplest level the goal for a health worker would be to raise the nutritional quality of all retailers in their district. Lists of all such retailers are available from Local Authorities whose Environmental Services and Trading Standards visit all food retailers as part of their work. Usually there is a fair degree of co-terminosity between local authority and health authority boundaries. An audit could then be made of either all retailers in the district or some sample of those retailers. For example this could be the top 10 largest retailers, or those retailers where 90% of the population shop. This type of local information is often available from District Health Authority Nutrition Departments and Health Promotion Units as the results of previous 'food availability' studies. The aim would be to maximise the effect of the audit and there may or may not be

a requirement to evaluate effect. If there was, then a crude design would necessitate the reauditing of the sample after the agreed time period. The audit would often not be the only intervention being used. Often district nutrition policy will involve a multi-faceted implementation with evaluation being undertaken at a macro level. It would often be difficult and unnecessary to evaluate a strategy that has a reasonable methodological pedigree. If a controlled design were needed it would have to either, match retailers within a district or match some or all retailers in another district. Both would be problematic although not impossible. The sophistication of the design would have depend on the degree of evaluative validity required.

The use of the audit at district level could also have other benefits:

1. The initial use of the audit across the district would both highlight those retailers which ought to be targeted for health promotion initiatives and suggests the direction of those initiatives, this being dependant on particular dimension scores. With increasing pressure being put on NHS budgets the desirability of targeting of scarce health promotion budgets grows.
2. Some aspect of the district's audit score could be compared with the same aspect in another district. For example average audit score for all retailers or average per retailer type or individual sample scores could be compared with the those in another similar or dissimilar district. Both the socially stratified response to the nutrition debate linked to the marketing strategies of many retailers would suggest that nutritional quality would vary geographically. The Black Report (DHSS 1980) and the Health Divide (Whitehead 1987) highlight inequalities in health and demonstrate that the north-south social-economic divide influences health indicators. This would suggest that retailers in the north and more socially deprived districts might have a reduced nutritional quality compared to more affluent districts. An analysis of this information would throw light on one of the more controversial contemporary issues in public health, the relationship between health and environment. Is reduced nutritionally quality a cause or effect of socio-economic deprivation ?

It might be worth noting that the audit could be computerised with relative ease. Preliminary trails using Q&A and LOTUS 123 suggest that this would facilitate data collection and analysis. A natural extension of this process might be to develop a national data base for the audit's results. Local auditors would send copies of their results to a central data base held, for example, by the Health Education Authority. This collective information would open

up a new range of options for using the audit to facilitate and monitor change. It is considered that a detailed analysis of these possibilities is beyond the scope of this thesis - they do however suggest an important avenue for the audit's future development.

This chapter set out to look at a number of issues. Firstly the possible effects of the audit on the actions of retailers were analysed. To predict this a detailed look at communication of innovation theory was undertaken. From this it was concluded that the audit could be used in a number of ways but to maximise effectiveness the audit should encourage and support the process of innovation ie the adoption of nutritional quality. Secondly the chapter looked at how the audit's use might be evaluated and lastly the audits use as an instrument of change was analysed.

CONCLUSION

The need for research is based in those problems of the real world that can not be solved by existing theories or methods. Such is the perceived necessity for a nutritional quality audit that will analyse the contributions of food retailers to promoting nutrition. In the introduction to this thesis a problem was presented, a problem that is currently of major concern to health professionals working in the field of health promotion. This problem is related to the implementation of local nutrition policies. Policies that have been devised by individuals and organisations concerned with health, as part of their responsibility to prevent ill-health caused by diet related disease.

The introduction reviews contemporary nutrition policy implementation, and questions the effectiveness of strategies designed to influence the individual's knowledge, attitudes and behaviour, through health education. It suggests that more emphasis needs to be placed on strategies aimed at those organisations concerned with food supply, and proposes that food retailers be considered key targets. The need for research comes from the review of such strategies, namely the need to measure what retailers are currently doing and how well they are doing it. Finally a hypothesis was proposed that if such a research instrument was available then it might itself influence the actions of retailers, by stimulating their competitive instinct.

In chapter one a review was undertaken regarding the nature of retail food supply in this country and some time was spent developing the historical perspective. Food is shown to be a vital commodity, and its supply central to Britain's social and political structure. It would appear that the nature of food supply has always reflected contemporary social values. This relationship, or more particularly the relationship between food supply and consumer demand is central to this research. A current debate is concerned with whether the provision of food products is largely demand (Murrey 1986) or supply led (Cannon 1985). The review and historical perspective indicates the retail food sector is neither supply or demand led and that any such dichotomy is simplistic. Food supply is the result of the interaction of many factors, cultural, political, economic and social. Supply and demand are the result of a dynamic equilibrium therefore effective intervention at any stage may influence the nature of food supply. This review and the previously discussed limitations of health education strategies aimed at the individual suggests that the rationale behind the nutritional quality audit, that food supply can and should be influenced, is valid.

Chapter two, looks at the links between food and health. Food consumption habits have never been static and are influenced by many factors:

" To claim that eating habits do not or cannot change is to ignore history" (Walker 1984).

Likewise the perceived links between food and individual and community health are constantly changing. Each age has had its concerns, concern about obtaining enough food, concern with adulteration and concern with nutrition. The reasons for contemporary concerns are noted, particularly the increasing evidence that diet and health are linked in such a way that modification of diet may prevent several common diseases including coronary heart disease. The chapter reviews how these concerns have resulted in the publication of generally agreed nutritional guidelines.

The introduction of the above has given the food and health debate a tremendous impetus and has allowed the issues to be understood by the community as a whole. Trends indicate that people may now be beginning to alter their dietary patterns (MAFF 1987) in line with the guidelines. However there is still much opposition to change, and the chapter reviews the nature of this opposition. Whilst this may be considered largely unscientific and more concerned with ethical values, it collectively influences the attitude of consumers and suppliers and may account for some of the inertia shown by food retailers.

Chapter three investigates the food retailers and their contributions to promoting and hindering improved individual and community nutrition. Food retailers are considered to be the 'gate-keepers' of food supply, being as they are in the key position between producers, manufacturers and consumers. The chapter undertakes an analysis of the retailer's expressed policies with regard to nutrition and key issues are determined which provide the basis for the audit. The overall conclusion from this chapter is the food retailers have considerable opportunities to influence nutrition and that the majority of retailers are attempting to do so, but only in those areas that might be considered to suit their short term interests and in ways that might be ineffective.

Chapter four is concerned with the design of the nutritional quality audit itself based on the investigations and analyses of the earlier chapters. In both scientific and sociological research, measurements are made in order to investigate relationships and draw inferences, and there are various methods for collecting and analysing data. The audit as a investigative tool has not been well developed. Its origins are in the area of financial management. It differs from a survey or questionnaire methods in that it does not

attempt to be as methodologically rigorous. An audit is designed to give a overall indication of some factor at a particular point in time. Its design is thus very different from other research instruments and its nature and uses dictate certain limitations on its construction. The nutritional quality audit is a monitoring instrument which will enable local health professionals and other workers to investigate local food retailers and produce an objective data base on which to develop implementation strategies for nutrition policy. Whilst the design and construction of a questionnaire is well mapped out the design of such an audit form has no such provision. The design of the nutritional quality audit therefore required several key questions to be answered:

1. What was the audit measuring ?
2. How was this measurement to take place ?
3. Would method would be used to provide objectivity ?

Chapter four therefore develops several key concepts, including those of nutritional quality, nutritional dimensions and nutritional indicators, it is hoped that one consequence of this research will be to provide workers with a defined terminology which will facilitate further research and communication. The end result of the research, the nutritional quality audit itself is presented in chapter 5 and piloted in chapter 6. The audit form presented is not considered to be a perfected research instrument, this is outside the scope of such a thesis. Far more extensive piloting must be undertaken, and the appropriate revisions made. The direction forward, based on the small pilot study is presented in chapter 6. What this thesis aims to present is a methodologically sound proposal for further development. However the pilot study in chapter 6 suggests that the audit's use in its current form may well be viable and lead to constructive developments.

In its developed form it is envisaged that the nutritional quality audit will enable a professional or a reasonably informed layman to, undertake an audit of a retailer and produce objective, reliable data on which to base nutrition policy implementation strategies. Chapter 7 investigates some of the ways in which the the audit could be used and looks at the possible policy implications for retailers and health workers implementing nutrition policy.

No food retailer can be oblivious to the increased consumer interest in nutrition that has occurred over the last few years. The combined actions of health workers and the media have ensured that a large segment of the population is now aware that diet effects health and is responding by demanding changes in the food supplied. The food retailers

are responding to this demand, but are responding in an uncoordinated way, which might not be in the long term interests of the consumer. This response is perhaps not surprising and they are perhaps justified in asking whether the current consumer interest is:

"a short-term media created hype, or will it result in long term changes in our diet ? What evidence is there of genuine and long lasting changes in consumer's attitudes to and preferences in foods ?" (Euromonitor 1987).

This uncertainty has led to inertia and conservatism, and the retailer's response to the food and health debate being restricted to certain areas of action.

Those organisations concerned with the promotion of public health will continue to raise concern about the links between food and health. It is hoped that as more people accept this evidence and modify their diet then this country will see a reduction in the diet-related diseases, particularly coronary heart disease. It is probable that this will not occur in the short-term. Dietary change, and indeed the adoption of health education stimulated behaviour change as a whole is closely linked to socio-economic factors such as social class (Tuckett 1976). A minority of the population will be 'early innovator's (Rogers and Shoemaker 1971) particularly those in socio-economic classes I and II, other sections of the community may resist change until they are convinced of personal benefits. Dietary change may follow a similar trend to the incidence of cigarette smoking over the last 20 years. This trend has seen incidence for men fall from 64% in 1971 to 34% in 1987 (Ball 1987) but further analysis shows that the reduction has occurred mainly in social classes I/II and least in IV/V.

This reduction in the incidence of smoking has required major health promotion efforts at both the individual and population level. Whilst health education has undoubtedly meant that smokers have been better informed, and has resulted in some attitude, belief and finally behaviour change, it is in the socio-economic sphere that the potential for health promotion has been realised. The fact that 80% of smokers know the dangers of their habit and wish to give up underlines the view that continued action at an individual level only, is ineffective and unethical. Restrictions on public smoking, the development of smoke-free workplaces and taxation, have probably been as, if not more successful than traditional health education methods.

The lesson to be learnt from this example is that if nutrition policy implementation is to be effective, and reach all sections of the population then the food retail

sector must be encouraged to realise and develop its potential for influencing community nutrition. This is a major task and presents health workers with a formidable challenge. The nutritional quality audit for food retailers presented in this thesis is designed to facilitate progress by providing workers with a research instrument, that will analyse food retailers contributions to promoting better individual and community nutrition, facilitate discussion, promote action and finally produce change.

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