R&D REPORT No. 80

Barriers to the consumption of reduced-fat bakery products: a consumer survey

1999

Campden BRI

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Chipping Campden Gloucestershire GL55 6LD, UK

Tel: +44 (0)1386 842000 Fax: +44 (0)1386 842100 www.campden.co.uk

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JA McEwan

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EXECUTIVE SUMMARY

This document reports the results of consumer quantitative research undertaken as part of a MAFF funded project to look at technical, economic, legislative and consumer barriers to the consumption of reduced fat bakery products. This follows on from previous qualitative research to identify and explore barriers to consumer acceptance of reduced fat bakery products. The purpose of this stage was to quantify some of the attitudes and perceptions highlighted in the group discussions.

A questionnaire was designed to quantify potential barriers to the consumption of reduced fat bakery products. As well as reflecting attitudes and perceptions elicited from the previous group discussions (McEwan and Clayton, 1999), background information was collected on respondents' age, gender, family and eating habits.

The questionnaire was sent to 3000 households provided by CACI (a provider of addresses for market research work), and 206 completed questionnaires arrived by the deadline. Overall the distribution of male: female was 26:74, with more respondents aged 35 to 54 years. In addition, the regional distribution was weighted towards the South East of the country. The data should be interpreted taking into account that the sample is biased in these respects.

Bakery products tended to be purchased in the supermarket, though bakeries still tended to be used for pastries and fresh cakes. Biscuits tended to be purchased as standard packs, whilst cakes were mainly purchased as individual cakes or cake bars followed by whole family size cakes, whilst pastries tended to be purchased individually.

Most respondents consumed sweet biscuits, with 72% consuming them at least once a week, whilst this figure was 57% for savoury biscuits. Pastries were consumed by 30% of respondents on a weekly basis; this figure was 38% for fresh cakes, 11% for frozen cakes and 28% for pre-packed cakes.

Sweet biscuits tended to be purchased as a snack product or as an indulgence or treat item, whereas savoury biscuits were seen as a snack or part of a meal. Pastries and fresh cakes were most frequently purchased as an indulgence or treat.

Price, quality and family favourite were the most quoted reasons influencing the choice of purchase of bakery products.

In general, respondents considered that biscuits, cakes and pastries were fattening and that they worried about the fat in these items. However, it was equally clear that bakery products played a specific role in the diet as filling a gap or as a treat. However, respondents could be segmented into groups according to their attitudes, and so not all respondents held the same views.

Over half the respondents claimed that, in terms of diet, they tried to live a fairly healthy lifestyle. Factors identified as contributing to a healthy lifestyle included reducing sugar, eating less red meat and controlling/reducing alcohol consumption, and then reducing cholesterol. When asked about measures contributing to watching diet and weight, the most common measure was reducing fat in the diet, followed by reducing sugar. Therefore there seems to be some confusion over living a healthy lifestyle and dieting or weight watching.

In terms of attitudes towards health, respondents felt that treats for the family need not be healthy, but nonetheless most felt that they tried to feed the family a balanced diet. In terms of reduced fat products tried, McVities Go Ahead was most cited across all categories, except pastries.

Respondents perceived that reduced fat bakery products were too expensive, they tasted worse than 'normal fat' products, and that the reduction in fat was small. However, for those buying reduced fat bakery products, the reasons given were to reduce the fat in the diet or as an action towards general health for all the family.

Looking at attitudes towards reduced fat bakery products, respondents tended to agree that they would prefer to cut out cakes completely if on a diet and that reduced fat products were only important if you had special dietary needs.

Considering the purchase of reduced fat bakery products, respondents agreed that they would try new products if they were on special offer, and if they were of equal quality to 'normal fat' products. In terms of reduced fat claims, 'fat free' was most likely to be purchased followed by 'virtually fat free', with the least attractive option being 'less fat than standard'. The most attractive reductions in fat to respondents were cited as 99% and 95%.

It would therefore seem that reduced fat bakery products could be important when dieting, but not necessarily as part of reducing fat in the diet. Price, quality and availability were also issues. In addition, it was clear that bakery products pay an important role in the diet, and are seen as a treat or indulgence, particularly with respect to cakes and pastries. Added to this is the perception that the fat reduction available may not be enough to shift behaviour.

In conclusion, for reduced fat bakery products to be more widely consumed, industry must address the amount of fat reduction, and look at better communication strategies to convey benefits to the consumer. However, it should not be forgotten that biscuits, cakes and pastries are frequently indulgence items, and as such may be expected to contain fat.

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1. INTRODUCTION

1.1 Background

The substitution of high fat foods by reduced fat alternatives can result in a significant reduction in the amount of energy that consumers derive from fat. While in some product sectors (e.g. spreads and milk) reduced fat alternatives are both widespread and acceptable to the consumer, other sectors such as bakery have had less success. Cereals and cereal products contribute approximately 15.6% of dietary fat in the UK, of which bakery products contribute at least two thirds.

In the bakery sector, technical and economic issues may be barriers to providing quality reduced fat products, whilst consumer barriers could lie in the perception of such products as being indulgences; therefore reduced fat is a contradiction in expectations. In other words, does the product labelling and concept match consumer expectations of this product category, and if not why not? In this respect, both sensory and psychological factors come into play. In addition, legislative issues may be potentially constraining the reduction of fat, as in order to make a fat reduced claim, a 25% reduction is recommended (HMSO, 1991). The strategy for a step-wise reduction in fat may be more attractive from the technical and eating quality point of view and this issue needs to be explored.

This project investigates the barriers to reduced fat bakery products, both from the industrial point of view through a series of one to one interviews (Sharp and Catterall, 1999) and from the consumer's point of view through group discussions (McEwan and Clayton, 1999) and a quantitative survey (current report). Information from all parties will be combined to provide detailed documentation as a starting point to propose strategies for overcoming the barriers identified.

1.2 Project Objectives

The objectives for the overall project have been broken down into three main components.

- 1. To identify the obstacles to the development of reduced fat alternatives for bakery products.
- 2. To identify the barriers to consumer acceptability of reduced fat bakery products and the extent to which this response is influenced by demographic and other factors, and by the individual's perceptions of the potential health benefits.
 - 2.1 To explore and identify barriers to consumer acceptance of reduced fat bakery products (e.g., eating quality, availability, image/concept, etc.)
 - 2.2 To quantify barriers to establish the extent to which they exist in England, looking at differences between region, age and sex.
- 3. To assess how the barriers indicated in these two areas might be overcome.

This report follows on from the consumer qualitative research (McEwan and Clayton, 1999), and deals with the development, administration and interpretation of a questionnaire survey to quantify consumer barriers to the consumption of reduced fat bakery products. A report by Sharp and Catterall (1999) deals with identifying the technical, economic and legislative barriers to the production of reduced fat bakery products.

2. QUESTIONNAIRE DESIGN AND DATA COLLECTION

2.1 The Questionnaire

A questionnaire was designed to quantify potential barriers to the consumption of reduced fat bakery products. As well as reflecting attitudes and perceptions elicited from the previous group discussions (McEwan and Clayton, 1999), background information was collected on respondents' age, gender, family and eating habits.

The questionnaire was designed to be completed by one person in a household, who was solely or jointly responsible for the main food shopping. The questionnaire comprised a number of sections, namely:

- ♦ About the products you eat and buy;
- Your attitudes towards health and dieting;
- ♦ Your usage of reduced fat products;
- ♦ Details about you.

After completing a number of drafts, the questionnaire was piloted on ten respondents from different ages and socio-economic groups. This was to establish if the questions were easy to answer as a self-completion exercise. After filling in the questionnaire, an interviewer discussed any problems raised by the respondent regarding the questionnaire. These were addressed and a final version created (Appendix 1).

The questionnaire was then typeset by DRS Data and Research Services plc in a format suitable for reading with an optical mark reader.

2.2 The Sampling Method

The questionnaire was sent to 3000 households provided by CACI, a provider of addresses for market research work. CACI firstly stratifies all the postcodes in England by Government Standard Region (GSR). The postcodes are ordered by CACI's socioeconomic classification (ACORN), and finally one Electoral Roll record is extracted at random from each of the 3000 selected postcodes.

The questionnaires, return envelopes and a letter were distributed by ACORN mailing Services on 7th September 1998, with a return date deadline of Friday 2^{nd} October, 1998. An incentive of 25 x £10 WH Smith Vouchers was offered in a prize draw.

By sending out 3000 questionnaires, it was hoped to receive at least 600 returns (20% return rate). This was not considered unreasonable for this type of postal questionnaire.

2.3 Return Rate

A total of 236 questionnaires were returned, of which 27 were returned by respondents without completing, and 3 were received after 12th October, the cut-off date for data entry. Therefore a total of 206 questionnaires were decoded and transferred to the Minitab statistical package for data analysis.

This return rate of 7.2% was extremely disappointing, and perhaps partly reflects the lack of interest respondents have with respect to filling in a questionnaire on bakery products. Another aspect was undoubtedly the length of the questionnaire, which took between 30-45 minutes to complete. This is an important learning for future studies in this area, where use of regional central location tests and one-on-one interviews may be more appropriate.

3. RESULTS: SAMPLE INFORMATION

In total, 206 respondents returned their completed questionnaires in time for scanning and decoding. Unless otherwise stated, all tables express percentages in relation to this base of 206. Where missing data occurred, the percentage (or count) is either adjusted for this or the percentage missing data are recorded.

This section concentrates on the background information of respondents, thus illustrating the range of respondents replying to the survey.

3.1 Age and Gender

Table 3.1 shows the age and gender distribution of respondents. In all age categories, there was a predominance of female respondents, which is not unexpected given that the recruitment criterion was for those solely or jointly responsible for food shopping. However, in the younger and older age groups there was a slightly greater percentage of males. The distribution of ages tended towards more respondents between 35 and 54 years, with relatively few young respondents (16-24 years).

Table 3.1: Age and gender of respondents expressed as a percentage.

	Distribution by Age (%)			Distribution by Gender (%)			
Age	Male	Female	All	Male	Female	All	
16-24	9	6	7	33	67	100	
25-34	15	16	15	25	75	100	
35-44	13	23	20	16	84	100	
45-54	17	28	25	17	83	100	
55-64	21	12	14	38	62	100	
65+	26	15	18	38	63	100	
All	100	100	100	26	74	100	

Note: Base = 181 due to missing data.

3.2 Marital Status and Family

Table 3.2 reveals that the majority of respondents were married (66%). Approximately 20% were single person households, whilst 7% were divorced or separated.

Table 3.2: Marital status of respondent, expressed as a percentage.

Status	Percent
Single	12
Married	66
Widowed	5
Living together	6
Divorced	3
Separated	4
Not answered	4
	100

Table 3.3: Number of people in household, expressed as a percentage.

Number of			
People	People	Adults	Children
0	0	0	53
1	12	12	18
2	44	66	24
3	16	12	4
4	19	6	1
5	6	3	0
6	2	1	0
7	1	0	0
	100	100	100

3.3 Qualifications

Half the respondents were educated to O level or GCSE level, with 20% educated to A level standard. However, 24% of respondents appeared not have to any formal qualifications.

Table 3.5: Qualifications of respondents expressed as a percentage.

Qualification	Percent
O Level or GCSE	50%
A Level or Scottish Highers	20%
HNC or HND	6%
BSc/BA	12%
Higher Degree (Masters or PhD)	3%
Other	15%
None of the above	24%

3.4 Region

Table 3.6 shows the percentage of respondents in each of 6 regions. It is clear that the returns were biased towards the South East of England.

Table 3.6: Percentage of respondents in each region.

	Region	Percent
1	North West	14 -
2	North East	16
3	West Midlands	10
4	East Midlands	17
5	South West	12
6	South East	31

4. RESULTS: PURCHASE OF BAKERY PRODUCTS

4.1 Frequency of Purchase

Table 4.1 shows the frequency with which respondents consumed different types of bakery products. It was clear that sweet biscuits were the most frequently consumed with 71% of respondents consuming these at least once a fortnight, whilst for savoury biscuits this figure was reduced to 38%. 37% of respondents consumed fresh cakes once a fortnight, whilst 38% consumed pre-packed cakes once a fortnight, but only 11% of respondents consumed frozen cakes this frequently. Pastries were consumed at least once a fortnight by 35% of respondents.

Table 4.1: Frequency of consuming different bakery products, expressed as a percentage.

	Sweet	Savoury	Fresh	Frozen	Pre-Packed	
Frequency	Biscuits	Biscuit	Cakes	Cakes	Cakes	Pastries
More than once a week	14	3	7	0	5	6
Once a week	39	21	20	5	20	17
Once a fortnight	18	14	10	6	13	12
Once a month	13	23	17	10	10	14
Once every 2-3 months	6	11	11	15	10	10
Less often	5	16	13	22	17	18
Never	3	2	10	24	13	9
Missing Data	2	9	12	17	12	15
	100	100	100	100	100	100

4.2 Product Format/Packaging

Table 4.2 shows the types of products purchased by respondents in terms of size, format and packaging. The majority of biscuits were bought as standard packets, as opposed to mini/snack packs or family packs. The majority of cakes were purchased as individual cakes or cake bars, followed by large/family size whole cakes, whilst relatively fewer were

purchased as mini/snack packs. Pastries tended to be purchased as individually.

Table 4.2: Types of products purchased, expressed as a percentage.

	Sweet Biscuits	Savoury Biscuits	Cakes	Pastries
Mini-packs / snack packs	15	21	16	n/a
Standard packets	85	72	n/a	n/a
Family selection packs	18	15	n/a	n/a
Individual cakes / cake bars	n/a	n/a	63	n/a
Large / family size cakes (whole)	n/a	n/a	41	n/a
Individual	n/a	n/a	n/a	53
Pre-packages	n/a	n/a	n/a	38
I do not buy	5	6	13	16

4.3 Reasons for Purchase

Table 4.3 summarises some of the reasons for respondents purchasing bakery products. Whilst it was clear that biscuits were most commonly purchased as a regular item of shopping, very little else could be drawn from this table, as it was poorly completed by the respondents.

Table 4.3: Reasons for purchasing bakery products, where first, second and third choices were allowed. Values are expressed as a percentage of respondents choosing the option.

	Sweet Biscuits			Savoury Biscuits			Pastries		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
As a regular item of shopping	66	4	2	46	4	3	19	4	1
As an impulse purchase	10	10	4	7	7	6	22	9	5
For a special occasion	4	13	7	13	11	5	6	11	4
As a planned luxury or treat	6	6	9	2	3	3	14	5	6
	Fr	esh Ca	kes	Fre	ozen Ca	ıkes	Pre-P	acked C	Cakes
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
As a regular item of shopping	15	1	1	7	1	1	34	3	2
As an impulse purchase	26	10	6	13	4	5	17	9	4
For a special occasion	17	17	4	19	10	3	8	7	5
As a planned luxury or treat	16	. 7	8	11	8	6	16	7 -	8

4.4 Place of Purchase

Table 4.4 shows where respondents are most likely to purchase bakery products. For all categories, the Supermarket, not surprisingly, was most often used. However, the bakery was commonly used for pastries and fresh cakes.

Table 4.4: Locations where bakery products are purchased, where first, second and third choices were allowed. Values are expressed as a percentage of respondents choosing the option.

	Swe	et Bisc	cuits	Savo	ury Bi	scuits		Pastrie	S
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Supermarket	86	1	0	78	2	0	39	10	2
Convenience / local shop	2	18	2	2	11	1	4	8	5
Bakery	2	5	5	1	1	2	21	11	3
Garage	0	1	2	0	2	2	0	0	1
Restaurant / Coffee Shop	0	1	2	0	0	1	2	6	5
	Fre	Fresh Cakes		Frozen Cakes			Pre-Packed Cakes		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Supermarket	46	7	3	52	0	2	63	0	1
Convenience / local shop	4	6	4	0	5	0	1	16	0
Bakery	24	18	3	1	0	1	0	1	3
Garage	0	0	0	0	0	1	0	1	1
Restaurant / Coffee Shop	3	5	9	0	0	0	0	0	1

4.5 Weekly Spend on Bakery Products

Table 4.5 shows the amount respondents were most likely to spend on different bakery products in one week. In all categories between £0.51 and £2.00 was about the norm, though within this for savoury biscuits the spend was slightly less and for cakes and sweet biscuits the spend slightly more.

Table 4.5: Amount spent on different bakery products, expressed as a percentage.

	Sweet Biscuits	Savoury Biscuits	Cakes	Pastries
None	4	6	6	9
Under £0.50	12	31	10	17
Between £0.51 and £1.00	34	32	20	23
Between £1.51 and £2.00	29	15	. 29	18
Between £2.51 and £3.00	8	3	13	9
Between £3.51 and £4.00	2	1	5	0
Between £4.51 and £5.00	1	0	3	1
In excess of £5.00	2	0	3	2
Missing	6	11	10	20
	100	100	100	100

4.6 People Purchased For

Table 4.6 summarises who bakery products were purchased for in the household. This tended to be for self, self and partner or the family. Frozen cakes, however, were also purchased for visitors.

Table 4.6: Summary of people for whom products purchased for, expressed as a percentage.

	Sw	Sweet		Savoury Fresh Biscuits Cakes		Fro	zen	Pre-P	acked			
	Biscuits		Bise			Cakes		Cakes		Cakes		Pastries
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Self only	15	2	24	1	11	1	4	1	5	3	11	2
Partner only	9	2	7	3	5	3	2	1	4	1	3	1
Self and Partner	24	5	24	1	24	3	9	1	16	1	21	1
Children	12	5	3	4	3	4	1	1	8	3	3	3
Whole family	24	4	20	3	24	3	20	2	23	2	20	3
Other adults in the house	0	1	2	2	1	2	1	0	1	1	1	1
Visitors	9	12	3	9	7	9	14	8	8	11	7	7

Table 4.7: Frequency of personal consumption of different bakery products, expressed as a percentage.

	Sweet	Savoury	Fresh	Frozen	Pre-Packed	
	Biscuits	Biscuits	Cakes	Cakes	Cakes	Pastries
Daily	23	12	3	0	2	2
4-6 times per week	12	5	2	0	5	2
2-3 times per week	22	21	11	3	9	6
Once a week	15	19	22	8	12	20
Once a fortnight	8	9	11	8	12	12
Once a month	4	7	13	14	12	14
Once every 2-3 months	2	5	10	12	8	6
Less often	3	8	8	12	10	11
Never	5	5	7	23	13	11
Missing	5	9	13	19	17	16
	100	100	100	100	100	100

4.7 Frequency of Consumption

Table 4.7 shows the frequency of personal consumption for different bakery products. It is clear that respondents most frequently consumed sweet biscuits, with 72% consuming them at least once a week, and 23% on a daily basis. Savoury biscuits were eaten at least once a week by 57% of respondents, with 17% eating these at least 4-6 times a week. With respect to cakes, 38% of respondents at fresh cakes at least once a week, 11% ate frozen cakes this often, and 28% ate pre-packed cakes. Pastries were eaten by 30% of respondents at least once a week.

5. RESULTS: PURCHASE BEHAVIOUR

5.1 Reasons for Purchase

Sweet biscuits tended to be purchased as a snack product or as an indulgence or treat item, whereas savoury biscuits were either seen as a snack or part of a meal. Pastries and fresh cakes were most frequently purchased as an indulgence or treat, and to a lesser extent as part of a meal.

Table 5.1: Reasons for purchasing bakery products, where first, second and third choices were allowed. Values are expressed as a percentage of respondents choosing the option.

	Swe	eet Bisc	uits	Savo	Savoury Biscuits			Pastries		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	
For indulgence or treat	23	7	6	6	2	3	35	2	1	
As part of a lunch box	10	9	3	11	5	3	5	3 _	4	
As a standby item	15	11	5	11	10	4	3	5	3	
As a snack product	36	14	3	29	11	5	7	7	2	
As part of a meal	6	1	1	19	7	3	15	5	3	
As a special occasion	3	2	6	8	4	2	7	7	3	
			•							
	Fr	esh Ca	kes	Frozen Cakes			Pre-Packed Cakes			
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	
For indulgence or treat	44	6	2	14	3	4	19	- 5	2	
As part of a lunch box	1	2	0	0	0	0	14	3	1	
As a standby item	0	3	1	11	4	2	13	4	4	
As a snack product	3	4	3	1	1	2	4	7	3	
As part of a meal	10	7	7	10	8	3	11	5	2	
As a special occasion	20	12	6	20	7	8	9	5	4	

5.2 Factors Influencing Choice of Purchase

'Price', 'quality' and 'family favourites' were the most quoted reasons influencing choice of purchase for sweet and savoury biscuits, as shown in Table 5.2.

Table 5.2: Factors influencing choice of bakery products, expressed as a percentage.

	Swe	eet Bisc	cuits	Savo	ury Bi	scuits		Pastrie	es
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Price	30	8	7	18	7	5	12	6	3
Quality	26	14	4	24	7	3	21	7	2
Habit	6	7	3	5	5	1	5	6	3
Special offers	8	14	11	5	13	5	8	6	5
Family favourites	30	9	5	22	7	5	22	4	2
Availability	1	2	4	1	2	1	2	3	4
Nutrition / health	6	4	5	9	3	4	2	1	1
Brand	4	4	5	7.	2	4	1	2	1
							•		
	Fr	esh Ca	kes	Frozen Cakes			Pre-Packed Cakes		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Price	13	3	5	16	3	3	19	5	5
Quality	23	9	4	12	3	2	10	7	3
Habit	3	6	2	1	4	2	3	6	2
Special offers	9	10	5	17	7	5	17	9	5
Family favorites	23	7	.4	14	6	3	17	8	5
Availability	2	3	3	- 2	1.	1	2	2	. 2
Nutrition / health	1	2	1	0	2	1	1	3	1
Brand	1	1	1	2	1	3	3	2	2

Whilst not the most important factor, it is interesting to note that special offers attract purchase in most areas, particularly for frozen cakes and pre-packed cakes, and therefore could be used as an incentive to purchase in the first instance.

5.3 Brand, Own Label or Fresh

Branded varieties of sweet and savoury biscuits tended to be purchased most often by respondents, whether as part of the regular shop or as a luxury item. Fresh cakes were of course purchased fresh both as part of the regular or luxury shop, whilst frozen and prepacked cakes tended to be branded.

Table 5.3: Percentage of respondents purchasing branded or own label products during a regular or luxury shop, by product category.

		Regular S	Shopping		Luxury Shopping				
	Branded	Own Label	Fresh	Don't buy	Branded	Own Label	Fresh	Don't buy	
Sweet biscuits	57	33	1	4	68	16	2	8	
Savoury biscuits	60	24	1	3	64	15	1	7	
Fresh cakes	9	17	48	11	13	11	51.	11	
Frozen cakes	37	17	2	25	38	13	5	25	
Pre-packed cakes	42	24	4	14	42	17	7	17	
Pastries	15	19	36	12	17	12	39	14	

Note: Numbers add up to 100 of 206 respondents by row for both regular and luxury shopping – missing data accounts for the short-fall.

6. RESULTS: ATTITUDES AND LIFESTYLE

6.1 Attitudes Towards Biscuits

Consumers were asked to say how much they agreed or disagreed with a number of statements with respect to biscuit products. The response distribution for each statement is shown in Table 6.1. Where consumers recorded 'no opinion', this was coded to 'neither agree nor disagree', which effectively expresses lack of opinion. Many consumers used this category, and for this reason the mean response was also calculated omitting these responses (adjusted mean score).

Table 6.1: Number of respondents agreeing with a list of statements with respect to biscuit products. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category.

	1	2	3	4	5		
	Agree	Agree		Disagree	Disagree		Adj
Statements	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
Crackers are more of a savoury snack.	96	64	35	10	1	1.8	1.6
Biscuits are very fattening.	70	59	48	22	7	2.2	2.0
Biscuits are ideal when you're feeling a bit peckish.	58	77	45	14	12	2.2	2.0
I worry about the fat in biscuits.	58	42	76	15	15	2.5	2.1
Biscuits can ruin your appetite for meals.	49	74	41	35	7	2.4	2.3
Biscuits are a must with a cup of tea or coffee.	45	62	51	16	32	2.7	2.5
Biscuits are good for eating on the go.	21	63	69	30	23	2.9	2.8
I associate savoury biscuits/crackers with meal times.	37	40	63	34	32	2.9	2.9
Biscuits contain lots of goodness.	14	28	74	45	45	3.4	3.6
Biscuits are good for the children after school.	10	27	56	60	53	3.6	3.8

A low mean or adjusted mean value (< 2) implies agreement with a statement, whilst a high value (>4) implies disagreement.

Consumers agreed with the statements that 'biscuits are very fattening' and 'I worry about the fat in biscuits'. This suggests that respondents were aware that biscuits contained some amount of fat. However, the fact that respondents agreed slightly with 'biscuits are ideal when you're feeling a bit peckish' suggests that they eat them anyway, as they have a specific and important role in the diet.

Factor Analysis

Factor analysis is a multivariate analysis tool that allows variables (attitude statements) to be grouped if they have a similar response pattern. This allows different attitude groups to be identified and, if required, the consumers most likely to fall into each group.

For these data, principal component factor analysis with varimax rotation was used, and the appropriate number of factors selected according to logical groupings and information explained.

Table 6.2 shows the factor loading for the 3 groups selected. The loadings appearing in bold italics indicate which statements fall into the factor grouping.

In Factor 1, statements relating to positive aspects of biscuits are highlighted, whereas Factor 2 refers to the fat in biscuits and the negative aspects. Factor 3 reflects a group of consumers who do not associate biscuits and crackers with meal times.

 Table 6.2:
 Results from factor analysis on the biscuit product attitude statements.

	Factor 1	Factor 2	Factor 3
Statements	22.3%	16.9%	11.0%
Biscuits are ideal when you're feeling a bit peckish.	0.746	0.06	-0.035
Biscuits are a must with a cup of tea or coffee.	0.661	-0.032	-0.005
Biscuits are good for eating on the go.	0.618	-0.055	-0.156
Biscuits are good for the children after school.	0.556	-0.258	-0.027
Biscuits contain lots of goodness.	0.510	-0.233	-0.271
Biscuits are very fattening.	-0.098	0.719	-0.125
I worry about the fat in biscuits.	-0.15	0.636	-0.249
Biscuits can ruin your appetite for meals.	-0.211	0.559	0.322
Crackers are more of a savoury snack.	0.434	0.553	0.189
I associate savoury biscuits/crackers with meal times.	0.161	0.136	-0.886

6.2 Attitudes Towards Cakes and Pastries

Consumers were asked to say how much they agreed or disagreed with a number of statements with respect to cakes and pastries. The response distribution for each statement is shown in Table 6.3. As before, with a mean value of ≤ 2 , the consumers generally agreed with the statement, and if the value was ≥ 4 they disagreed.

Table 6.3: Number of respondents agreeing with a list of statements with respect to cakes and pastries. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category.

	1	2	3	4	5		
	Agree	Agree		Disagree	Disagree		Adj
Statements	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
Cakes are very fattening.	82	60	48	10	6	2.0	1.7
Pastries and cakes are equally bad for you.	60	50	79	10	7	2.3	1.9
I worry about the fat in cakes.	63	44	72	13	14	2.4	2.0
Cakes are a well deserved treat.	45	70	64	15	12	2.4	2.1
Pastries make a nice change from cakes.	32	69	91	4	10	2.5	2.1
Cakes stop you from eating proper meals.	41	65	64	26	10	2.5	2.3
It's the filling/topping in cakes that I worry about.	24	43	105	18	16	2.8	2.6
Cakes fill a gap when I'm hungry.	29	71	51	21	34	2.8	2.7
Pastries are more versatile than cakes.	19	34	111	32	10	2.9	2.8
Pastries are more luxurious than cakes.	22	23	108	37	16	3.0	3.0
Cakes relieve me when I'm stressed.	24	36	83	23	40	3.1	3.2
Cakes are better than a pudding.	8	27	93	41	37	3.3	3.6

Consumers agreed slightly with the statements that 'cakes are very fattening', 'I worry about the fat in cakes' and 'pastries and cakes are equally bad for you'. This suggests that respondents were aware that cakes and pastries contain some amount of fat. However, the

fact that respondents agreed slightly with 'cakes are a well deserved treat' and 'pastries make a nice change from cakes' suggested that they eat them anyway, as they have a specific and important role in the diet.

Factor Analysis

Table 6.4 shows the factor loading for the 3 groups selected. The loadings in bold italics indicate which statements fall into the factor grouping. In Factor 1, statements relating to the fat in cakes and pastries and other negative aspects are highlighted, whereas Factor 2 reflects the positive aspects. Factor 3 reflects the positive role of cakes and pastries in a comparative sense.

Table 6.4: Results from factor analysis on the cakes and pastries product attitude statements.

	Factor 1	Factor 2	Factor 3
Statements	23.0%	15.9%	13.4%
I worry about the fat in cakes.	0.801	0.002	-0.028
Cakes are very fattening.	0.703	-0.028	0.007
Cakes stop you from eating proper meals.	0.692	-0.088	0.088
Pastries and cakes are equally bad for you.	0.691	-0.315	0.006
It's the filling/topping in cakes that I worry about.	0.594	0.135	0.079
Cakes are a well deserved treat.	0.116	0.682	0.257
Cakes are better than a pudding.	-0.208	0.653	0.14
Cakes relieve me when I'm stressed.	0.388	0.612	-0.126
Cakes fill a gap when I'm hungry.	-0.217	0.606	0.045
Pastries make a nice change from cakes.	0.036	0.258	0.748
Pastries are more versatile than cakes.	-0.119	0.219	0.691
Pastries are more luxurious than cakes.	0.224	-0.173	0.669

6.3 Healthy Lifestyle and Diet

Table 6.5 reflects the fact that most people 'try to live a fairly healthy lifestyle generally', and that very few people would admit to living an unhealthy lifestyle. However, due to the nature of the questionnaire, the emphasis is on the diet aspect of health lifestyle.

Table 6.5: Attitudes to living a healthy lifestyle, expressed as a percentage of respondents indicating which statement most accurately reflected their behaviour.

Statements	Percent
I don't live a healthy lifestyle and don't care.	0.5
I don't really worry about how healthy my lifestyle is.	0.5
I'm not that bothered about living a very healthy lifestyle, but do try a bit.	10
Parts of my lifestyle are quite healthy.	13
I try to live a fairly healthy lifestyle generally.	55
I do live a very healthy lifestyle on the whole.	13
I have an extremely healthy lifestyle.	2
None of the above.	1
Missing data.	5

Respondents were then asked to say what factors, with respect to them, contributed to living a healthy lifestyle (Table 6.6). Reducing sugar in the diet was mentioned by 65% of respondents, followed by eating less red meat (46%) and controlling/reducing alcohol consumption (44%). For the measures of reducing fat intake and reducing cholesterol, 38% of respondents highlighted these. Controlling calorie intake and reducing caffeine were mentioned by 34% and 30% of respondents, respectively.

Table 6.6: Measures considered as contributing to living a healthy lifestyle.

Statements	Percentage
Reduce sugar in diet	65
Eat less red meat	46
Control/reduce alcohol consumption	44
Reduce fat intake	38
Reduce cholesterol in diet	38
Control calorie intake	34
Reduce caffeine intake	30
None of these	9
Not eat meat	8
Other	3

Table 6.7: Attitudes to dieting or weight watching, expressed as a percentage of respondents indicating which statement most accurately reflected their behaviour.

Statements	Percent
I diet / watch my weight as I go and when I need to.	31
I am always watching my weight.	23
I don't go on diets.	13
I never need to watch my weight.	7
I diet / watch my weight at certain times of the year or on certain occasions.	5
I don't bother to watch my weight.	4
I try to put on weight.	4
I am always on a diet.	4
None of the above.	2
Missing data.	7

Table 6.7 demonstrates different attitudes to dieting or weight watching. 31% of respondents considered that they dieted or watched their weight as and when necessary, whilst 23% said they were always watching their weight.

Table 6.8 reports on the measures respondents took to aid dieting or weight watching. Reducing fat in the diet was mentioned by 66% of respondents, whilst 57% mentioned reducing sugar in the diet. Reducing alcohol consumption was mentioned by 35% of respondents and 34% mentioned eating less or no red meat.

Table 6.8: Measures contributing to watching diet and weight, expressed as a percentage.

Statements	Percentage
Reduce fat in the diet	66
Reduce sugar in the diet	57
Reduce alcohol consumption	35
Eat less or no red meat	34
Count calories	21
Follow a specific diet plan	15
Go to a slimming club	11
None of these	12
Other	4

6.4 Attitudes Towards Health

Consumers were provided with a list of statements reflecting different attitudes to health, either with respect to themselves or their families. The response distributions for each statement are provided in Table 6.9.

Table 6.9: Number of respondents agreeing with a list of statements with respect to themselves and their family's health. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category

	1	2	3	4	5		
	Agree	Agree		Disagree	Disagree		Adj
Statements	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
I try to feed my family a balanced diet.	131	38	33	1	3	1.6	1.3
Treats for the family need not be healthy.	32	62	82	15	15	2.6	2.3
As long as the diet is balanced, I don't worry about buying healthy products.	35	61	75	23	12	2.6	2.4
The family eat what they are given.	42	47	80	24	13	2.6	2.4
My partner is concerned about eating a healthy diet.	37	42	88	24	15	2.7	2.5
Some of my family ask for healthy foods.	31	47	94	20	14	2.7	2.5
My partner is concerned about their weight.	38	41	85	19	23	2.7	2.6
I buy health products for the family, but don't tell them.	19	33	109	20	25	3.0	3.0
We eat what we like whether its good or bad.	19	32	76	33	46	3.3	3.4
My family don't like health products.	9	16	113	37	31	3.3	3.7

Most people considered that they try to feed their families a balanced diet, and disagreed slightly with the statement 'my family don't like health products'. Consumers also agreed that 'treats for the family need not be healthy'.

Factor Analysis

Table 6.10 shows the factor loading for the 4 groups selected. The loadings appearing in bold italics indicate which statements fall into the factor grouping.

In Factor 1, statements relating to the family receiving a balanced diet and healthy foods are reflected, as well as the negative towards 'my family don't like health products'. Factor 2 refers to the respondents' partner, and reflects the view that partners concerned about eating a healthy diet are also watching their weight.

Table 6.10: Results from factor analysis on the health related statements.

	Factor 1	Factor 2	Factor 3	Factor 4
Statements	17.5%	16.9%	14.9%	13.4%
I try to feed my family a balanced diet.	0.705	-0.054	0.082	-0.190
Some of my family ask for healthy foods.	0.502	-0.45	0.144	-0.071
My family don't like health products.	-0.789	0.001	-0.051	-0.130
My partner is concerned about their weight.	-0.086	-0.865	-0.139	0.063
My partner is concerned about eating a healthy diet.	0.208	-0.800	0.232	-0.085
Treats for the family need not be healthy.	0.035	-0.086	-0.836	-0.086
We eat what we like whether its good or bad.	-0.429	0.204	-0.649	-0.149
The family eat what they are given.	-0.240	-0.107	-0.135	-0.757
I buy health products for the family, but don't tell them.	0.269	0.119	0.016	-0.701
As long as the diet is balanced, I don't worry about buying healthy products.	-0.111	0.163	-0.5	0.422

Factor 3 groups 'treats for the family need not be healthy' and that 'we eat what we like whether its good or bad', suggesting a group of respondents who are not overly concerned about eating 'healthy' foods. Factor 4 groups the statements 'the family eat what they are given' and 'I buy health products for the family, but don't tell them', suggesting an attitude of eating what's put in front of you as its good for you.

7. RESULTS: REDUCED FAT PRODUCTS

7.1 Purchase of Reduced Fat Products

Table 7.1 looks at the purchase of reduced fat. Reduced fat dairy products, particularly milk, were bought regularly.

Sweet biscuits were purchased regularly by 41% of respondents, with 70% purchasing at least occasionally, whilst the figures for savoury biscuits were 31% and 66%, respectively. Cakes were bought at least occasionally by 56% of respondents, whilst pastries were purchased at least occasionally by 49% of respondents. However, 30% and 24% had never bought reduced fat pastries or cakes, respectively, compared with 2-11% for reduced fat dairy products.

Table 7.1: Purchase frequency of different reduced fat products, expressed as a percentage of the total number of respondents.

	Buy	Buy	Tried, but	Never	Missing
	Regularly	Occasionally	Don't Buy	Buy	Data
Milk	86	2	2	2	7
Spread	66	10	5	10	9
Yoghurt	56	19	2	11	11
Cheese	48	21	11	11	10
Sweet Biscuits	41	29	6	16	8
Salad Dressing	32	36	7	13	12
Savoury Biscuits	31	35	6	19	9
Crisps	22	24	3	14	37
Cakes	21	35	6	24	13
Soups	20	37	8	19	16
Pastries	14	35	6	30	15
Other	2	0	0	2	95

7.2 Factors Deterring Purchase of Reduced Fat Products

Respondents were asked about what factors deterred purchase of reduced fat bakery products, and Table 7.2 reveals that many considered that they were too expensive and tasted worse than 'normal fat' products. Other reasons were that the fat reduction was considered to be small. The respondent did not consider there to be a need for reduced fat products and there was perceived to be a poor range available.

Table 7.2: Factors deterring purchase of reduced fat bakery products: an overview across biscuits, cakes and pastries – figures expressed as percentages.

	Sweet Biscuits	Savoury Biscuits	Cakes	Pastries
Too expensive	25	17	19	18
Taste worse	17	15	15	14
Poor quality	8	8	9	8
Poor appearance of product	1	2	. 3	3
Poor appearance of packaging	1	3	2	2`
Small fat reduction	17	13	13	9
Rarely available	7	9	9	10
Poor range	11	8	8	10
No need to eat low fat products	14	12	9	9
Unsure of other ingredients	. 6	4	3	3
Other	1	1	1	1

7.3 Reasons for Trying Reduced Fat Bakery Products

Table 7.3 illustrates that most respondents who purchased reduced fat bakery products were trying to reduce fat in the diet or as an action towards general health for all the family.

Table 7.3: Reasons for trying reduced fat bakery products, where figures are expressed as a percentage of respondents indicating a reason in 1st, 2nd or 3rd position.

	Sweet Biscuits	Savoury Biscuits	Cakes	Pastries
Trying to reduce fat in the diet	35	26	27	21
A member of the family was on a diet	15	12	10	9
They were recommended by friends	14	7	6	2
Due to specific health concerns	8	8	8	5
General health for all the family	18	15	12	8
I was on a diet	10	9	8	7
There were no others available	3	3	2	3
I bought them by mistake	3	2	3	2
They were on special offer	11	9	10	7
I saw the product advertised on the TV and/or read about it	10	6	7	5
Other	2	1	2	1

7.4 Types of Reduced Fat Bakery Products Tried

Table 7.4 shows that for sweet biscuits, many respondents had tried McVities Go Ahead, followed by supermarket own label products. In fact, McVities Go Ahead range was the most cited for sweet biscuits and cakes.

Table 7.4: Reduced fat bakery products tried by respondents, expressed as a percentage.

	Sweet Biscuits	Savoury Biscuits	Cake	Pastries
McVities Go Ahead	44	12	23	4
Jacob Vitalinea	8	7	0	0
Trimlyne	2	1	1	0
Entenmann's	1	1	12	1
Supermarket Own Label	20	17	11	9
Other	1	0	1	0

7.5 Reasons for Buying Reduced Fat Bakery Products

Respondents who bought reduced fat bakery products were asked about their current usage behaviour, and the results are summarised in Table 7.5. As many consumers did not currently purchase reduced fat bakery products, the adjusted column is most useful. It was clear that most purchased these products to reduce fat in the diet, followed by as part of a healthy diet for the family, and then for weight watching.

Table 7.5: Reasons for purchasing reduced fat bakery products, expressed as a percentage of the number of respondents selecting the reason which best describes their behaviour.

	Percent	Adj Percent
I only buy them when I am on a diet or watching my weight.	4	10
I buy them to watch my weight.	7	18
I buy them to reduce my fat intake.	17	42
I buy them for the family as part of a healthy diet.	11	28
Other	1	2
Don't buy (or missing data)	60	n/a
	100%	

8. RESULTS: ATTITUDES TOWARDS REDUCED FAT PRODUCTS

8.1 Behaviour if on a Diet

Respondents were asked how they would approach a diet with respect to bakery products, choosing from a list of 4 statements. For sweet biscuits (Table 8.1) the most common reason was to cut down on the amount eaten, followed by cutting them out completely, whereas for savoury biscuits the use of a reduced fat alternative was the reason most cited followed by cutting down on the amount eaten. For cakes and pastries these would be cut out completely, followed by cutting down on the amount eaten.

Table 8.1: Consumers approach to dieting with respect to bakery products, expressed as a percentage of the total number of respondents.

	Sweet	Savoury		
Statement	Biscuits	Biscuits	Cakes	Pastries
I would cut down on the amount I eat	38	25	29	20
I would cut out completely	28	16	38	38
I would use a low fat alternative	18	29	. 12	10
I would not change my eating habits	5	12	5	5
Missing data	11	18	17	26
Grand Total	100	100	100	100

8.2 Attitudes Towards Reduced Fat Bakery Products

All respondents were asked to say how much they agreed or disagreed with a list of statements reflecting attitudes expressed by other people.

Table 8.2: Number of respondents agreeing with a list of statements with respect to reduced fat bakery products. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category

	1	2	3	4	5		
	Agree	Agree		Disagree	Disagree	-	Adj
Statement	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
I'd prefer to cut cakes out completely if I'm on a diet.	74	37	62	24	9	2.3	2.0
They are a good way to have a treat when on a diet.	42	72	68	9	15	2.4	2.2
They are more important if you have special dietary needs.	46	52	79	13	16	2.5	2.2
If they were more available, I'd be more likely to try them.	28	45	98	19	16	2.8	2.5
I don't really think of the ingredients, they're a treat.	25	45	85	27	24	2.9	2.8
It's more important for the children to have low fat products.	28	38	85	35	20	2.9	2.8
If you buy low fat bakery products you just eat more.	14	38	76	32	46	3.3	3.4
I'd only really buy them for myself on a diet.	8	12	156	13	17	3.1	3.4
I don't understand the claims made on low fat products.	12	20	103	35	36	3.3	3.6
They look so boring I can't be bothered.	11	23	103	36	33	3.3	3.6
I save up calories for a cake and cut back on other things.	13	19	95	26	53	3.4	3.8
You don't need to worry about a few biscuits, they're quite good for you really.	14	21	66	51	54	3.5	3.8

In general, respondents agreed slightly with the statements 'I'd prefer to cut cakes out completely if I'm on a diet', 'they are a good way to have a treat when on a diet' and 'they are important if you have special dietary needs'. This associates reduced fat bakery

products with dieting, rather than reducing fat in the diet as such.

Factor Analysis

Three factors were derived from the factor analysis on the statements (Table 8.2). The first factor seems to reflect a lack of need for reduced fat bakery products, whilst Factor 2 groups statements which reflect a potential positive need for such products. The third factor reflects the attitude that they are only really for people with special dietary needs or when on a diet.

 Table 8.3:
 Results from factor analysis on attitudes towards reduced fat bakery products.

	Factor 1	Factor 2	Factor 3
Statement	18.5%	14.1%	12.8%
You don't need to worry about a few biscuits, they're quite good for you really.	0.704	-0.241	-0.059
I don't really think of the ingredients, they're a treat.	0.650	-0.061	-0.05
If you buy low fat bakery products you just eat more.	0.578	0.093	0.342
I save up calories for a cake and cut back on other things.	0.544	-0.104	-0.009
They look so boring I can't be bothered.	0.536	0.32	0.306
I don't understand the claims made on low fat products.	0.515	0.246	0.384
They are a good way to have a treat when on a diet.	-0.067	-0.837	0.082
If they were more available, I'd be more likely to try them.	0.132	-0.758	0.146
It's more important for the children to have low fat products.	0.301	-0.333	-0.244
They are more important if you have special dietary needs.	0.032	0.083	0.696
I'd only really buy them for myself on a diet.	0.072	-0.234	0.651
I'd prefer to cut cakes out completely if I'm on a diet.	0.014	-0.043	0.426

8.3 Attitudes to Sensory Attributes

Respondents were asked to agree or disagree with a list of statements reflecting aspects of the sensory quality of reduced fat bakery products. Overall, consumers agreed slightly that reduced fat bakery products are nice and light, but for the other statements there was no clear consensus of agreement or disagreement.

Table 8.4: Number of respondents agreeing with a list of statements with respect to the appearance and taste of reduced fat bakery products. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category

	1	2	3	4	5		Adj
	Agree	Agree		Disagree	Disagree		
	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
Low fat bakery products are nice and light.	20	69	98	16	3	2.6	2.2
Low fat bakery products have a good taste.	17	40	105	36	8	2.9	2.8
Low fat bakery products are moist.	7	28	130	31	10	3.0	3.1
Low fat bakery products have a poor after taste.	15	36	107	24	24	3.0	3.1
Low fat bakery products have a poor colour.	7	30	124	29	16	3.1	3.2
Low fat bakery products are not sweet enough.	17	26	95	37	31	3.2	3.4

Factor Analysis

Factor analysis revealed two groups of statements, the first related to negative aspects of bakery products, whilst the second factor grouped the positive aspects.

Table 8.5: Results from factor analysis on the sensory attributes of reduced fat bakery products.

	Factor 1	Factor 2
Statement	36.4%	25.3%
Low fat bakery products have a poor colour.	0.831	0.003
Low fat bakery products have a poor after taste.	0.778	0.287
Low fat bakery products are not sweet enough.	0.757	0.031
Low fat bakery products are moist.	0.144	-0.745
Low fat bakery products have a good taste.	-0.508	-0.677
Low fat bakery products are nice and light.	-0.183	-0.651

8.4 Product Involvement

Table 8.6 reveals that, on average, respondents agreed slightly that they would buy reduced fat bakery products if they were of equal quality, and would try new reduced fat bakery products if they were on special offer.

Factor Analysis

Three groupings of statements were derived from factor analysis. Factor 1 reflects the attitude that brand and quality equate with paying more, and such respondents are happy to do this, whilst Factor 2 represents a more cautious consumer who will try if on special offer or if they can expect equal quality from reduced fat products. Factor 3 expresses the view of not worrying about what you eat, it is more important to like the product.

Table 8.6: Number of respondents agreeing with a list of statements with respect to purchase of reduced fat bakery products. The adjusted mean is based on the calculation omitting the 'neither agree nor disagree' category

	1	2	3	4	5		Adj
	Agree	Agree		Disagree	Disagree		
	Strongly	Slightly	Neither	Slightly	Strongly	Mean	Mean
I would buy low fat bakery products if they were of equal quality.	63	60	75	6	2	2.1	1.7
I will try new low fat bakery products if they are on special offer.	55	62	69	11	9	2.3	2.0
I am more likely to buy low fat bakery products if they have a brand name.	36	56	67	28	19	2.7	2.6
I don't buy economy brands when buying bakery products.	40	34	85	32	15	2.7	2.6
I buy a product because I like it, I don't worry about the ingredients.	32	51	59	38	26	2.9	2.8
I would not cut biscuits, cakes and pastries out of my diet	28	48	68	31	31	2.9	2.9
I could happily live without eating cakes, biscuits and pastries.	31	26	57	43	49	3.3	3.4
I am willing to pay more for low fat bakery products.	14	36	74	47	35	3.3	3.4

Table 8.7: Results from factor analysis on attitudes towards purchasing reduced fat bakery products.

	Factor 1	Factor 2	Factor 3
Statement	21.0%	20.0%	18.5%
I am more likely to buy low fat bakery products if they have a brand name.	0.840	0.152	-0.005
I am willing to pay more for low fat bakery products.	0.724	0.154	0.079
I don't buy economy brands when buying bakery products.	0.588	-0.197	-0.426
I will try new low fat bakery products if they are on special offer.	-0.005	0.798	0.01
I would buy low fat bakery products if they were of equal quality.	0.308	0.731	-0.037
I buy a product because I like it, I don't worry about the ingredients.	-0.02	-0.254	-0.706
I would not cut biscuits, cakes and pastries out of my diet	0.078	0.194	-0.667
I could happily live without eating cakes, biscuits and pastries.	0.055	-0.491	0.593

8.5 Reduced Fat Claims

Respondents were asked about their reaction to reduced fat claims, in terms of what they would be most likely to buy. Table 8.8 indicates that products labelled as 'fat free' were the most likely to be purchased, followed by those labelled 'virtually fat free'. The least attractive option appeared to be 'less fat than standard'.

Table 8.8: Tabulation of most attractive fat reduction claim, expressed as a percentage.

	Percent for each Choice			
Claim	1st	2nd	3rd	Missing
Fat free	43	7	4	45
Less fat than standard	9	12	8	71
Reduced fat	20	15	13	52
Low fat	16	13	18	53
Virtually fat free	21	25	14	40
Healthy choice	17	16	17	50

Table 8.9 shows the response when considering the amount of fat reduction in terms of purchase likelihood. The most attractive reductions in fat to respondents were cited as 99% and 95%, in terms of 1st and 2nd choices.

Table 8.9: Tabulation of most attractive fat free claim, expressed as a percentage.

	Percent for each Choice			
Fat Reduction	1st	2nd	3rd	Missing
99%	31	2	9	58
95%	15	27	5	52
85%	8	14	22	55
50%	22	6	10	61
25%	6	9	8	76
Less than 25%	9	2	7	82

9. RESULTS: CONSUMER GROUPING

This chapter looks at potential groupings of consumers according to the attitude statements previously analysed in Sections 6.1, 6.2, 6.4, 8.2, 8.3 and 8.4. The approach throughout is to use cluster analysis to group consumers with similar response patterns to the attitude statements. The mean agreement is then calculated for each statement for the consumers in each cluster (grouping). Thereafter, tables are calculated to determine whether groups of consumers could be characterised according to age, gender, education or region.

Cluster Analysis Method

The K-Means clustering method was used in the Minitab statistical software. The program starts by allocating each observation (respondent) into a pre-defined number of clusters. This initial allocation is then evaluated, and the observation moved to the cluster whose centroid it is closest to. As clusters change after losing or gaining an observation, the cluster centroid is recalculated. This process is repeated until no more observations can be moved.

Cluster Composition

When interpreting any data in this report, reference needs to be made to the quota outlined in Chapter 3: a pre-dominance of female respondents is bound to skew results. However, it is still useful to see if clusters of consumers obtained on the basis of attitudes differ from the overall quota. The main variables looked at were gender, age and region.

9.1 Attitudes Towards Biscuits

Table 9.1 shows the statement means for consumers in each of three clusters, where the percentage of consumers in each cluster is shown in the second row of the table. It should be noted that a value of '1' equates to 'agree strongly' and '5' to 'disagree strongly'.

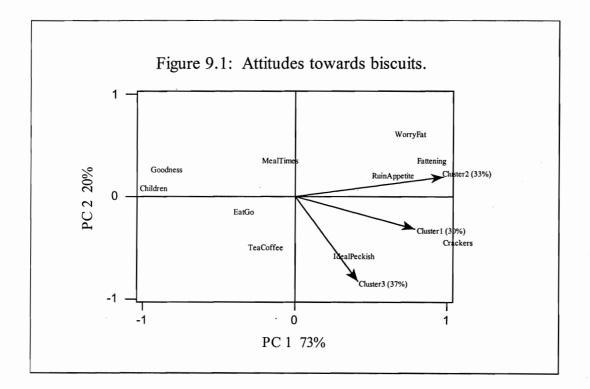
Table 9.1: Statement means derived for three clusters of consumers with respect to attitudes towards biscuits.

	Cluster 1	Cluster 2	Cluster 3
Statement	30%	33%	37%
Biscuits are a must with a cup of tea or coffee. [TeaCoffee]	3.4	3.1	1.6
Biscuits can ruin your appetite for meals. [RuinAppetite]	2.4	2.1	2.6
Biscuits are good for the children after school. [Children]	3.7	4.3	2.9
Biscuits are good for eating on the go. [EatGo]	3.4	3.1	2.2
Biscuits are very fattening. [Fattening]	2.9	1.5	2.3
Crackers are more of a savoury snack. [Crackers]	2.3	1.7	1.6
I worry about the fat in biscuits. [WorryFat]	3.1	1.5	2.8
Biscuits are ideal when you're feeling a bit peckish. [IdealPeckish]	2.6	2.6	1.6
I associate savoury biscuits/ crackers with meal times. [MealTimes]	3.9	2.5	2.5
Biscuits contain lots of goodness. [Goodness]	3.6	3.7	2.9

Respondents in Cluster 1 disagree with the statements: 'biscuits are good for the children after school' and 'I associate savoury biscuits / crackers with meal times'. Respondents in Cluster 2 also disagree that 'biscuits are good for the children after school' and 'biscuits contain lots of goodness', and agree with the statements that 'biscuits are fattening', 'crackers are more of a savoury snack' and 'I worry about the fat in biscuits'. Therefore Cluster 2 respondents demonstrate more health concerns.

Respondents in Cluster 3 agreed that 'biscuits are a must with a cup of tea or coffee', 'crackers are more of a savoury snack' and 'biscuits are ideal when you are feeling a bit peckish'. This group of respondents were therefore more tending towards seeing specific benefits from biscuits.

Figure 9.1 summarises the data by using principal component analysis (PCA). The statements are positions on the map, while the clusters represent directions of increasing agreement for the different groups of consumers. It is important to interpret this plot in conjunction with the table of means (Table 9.1).



It was clear that respondents did not agree that 'biscuits contain lots of goodness' and that 'biscuits are good for the children after school'.

Cluster Composition

There was no evidence to suggest that the male/female or region distributions differed from the quota in any of the clusters; however, some differences were found in terms of age. Examination of Table 9.2 indicates that Cluster 1 had a lower proportion of 16-24 years and a higher proportion on 35-44 years, whilst the converse was true for Cluster 3.

Table 9.2: Classification of clusters according to age breakdown: attitudes towards biscuits.

Age	Cluster 1	Cluster 2	Cluster 3	All
16-24	0	4	13	6
25-34	11	16	15	15
35-44	30	18	11	19
45-54	23	30	21	25
55-64	13	15	17	15
65+	23	16	23	21
All	100	100	100	100

9.2 Attitudes Towards Cakes and Pastries

Table 9.3 shows the statement means for respondents in each of three clusters, where the percentage of respondents in each cluster is shown in the second row of the table.

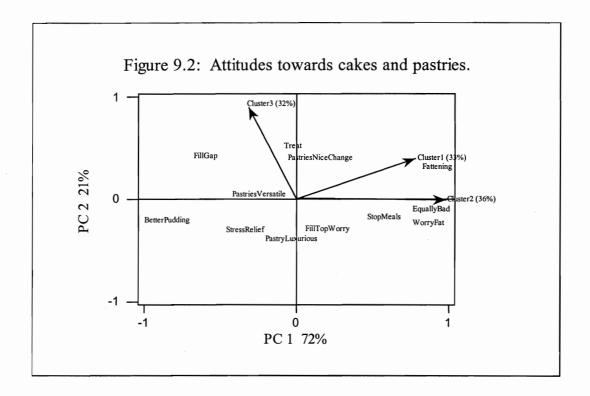
Table 9.3: Statement means derived for three clusters of consumers with respect to attitudes towards cakes and pastries.

	Cluster 1	Cluster 2	Cluster 3
Statement	33%	36%	32%
Cakes fill a gap when I'm hungry. [FillGap]	3.2	3.2	1.9
Cakes are better than a pudding. [BetterPudding]	3.6	3.7	2.7
Pastries are more versatile than cakes. [PastriesVersatile]	3.1	3.0	2.6
Cakes are a well deserved treat. [Treat]	3.1	2.3	1.8
It's the filling/topping in cakes that I worry about. [FillTopWorry]	3.3	2.3	3.0
Pastries make a nice change from cakes. [PastriesNiceChange]	2.9	2.4	2.1
Cakes stop you from eating proper meals [StopMeals]	3.0	1.8	2.9
Cakes relieve me when I'm stressed. [StressRelief]	4.0	2.7	2.7
Cakes are very fattening. [Fattening]	2.4	1.4	2.4
Pastries are more luxurious than cakes. [PastryLuxurious]	3.3	2.7	3.1
Pastries and cakes are equally bad for you. [EquallyBad]	2.4	1.6	3.0
I worry about the fat in cakes. [WorryFat]	3.0	1.3	3.0

Respondents in Cluster 1 disagreed that 'cakes relieve me when I'm stressed', whilst respondents in Clusters 2 and 3 have no strong view on this. Respondents in Cluster 2 disagree that 'cakes are better than a pudding', and agree that 'cakes stop you from eating proper meals', 'pastries and cakes are equally bad for you', cakes are very fattening' and 'I worry about the fat in cakes'. Therefore, these respondents demonstrate a concern about fat in cakes and pastries.

Respondents in Cluster 3 are more positive and see cakes and pastries as having a positive role. They agree that 'pastries make a nice change from cakes', 'cakes fill a gap when I'm hungry' and 'cakes are a well deserved treat'.

Figure 9.2 illustrates that respondents in Clusters 1 and 2 show the same overall trend towards the negative aspects of cakes and pastries. However, it can be seen from the table of means that Cluster 1 respondents don't hold such strong views. Respondents in Cluster 3, on the other hand, see cakes and pastries as having a positive role.



Cluster Composition

While the age and region distributions did not appear to differ from the quota, differences were found in Clusters 2 and 3 with respect to male/female split. In Cluster 2, representing concerns about fat, there were less men than quota. Cluster 3 represented a more positive attitude to cakes and pastries, and this view was held by more men than quota.

Table 9.4: Classification of clusters according to age breakdown: attitudes towards cakes and pastries.

Age	Cluster 1	Cluster 2	Cluster 3	All
Male	27	13	41	26
Female	73	87	59	74
All	100	100	100	100

9.3 Attitudes Towards Health

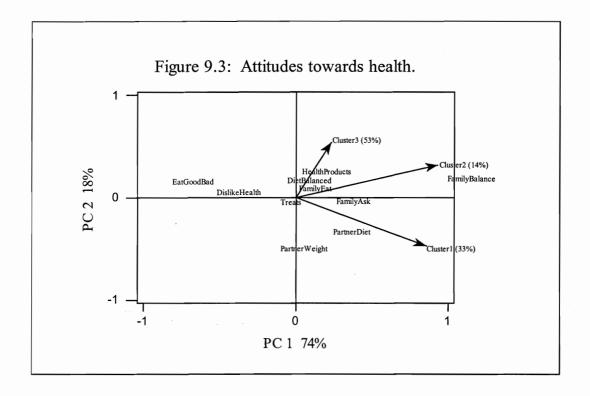
Table 9.5 shows the statement means for respondents in each of three clusters, where the percentage of respondents in each cluster is shown in the second row of the table.

Table 9.5: Statement means derived for three clusters of consumers with respect to attitudes towards health.

	Cluster 1	Cluster 2	Cluster 3
Statement	33%	14%	53%
I try to feed my family a balanced diet. [FamilyBalance]	1.2	1.0	1.9
I buy health products for the family, but don't tell them. [HealthProducts]	3.1	2.5	3.0
Some of my family ask for healthy foods. [FamilyAsk]	2.2	2.5	3.1
As long as the diet is balanced, I don't worry about buying healthy products. [DietBalanced]	2.8	3.1	2.3
My family don't like health products. [DislikeHealth]	3.5	4.0	3.0
My partner is concerned about eating a healthy diet. [PartnerDiet]	1.7	3.0	3.3
The family eat what they are given. [FamilyEat]	2.6	3.0	2.5
We eat what we like whether its good or bad. [EatGoodBad]	4.0	4.6	2.5
My partner is concerned about their weight. [PartnerWeight]	1.7	4.0	3.1
Treats for the family need not be healthy. [Treats]	2.6	3.4	2.4

Respondents in Cluster 1 represented a group who sought to maintain a healthy diet. These respondents agree that 'some of my family ask for healthy foods', 'I try to feed my family a balanced diet', 'my partner is concerned about eating a healthy diet' and 'my partner is concerned about their weight'. Respondents in Cluster 2 demonstrate similar attitudes, but place a greater emphasis in terms of disagreeing with the statements 'my family don't like health products', 'my partner is concerned about their weight' and 'we eat what we like whether its good or bad'. Respondents in Cluster 3 have no really strong views, but do agree that 'I try to feed my family a balanced diet'.

Figure 9.3 confirms that respondents in Cluster 3 contribute relatively little to the attitude plot, as the directional vector is rather short. As previously mentioned, respondents in Clusters 1 and 2 exhibit similar attitudes along Principal Component 1 (PC 1), but differ in the agreement on statements regarding their partner's weight.



Cluster Composition

While the age and region distributions did not appear to differ from the quota, differences were found in Clusters 1 and 2 with respect to male/female split. In Cluster 1 there were slightly more men than quota, whilst in Cluster 2 there were fewer men.

Table 9.6: Classification of clusters according to age breakdown: attitudes towards health.

Age	Cluster 1	Cluster 2	Cluster 3	All
Male	35	15	23	26
Female	65	85	77	74
All	100	100	100	100

9.4 Attitudes Towards Reduced Fat Bakery Products

Table 9.7 shows the statement means for consumers in each of three clusters, and the percentage of respondents in each cluster.

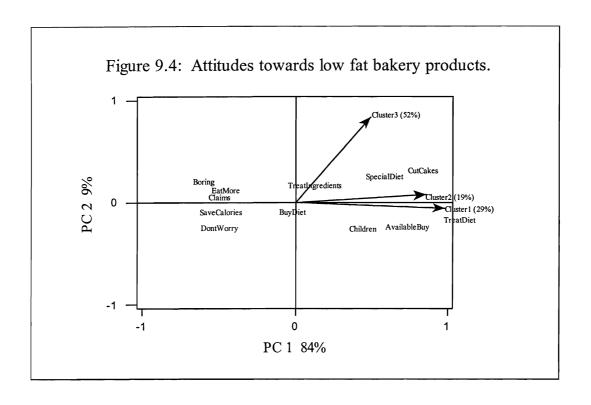
Respondents in Cluster 1 disagreed that 'it's more important for the children to have reduced fat products', 'they are a good way to have a treat when on a diet', 'I'd only really buy them for myself if I'm on a diet', 'they look so boring I can't be bothered' and 'I don't understand the claims made on reduced fat products', and agree that '; I don't really think of the ingredients, they're a treat'.

Table 9.7: Statement means derived for three clusters of consumers with respect to attitudes towards reduced fat bakery products.

	Cluster 1	Cluster 2	Cluster 3
Statement	29%	19%	52%
You don't need to worry about a few biscuit, they're quite good for you really. [DontWorry]	3.6	2.3	2.7
I don't really think of the ingredients, they're a treat. [TreatIngredients]	2.1	1.8	2.9
If you buy low fat bakery products you just eat more. [EatMore]	2.7	1.8	2.3
I save up calories for a cake and cut back on other things. [SaveCalories]	2.7	1.8	3.1
They look so boring I can't be bothered. [Boring]	4.3	2.4	3.5
I don't understand the claims made on low fat products. [Claims]	4.4	2.3	3.0
They are a good way to have a treat when on a diet. [TreatDiet]	4.2	2.7	3.0
If they were more available, I'd be more likely to try them. [AvailableBuy]	2.9	2.2	3.2
It's more important for the children to have low fat products. [Children]	4.1	3.0	3.2
They are more important if you have special dietary needs. [SpecialDiet]	3.4	2.7	3.1
I'd only really buy them for myself on a diet. [BuyDiet]	4.2	3.1	2.8
I'd prefer to cut cakes out completely if I'm on a diet. [CutCakes]	3.0	2.0	2.5

Respondents in Cluster 2 agreed that 'if they were more available, I'd be more likely to try them', 'I'd prefer to cut cakes out completely if I'm on a diet', 'I don't really think of the ingredients, they're a treat', 'if you buy reduced fat products you eat more' and 'I save up calories for a cake and cut back on other things'. Respondents in Cluster 3 did not appear to have strong views, but did agree that 'if you buy reduced fat bakery products you just eat more'.

Figure 9.4 summarises the information in two dimensions, illustrating that respondents in Clusters 1 and 2 have similar attitude trends, but the emphasis on the statements is different. Cluster 3 is not well represented on this plot.



9.5 Attitudes to Sensory Attributes

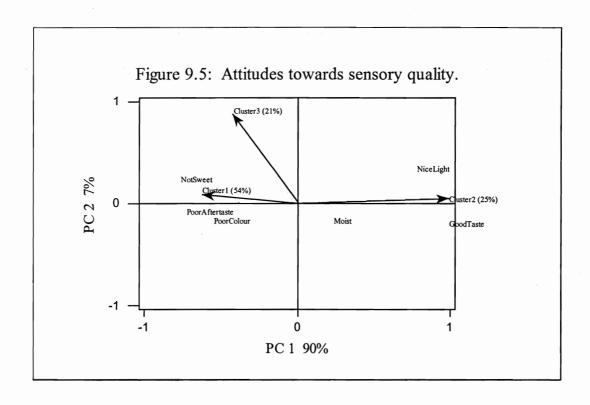
Table 9.8 shows the statement means for respondents in each of three clusters, where the percentage of respondents in each cluster is shown in the second row of the table.

Respondents in Cluster 1 do not have strong views, and only disagree very slightly that 'low fat bakery products have a good taste'. Respondents in Cluster 2 reflect the view that reduced fat bakery products are good quality, though disagree that they 'are nice and light'. Respondents in Cluster 3 tend towards the negative quality of reduced fat bakery products.

These findings are reflected in Figure 9.5, where the majority of consumers tend towards a negative attitude to reduced fat bakery products.

Table 9.8: Statement means derived for three clusters of consumers with respect to attitudes towards sensory quality of reduced fat bakery products.

Statement	Cluster 1 54%	Cluster 2 25%	Cluster 3 21%
Low fat bakery products have a poor colour. [PoorColour]	3.1	4.3	2.0
Low fat bakery products have a poor after taste. [PoorAftertaste]	3.0	2.0	2.1
Low fat bakery products are not sweet enough. [NotSweet]	2.9	4.0	2.5
Low fat bakery products are moist. [Moist]	3.2	3.0	2.7
Low fat bakery products have a good taste. [GoodTaste]	3.4	1.8	2.9
Low fat bakery products are nice and light. NiceLight]	2.7	4.2	2.4



9.6 Attitudes Towards Purchase

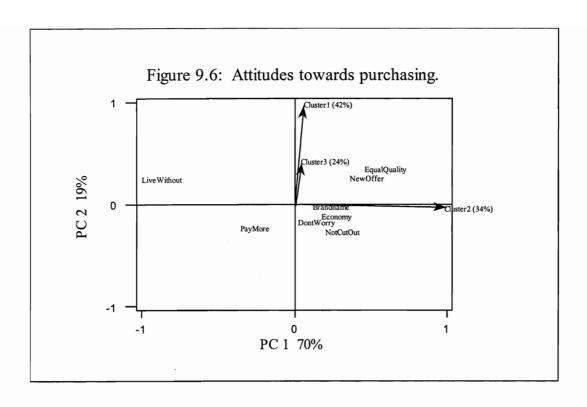
Table 9.9 shows the statement means for respondents in each of three clusters, where the percentage of respondents in each cluster is shown in the second row of the table.

Table 9.9: Statement means derived for three clusters of consumers with respect to attitudes towards purchasing.

	Cluster 1	Cluster 2	Cluster 3
Statement	42%	34%	24%
I am more likely to buy low fat bakery products if they have a brand name. [BrandName]	3.5	3.3	2.7
I am willing to pay more for low fat bakery products. [PayMore]	3.2	2.4	2.2
I don't buy economy brands when buying bakery products. [Economy]	3.4	2.2	3.2
I will try new low fat bakery products if they are on special offer. [SpecialOffer]	3.6	2.6	2.0
I would buy low fat bakery products if they were of equal quality. [EqualQuality]	2.6	1.9	2.3
I buy a product because I like it, I don't worry about the ingredients. [DontWorry]	3.4	2.3	2.2
I would not cut biscuits, cakes and pastries out of my diet. [NotCutOut]	2.4	1.8	2.2
I could happily live without eating biscuits, cakes and pastries. [LiveWithout]	2.7	4.6	2.3

Respondents in Cluster 1 had no strong views, though 'would not cut biscuits, cakes and patries out of my diet'. Respondents in Cluster 2 agreed that 'I don't by economy brands when buying bakery products', 'I would buy reduced fat bakery products if they were of equal quality' and 'I would not cut biscuits, cakes and pastries out of my diet', and disagreed that 'I could happily live without eating biscuits, cakes and pastries'. Therefore, these respondents were quality conscious and were committed consumers of bakery products.

Respondents in Cluster 3 tended to agree with most statements, and there appeared to be some conflict in their attitudes. This information is summarised in Figure 9.6.



Cluster Composition

While the age and region distributions did not appear to differ from the quota, differences were found in Clusters 2 and 3 with respect to male/female split. In Cluster 2 there were slightly more men than quota, whilst in Cluster 3 there were slightly less men than quota.

Table 9.10: Classification of clusters according to age breakdown: attitudes towards health.

Age	Cluster 1	Cluster 2	Cluster 3	All
Male	23	35	18	26
Female	77	65	82	74
All	100	100	100	100

10. DISCUSSION AND CONCLUSIONS

On the whole, the quantitative research confirmed the issues raised in the qualitative group discussions, though the actual survey was restricted by the sample of consumers returning the questionnaires. Nonetheless, together the qualitative and quantitative research has provided an important insight into the barriers inhibiting greater consumption of reduced fat bakery products. A final report (McEwan and Sharp, 1999) will address how these barriers may be overcome.

In summary, consumers were aware that bakery products contain fat, but such products were generally perceived to be an indulgence/treat item and as such were expected to contain 'less healthy' ingredients. Reduced fat bakery products could be important when dieting, but it was indicated that reducing sugar was more important than reducing fat when considering living a healthy lifestyle.

Price, quality and availability were also issues with respect to decision to purchase reduced fat bakery products, as was the amount of fat reduction. It was also clear that better communication strategies were required to convey benefits to the consumer.

In conclusion, more comprehensive research is required to explore communication of information to consumers, and therefore promote the benefits of reducing fat in the diet across all product categories where a significant fat contribution is made to the diet.

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HMSO (1991). Food Advisory Committee Report on its Review of Food Labelling and Advertising 1990. London: HMSO.

McEwan, J.A. and Clayton, D. (1999). Barriers to the Consumption of Reduced Fat Bakery Products: A Qualitative Approach. CCFRA R&D Report 78.

Sharp, T.M. (1999). Barriers to the Production of Reduced Fat Bakery Products. CCFRA R&D Report. In press.



APPENDIX 1: QUESTIONNAIRE

About the products you buy & eat

0	A 11 - 1-1-			C	Ple	ase mark only	one box.
Q	Are you personally, solely The main food shopping fo			Yes	□ No		
	IF NO, the following que answer further questions household to complete th	and kindly	ask the pe				
Q	Thinking about your purch buy these products?	ase of bisc	uits, cakes	and pastrie	es, how of	ten do you	
	Please mark only one box	for each pi	roduct type				
	More than once a week Once a week Once a fortnight Once a month Once every 2-3 months Less often Never	Sweet Biscuits	Savoury Biscuits	Fresh Cakes	Frozen Cakes	Pre-packed Cakes □ □ □ □ □ □	Pastries
Q	Thinking about when you b	ouy these p	products, w	hat types d	o you usu	ally purchase?	
	For each product type plea	se mark al	ll formats ti	hat you buy	v.		
	Sweet Biscuits		_ _ _	Standard pa	ection packs		
,	Savoury Biscuits		_ _ _	Standard pa	ection packs		
	Cakes		0	Individual)
	Pastries		0	Individual Pre-packag I do not buy			

	Please select up to thr east 1st, 2nd and 3rd choice apply mark your secon	es. 1	Mari	k you	ur fi	rst	choi	ce ir	the	col	umr	ı '1	' an	id ij	f fur	rthe	r cl			re	
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	As a regular item of shopping		2	3	1	2 □	3	1	2 □	3			;]	3 •		2	3		1	2	
	As an impulse purchase For a special occasion As a planned luxury or treat									0))			(
	Other (please write in the											ו נ))			Ţ
	box below) I do not buy) [))			Ţ
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	Supermarket Convenience/local shop Bakery Garage Restaurant/Coffee shop Other (please write in the box below) I do not buy	1000000	2 0 0 0 0	300000		20000	3 0 0 0 0	1000000	2 0 0 0 0 0	3 0 0 0 0 0	1000000	2 0 0 0 0	300000	1000000		2	300000	100000	200000	3	
	If 'Other' please give details in t			_	_	_		_	_	_							_	_	_		٦
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	None Under £0.50 between £0.51 - £1.00 between £1.01 - £2.00 between £2.01 - £3.00 between £3.01 - £4.00 between £4.01 - £5.00 In excess of £5.00		Swe	et Bi	scuit	s	Sa		y Bis	cuits		C		5		. F	Pastri				

When buying biscuits, cakes and pastries, when do you buy these products?

Q

3

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		Sw Bisc		Savou Biscu		Fre Cal		Fro Cal		Pre-pa Cal		Pas	strie
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Q

Q	Thinking about you them?	our p	urch	ase	of b	aker	y pr	oduc	ts, v	vnat	are	you	r ma	ın re	easo	ns fo	or bu	ıyıng	3
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	For indulgence or the As part of a lunch be As a standby item As a snack product As part of a meal As a special occasion Other (please write in a box below) I do not buy	oox	10000000	20000000	3000000	10000000	20000000	3000000	100000000	2000000	3000000	10000000	2000000	30000000	100000000	2000000	3 0 0 0 0 0 0 0 0	100000000	2 0 0 0 0 0 0
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	If 'Other' please give de	tails in	this b	ox								-							
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Q	b) When buying bise following do you usu		l pastries a	s a luxury	item of y	our shopp	oing, which	n of the
	Please mark only on	e box for each	product typ	oe.				
	Branded Own label Fresh (un-branded) I do not buy		Savoury Biscuits	Fresh Cakes □ □ □	Frozen Cakes	Pre-pac Cake]]]
Q	Here is a list of thing indicate how much y						e can you	
	Please mark only one	e box for each	product typ	e.				
			Agree strongly	Agree slightly	Neither agree or disagree	Disagree slightly	Disagree strongly	No opinion
	Biscuits are a must with coffee	a cup of tea or			ulsagree 🗆			
	Biscuits can ruin your a Biscuits are good for the school/in between meal	e children after						0
	Biscuits are good for ea Biscuits are very fatteni Crackers are more of a s I worry about the fat in Biscuits are ideal when	ting on the go ng savoury snack biscuits	0000		_ _ _ _	0 0 0 0	0 0 0	0 0 0 0
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	Biscuits contain lots of	goodness						
Q	Here is a list of thing indicate how much your Please mark only one	ou personally a	igree or dis	agree wit			e can you	
			Agree strongly	Agree slightly	Neither agree or	Disagree slightly	Disagree strongly	No opinion
	Cakes fill a gap when I' Cakes are better than a p Pastries are more versat Cakes are a well deserve It's the filling/topping in	oudding ile than cakes ed treat	0000	0000	disagree	0000	0000	0 0 0 0
	worry about Pastries make a nice cha Cakes stop you from eat Cakes relieve me when Cakes are very fattening Pastries are more luxuri Pastries and cakes are ea	ting proper meals I am stressed S ous than cakes	0 0 0 0 0	00000	00000	00000	0 0 0 0	00000
	you I worry about the fat in	cakes	0					٥

	Q People have different attitudes tow own needs. Please can you say own opinion of your lifestyle?					
	Please mark only one box					
	I don't live a healthy lifestyle and don't care I don't really worry about how healthy my lif I'm not that bothered about living a very heal Parts of my lifestyle are quite healthy I try to live a fairly healthy lifestyle generally I do live a very healthy lifestyle on the whole I have an extremely healthy lifestyle None of the above	thy lifestyle, but do	try a bit			
Q	Thinking about living a healthy lifestyle. terms of the food you eat?	Which of the fo	ollowing do	you ger	nerally	do in
	Please select up to three reasons for buthere are 1st, 2nd and 3rd choices. Machoices apply mark your second reason	rk you first reas	on in the col	umn '1	'and if	further
	Mark	all that apply	Select you	r top th	iree	
	Eat less red meat Not eat meat Control calorie intake Reduce fat in diet Reduce cholesterol in diet Reduce caffeine intake Control/reduce alcohol consumption None of these Other (Please write in the box below)		000000	1000000	2000000	3
	If 'Other' please give details in this box					
Q	People have different attitudes to dieting statements best describes you? Please mark only one box I don't bother to watch my weight I don't go on diets I try to put on weight I never need to watch my weight I diet/watch my weight as and when I need to I diet/watch my weight at certain times of the I am always watching my weight I am always on a diet None of the above			Thich of	f the fo	llowing

Q	Thinking about watching your weight best describes your behaviour?	and dietin	g. Which	h of the fo	ollowing s	tatements	
	Please mark all options that apply an marked 'Select you top three' there a the column '1' and if further choices third choice in column '3'.	re 1st, 2n	d and 3rd	d choices.	Mark yo	u first cho	ice in
	Ma	irk all tha	t apply	Select y	our top th	iree	
	Go to a slimming club Follow a specific diet plan Eat less or no red meat Count calories Reduce fat in diet Reduce sugar in diet Reduce alcohol consumption None of these Other (Please write in the box below)			00000000	1000000000		1 1 1 1 1 1 1
	If 'Other' please give details in this box						
Q	Here are some statements that other phealth. Please can you indicate the estatements, in respect of the health of Please mark only one box for each statements.	xtent to w f yourself	hich you	agree or	disagree w	d their far vith the fo	nilies llowing
Q	health. Please can you indicate the estatements, in respect of the health of	xtent to w f yourself	hich you	agree or our family Neither agree or	disagree w	od their far with the for Disagree strongly	nilies llowing No opinion
Q	health. Please can you indicate the estatements, in respect of the health of Please mark only one box for each statements. I try to feed my family a balanced diet I buy healthy products for the family but	xtent to we factor yourself the statement. Agree	hich you and/or yo Agree	agree or o our family Neither	disagree w ? Disagree	vith the fo	llowing
Q	health. Please can you indicate the estatements, in respect of the health of Please mark only one box for each statements. I try to feed my family a balanced diet I buy healthy products for the family but don't tell them Some of my family ask for healthy foods As long as the diet is balanced I don't	xtent to we for yourself tatement. Agree strongly	hich you and/or yo Agree slightly	Neither agree or disagree	disagree we? Disagree slightly	Disagree strongly	No opinion
Q	health. Please can you indicate the estatements, in respect of the health of Please mark only one box for each statements. I try to feed my family a balanced diet I buy healthy products for the family but don't tell them Some of my family ask for healthy foods As long as the diet is balanced I don't worry about buying healthy products My family don't like health products My partner is concerned about eating a	xtent to we factor yourself statement. Agree strongly	Agree slightly	Neither agree or disagree	disagree w ? Disagree slightly	Disagree strongly	No opinion
Q	I try to feed my family a balanced diet I buy healthy products for the family but don't tell them Some of my family ask for healthy foods As long as the diet is balanced I don't worry about buying healthy products My family don't like health products My partner is concerned about eating a healthy diet The family eat what they are given We eat what we like whether it's good or	xtent to we fatement. Agree strongly	Agree slightly	Neither agree or disagree	disagree we? Disagree slightly	Disagree strongly	No opinion
Q	health. Please can you indicate the estatements, in respect of the health of Please mark only one box for each statements. I try to feed my family a balanced diet I buy healthy products for the family but don't tell them Some of my family ask for healthy foods As long as the diet is balanced I don't worry about buying healthy products My family don't like health products My partner is concerned about eating a healthy diet The family eat what they are given We eat what we like whether it's good or bad My partner is concerned about their	xtent to we fatement. Agree strongly	Agree slightly	Neither agree or disagree	disagree we? Disagree slightly	Disagree strongly	No opinion
Q	I try to feed my family a balanced diet I buy healthy products for the family but don't tell them Some of my family ask for healthy foods As long as the diet is balanced I don't worry about buying healthy products My family don't like health products My partner is concerned about eating a healthy diet The family eat what they are given We eat what we like whether it's good or bad	extent to we factor yourself statement. Agree strongly	Agree slightly	Neither agree or disagree	disagree we? Disagree slightly	Disagree strongly	No opinion

Your usage of low fat products

Please mark only one box fo	r each product typ			
	Buy regularly	Buy occasionally	Tried but don't	Never b
Spread/margarine			buy □	
Yoghurt	ā	ā	Ö	<u> </u>
Milk	ā	ā	ō	ū
Cheese	<u> </u>	Ö	Ö	<u> </u>
Crisps	ā	ō	ō	ū
Soups	ō	Ö	Ö	0
Salad dressing	ō	ō	ō	0
Sweet Biscuits	Ö	0	j	0
	ō	<u> </u>	j	0
Savoury Biscuits Cakes	Ğ	0	Ğ	ō
Pastries	ö	0	ō	0
Other (please write in the box below)		ā	ă	٥
Other (please write in the box below)	_	_	_	•
answer this question if you hry products. Thinking specifically about purchasing these products?	7.	·	• 0	
answer this question if you h ry products. Thinking specifically about p	ourchasing low fat sons for not buyin rd choices. Mark our second reason	t bakery produc ng each produc you first reaso n in column '2	cts. What deters y ct type. Under eac on in the column 'i ' and your third re	ou from ch product l'and if cason in
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y	ourchasing low fat sons for not buying rd choices. Mark our second reason Sweet Biscuits	t bakery productions and search productions are search productions and search productions are search productions. Savoury Biscuits	cts. What deters y ct type. Under eac on in the column 'i' and your third re Pre-packed Cakes	ou from ch product l'and if cason in
answer this question if you have products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y column '3'.	sons for not buying the choices. Mark our second reason Sweet Biscuits	ng each product you first reason in column '2 Savoury Biscuits 3 1 2 3	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3 1 2 3	cou from ch product l' and if eason in Pastries 1 2 3
answer this question if you have products. Thinking specifically about purchasing these products? Please select up to three real type there are 1st, 2nd and 3 further choices apply mark y column '3'.	sons for not buying rd choices. Mark our second reason Sweet Biscuits 1 2	t bakery productions and productions are ach productions from the column '2 Savoury Biscuits 3 1 2 3	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3 1 2 3	ch product l' and if cason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reactype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse	sons for not buying rd choices. Mark our second reason Sweet Biscuits	savoury Biscuits 1 2 3	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 1 2 3	rou from ch product l' and if rason in Pastries 1 2 3
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality	sons for not buying rd choices. Mark our second reason Biscuits 1 2	savoury Biscuits 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 3 1 2 1 1 1 1	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3 1 2 3	rou from ch product l' and if cason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product	sons for not buying the choices. Mark our second reasons Sweet Biscuits	syou first reason in column '2 Savoury Biscuits 1 2 3	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3	rou from ch product l' and if cason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product Poor appearance of packaging	sons for not buying the choices. Mark sour second reason Sweet Biscuits	syou first reason in column '2 Savoury Biscuits 1 2 3	cts. What deters y ct type. Under each on in the column 's ' and your third re Pre-packed Cakes 3 1 2 3 1 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	rou from ch product l' and if eason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reatype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product Poor appearance of packaging Small fat reduction	sons for not buying the choices. Mark sour second reason Sweet Biscuits	savoury Biscuits 1 2 3 0 0 0 0	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3 1 2 3 Cakes 1 2 3 Cakes	ch product I' and if eason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reactype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product Poor appearance of packaging Small fat reduction Rarely available	sons for not buying the choices. Mark your second reason Sweet Biscuits	st bakery productions of the production of the p	cts. What deters y ct type. Under each on in the column 's ' and your third re Pre-packed Cakes 3 1 2 3	ch product l' and if eason in Pastries
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reactype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product Poor appearance of packaging Small fat reduction Rarely available Poor range	sons for not buying the choices. Mark our second reason Sweet Biscuits 1 2	savoury Biscuits 1 2 3 0 0 0 0 0	cts. What deters y ct type. Under each on in the column 's ' and your third re Pre-packed Cakes 3	ch product l' and if eason in Pastries 1 2 3
answer this question if you hery products. Thinking specifically about purchasing these products? Please select up to three reactype there are 1st, 2nd and 3 further choices apply mark y column '3'. Too expensive Taste worse Poor quality Poor appearance of product Poor appearance of packaging Small fat reduction Rarely available	sons for not buying rd choices. Mark our second reason Sweet Biscuits 1 2	savoury Biscuits 1 2 3 0 0 0 0 0	cts. What deters y ct type. Under each on in the column 'a ' and your third re Pre-packed Cakes 3	ch product l' and if eason in Pastries

Only answer this question if you have purchased, or currently purchase low fat bakery products. What was your main reason for first trying low fat bakery products? Q Please select up to three reasons for buying each product type. Under each product type there are 1st, 2nd and 3rd choices. Mark you first reason in the column '1' and if further choices apply mark your second reason in column '2' and your third reason in column '3'. Savoury Pre-packed Sweet **Pastries Biscuits Biscuits** Cakes 2 2 2 2 Trying to reduce fat in the diet A member of the family was on a diet They were recommended by friends Due to specific health concerns General health for all the family I was on a diet There were no others available I bought them by mistake They were on special offer I saw the product advertised on the TV and/or read about it Other (please write in the box below) If 'Other' please give details in this box Only answer this question if you have tried low fat bakery products. Q Which of the following low fat bakery products have you tried? For each product type please mark **all** products that you have tried. Sweet Savoury Pre-packed **Pastries Biscuits Biscuits** Cakes McVities Go Ahead Jacobs Vitalinea Trimlyne Entenmann's

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Supermarket own label

Other (please write in the box below)

If 'Other' please give details in this box

Only	answer this question if you bu	y low f	fat baker	y prodi	ucts.				
Q	Thinking about your current u behaviour in terms of the use				roducts, l	now wou	ld you	describe	your
	Please mark only one box								
	I only buy them when I', on a diet I buy them to watch my weight	or watch	ning my wei	ght				.	
	I buy them to reduce my fat intake						Ţ	ם ם	
	I buy them for the family as part of Other (please write in the box below)	f a health	ny diet					<u> </u>	
	If 'Other' please give details in this box								
Only	answer this question if you ha	ve pur	chased lo	w fat b	akery pr	oducts.			
Q	Thinking about when you hav bought for?	e purch	ased low	fat bak	ery produ	cts, who	were t	hese prod	ucts
	Please mark up to two selection buy for in column '1' and if th							you main	ly
		Sweet	Biscuits	Savour	y Biscuits	Pre-pa Cak		Past	ries
	Self only	1	2	1	2	1	2	1	2
	Partner only							ā	
	Self & Partner							ū	
	Whole family								_
	Children Other adults in the house	0		0			<u> </u>	<u> </u>	_
	Visitors	<u> </u>	ū	ū	0	ū	ū	ū	
	Other (please write in the box below)	ā		ō		ā	ā	ā	ō
	If 'Other' please give details in this box						· ·		
Ever	yone to answer the following q	uestion	18.						
Q	If you were on a diet or trying you do in respect of each of the			eight w	hich of th	ne follow	ing thi	ngs would	i
	For mark only one box for each	produ	ct type.						
			Sweet Biscuits		avoury Biscuits	Pre-pack Cakes		Pastries	
	I would cut down on the amount I	eat							
	I would cut out completely								
	I would use a low fat alternative	••-							
	I would not change my eating hab	its	J		J	J		_	

20000000

	Please mark only one box for each st products please complete this question						ery
		Agree strongly	Agree slightly	Neither agree or	Disagree slightly	Disagree strongly	No opinior
	I don't really think of the ingredients,			disagree			
	they're a treat They are a good way to have a treat when						
	on a diet I'd prefer to cut cakes out completely if	٥					
	I'm on a diet If they were more available I'd be more						
	likely to try them You don't need to worry about a few						
	biscuits, they're quite good for you really If you buy low fat bakery products you						
	just eat more I don't understand the claims made on		۵				
	low fat products It's more important for the children to						
	have low fat products I save up calories for a cake and cut back			۵			
	on other things I'd only really buy them for myself on a		٥				
	diet They look so boring I can't be bothered They are more important if you have special dietary needs	٥	0		٥	٥	
Q	Here are some statements that other per fat bakery products. Please indicate has a products please complete this question.	now much	you agre Even if y	ee or disag ou have n	gree with o	each stater w fat bake	nent.
		Agree strongly	Agree slightly	Neither agree or	Disagree slightly	Disagree strongly	No opinion
	Low fat bakery products are not sweet			disagree			
	enough Low fat bakery products are nice and						
	light Low fat bakery products have a poor						
	colour Low fat bakery products are moist Low fat bakery products have a good	0	0	0		0	
	taste						

Q	There are a lot of different low fat bakery products on the market which claim different things. Please can you tell me which claim on a low fat product you would most likely buy												
	Please select up to three product claims that you would buy. Mark your first choice in the column '1', and if further choices apply please mark your second choice in column '2' and your third choice in column '3'.												
	Fat free Less fat than standard Reduced fat Low fat Virtually fat free Healthy choice		2 0 0 0 0	3									
Q	When considering the purchase of low fat bakery products, what amount of fat reduction would you be looking for before deciding to buy the product?												
	Please select up to three product claims that you would buy. Mark your first choice in the column '1', and if further choices apply please mark your second choice in column '2' and your third choice in column '3'.												
	99% 95% 85% 50% 25% Less than 25%		2 0 0 0 0 0	3									
Q	Thinking about when you buy low fat bakery products, which of the following statements best describes you?												
	Please mark only one box for each statement. Even if you have not tried low fat products please complete this question, it is your opinion that we are interested							ery					
			gree ongly	Agree slightly	Neither agree or	Disagree slightly	Disagree strongly	No opinio					
	I am willing to pay more for low fat	[_		disagree								
	bakery products I am more likely to buy low fat bakery	[_										
	products if they have a brand name I would not cut biscuits, cakes and	(_										
	pastries out of my diet I buy a product because I like it, I don't	(٦										
	worry about the ingredients I will try new low fat bakery products if	[_										
	they are on special offer I don't buy economy brands when buying	[_										
	bakery products I would buy low fat bakery products if	Ţ	_										
	they were of equal quality I could happily live without eating cakes, biscuits and pastries	[ב				٥						

Please write b	pelou	'.						
		-						
We may need to re-contacted?	o re-c	contra	act so	me p	eople f	or a f	urther	interview. Would you be willing to be
Please mark o	only c	one b	ox.		Y	es [ו ב	No 🗖
				De	etails .	Abo	ut Yo	ou -
Name:								
Address:								
				-				
Postcode:								Telephone number:
T	(A)	(A)	(0)	(0)	(0)	(A)	(A)	
Write your	(B)	(B)	(1)	(1)	(1)	(B)	(B)	
postcode, one character per	(C) (D)	(C) (D)	(2) (3)	(2) (3)	(2) (3)	(C) (D)	(C) (D)	
box in the	(E)	(E)	(4)	(4)	(4)	(E)	(E)	
spaces here	(F)	(F)	(5)	(5)	(5)	(F)	(F)	
then mark the	(G)	(G)	(6)	(6)	(6)	(G)	(G)	
corresponding	(H)	(H)	(7)	(7)	(7)	(H)	(H)	
letter/number in	(I)	(I)	(8)	(8)	(8)	(I)	(I)	
the column	(J)	(J)	(9)	(9)	(9)	(J)	(J)	
directly underneath	(K)	(K)				(K)	(K)	·
each box here.	(L) (M)	(L) (M)				(L) (M)	(L) (M)	
cacii box nore.	(N)	(N)				(N)	(N)	EXAMPLE
	(0)	(O)				(O)	(O)	C H 1 4 4 1
	(P)	(P)				(P)	(P)	(A) (A) (0) (0) (0) (
	(Q)	(Q)				(Q)	(Q)	(B) (B) (1) (1) (1)
	(R)	(R)				(R)	(R)	(C) (C) (2) (2) (2) (2)
	(S)	(S)				(S)	(S)	(D) (D) (3) (3) (3) (4)
	(T)	(T)				(T)	(T)	(E) (E) (4) (4) (4) (4) (5) (6)
	(U)	(U)				(U)	(U) (V)	(F) (F) (5) (5) (5) (6) (6)
	(V) (W)	(V) (W)				(V) (W)	(V) (W)	(G) (G) (6) (6) (6) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7
	(W)	(X)				(X)	(X)	(I) (I) (8) (8) (8) (8)
	(Y)	(Y)				(Y)	(Y)	(J) (J) (9) (9) (9) (9)
	(1)	(1)						

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Gender:	Male	□ Female □								
Age:	16-24 years 25-34 years 35-44 years	0	4: 5:							
Marital Status:	Single Married Widowed	0		ng together Divorced Separated D						
Family Details:	Number of people in Number of adults in Number of children (aged under 16 years)	household	(0) (1) (2)	(3) (4) (5) (6) (3) (4) (5) (6) (3) (4) (5) (6)) (7) (8) (9					
Age of children if any	0-5 6-10 11-15		(1) (2) (3) (1) (2) (3) (1) (2) (3)	(4) (5) (4) (5) (4) (5)						
Accommodation:	Own home Shared			Rented Council C						
Qualifications:										
Which of the following do you have – mark all that apply										
O Level or GCSE A Level or Scottish Highers HNC or HND BSc/BA Higher Degree (Masters or PhD) Other (please write the box below) None of the above										
If 'Other' please give details in this box										
Occupation: Who is the chief wager earner in your household? Self Partner/Husband Other (please write the box below)										
If 'Other' please give details in this box										
What is the occupation of the chief wage earner?										
What is their job titl	e?									
Thank you for completing this questionnaire Please return in the pre-paid envelope provided no later than Friday 2nd October 1998. Remember completed questionnaires, with postcode details, received by this date will be entered into a prize draw.										

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