

BREAD :

A CONSUMER SURVEY

OF CHRISTCHURCH

HOUSEHOLDS

BY

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THE AGRICULTURAL ECONOMICS RESEARCH UNIT

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PREFACE

This study is the third in a series of AERU Research Reports presenting results of Consumer Surveys for various agricultural and horticultural products. In this study bread is the product under investigation and Christchurch was the location for the survey.

The objective of the present research was to present information on consumer purchasing and consumption patterns and the factors affecting these patterns. The results presented are particularly timely, as the New Zealand Association of Bakers is at present considering a nationwide promotion campaign for bread.

Professor J.B. Dent,
Director, AERU.

CONTENTS

	<u>Page</u>
LIST OF TABLES	(iii)
LIST OF FIGURES	(v)
ACKNOWLEDGEMENTS	(vi)
SUMMARY	(vii)
CHAPTER 1 INTRODUCTION	1
1.1 Purpose of Study	1
1.2 Research Procedure	3
1.3 Characteristics of the Sample	5
CHAPTER 2 HOUSEHOLDS PURCHASING PATTERNS	7
2.1 Buying Bread	7
2.2 Outlet Used	11
2.3 Types of Loaves Bought	17
2.4 Number of Loaves Bought Per Week	21
2.5 Reasons Influencing Choice of Bread	24
2.6 Changes in Types of Loaves Bought	28
2.7 Brand Loyalty and Brand Knowledge	30
2.8 Rolls, Buns and Fruit Loaves	31
2.9 Homemade Bread	33
CHAPTER 3 HOUSEHOLDS CONSUMPTION PATTERNS	35
3.1 Households Consuming Bread	35
3.2 When Bread is Consumed at Home	35
3.3 Substitutes for Bread	37
3.4 Lunches Away From Home	37
3.5 Use of Bread for Cooking	38
3.6 Other Uses of Bread	39
3.7 Takeaway Meals and Meals at Restaurants, Hotels and Clubs	39
CHAPTER 4 STORAGE OF BREAD	41
4.1 Where Bread is Kept for Day to Day Use	41
4.2 Freezing Bread	42
CHAPTER 5 ATTITUDES TOWARDS BREAD	45
5.1 Health Value	45
5.2 Price	48
5.3 Extra Cost of Wrapped and Sliced Bread	49
5.4 Keeping Quality	51
5.5 Amount Consumed	53

	<u>Page</u>
CHAPTER 6 IMPLICATIONS	55
6.1 The Aggregate Demand for Bread	55
6.2 The Demand for Product Varieties	61
6.3 Cropping Farmers	64
6.4 Millers	64
6.5 Bakers	65
6.6 Retailers	68
APPENDICES	
1. The Questionnaire	73
2. Sample Details	75
3. Average Per Capita Number of Loaves Bought Per Week by Occupation and Age of Head of Household and Households Having Cut Lunches	77
4. Reason for Changing Type of Bread Bought	79
5. Changes in Types of Bread Bought by Occupation and Age of Head of Household	81
6. Respondents Recall of Bakery's and Brand Names	83
7. Households Buying Rolls, Buns and Fruit Loaves by Occupation and Age of Head of Household	85
8. Meals When Bread is Consumed by Occupation and Age of Head of Household	87
9. Non-Meal Times When Bread is Consumed by Occupation and Age of Head of Household	89
10. Households Using Bread for Cooking by Occupation and Age of Head of Household	91
11. Households with Deep Freezers by Occupation and Age of Head of Household	93
12. Attitudes Towards Health Value by Occupation and Age of Head of Household	95
13. New Zealand Flour Usage	97
14. New Zealand Household Composition	99
15. Price of Bread Compared with Substitute and Complementary Foods	101

LIST OF TABLES

		<u>Page</u>
1.	Estimated Annual Consumption of Bread in New Zealand	1
2.	Sample Characteristics	6
3.	Person Who Decides What Type of Bread to Buy and Person Who Buys	7
4.	Days of the Week for Buying	8
5.	Frequency of Buying	8
6.	Frequency of Buying by Household Composition	9
7.	Time Between Buying and First Eating	10
8.	Time Between Buying and First Eating by Time of Day for Buying Bread	10
9.	Person Who Buys by Outlet	11
10.	Outlet Used by Occupation and Age of Head of Household	12
11.	Outlet Used by Day of the Week	13
12.	Frequency of Buying by Outlet	14
13.	Time Between Buying and Eating by Outlet	14
14.	Number of Loaves Bought at a Time by Outlet	15
15.	Reason for Using Outlet	16
16.	Types of Loaves Bought	17
17.	Types of Loaves Bought by Occupation and Age of Head of Household	18
18.	Wrapped and Sliced Bread Bought by Occupation and Age of Head of Household	19
19.	Type of Slice Bought	20
20.	Number of Loaves Bought Per Week	21
21.	Number of Loaves Bought Per Week Per Capita	22
22.	Number of Loaves Bought Per Week Per Capita by Household Composition	23
23.	Reasons Influencing Choice of Type of Bread	25

	<u>Page</u>
24. Reasons Influencing Choice of Type of Bread by Occupation and Age of Head of Household.	26
25. Other Reasons Influencing Choice of Type of Bread.	27
26. Changes in Types of Bread Bought	28
27. Changes in Types of Bread Bought by Occupation and Age of Head of Household	29
28. Changes in Types of Bread Bought by Outlet	30
29. Recall of Bakery and Brand Names	31
30. Households Buying Rolls, Buns and Fruit Loaves	32
31. Buying of Rolls, Buns and Fruit Loaves by Household Having Cut Lunches	32
32. Frequency of Making Bread	33
33. Homemade Bread by Occupation and Age of Head of Household.	34
34. Reason for Making Own Bread	34
35. Times When Bread is Consumed	36
36. Use of Bread for Cooking by Household Composition and Age of Head of Household	39
37. Takeaway Meals and Dining Out by Occupation and Age of Head of Household	40
38. Where Bread is Kept for Day to Day Use by Age of Head of Household	41
39. Households with Deep Freezers by Composition of Household	42
40. Freezing Bread by Age of Head of Household	43
41. Number of Loaves Frozen	44
42. Disadvantages in Freezing Bread	44
43. Attitudes Towards Health Value	46
44. Attitudes Towards Health Value by Use of Wholemeal Bread	47
45. Attitudes Towards Price	48
46. Attitudes Towards Extra Cost of Wrapped and Sliced Bread	49

	<u>Page</u>
47. Attitudes Towards Extra Cost of Wrapped and Sliced Bread by Use	50
48. When Bread is Too Stale to Eat as Bread or Toast	51
49. Attitudes Towards Keeping Quality by Household Composition and Age of Head of Household	52
50. Perception of Amount of Bread Consumed by Actual Purchases	53
51. Profile of Heavy White Sliced Bread Buyers	63
52. Profile of Households Using Different Outlets	69

LIST OF FIGURES

1. Per Capita Bread Consumption by Real Wages, 1955-1977	58
2. Per Capita Bread Consumption, Real Price and Real Wages, 1955-1977	59

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SUMMARY

An interview survey was conducted among 405 randomly selected Christchurch households during late April 1978. The objective of the study was to obtain information about bread purchasing and consumption patterns and factors affecting these patterns. The survey results can be summarised as follows.

Purchase of Bread

Buying bread. For the majority of the households the wife decided the type of bread to buy and also bought the bread.

Outlet used. Forty-three percent of the households bought their bread at a supermarket; 41 percent at a dairy; 27 percent at a grocer and 9 percent at a hot bread shop or bakery. "Being able to do other shopping there" was the most frequent reason given for buying at the supermarket, while "closeness to home" was the most frequent reason given for buying at a dairy or grocer. A variety of reasons were given for buying at a hot bread shop or bakery including "freshness", "special types" and "social outing".

Frequency of buying. Households buying bread at a supermarket tended to buy once or twice a week, with those buying at a dairy or grocer buying more frequently.

Time between buying and eating. Forty-five percent of the households started eating the bread they bought within 4 hours of buying it and 70 percent started to eat it within 12 hours.

Types bought. Eighty-nine percent of the households bought white bread, compared with 25 percent buying brown and 33 percent buying wholemeal. Larger proportions of the households in the younger and middle age groups bought white with larger proportions of the households in the middle and older groups buying brown, and a larger proportion of the under 25 year old age group buying wholemeal.

Quantities bought. The average number of loaves bought was 1.5 loaves per capita per week. While the average per capita figure declined as the number of occupants increased for households without children, the reverse occurred for households with children.

Reasons influencing choice of bread. "Freshness" was seen to be the most important influence when choosing bread followed by "whether the bread is wrapped", "crust", "shape", and "price" in that order. Other reasons given included "texture", "cleanliness of shop", "keeping quality" and "ingredients".

Wrapped and sliced bread. Seventy-eight percent of the households bought wrapped bread, 87 percent of which was sliced bread.

Changes. A third of the households indicated they were buying different types of bread than 1-2 years ago, with larger proportions of these being in the younger age group and the professional and managerial occupational group. While similar proportions of households had changed towards and away from different varieties of white bread, there was a noticeable "swing" towards wholemeal bread. "Health" and "goodness" were the most frequent reasons given for this change.

Brand loyalty. Seventy percent of the households always or nearly always bought the same baker's bread.

Recall of bakery and brand names. Eighty-five percent of the respondents recalled at least one bakery name, and 26 percent recalled 3 or more. There was a lower recall for brand names than for bakery names.

Rolls, buns and fruit loaves. Forty-one percent of the households had bought rolls in the last three months; 33 percent plain buns; 22 percent iced buns and 14 percent fruit loaves. However, only small proportions of households bought any of these types of bread regularly.

Homemade bread. While over 20 percent of the households had made their own bread in the last year, few made it regularly.

Consumption of Bread

When bread is consumed at home. Over 80 percent of the households regularly had bread with their breakfast, with 58 percent of the households having bread with their midday meals during the week and 65 percent having bread with their midday meals during the weekend. This compared with 18 percent of the households that had bread with their evening meals (tea or dinner) during the week and 27 percent of households having bread with their evening meals during the weekend. Larger proportions of those having bread with their evening meals were in the older and under 25 year old age groups.

Only small proportions of households consumed bread regularly outside major meal times.

Substitutes for bread. The majority of households saw cereals or porridge as a substitute for bread at breakfast, while for weekend lunch a number of substitutes were suggested. These included scones, pikelets, dry biscuits, vegetables, fruit and cheese.

Lunches away from home. The majority of the adults and children taking lunches to work or school took sandwiches, with smaller proportions taking rolls, biscuits, cake or fruit. If bread was not available for their lunches the majority of respondents indicated they would buy their lunch.

Use of bread for cooking. Forty-four percent of the households had used bread crumbs for cooking in the last year; 44 percent used bread for stuffing and 31 percent used bread in puddings.

Storage

Where bread is kept for day to day use. The place where bread was kept varied, with 39 percent of the households using unventilated containers; 33 percent using ventilated containers; 13 percent using deep freezers and 7 percent using refrigerators.

Freezing bread. Fifty six percent of those households with freezers (93 percent of all households) regularly stored bread in their freezers. The majority of

respondents had a favourable attitude towards freezing bread. Of the 24 percent of respondents who saw disadvantages, the most frequent reasons given were "loss of freshness", "drying out", and "taste changes".

Attitudes

Health value. The majority of households agreed that wholemeal bread was more nutritious than white bread and that the higher fibre content in wholemeal bread was good for one's health. However, there was a lower level of agreement with the statement that white bread was more fattening than wholemeal.

Price. The majority of households thought that bread was good value for money and that it was worth paying a few extra cents for the type of bread one likes.

Extra cost of wrapped and sliced bread. Over 70 percent of the households agreed the wrapped bread and sliced bread were worth a few extra cents.

Keeping quality. The majority of households thought that after 3 days bread was too stale to eat fresh and after 5 days it was too stale to eat as toast.

CHAPTER 1

INTRODUCTION

1.1 Purpose of the Study

In the period between 1960 and 1972 there was over a 20 percent decline in the per capita consumption of bread in New Zealand, with the annual figure since 1972 stabilizing at 56 to 57 kilos per capita. This has resulted in only a gradual increase in total consumption of bread in the 1970s (Table 1).

TABLE 1
Estimated Annual Consumption of Bread in New Zealand

Year ^a	Per Capita Consumption ^b (Kilos)	Total Consumption (10 ³ tonnes)
1955	73.0	153.6
1960	72.8	170.9
1965	69.9	181.7
1966	68.8	184.5
1967	64.0	174.6
1968	63.2	173.9
1969	61.8	171.7
1970	60.4	169.9
1971	58.9	171.5
1972	56.8	165.5
1973	55.8	165.7
1974	56.4	171.1
1975	56.6	174.6
1976	56.5	176.2
1977	57.0	178.1

- a. 1955 to 1965 years ending 31 March
1970 to 1977 years ending 31 December
- b. (i) A factor of 1.375 was used to convert flour consumption into bread consumption.
(ii) Per capita figures were derived using mean population figures for the years.

Sources

- (i) 1957-65 N.Z. Industrial Production statistics of flour purchases by establishment primarily engaged in the baking of bread.
(ii) 1970-77 N.Z. Wheat Board statistics of flour purchased by bread bakers and bread pastry cooks.

The stabilizing of per capita consumption and the subsequent slow growth of total consumption for bread has led the New Zealand Association of Bakers to consider a national promotion programme, with the objective of stimulating the demand for bread.¹ However, before deciding whether to have a promotion campaign, a detailed analysis of the market and market environment is necessary.

Although the industry has information about the production and distribution of bread to retail outlets, institutions, caterers, etc., it has little information about consumer buying, consumption patterns and consumer attitudes. While in recent years per capita consumption has remained relatively stable there have been changes in the market environment which have affected buying and consumption patterns and consumer attitudes. These include:

- the tendency for households to buy their groceries once a week at supermarkets.
- a decline in the number of bakeries with a home delivery service and an increase in the cost of this service.
- the advent of hot bread shops.
- a rapid increase in the number of households owning deep freezers.
- an increase in the popularity of "health" foods and "natural" ingredients in foods.
- medical evidence showing the importance of fibre in one's diet.
- higher standards of hygiene with most varieties of bread being available wrapped.
- an increase in the variety of breads available e.g. health and wholemeal varieties, fancy white varieties, different cuts of sliced bread, new types of rolls.

¹

A number of Western European countries with similar declines in per capita consumption of bread have held promotion campaigns.

- an increase in the variety of breakfast cereals available and the promotion of them including television advertising.
- the removal of the price subsidy on bread in March 1976.
- more frequent changes in the price of bread, with each bakery having to justify its price increases to the Department of Trade and Industry.
- an increase in the popularity of fast food and takeaway meals.
- an increase in the popularity of dining out at restaurants, hotels and clubs.

Thus, with the agreement of the New Zealand Association of Bakers, the Agricultural Economics and Marketing Department at Lincoln College carried out a consumer survey with the purpose:

to personally interview a random sample of 400 Christchurch households in order to examine;

1. household purchasing and consumption patterns for bread.
2. factors affecting these purchasing and consumption patterns.

1.2 Research Procedure

The Sample. The population was defined as households in the Christchurch urban area. The planned sample of 420 households was drawn as follows:

1. Christchurch was divided into 58 suburbs.²
2. Twenty-eight of these suburbs were selected.³
3. From each suburb an address was randomly selected to act as a starting point for 15 interviews (every second house in either direction to be interviewed).

² The suburbs were those listed in the Wises Post Office Directory. (Volume 3, 1977).

³ The authors' knowledge of the socio-economic "status" of the suburb was used to select the suburbs. Care was taken to ensure that a representative cross section was included.

Geographical details of the achieved sample of 405 households are in Appendix 2.

The Questionnaire. The final format of the questionnaire was determined after pilot testing and redrafting. It was divided into seven sections with questions designed to obtain the following information:

Section 1 - Buying: Households perception of the amount of bread it eats; who decided to buy and who collects the bread; how often bread is bought; when and where it is bought and why; quantities and types of bread bought; preference for type of wrapping; reasons influencing choice of type of bread; brand loyalty and recall of bakery and brand names; changes in bread consumption; making of homemade bread.

Section 2 - Dining out and take-away meals: Frequency of eating out at restaurants, clubs, hotels and frequency of having takeaway meals.⁴

Section 3 - Consumption: Number of occupants in house, number of preschool, primary and secondary school children; children and adults taking cut lunches and what they usually have; alternative to taking cut lunch; times when bread is consumed at home; substitutes for bread at breakfast and lunch; use of bread for cooking; other uses of bread.

Section 4 - Storage: Where bread is kept for day to day use; households with freezers; freezing of bread; disadvantages seen in freezing bread; how long before bread is stale.

Section 5 - Attitudes: Opinions towards: the health value of bread; cost of wrapped and sliced bread; the price of bread.

⁴ Section 2 was included to see if these meals were having a significant impact on home bread consumption.

Section 6 - Non-bread eaters: Reasons for not eating bread.

Section 7 - Socio-economic characteristics.

A copy of the questionnaire is included as Appendix I.

The Interviews. The interviews were carried out during the last week of April with the majority on Saturday morning or early Saturday afternoon. The team of interviewers was made up of 27 senior students and 1 staff member. The senior students obtained interviewing experience through pilot testing and a training session. Five percent of the completed questionnaires were checked with telephone and house callbacks.

The analysis. The data was coded and edited for computer analysis. Responses were tabulated and estimates were derived for quantities of bread consumed. The analysis involved examining the marginal frequencies of the variables (i.e. questions) and the relationships between variables. Chi square tests were used to examine whether there were statistically significant relationships between variables.⁵

1.3 Characteristics of the Sample

In order to examine whether the achieved sample was representative of the population from which it was drawn, socio-economic characteristics were compared between the sample and the census data. Because census data were not available for the Christchurch urban area, New Zealand figures were used.

The sample figures were similar to the national figures except for a slightly larger proportion of the under 35 year old age group and smaller proportion of the 35 to 49 year old group. (Table 2.)

⁵ The 90 percent confidence level was used to test various hypotheses about relationships between variables.

TABLE 2
Sample Characteristics

Household Characteristics	Survey Sample	New Zealand Census ^a (excl. Agric. Workers) 1971
	%	%
(i) <u>Occupation of Head of Household</u>		
Professional and Managerial	16.3	13.6
Clerical Sales and Service	23.9	22.8
Tradesmen and Labourer	35.4	37.7
Retired and Other	24.2	25.9
	<u>100.0^b</u>	<u>100.0</u>
Valid Responses ^c 392		
(ii) <u>Age of Head of Household^d</u>		
Less than 25 years	10.4	6.7
25-34 years	26.9	20.6
35-49 years	22.6	29.3
50-64 years	24.6	25.6
Older than 64 years	15.5	17.7
	<u>100.0</u>	<u>100.0</u>
Valid Responses 394		
(iii) <u>Household Composition</u>		
Occupants 1-2	36.6	40.5
3-4	43.8	34.5
More than 4	19.7	25.2
	<u>100.0</u>	<u>100.0</u>
Valid Responses 402		

^a The 1976 figures have yet to become available.

^b Because of rounding errors figures may not add exactly to 100.0 percent.

^c For some questions there were a few cases where invalid responses occurred. This was because the respondent did not provide an answer to the question or the response was not recorded correctly.

^d The age of the person who buys the groceries (usually the wife) was taken as equivalent as the age of the head of the household.

CHAPTER 2

HOUSEHOLD PURCHASING PATTERNS

2.1 Buying Bread

Person who decides type of bread to buy and person who buys. For the majority of households the wife decided the type of bread to buy and also bought the bread (Table 3). Only 4 percent of the households had bread delivered.

TABLE 3

Person Who Decides What Type of Bread
to Buy and Person Who Buys

	Person Who Decides	Person Who Buys
	%	%
Wife	73.0	68.6
Husband	10.1	11.9
Wife & Husband	7.4	5.7
Parents or Children	2.2	3.2
Single Male or Female	6.7	7.2
Other/Delivered	0.5	3.5
	<hr/>	<hr/>
	100.0	100.0
Valid Responses	404	404

Days of the Week. Similar proportions of households bought bread on the different weekdays, with smaller proportions buying during the weekends. (Table 4.)

TABLE 4
Days Of The Week for Buying

Day (s)	%
Monday to Wednesday	68.5
Thursday	53.4
Friday	62.0
Saturday	12.2
Sunday	22.4
Valid Responses	403

Frequency of Buying. The majority of households bought their bread once, twice or three times a week (Table 5.)

TABLE 5
Frequency of Buying

Times per week	%
Less than once	2.5
1	32.1
2	23.6
3	21.4
4	2.5
5	6.5
6	6.0
7	5.5
	100.0
Valid Responses	402

There was a tendency for larger households to shop more frequently. (Table 6.)

TABLE 6
Frequency of Buying by Household Composition

Times per Week	1-2 Occupants	3-4 Occupants	Over 4 Occupants
	%	%	%
Once or less	39.7	32.0	29.5
2	32.9	22.9	9.0
3	19.2	24.6	17.9
4 or more	8.2	20.6	43.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	146	175	78

Time of day. Fifty two percent of the households usually bought their bread in the morning; 29 percent in the afternoon and 13 percent in the evening. The remaining 6 percent did not buy their bread at any regular time.

Time between buying and eating. Forty five percent of the households started eating the bread they bought within 4 hours of buying it with 70 percent starting to eat it within 12 hours. (Table 7.)

TABLE 7
Time Between Buying and First Eating

Time	%
0 - 4 hrs	44.9
4 - 8 hrs	11.6
8 -12 hrs	13.4
12-24 hrs	23.7
1 - 2 days	4.8
longer	1.5
	<u>100.0</u>
Valid Responses	396

Larger proportions of those who bought their bread either in the morning or at no regular time started eating it within 4 hours compared with those buying in the afternoon or evening.
(Table 8.)

TABLE 8
Time Between Buying and First Eating
by Time of Day for Buying Bread

Time When Bread Bought	Morning	Afternoon	Evening	Anytime
Time before first eating	%	%	%	%
0 - 4 hrs	50.7	37.1	34.7	56.0
longer	49.3	62.9	65.3	44.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	203	116	49	25

2.2 Outlet Used

Forty one percent of the households bought their bread at a dairy; 27 percent at a grocer; 43 percent at a supermarket and 9 percent at a hot bread shop or bakery.⁶

Person who buys the bread. There was a tendency for the wife to purchase from the grocer and supermarket and for the husband to purchase from the dairy. (Table 9.)

TABLE 9
Person Who Buys by Outlet^a

Person	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
Wife	68.2	75.8	85.4	70.0
Husband	19.2	12.9	7.3	20.0
Adults/ Children	12.6	11.3	7.3	10.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	151	62	164	30

^a Includes only households with husband and wife

⁶ The percentages do not add to 100 percent because some households used more than one outlet.

Occupation and age characteristics. Large proportions of households in the non-professional and managerial occupation groups tended to use the dairy and grocer, with a larger proportion of the professional and managerial groups using the supermarket. The age characteristics were not as clear except for the tendency for older people to use the grocer.

Larger proportions of those in the younger age groups and clerical sales and service, and tradesmen and labourer groups tended to use the hot bread shop. (Table 10.)

TABLE 10
Outlet Used by Occupation and Age
Of Head of the Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesmen & Labourer	Other & Retired	
	%	%	%	%	
Dairy	31.3	39.4	47.1	40.0	
Grocer	12.5	20.2	14.5	22.1	
Supermarket	54.7	39.4	39.9	42.1	
Hot Bread Shop/Baker	4.7	10.6	11.6	6.3	
Valid Responses	64	94	138	95	
(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Dairy	45.0	47.2	38.2	35.1	39.3
Grocer	12.5	16.0	11.2	20.6	26.2
Supermarket	47.5	42.5	47.2	41.2	37.7
Hot Bread Shop/Baker	15.0	10.4	11.2	7.2	1.6
Valid Responses	40	106	89	97	61

Note: The percentages do not add to 100 percent because some households used more than one outlet.

Days of the week. Dairies had the largest share of customers on all of the days of the week except Thursday, when the supermarket had the largest share. Hot bread shops and bakeries increased their share of customers during the weekend. (Table 11.)

TABLE 11

Outlet Used by Day of the Week

Outlet	Mon.-Wed.	Thurs.	Fri.	Sat.	Sun.
	%	%	%	%	%
Dairy	43.6	29.7	40.7	44.4	60.0
Grocer	14.3	15.6	17.5	0.0	0.0
Supermarket	30.8	46.2	30.1	24.4 ^a	0.0
Hot Bread Shop/ Bakery	4.8	4.2	5.3	24.4	21.3
More than one outlet	1.4	1.8	1.2	6.7	18.8
Delivered	5.1	2.4	5.3	0.0	0.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	273	212	246	45	80

Note:

The percentage for Saturday can be attributed to supermarkets being open in New Brighton on Saturday.

Frequency of buying. There was a tendency for households buying bread at a supermarket or hot bread shop to buy once or twice a week, while those buying at a dairy or grocer tended to buy more than once a week. (Table 12.)

TABLE 12
Frequency of Buying by Outlet

Times per Week	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
Once or less	35.8	40.0	60.3	61.1
2	33.3	34.3	24.7	16.7
3	15.8	21.4	11.5	13.9
4 or more	15.2	4.3	3.4	8.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	165	70	174	36

Time between buying and eating. Larger proportions of those buying at a dairy, grocer, hot bread shop or bakery ate their bread within 4 hours of buying compared with those buying at the supermarket. (Table 13.)

TABLE 13
Time Between Buying and Eating by Outlet

Time for First Eating	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
0 - 4 hrs	48.4	51.4	41.0	48.5
longer	51.6	48.6	59.0	51.5
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	161	70	173	33

Number of loaves bought at a time. Households buying bread at a dairy, grocer, hot bread shop or bakery tended to buy one or two loaves at a time while those buying at the supermarket tended to buy in larger quantities. (Table 14.)

TABLE 14

Number of Loaves Bought at a Time by Outlet

Average Loaves per purchase	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
1	49.4	41.4	24.4	38.9
2	34.1	31.4	28.5	38.9
3	6.7	12.9	17.4	11.1
4 - 6	9.1	12.9	20.3	8.3
7 or more	0.6	1.4	9.3	2.8
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	164	70	172	36

Reasons influencing choice of outlet. The majority of those who bought bread at the dairy or grocer gave "closeness to home" as the reason for shopping there. In contrast "being able to do other shopping there" was the most frequent reason given by those who bought bread at the supermarket. For those buying at a hot bread shop or bakery a variety of reasons were given including "freshness", "hotness", "type we like", "enjoyment and social outing". (Table 15.)

TABLE 15

Reasons for Using Outlet

Reason	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
"closeness to home"	77.1	74.2	20.3	20.8
"able to do other shopping"	4.4	11.7	55.6	0.0
"freshness/hotness"	4.4	5.0	8.6	32.1
"type we like"	4.1	2.5	5.3	18.9
"wide selection"	0.9	0.0	6.4	0.0
"enjoyment/social"	0.0	4.2	1.5	9.4
other	9.1	2.5	2.3	18.9
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses ^a	341	120	266	53

^a The responses have been aggregated from the reasons given for the different days of the week.

2.3 Types of Loaves Bought

White, brown and wholemeal loaves. Eighty nine percent of the households bought white loaves; 25 percent brown and 33 percent wholemeal. Half of the households bought white bread exclusively with only small proportions of households buying brown or wholemeal exclusively. (Table 16.)

TABLE 16
Types of Loaves Bought

Type	%
White only	51.7
Brown only	2.2
Wholemeal only	8.0
White and brown	13.4
White and wholemeal	15.2
Brown and wholemeal	3.2
All types	6.2
	<hr/> 100.0
Valid Responses	402

Note: The interviewers were instructed to carefully differentiate between brown and wholemeal. Brown was distinguished by colour and no obvious fibre.

Of those households buying white, there were larger proportions in the tradesmen and labourer group and the younger age groups. In contrast there were larger proportions of the professional and managerial and under 25 year old groups buying wholemeal, and the middle and older age groups buying brown. (Table 17.)

TABLE 17

Types of Loaves Bought by Occupation
and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesmen & Labourer	Other & Retired
	%	%	%	%
White	89.1	89.4	94.2	81.1
Brown	21.9	26.6	23.9	24.2
Wholemeal	43.8	42.6	26.1	30.5
Valid Responses	64	94	138	95

(ii) Age of Head of Household	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
White	90.0	93.4	92.1	84.5	83.6
Brown	15.0	21.7	28.1	28.9	19.7
Wholemeal	40.0	27.4	32.6	34.0	32.8
Valid Responses	40	106	89	97	61

Wrapped and sliced bread. Seventy eight percent of the households bought wrapped bread; 66 percent of which bought it exclusively. Of those buying wrapped bread 87 percent bought sliced bread, 77 percent of which bought it exclusively.

Larger proportions of those buying wrapped bread were in the clerical sales and service group and the middle age groups. (Table 18.)

TABLE 18

Wrapped and Sliced Bread Bought by Occupation
and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Services	Tradesmen & Labourer	Other & Retired
	%	%	%	%
Sliced	61.9	76.6	76.8	58.9
Wrapped not sliced	11.1	7.4	4.3	9.5
Not wrapped	27.0	16.0	18.8	31.6
	100.0	100.0	100.0	100.0
Valid Responses	63	94	138	95

(ii) Age	Under 25 yrs	25-34 yrs	35-49 yrs	50-64 yrs	Over 64 yrs
	%	%	%	%	%
Sliced	65.0	78.1	82.0	64.9	54.1
Wrapped not sliced	10.0	4.8	5.6	9.3	8.2
Not wrapped	25.0	17.1	12.4	25.8	37.7
	100.0	100.0	100.0	100.0	100.0
Valid Responses	40	105	89	97	61

Sliced bread and cut lunches. A larger proportion (75 percent) of those households where children or adults took cut lunches bought sliced bread, compared with households that did not (56 percent).

Preference for type of wrapping. Forty four percent of the respondents indicated a clear preference for a greaseproof wrapping; 21 percent preferred a plastic bag and 9 percent preferred cellophane. A further 10 percent indicated a preference for either greaseproof or a plastic bag and 15 percent were undecided.

Thickness of slice. Similar proportions of households bought the different types of slices. (Table 19.)

TABLE 19

Type of Slice Bought

Slices	%
Thick	15.5
Thick & Thin	23.0
Thin	18.4
All Purpose	17.3
More than one type	25.8
	<hr/> 100.0
Valid Responses	283

Note: The percentages are of those households buying sliced bread.

Shapes bought. Thirty seven percent of the households bought sandwich shape loaves; 34 percent the flat top shape; 42 percent the raised top shape and 12 percent the slipper vienna.

Non standard size loaves.⁷ Eight percent of the households bought non standard size loaves. The proportions of households buying these types of loaves did not vary with any of the household characteristics (i.e. occupation, age, number of occupants).

2.4 Number of Loaves Bought Per Week

Number of loaves per household. The average number of loaves bought per week per household was 4.8, with the number varying from 1 to 24 loaves and the majority of households buying less than 8 loaves. For white bread the average was 3.7 loaves, while for brown it was 0.4 loaves and wholemeal 0.7 loaves. (Table 20.)

TABLE 20
Number of Loaves^a Bought Per week

Loaves	White	Brown	Wholemeal	All Types
	%	%	%	%
0	10.5	75.4	66.7	-
1-2	30.3	21.3	25.3	21.8
3-4	29.3	2.8	6.0	33.3
5-6	15.0	0.3	1.3	23.6
7-8	9.8	0.3	0.3	13.0
9-10	2.3	0.0	0.3	3.3
11-12	1.0	0.0	0.3	2.5
More than 12	1.8	0.0	0.0	2.5
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Mean	3.7	0.4	0.7	4.8
Std Deviation	3.0	0.9	1.4	3.0

Valid Responses 399

a This includes non standard size loaves (3.5 percent of the loaves bought were non standard size).

7 Standard size loaves are the normal size loaves made by large scale bakeries. Weights ranged from 500gm for some sliced white loaves to 750gm for brown and wholemeal loaves and "sandwich" white loaves.

Number of loaves per capita. The average number of loaves bought per capita was 1.54 loaves⁸, with majority of households buying less than 2½ loaves per capita. For white bread the average was 1.16 loaves, while for brown it was 0.14 loaves and for wholemeal 0.25 loaves. (Table 21.)

TABLE 21

Number of Loaves Bought Per Week Per Capita

Loaves	White	Brown	Wholemeal	All Types
	%	%	%	%
0.0	10.5	75.4	66.7	-
0.0 - 0.4	5.3	9.8	11.0	1.0
0.5 - 0.9	19.8	9.8	10.8	13.5
1.0 - 1.4	35.1	3.8	7.0	36.3
1.5 - 1.9	13.3	1.0	2.3	23.1
2.0 - 2.4	11.0	0.3	2.0	16.3
2.5 - 2.9	1.8	0.0	0.0	2.5
3.0 or more	3.3	0.0	0.3	7.3
	100.0	100.0	100.0	100.0
Mean	1.16	0.14	0.25	1.54
Std Deviation	0.93	0.30	0.46	0.90
Valid Responses 399				

8

Assuming the average weight of a loaf is 0.68kg, this gives an estimate of 1.05 ± 0.06 kilos per capita per week at the 95% confidence interval. This compares with the national estimate of 57.0 kilos per capita per year or 1.10 kilos per week. (See Table 1.)

Socio-economic characteristics. There were distinct variations in the average per capita number of loaves bought for households of different compositions. With the highest per capita figure being for households without children and with 1 or 2 occupants. While the per capita figure declined as the number of occupants increased for households without children, the reverse occurred for households with children. (Table 22.)

TABLE 22

Number of Loaves Bought Per week
Per Capita by Household Composition

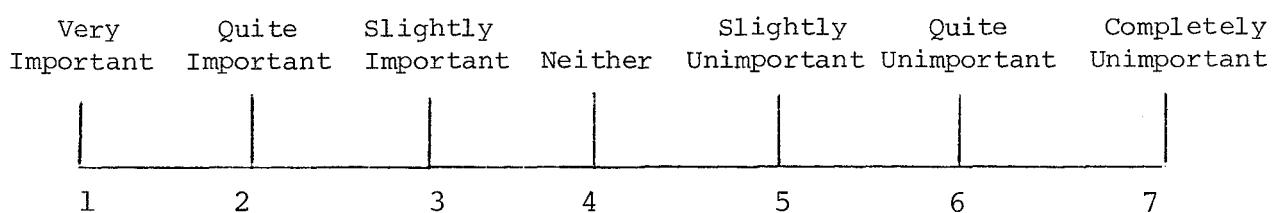
Number of Children	1-2 Occupants	3-4 Occupants	Over 4 Occupants	All Households
None	1.89 (142) ^a	1.48 (85)	0.98 (10)	1.71 (237)
1	-	1.09 (33)	1.47 (19)	1.24 (54)
2	-	1.24 (57)	1.46 (12)	1.28 (69)
3 or more	-	-	1.46 (38)	1.46 (39)
All households	1.90 (144)	1.32 (176)	1.40 (79)	1.54 (399)

^a The numbers are the average weekly per capita consumption with numbers in brackets being the number of valid responses. Averages were excluded when there were only one or two responses.

There was little variation in the average per capita purchases between households in the different occupational and age groups for households of different compositions or for those with children or adults taking cut lunches to school or work. (See Appendix 3.)

2.5 Reasons Influencing Choice of Bread

Reasons influencing choice. Respondents were read a list of reasons that might influence their choice of type of bread. At the same time they were handed a 7 point scale and asked to indicate the order of importance of the reasons. The scale was:



A comparison of the frequency of responses indicated that "freshness" was clearly seen to be the most important reason, with the majority of respondents considering it to be "very important". "Whether the bread is wrapped" was seen to be the next most important reason and this was followed by "crust", "shape" and "price" in that order. (See Table 23.)

While "price" was ranked behind "crust" and "shape" in terms of the proportion considering it "important" (i.e. 1 + 2 + 3), 18 percent of the respondents considered it to be "very important" compared with 10 percent for "crust" and "shape". (Table 23.)

TABLE 23

Reasons Influencing Choice of Type of Bread

(i) Absolute Percentage	"Freshness"	"Whether it is Wrapped"	"Crust"	"Shape"	"Price"
	%	%	%	%	%
Very Important	80.7	28.9	10.4	9.7	17.8
Quite Important	13.6	28.4	28.0	25.5	15.6
Slightly Important	2.5	9.7	23.8	18.8	15.1
Neither Important nor Unimportant	1.5	9.2	9.2	8.9	15.6
Slightly Unimportant	0.2	6.0	7.2	8.7	10.1
Quite Unimportant	1.0	10.0	12.2	14.4	12.6
Completely Unimportant	0.5	8.0	9.2	14.1	13.1
	100.0	100.0	100.0	100.0	100.0
(ii) Cumulative Percentages					
Very Important	80.7	28.9	10.4	9.7	17.8
Quite Important	94.3	57.2	38.5	35.1	33.4
Slightly Important	96.8	66.9	62.3	54.0	48.5
Neither Important nor Unimportant	98.3	76.1	71.5	62.9	64.1
Slightly Unimportant	98.5	82.1	78.7	71.5	74.3
Quite Unimportant	99.5	92.0	90.8	85.9	86.9
Completely Unimportant	100.0	100.0	100.0	100.0	100.0
Valid Responses	404				

Socio-economic characteristics. While the majority of the respondents regarded "freshness" as "important" (i.e. 1 + 2 + 3) a small proportion of the older age group did not. For "whether it is wrapped" there were larger proportions of the clerical sales and service and tradesman and labourer occupational groups and younger and middle age groups regarding it as "important".

A greater proportion of the older age groups regarded "crust" as "important" while for "shape" there was a greater proportion of the 25-49 year old age group. Larger proportions of the tradesman and labourer and younger age groups regarded "price" as "important".

TABLE 24

Reasons Influencing Choice of Type of Bread
By Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired	
	%	%	%	%	
"Freshness"	98.4	100.0	97.1	91.6	
"Whether it is wrapped"	57.1	73.4	72.3	57.9	
"Crust"	63.5	58.5	62.3	63.2	
"Shape"	45.3	63.8	53.6	51.6	
"Price"	42.2	42.6	59.4	43.2	
Valid Responses	64	94	138	95	
(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
"Freshness"	100.0	99.1	100.0	96.9	85.2
"Whether it is wrapped"	70.0	68.9	75.9	66.0	50.8
"Crust"	62.5	61.3	52.3	69.1	65.6
"Shape"	40.0	55.7	58.4	59.8	44.3
"Price"	57.5	56.6	46.1	46.4	37.7
Valid Responses	40	106	89	97	61

Note: The percentages are the number of respondents in each group ranking the reason as "important" i.e. (1 + 2 + 3)

Other reasons influencing choice. Respondents were then asked if there was anything else they thought was important. Thirty six percent of respondents gave additional reasons. (Table 25.)

TABLE 25

Other Reasons Influencing Choice of Type of Bread

Reason	%
"Texture"	26.0
"Cleanliness of shop"	13.7
"Quality/keeping quality"	12.3
"Ingredients"	10.3
"Colour - not burnt"	8.9
"Wrapper not sealed"	6.8
"Information on wrapper"	5.5
Other	16.4
	<u>100.0</u>
Valid Responses	146

2.6 Changes in Types of Loaves Bought

Households having changed. Thirty four percent of the households indicated that they were buying different types of bread compared with one to two years ago.

Types of change. For white and brown bread similar proportions had changed towards as away from them. However there was a definite "swing" (13 percent of all households) towards wholemeal bread. (Table 26.)

TABLE 26

Changes in Types of Bread Bought

Type of Change	White	Brown	Wholemeal
	%	%	%
Towards	12.6	5.9	14.8
Away from	15.6	6.4	2.0
"Swing"	-3.0	-0.5	+12.8
Valid Responses	404		

Note: The percentages are for all households

Reasons for changes. The most frequent reasons for changing away from white and towards wholemeal were "health" and "goodness". In contrast a variety of reasons were given for changing towards white including "variety enjoyment", "improved types", "change in family tastes". (See Appendix 4 for details.)

Occupation and age characteristics. Greater proportions of those who had changed were in the professional and managerial and clerical and sales occupational groups, and the younger age groups. (Table 27.)

TABLE 27

Changes in Types of Bread Bought
by Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired
	%	%	%	%
Changed	46.9	41.1	31.3	28.3
Unchanged	53.1	58.9	68.7	71.7
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	64	90	134	92

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Changed	39.5	47.0	34.5	29.9	25.0
Unchanged	60.5	53.0	65.5	70.1	75.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	38	100	87	97	60

Of those who had changed, larger proportions of the non tradesmen and labourer occupational groups and the over 64 year old age group had changed to wholemeal. (see Appendix 5.)

Outlets used. Greater proportions of those who bought bread at a supermarket, hot bread shop or bakery had changed compared with households that bought at a dairy or grocer. (Table 28.)

TABLE 28
Changes in Types of Bread by Outlet

	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
	%	%	%	%
Households that changed	31.2	29.0	42.9	37.1
Did not change	68.8	71.0	57.1	62.9
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid responses	157	69	168	35

2.7 Brand Loyalty and Brand Knowledge

Brand loyalty. Forty nine percent of households indicated that they always bought the same baker's bread and an additional 21 percent indicated they nearly always did. Brand loyalty did not vary with any of the household characteristics (i.e. occupation, age, number of occupants in the household) or with the household's per capita purchases of bread.

Baker and brand knowledge.⁹ Eighty five percent of the respondents recalled at least one bakery name correctly without prompting, with 26 percent recalling 3 or more. (See Table 29.)

⁹ See Appendix 5 for recall of individual bakers and brands.

After being asked to name bakers, respondents were then asked to recall bakers' brand names. Sixty six percent recalled at least one brand correctly with 13 percent recalling three or more. (Table 29.)

TABLE 29
Recall of Bakery and Brand Names

Recall ^a	Baker's Names	Brand Names
	%	%
0	15.1	33.4
1	30.2	31.9
2	28.2	21.8
3	19.6	9.9
4	5.7	3.0
5	1.2	0.0
	<u>100.0</u>	<u>100.0</u>
Valid Responses 404		

^a Unprompted recall

2.8 Rolls, Buns and Fruit Loaves

Households buying rolls, buns and fruit loaves.

Seventy two percent of the households had bought other types of bread in the last three months; 41 percent rolls¹⁰ 33 percent plain buns; 22 percent iced buns and 14 percent fruit loaves. However, only a small proportion of these households bought any of these types of bread regularly. (Table 30.)

¹⁰ This includes French Sticks.

TABLE 30

Households Buying Rolls, Buns and Fruit Loaves

Frequency of Buying	Rolls	Plain Buns	Iced Buns	Fruit Loaves
	%	%	%	%
Regularly (2 wks)	17.1	11.4	7.9	5.2
Less Regularly (3 mths)	33.7	22.5	13.9	8.9
Rarely or Did Not Buy	49.3	67.1	78.2	85.9
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Valid Responses 404

Household characteristics. Larger proportions of those households with someone taking a cut lunch to school or work bought rolls, buns and fruit loaves. (Table 31.)

TABLE 31

Buying of Rolls, Buns and Fruit Loaves
by Households Having Cut Lunches

Frequency of Buying	(i) <u>Rolls</u>		(ii) <u>Plain Buns</u>	
	Cut Lunch	No Cut Lunch	Cut Lunch	No Cut Lunch
	%	%	%	%
Regularly (2 wks)	23.5	7.0	12.1	10.2
Less Regularly (3 mths)	39.3	24.8	24.3	17.2
Rarely or Did Not Buy	37.2	68.2	63.6	72.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Frequency of Buying	(iii) <u>Iced Buns</u>		(iv) <u>Fruit Loaves</u>	
	Cut Lunch	No Cut Lunch	Cut Lunch	No Cut Lunch
	%	%	%	%
Regularly (2 wks)	9.7	5.1	6.9	2.5
Less Regularly (3mths)	18.6	6.4	8.5	9.6
Rarely or Did Not Buy	71.7	88.5	84.6	87.9
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses:	for households having cut lunches = 247		for households not having cut lunches = 157	

There was a tendency for larger proportions of the 25-49 year old age group to buy rolls, buns and fruit loaves. However the occupational characteristics were not as clear. (See Appendix 6.)

2.9 Homemade Bread

Households making bread. Twenty one percent of the households had made their own bread. However the majority of these made it infrequently, with over half (58 percent) making it less than once a month. (Table 32.)

TABLE 32

Frequency of Making Bread

Frequency	%
Weekly	7.1
Fortnightly	9.5
Monthly	15.5
2-3 Months	28.6
Longer	39.3
	<u>100.0</u>
Valid Responses	84

Note: The percentages are for households that made their own bread.

Occupational and age characteristics. Greater proportions of the professional and managerial and younger age groups had made their own bread. (Table 33.)

TABLE 33

Homemade Bread by Occupation and Age of Head of Household

(i) Occupation	Professional and Managerial	Clerical Sales & Service	Tradesman and Labourer	Other and Retired
	%	%	%	%
Make Own	29.7	21.3	23.2	12.6
Don't Make Own	70.3	78.7	76.8	87.2
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	64	94	138	94

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Make Own	27.5	26.4	28.1	13.4	10.0
Don't Make Own	72.5	73.6	71.9	86.6	90.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	40	106	89	97	60

Reasons for baking own bread. A variety of reasons were given for baking one's bread with the majority relating to leisure activities. (Table 34.)

TABLE 34

Reasons for Making Own Bread

Reason	%
"enjoyment"	30.9
"for a change"	25.5
"an experiment - interest"	14.5
"tastier - nicer - better"	16.4
"shortage - strike"	7.3
other	5.5
	<u>100.0</u>
Valid Responses	55

CHAPTER 3

HOUSEHOLD CONSUMPTION PATTERNS

3.1 Households Consuming Bread

There was only one household in the sample of 405 that did not consume bread. The household consisted of two adults in the under 25 year old age group and the reason given for not eating bread was that they preferred cereals¹¹.

3.2 When Bread is Consumed at Home

Breakfast. Over 80 percent of the households had bread or toast with their breakfast (see Table 35), with larger proportions being in the professional and managerial and clerical, sales and service occupational groups (see Appendix 7).

Midday meals. Fifty eight percent of the households usually had bread with their midday meals on weekdays, and 65 percent usually had bread with their midday meals during the weekend. (See Table 35.)

For midday meals during the week there were greater proportions of the tradesman and labourer and professional and managerial occupational groups and middle age groups having bread. While for midday meals during the weekend there were greater proportions of the professional and managerial and clerical, sales and service occupational groups and the middle and younger age groups having bread. (See Appendix 7.)

Evening meals. Eighteen percent of the households usually had bread with their evening meals during the week compared with 27 percent for the weekends¹². (See Table 35.)

¹¹ For the remainder of the report households that consumed bread will be referred to as households.
¹² This includes both evening tea and evening dinner.

TABLE 35

Times When Bread is Consumed

(i) <u>Weekdays</u>	Breakfast	Midday Meal	Evening Meal	Morning Tea	Afternoon Tea	Supper	After School Snacks	Snacks Other Times
	%	%	%	%	%	%	%	%
Usually (most days)	83.7	57.7	18.1	2.5	3.5	6.4	6.7	3.5
Occasionally	4.0	11.1	8.9	2.5	5.0	15.8	3.5	9.9
Rarely or Never	12.4	31.2	73.0	95.0	91.6	77.7	89.9	86.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
(ii) <u>Weekends</u>	Breakfast	Midday Meal	Evening Meal	Morning Tea	Afternoon Tea	Supper	Snacks	
	%	%	%	%	%	%	%	
Usually (most days)	81.9	64.6	27.0	1.7	3.5	5.2	5.2	
Occasionally	3.0	9.4	11.4	3.2	3.5	12.9	9.7	
Rarely or Never	15.1	26.0	61.6	95.0	93.1	81.9	85.1	
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	
Valid Responses:	404							

Bread consumed at non-meal times. Only small numbers of households regularly consumed bread at non meal times. However larger numbers occasionally consumed bread at these times, especially for evening supper or casual snacks. (See Table 35.)

Of those consuming bread for evening supper, there were larger proportions of the middle and younger age groups and clerical sales and service and tradesman and labourer occupational groups. As could be expected there was a larger proportion of the households in the middle age group with children occasionally having bread as an after school snack. (See Appendix 8.)

3.3 Substitutes for Bread

Substitutes for bread at breakfast. When the respondents were asked "If bread was not available at breakfast what would you have instead?"¹³, 70 percent said cereals or porridge, with other replies being cooked food (11 percent); biscuits (5 percent); fruit (5 percent); and crumpets or scones (3 percent).

Substitutes for bread at a weekend lunch. When the respondents were asked "If bread was not available for a weekend lunch what would you have instead?" the replies included scones or pikelets (20 percent); dry biscuits (16 percent); vegetables (16 percent); fruit (13 percent); and cheese (8 percent). A variety of other foods were also mentioned including other types of biscuits; cake; soup and other types of cooked food.

3.4 Lunches Away from Home

Children's school lunches. Thirty three percent of the households (or 87 percent of households with school children) had children who regularly took a lunch to school. The majority of these (95 percent) usually took sandwiches, with 24 percent taking rolls or buns,

¹³ Only the first response was recorded.

46 percent biscuits or cake and 71 percent fruit.

When asked what the children would do instead of having a cut lunch, 40 percent of the respondents said the children would buy their lunch; 33 percent said they would go home for lunch and 25 percent said the children always had a cut lunch.

Adults taking cut lunches. Forty seven percent of the households had adults regularly taking a lunch to work. The majority of these took sandwiches (96 percent); 17 percent rolls or buns; 30 percent biscuits or cake and 49 percent fruit.

When asked what would be had if no bread was available for cut lunches, 58 percent of the respondents said lunch would be bought, with smaller proportions indicating that biscuits (14 percent) or fruit (12 percent) would be had as a substitute.

Adults buying lunches. Twenty four percent of the households had an adult that regularly bought lunch. A large proportion (48 percent) of those buying lunch bought sandwiches, rolls or buns; 19 percent bought pies; 17 percent bought their lunch at a works canteen and smaller proportions bought other takeaway foods or fruit.

3.5 Use of Bread for Cooking

Households using bread for cooking. Sixty nine percent of the households had used bread for cooking in the last year, with 44 percent using bread crumbs, 44 percent using bread for stuffing and 31 percent using bread in puddings.

There was a tendency for households with three or more occupants and those in the 35-64 year old age groups to use bread for cooking. (Table 36.)

TABLE 36

Use Bread for Cooking by Household Composition and
Age of Head of the Household

	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Households with					
1-2 Occupants	56.3	38.5	60.0	68.9	61.4
3-4 Occupants	63.6	63.9	80.0	82.9	50.0
Over 4 Occupants	- ^a	79.3	76.9	75.0	-
All Households	62.5	67.0	76.4	75.5	63.9
Valid Responses	40	103	89	94	61

^a Percentages have not been included where there were only one or two respondents.

There were similar age profiles for the use of bread crumbs, bread for stuffing and bread for puddings. The profiles for the different occupational groups were not as clear. (See Appendix 7.)

3.6 Other Use of Bread

Twenty two percent of the households said they used bread for picnics and 21 percent said they used bread to feed pets or birds.

3.7 Takeaway Meals and Meals at Restaurants, Hotels and Clubs

Takeaway meals. Sixty two percent of the households had takeaway meals; 33 percent of which had them weekly; 17 percent fortnightly; 21 percent monthly; 19 percent every 2-3 months and 10 percent less frequently.

Meals at restaurants, hotels and clubs. Sixty five percent of the households had meals out at restaurants, hotels or clubs; 6 percent of which had meals there weekly; 9 percent fortnightly; 21 percent monthly; 30 percent every 2-3 months and 35 percent less frequently.

Occupation and age characteristics. Greater proportions of the professional and managerial occupational groups and the younger age groups had takeaway meals and meals at restaurants, hotels and clubs. (Table 37.)

TABLE 37

Takeaway Meals and Dining Out
by Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired
Having :	%	%	%	%
Takeaway Meals	82.8	72.3	67.4	30.5
Meals at Restaurants etc	87.5	76.6	65.2	43.2
Valid Responses	64	94	138	75

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
Having :	%	%	%	%	%
Takeaway Meals	80.0	79.2	78.7	46.4	18.0
Meals at Restaurants etc	75.0	67.9	74.2	71.1	36.1
Valid Responses	40	106	89	97	61

Other characteristics. Households having takeaways were also characterised by those with children (81 percent) and those with more than two occupants (76 percent). This was not the case for households having meals at restaurants, hotels and clubs.

CHAPTER 4

STORAGE OF BREAD

4.1 Where Bread is Kept for Day to Day Use

Thirty nine percent of the households kept their bread in an unventilated container;¹⁴ 33 percent in a ventilated container; 13 percent in the freezer; 7 percent in the refrigerator and 8 percent in other places.

There was little variation in the proportions of the households in the different age groups and the places they kept their bread, apart from a larger proportion of older households keeping their bread in the refrigerator. (Table 38.)

TABLE 38

Where Bread is Kept for Day to Day Use
by Age of Head of Household

Place for Keeping Bread	Under 25 Yrs	25-34 Yrs	35-49 Yrs	60-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Unventilated container	47.4	37.7	43.8	43.2	28.3
Ventilated container	31.6	30.2	29.2	38.9	31.7
Freezer	5.3	14.2	14.6	9.5	16.7
Refrigerator	2.6	4.7	5.6	5.3	20.0
Other	13.2	13.2	6.7	3.2	3.3
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	38	106	89	95	60

¹⁴ Unventilated containers include plastic containers, plastic bags and tins while ventilated containers include bread bins with vents and bread drawers.

4.2 Freezing Bread

Households with deepfreeze. Forty seven percent of the households had chest deepfreezers and an additional 46 percent had refrigerator freezers. Thus 93 percent of the households had the capacity to freeze bread.

Greater proportions of households with more than two occupants had chest deepfreezers. (Table 39.)

TABLE 39

Households with Deep Freezers by Composition of Household

Type of Freezer	1-2 Occupants	3-4 Occupants	Over 4 Occupants
	%	%	%
Chest Freezer	35.4	51.4	56.4
Refrigerator/Freezer	53.5	43.9	37.2
No Freezer	11.1	4.6	6.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	144	173	78

There were also larger proportions of households in the 25-49 year old age group with chest deep freezers. However there was little difference between the occupational groups except that a smaller proportion of the other and retired group did not have chest freezers. (See Appendix 10.)

Households freezing bread. Fifty six percent of the households with a chest freezer or refrigerator/freezer regularly stored bread in their freezers; 22 percent during weekends; 9 percent occasionally and 13 percent never.

Greater proportions of the middle and younger age groups regularly stored bread in their freezers.

(Table 40.)

TABLE 40

Freezing Bread by Age of Head of Household

Frequency of Storing	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Regularly	61.8	61.5	61.9	44.9	53.8
Weekends	0.0	24.1	23.8	31.5	17.3
Occasionally	14.7	5.2	4.8	12.4	13.5
Never	23.5	9.4	9.5	11.2	15.4
	100.0	100.0	100.0	100.0	100.0
Valid Responses	34	96	84	89	52

Note: The percentages are of those households with a freezer (i.e. chest or refrigerator/freezer.)

Number of loaves stored at a time. The number of loaves stored in households' freezers varied, with the majority (91 percent) storing no more than six. (Table 41.)

TABLE 41.

Number of Loaves Frozen

Maximum Number of Loaves	%
1	20.0
2	28.7
3	17.0
4	13.0
5	7.0
6	5.0
7-8	5.4
9 or more	4.0
	100.0
Valid Responses	300

Note: The percentage is of those households freezing bread.

Attitudes towards freezing bread. Twenty-four percent of respondents saw disadvantages in freezing bread. A range of reasons were given. (Table 42.)

TABLE 42

Disadvantages in Freezing Bread

Reasons	%
"Not as fresh"	26.4
"Dries out - doesn't keep"	26.4
"Taste changes"	17.2
"Time taken to thaw out"	18.4
"Texture crumbles"	8.0
"Take up room in freezer"	3.4
	100.0
Valid Responses	87

Note: The percentages of those who saw a disadvantage in freezing bread.

CHAPTER 5

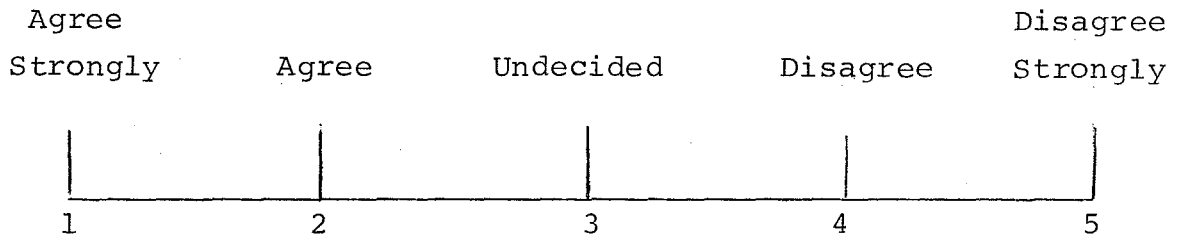
ATTITUDES TOWARDS BREAD

5.1 Health Value

Responses to attitude statements. Respondents were shown a card with the seven attitude statements. The first three were:

1. Wholemeal bread is more nutritious than white bread.
2. Wholemeal bread is good for your health because it has a high fibre content.
3. White bread is more fattening than wholemeal bread.

They were then shown a five point scale as follows:



and asked to indicate the point on the scale which best described their feelings about each statement.

A comparison of the frequency of responses indicated a slightly higher level of "agreement" with statement 1 than for statement 2, while for statement 3 there was a lower level of "agreement". Noticeable proportions of respondents were undecided about each of the statements, especially for statement 3. (Table 43.)

TABLE 43

Attitudes Towards Health Value

Ranking	"Wholemeal more nutritious than white"	"Wholemeal good for health because of fibre"	"White more fattening than wholemeal"
	%	%	%
1) Agree Strongly	27.4	19.1	8.7
2) Agree	53.1	51.9	33.4
3) Undecided	12.2	21.2	29.4
4) Disagree	6.5	6.2	24.2
5) Disagree Strongly	0.7	1.2	4.2
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Agree (1 + 2)	80.5	71.3	42.1
Disagree (4 + 5)	7.2	7.4	28.4
Valid Responses 401			

Attitudes compared with use. As would be expected there was a higher level of "agreement" with statements 1 and 2 for those consuming wholemeal bread, especially for the "heavy" users. However one half of the households that did not consume wholemeal bread "agreed" with the two statements (77 percent for statement 1 and 55 percent for statement 2). For statement 3 only a slightly larger proportion of non-wholemeal bread "users" agreed. (Table 44.)

TABLE 44

Attitudes Towards Health Value
by Use of Wholemeal Bread

Attitude Statement	Non User	"Light" User	"Medium" User	"Heavy" User
	%	%	%	%
"Wholemeal more nutritious than white"	77.3	86.2	86.4	100.0
"Wholemeal good for health because high fibre"	62.9	87.4	89.1	100.0
"White more fattening than wholemeal"	43.9	40.2	35.1	37.5
Valid Responses	269	87	37	8

Note: (i) The percentages are the number of each group "agreeing" (1 + 2) with the statement.
(ii) "Light" users were those households with weekly purchases of less than 1 loaf/capita. "Medium" users were for 1.0-1.9 loaves/capita and "Heavy" users were for 2 or more loaves/capita.

Occupation and age characteristics. There was a greater level of "agreement" with the under 25 year old age group for statement 1, with a larger proportion of the older age group being undecided or disagreeing. In contrast there was a greater level of "agreement" amongst the middle and older age groups for statement 2, and a greater proportion of the 35-49 year old age group disagreed with statement 3. The occupation characteristics for the three statements were not as clear. (See Appendix 11.)

5.2 Price

Responses to attitude statements. The next two attitude statements were:

4. Compared with other things today bread is good value for money.
5. It is better to pay a few extra cents to get the kind of bread you like.

The majority of respondents agreed with both statements with a noticeable 28 percent agreeing strongly with statement 5. (Table 45.)

TABLE 45
Attitudes Towards Price

Rankings	"Bread good value for money"	"Few extra cents for type of bread you like"
	%	%
1. Agree Strongly	10.5	27.9
2. Agree	65.3	61.1
3. Undecided	12.5	4.5
4. Disagree	9.7	5.7
5. Disagree Strongly	2.0	0.7
	100.0	100.0
Agree (1 + 2)	75.8	89.0
Disagree (4 + 5)	11.7	6.4
Valid Responses	401	

Household characteristics. Responses to statements 4 and 5 did not vary with occupation or age of the head of the household or quantities of bread bought.

5.3 Extra Cost of Wrapped and Sliced Bread

Responses to attitude statements. The final two attitude statements were:

6. Wrapped bread is worth a few extra cents.

7. Sliced bread is worth a few extra cents.

Over 70 percent of the respondents agreed with each statement. (Table 46.)

TABLE 46

Attitudes Towards Extra Cost of Wrapped and Sliced Bread

Rankings	"Wrapped is worth a few extra cents"	"Sliced is worth a few extra cents"
	%	%
1. Agree Strongly	14.2	10.7
2. Agree	58.6	61.7
3. Undecided	7.7	7.7
4. Disagree	15.0	17.5
5. Disagree Strongly	4.5	3.0
	<u>100.0</u>	<u>100.0</u>
Agree (1 + 2)	72.8	71.8
Disagree (4 + 5)	19.5	20.5
Valid Responses	401	

Attitudes compared with use. The majority of those households that bought either wrapped or sliced bread "agreed" about paying extra.¹⁵ In contrast only 50 percent who did not buy wrapped or sliced bread "agreed". (Table 47.)

TABLE 47

Attitudes Towards Extra Cost of Wrapped
and Sliced Bread by Use

(i) "Wrapped is worth a few extra cents"	Unwrapped Only	Buys Wrapped Only	Both
	%	%	%
Agree	50.5	80.6	73.5
Undecided	14.6	6.2	3.8
Disagree	34.8	13.2	22.7
	-----	-----	-----
	100.0	100.0	100.0
Valid Responses	89	258	53
<hr/>			
(ii) "Sliced is worth a few cents extra"	Unsliced Only	Buys Sliced Only	Both
	%	%	%
Agree	50.0	83.8	67.5
Undecided	8.3	6.7	12.5
Disagree	41.7	9.6	20.0
	-----	-----	-----
	100.0	100.0	100.0
Valid Responses	120	240	40

¹⁵ Larger proportions of households buying wrapped and sliced bread were in the middle age groups. (See section 2.3)

5.4 Keeping Quality

Time before bread is too stale to eat as bread or toast. The time that respondents considered bread to be too stale to eat fresh ranged from 1 to 7 days, while for toast it ranged from 2 days to over a week. (Table 48.)

TABLE 48

When Bread is Too Stale to Eat as Bread or Toast

Days	Bread	Toast
	%	%
1	17.5	0.0
2	37.5	11.3
3	28.4	26.4
4	9.6	26.2
5	1.3	13.1
6	1.0	4.7
7	4.8	16.5
More than 7	0.0	1.8
	<u>100.0</u>	<u>100.0</u>
Valid Responses	395	382

Household characteristics. Households with fewer occupants and in the older and younger age groups considered bread to keep longer. (Table 49.)

TABLE 49

Attitudes Towards Keeping Quality By
Household Composition and Age of Head of Household

(i) Bread <u>3 days</u> old is not too stale to eat fresh	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
Households with:	%	%	%	%	%
1-2 occupants	62.5	46.2	50.0	65.2	70.4
3-4 occupants	27.3	37.1	30.0	40.0	75.0
Over 4 occupants	-	17.9	34.2	42.9	-
All households	40.0	32.4	34.1	52.7	70.7
Valid Responses	40	105	88	93	58
<hr/>					
(ii) Bread <u>4 days</u> old is not too stale to make toast.					
Households with:	%	%	%	%	%
1-2 occupants	66.7	50.0	70.0	69.0	79.6
3-4 occupants	54.5	66.1	53.8	63.4	75.0
Over 4 occupants	-	35.7	51.4	71.4	-
All households	59.0	55.8	54.7	66.7	79.2
Valid Responses	39	104	86	90	53

Note: Percentages are for respondents who agreed with the statement.

5.5 Amount Consumed

Thirty eight percent of the respondents said their households were "light" bread eaters; 48 percent "medium" and 14 percent "heavy". However, for a number of households the respondents' perception of what the household ate differed from the actual quantities bought. This was especially evident for those who classified themselves as "light", where 22 percent bought more than two loaves per week per capita.¹⁶ (See Table 50.)

TABLE 50

Perception of Amount of Bread Consumed by Actual Purchases

Loaves bought/ week/capita	"light" eaters	"medium" eaters	"heavy" eaters	all households
	%	%	%	%
less than 1.0	20.7	12.6	5.2	14.5
1.0 - 1.9	54.0	64.9	55.2	59.4
2.0 or more	22.1	22.5	39.7	26.1
	100.0	100.0	100.0	100.0
Valid Responses	58	191	150	399

¹⁶The average weekly per capita purchase was 1.5 loaves. (See section 2.4).

CHAPTER 6

IMPLICATIONS

The main purpose of this study was to provide a detailed description of household consumption and purchasing patterns and attitudes towards bread. This information, when combined with other industry data, could be used by the New Zealand Bread Industry to plan its marketing operations.¹⁷ However, the results also have implications which extend beyond bakers to suppliers (i.e. cropping farmers and millers) and to retailers.

6.1 The Aggregate Demand for Bread

Factors influencing demand. The demand for bread, as for any food item, may be influenced by a large number of factors. These range from the product, price, distribution and promotion (including advertising) policies of the firms within the industry to environmental factors which are outside the control of the industry. Environmental factors include those which are independent of the industries' actions (e.g. population, income, culture, technology) and other factors which may be influenced by firms within the industry and the industry's national association. These latter type include consumer behaviour and attitudes, retailers' and suppliers' activities, government legislation, the media, vocal minorities, the marketing effort of industries with substitute products (e.g. breakfast cereals, biscuits, potatoes, etc.) and complementary products (e.g. butter, jam, soup).

Aggregate demand, product variety demand and brand share. It is important to distinguish between factors affecting aggregate demand and those only affecting demand for different

¹⁷ Caution is necessary when drawing national implications from a survey of one city.

varieties within that aggregate. In recent years population, income and the price of bread relative to other food items have had major influences on the level of aggregate demand. In contrast a number of factors, such as trends towards "naturalness" and changing immigration patterns have influenced the recent changes in the demand for product varieties.

Care should be taken to identify the industry's marketing activities that influence:

- 1) aggregate demand,
- 2) product variety demand,
- 3) brand share

These three dimensions must be considered simultaneously when developing an overall industry marketing strategy which is aimed at stimulating aggregate demand.

Population. While per capita consumption has declined by over 20 percent in the last two decades, total consumption has risen as a result of the steady increase in New Zealand's population (see Table 1). However, with the annual increase in population falling to 0.2 percent in the last year, and the low projected rate of increase¹⁸ the effect of total population growth on demand in the next few years will be small.

Household composition. While total population is an important factor in determining the level of aggregate demand, so also is the composition of households. The survey results highlight the importance of the number of adults and children in a household determining average per capita bread consumption (see Table 22). Thus, the recent increase in proportion of households with one or two occupants¹⁹ may have had the counter tendency of increasing average per capita consumption. Care must be taken to monitor such changes.

18 For the latest estimates of population growth see the Monthly Abstracts of Statistics. Department of Statistics e.g. June 1978 p.7 Table 1 and p.8 Table 2.

19 See Appendix 14.

Income. In the past two decades bread has had the characteristic of an "inferior" good. That is, as real income²⁰ increased in the period prior to 1975 per capita consumption declined, and since 1975 as real income declined, per capita consumption has increased slightly (see Figures 1 and 2). Thus if there is a further decline in real income in the next few years this may have the affect of stimulating demand. Conversely, a real income increase could weaken demand.

Price. Except for 1967 and 1968 when the average price of bread increased by 85 percent²¹ and per capita consumption dropped by 8 percent, per capita consumption has shown little response to price (see Figure 2.)²² In fact prior to 1967, then during 1969 to 1971 and also in 1973 per capita consumption declined despite a fall in the "real" price of bread,²³ and from 1975 per capita consumption increased slightly despite a marked increase in the "real" price.

The lower price "position" of bread relative to other foods except potatoes was also highlighted in the survey. Seventy percent of the respondents agreed that "compared with other things today bread was good value for money".

20 A measure of real income was based on the average "real" weekly wage rate for males, which is the average weekly nominal wage deflated by the consumer price index.

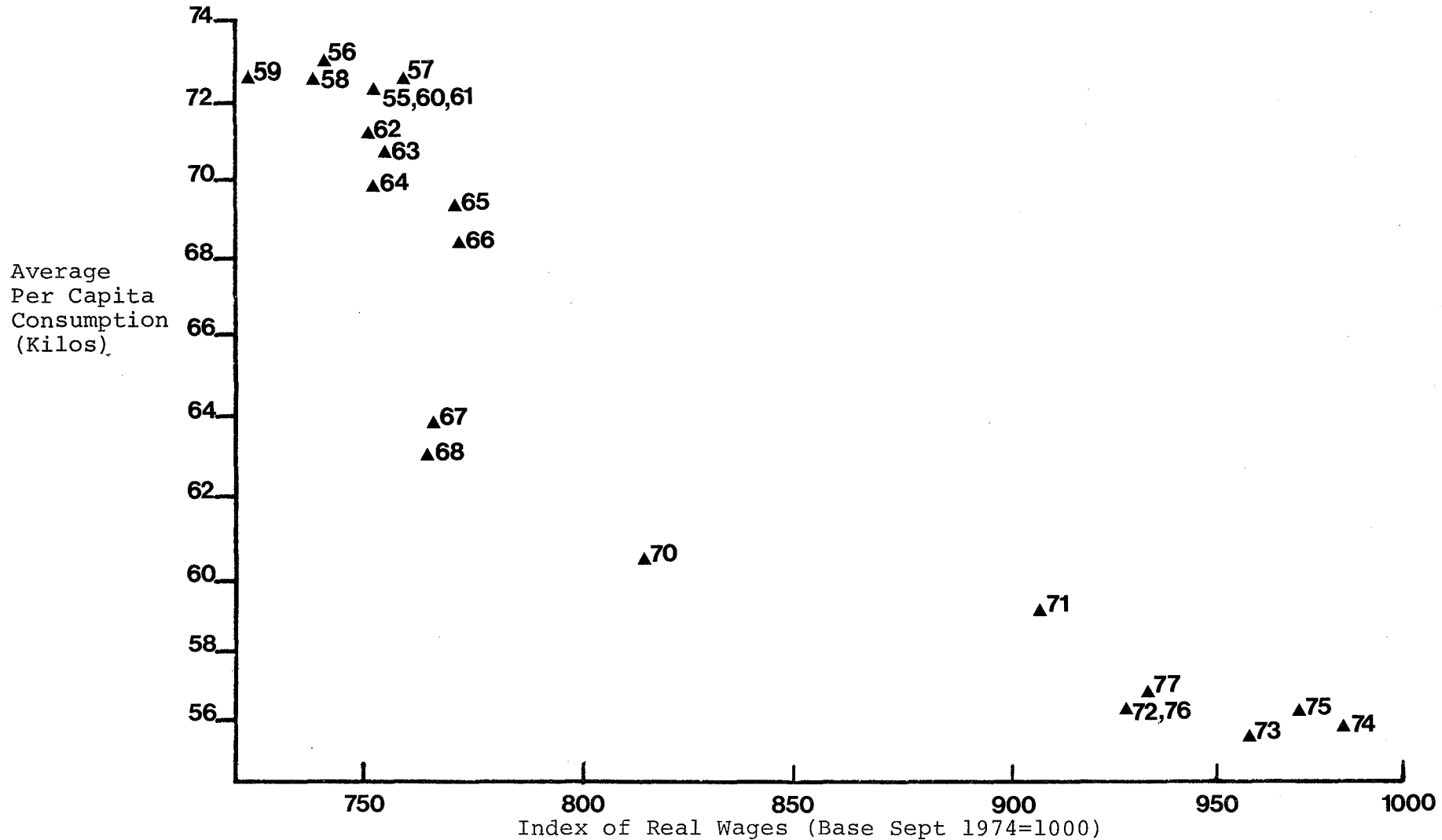
21 This is equivalent to a 68 percent increase relative to change in the consumer price index for food items.

22 Prior to 1967 the price of bread and potatoes per 100 gm. were similar. However, even after the price increase bread was still considerably cheaper per 100 gm. than other substitutes such as breakfast cereals, porridge, dry biscuits. Appendix 15 provides a comparison of the prices of substitute and complementary foods to bread in the last two decades.

23 The "real" price was calculated by deflating the nominal price of bread by the consumer price index for food.

FIGURE 1

Per Capita Bread Consumption by Real Wages^a 1955-1977



a. The index of real wages was based on the average nominal weekly wage for males deflated by the consumer price index.

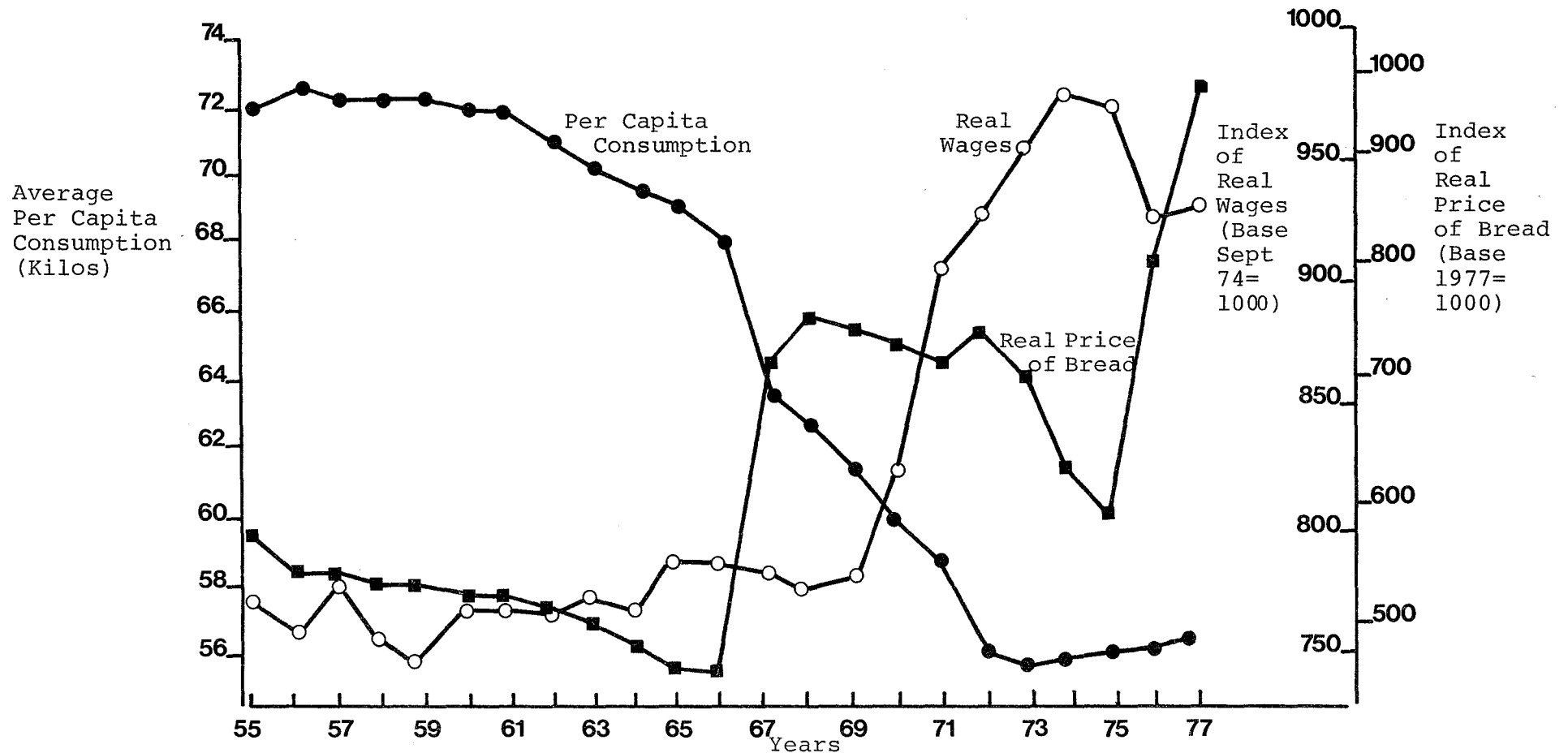
Note: The drop in per capita consumption from 1966 to 1967 could be attributed to the increase in the price of bread (see Figure 2).

Sources (i) Per Capita Consumption as for Table 1.

(ii) Department of Statistics Monthly Abstract of Statistics February 1978.

FIGURE 2

Per Capita Bread Consumption, Real Price^a
and Real Wages^b 1955-1977



a. The index of the real price of bread was based on the nominal price of bread deflated by the consumer price index for food items.

b. The index of real wages was based on the average nominal weekly wage for males deflated by the consumer price index for all items.

Sources (i) Per Capita Consumption - as for Table 1.

(ii) Department of Statistics Prices Wages and Labour 1955-1975, Monthly Abstract of Statistics February 1978, and personal communication.

The survey results also highlighted the relative unimportance of "price" when compared with bread's other attributes. "Price" was ranked behind "freshness", "whether it is wrapped", "crust" and "shape" and less than half of the respondents considered it to be important (see Table 23). However, the level of price "consciousness" was not the same for the different occupational and age groups (see Table 34) which means the responses to a price change may differ between these groups.

Stimulating aggregate demand. An analysis of the actual and potential demand situations for bread consumption is fundamental to the successful development of any marketing strategy²⁴ aimed at stimulating total consumption. Apart from providing an understanding of the nature of current demand, it will identify where current consumption may be threatened by substitute foods and target areas where consumption may be increased. The results presented in Chapter 3 provide a basis for such an analysis as they give information about:

- 1) The situations when bread is consumed at home (section 3.2) and away from home (sections 3.4 and 3.7).
- 2) The relative importance of these situations to aggregate demand.²⁵
- 3) Demographic and socio-economic characteristics.
- 4) Substitute foods for bread at breakfast and weekend lunch (section 3.3) and cut lunches (section 3.4).
- 5) Other situations when bread is used at home such as cooking. (Sections 3.5 and 3.6).

However, further research is necessary to clarify the situations where bread consumption is threatened by substitute foods, and the potential situations where bread consumption could be increased. This type of research which is known as

²⁴

In this context marketing strategy extends beyond advertising and promotion. It reflects an integrated marketing effort also covering product, price and distribution policies timed to match the market opportunities in the target market segments (i.e. groups of consumers).

²⁵

This is given by the proportions of households consuming bread in these situations.

market segmentation and product positioning would include a detailed analysis of:

- 1) Who consumes the varieties of bread, substitute foods and complementary foods in the different situations.
- 2) Household characteristics associated with these consumption patterns. This could extend beyond demographic and socio-economic characteristics to psychographic characteristics such as different "life styles".
- 3) Product positioning maps to highlight key product attributes.

Research should also be undertaken to analyse the market opportunities in the bread industry's industrial (institutional) markets (i.e. caterers, hotels, restaurants, clubs, takeaway food bars, hamburger bars) in view of the substantial growth by these outlets (Section 3.7).

This more detailed analysis will aid the identification of key opportunities on which the industry's overall marketing strategy can be based and subsequently monitored.

6.2 The Demand for Product Varieties

A changeable market. The fact that a third of the households had varied the types of bread they bought in the last 1-2 years (see Section 2.6) indicates the industry is facing a changeable market.²⁶ Over 40 percent in the professional and managerial and clerical, sales and service occupational groups as well as younger age groups had changed (see Table 27). The dominant change was towards wholemeal (15 percent) but for white important swings both "towards" (13 percent) and "away from" occurred (16 percent) (see Table 26).

²⁶ In a recent survey of Christchurch households 17 percent of households indicated they were buying different types of meat compared to a year ago. See: Brodie, R.J. Meat, A Consumer Survey of Christchurch Households, A.E.R.U. Research Report No. 82, p.14.

Consumer attitudes. The results confirm that the swing to wholemeal is based on the belief that it has more "health" value (see Appendix 4 and Section 5.1). However, over half of those households that did not consume wholemeal also believed it had a greater "health" value than white (see Table 44). In contrast, the "swing" to white was associated with the product attributes of "freshness", "hotness", "quality" and "variety" (see Appendix 4).

The importance of white, brown and wholemeal. Despite the recent "swing" to wholemeal, 75 percent of the loaves bought by households were white, 9 percent brown and 16 percent wholemeal.²⁷ Furthermore, 52 percent of the households bought white exclusively compared with only 8 percent for wholemeal and 3 percent for brown. (Table 16).

Acceptance of wrapped and sliced bread. A high level of acceptance was shown for both wrapped and sliced bread. This was highlighted by large proportions of households buying it in this form (see section 2.2); the majority of those who bought thought either type was worth a few extra cents (see Table 46), and "whether the bread is wrapped" was regarded as an important attribute by the majority of the respondents (see Table 23).

Buyer profiles for the product varieties. Chapter 2 and especially Sections 2.2 and 2.7 provide information which can be used to develop buyer profiles for the different product varieties which can be identified by:

- (i) basic type, i.e. white, brown, wholemeal (high fibre), rolls, french sticks, plain buns, iced buns, fruit loaves,
- (ii) whether it is wrapped, (iii) whether it is sliced,
- (iv) shape, and (v) weight. Household characteristics and product related behaviour can be listed against the various products. Table 51 provides an example of a profile developed to distinguish the characteristics of "heavy" buyers of white sliced bread.

27

These estimates of market share were based on the respondents estimates of the number of white, brown and wholemeal loaves they bought in the last week (see Section 2.4).

TABLE 51
Profile of Heavy Buyers of White Sliced Bread

(i)	<u>Geographical Location</u>	- Not investigated
(ii)	<u>Demographic Characteristics</u>	
	Age	- 25-49 age group (Table 18)
	Stage in family life cycle	- Married couples with dependant children (Section 2.3)
	Sex	- Female (Table 3)
	Race	- Not investigated
	Household composition	- Larger families with children (Implied from Tables 18,10,12,6)
(iii)	<u>Socio-Economic Characteristics</u>	
	Occupation	- Clerical sales and service and tradesmen and labourers (Table 18)
	Income	- Not investigated
	Education	- Lower (implied from occupation)
(iv)	<u>Product Related Behaviour</u>	
	Retail Outlet Used	- Dairy predominantly, but also Supermarket (Implied from Tables 18,10)
	Frequency of Purchases	- High: usually 4 times per week or more (Table 6)
	Quantities Purchased at a time	- Few: only one or two loaves but high in total (Tables 14, 20,21,22)
	Product Loyalty	- Least inclined to swing (Tables 18,27)
	Price Acceptability	- Acceptance of the extra cost (Table 47)
	Key Stimulant to use	- Cut lunches (Section 2.3 and Appendix 3)
(v)	<u>Psychographic and Life Style Characteristics</u>	- Not investigated ^a

a

The market segmentation and product positioning research suggested in the previous section would lead to the identification of psychographic characteristics.

6.3 Cropping Farmers

In recent years the bread industry has used 55 to 57 percent of the flour produced in New Zealand (see Appendix 13). Because of this heavy dependence on one industry it is important that cropping farmers are kept informed about the trends in product variety demand and adopt a flexible cultivar programme to meet these trends and quality requirements.

While total consumption of bread is likely to increase only gradually (see Section 6.1) the market is undergoing noticeable changes in the varieties of bread demanded (see Section 6.2). The recent "swing" to wholemeal emphasises the need for growers to keep a balance between the cultivars produced. The New Zealand Wheat Board's price setting decisions must reflect both this and baking score needs. Current D.S.I.R. trials on triticale and the growing use of black rye by some specialist bakers creates an additional consideration.

The "swing" to wholemeal also has implications about the bread industry demand for grain. This is because of the 99 percent extraction rate for wholemeal or 98 percent for flaked compared with 78 percent for white. This means that approximately 20 percent less grain is required to produce a wholemeal loaf than a white loaf of similar weight. If consumers find the denser wholemeal slices more "filling" than white, unit loaf sales may decline, so compounding the problem.

6.4 Millers

With the "swing" to wholemeal and the other changes in product varieties demanded, millers will need to be fully acquainted with new technology to meet bakers' changing ingredient requirements and decide which additional equipment would be a justified investment. Whilst some bakers are already using kibbled, flaked or milled wholemeal, others are still using the standard 78 percent extraction and adding back separately bran and pollard. If wholemeal

continues to gain a larger share of the market causing plant bakers to maintain bulk stocks of milled wholemeal or flaked grains, millers will need to have both the appropriate grain, and machinery to handle this demand. Changes from a traditional single product line will create additional control procedures and administrative planning will need to be geared to multi-product range.

6.5 Bakers

This section highlights the results not previously discussed which are relevant to bakers in planning their production and marketing operations.

The dangers of a changeable market. Bakers must be careful to avoid an excessive number of new varieties of bread being produced in response to the changeable market. Apart from the uneconomic production runs and cost of new product failures, excessive new varieties may lead to consumer confusion and frustration to retailers. Test marketing will lead to a better selection of successful new products.

Product attributes. Section 2.5 highlights the importance consumers attach to the different attributes of bread, i.e. "freshness", "whether it is wrapped", "shape", "crust" and "price". As "freshness" was clearly seen to be the most important attribute, bakers should carefully examine household purchasing patterns at the different outlets (see Section 2.2 and Tables 11, 12 14) and average eating time after buying by outlet (see Table 13) before deciding on a distribution policy. The current "lumpy" demand from supermarkets occurring on Thursday (Table 11) will need smoothing if production and transport facilities are to be used efficiently.

While "freshness" was regarded as the most important attribute by all respondents, rankings of the other attributes differed with the occupation and age characteristics of respondents (see Table 24). For example "crust" was ranked ahead of "whether it is wrapped" by the older age groups.

Also important are the additional attributes which respondents considered significant (see Table 25), "texture" being the most frequent attribute given.

Type of wrapping. Over half of the respondents preferred a greaseproof wrapping, with smaller proportions preferring a plastic bag or cellophane wrap (see Section 2.3).

Brand loyalty. While there was a high level of brand loyalty, confusion existed over the difference between local bakers' names and their brand names (see Section 2.7).

Homemade bread. This does not provide a threat to regular purchases of bread (Section 2.8). However, the potential for a frozen dough loaf or some other novelty "make your own" type of bread is highlighted by the reasons which were given for making homemade bread (see Table 34).

Storage of bread. Bread was stored in a variety of places (see Section 4.1) and attitudes varied about when bread was stale (see Section 5.4). Because "freshness" was regarded as such an important attribute, an information campaign would help educate consumers on how best to store bread.

Freezing bread. With over 80 percent of households freezing bread (see Section 4.2) and 13 percent storing their bread in their freezer for day to day use (see Section 4.1), care should be taken in new product development to ensure the product has good freezing properties.

Specialist bakers. Because of their size some specialists are at a cost disadvantage to large scale bakeries in terms of new product development, economies of scale and brand promotion through the media. The survey results indicate the opportunity for the more labour intensive specialty product which caters for special market segments. This is highlighted by 89 percent of the respondents agreeing "it is better to pay a few extra cents to get the kind of bread you like" (see Section 5.7), and the different rankings of product attributes by the

different groups of respondents (see Table 24).

Hot bread shops. While dairies, grocers and super-markets are clearly intermediaries serving the bread industry, hot bread shops are something of a hybrid.^{28, 29}

The implications for specialist bakeries about products also extend to hot bread shops. However, hot bread shops have an added advantage with regard to the attribute of "freshness" (see Table 15).

Hot bread shop operators must beware that if a stronger emphasis by other outlets is placed on this "freshness" attribute it could neutralise their "differential" advantage. Conversely rationalised (less frequent) delivery by large scale bakers could improve the attraction of hot bread shops.

Activity is "lumpy" being concentrated on Saturday and Sunday (Table 11). Unless this is evened out, different prices according to day of week (premiums) may be inevitable. Production could alternatively be diversified into other lines to use the facilities outside the weekend peak.

Because shop location generally necessitates a separate car journey to make purchases it will be necessary to have promotional support and product innovation to create excitement and novelty. Alternatively, with rising petrol prices and growing economy in private car use leading to "one stop shopping", location within a shopping complex rather than in lower cost isolation could be essential.

28 For the purpose of this report they will be classified as members of the industry.

29 Table 52 compares the distinguishing characteristics of households using hot bread shops with those using other outlets.

Outlets used. The results presented in Sections 2.2 and 2.6 and summarised in Table 52 highlight the distinguishing characteristics of the customers using dairies, grocers and supermarkets. Separate sales records for these three classes of outlets would help identify the responses to marketing effort of the different customer groups.

The profiles also provide direction for bakers in the planning of their marketing operations. For example, the supermarket appears to be the most suitable outlet for new product testing with its patronage from the professional and managerial occupational groups and middle and younger age groups (Table 10), who are most likely to try new varieties of products (Tables 27, 28). However, if it was decided to direct marketing activities specifically at husbands or the tradesmen and labourer and clerical sales and service occupational groups, then the dairy would be the most suitable outlet (Tables 9, 10).

Also of importance to bakers are the weekly distribution of bread sales at the different outlets (Table 11). The tendency to buy the week's supply of bread at the supermarket on Thursday or Friday (Tables 11, 12) provides problems in the efficient use of bakers' production and distribution facilities.

6.6 Retailers

The profiles of the customers buying bread at dairies, grocers and supermarkets (Sections 2.2 and 2.6 and Table 52) are also of importance to retailers. If specific retailers find their client profiles unsuitable, localised marketing effort may be needed to affect changes.

While bread may not be the most profitable item in a retailers product mix, it is an important determinant of store patronage. Thus retailers should pay particular attention to changes in product varieties demanded (Section 6.2); the rankings given to product attributes by the different groups of consumers (Table 24); other reasons given for the choice of the type of bread (Table 25); reasons influencing the choice of outlet (Table 15) and attitudes

TABLE 52

Profile of Households Using Different Outlets^a

	Dairy	Grocer	Supermarket	Hot Bread Shop/Bakery
i) Person who buys (Table 9)	Wife, Husband Children	Wife	Wife	Wife, Husband
ii) Occupational Groups (Table 10)	Tradesmen and Labour, Clerical Sales Service	Clerical Sales Service, Retired and Other	Professional and Managerial	Tradesmen and Labourer, Clerical Sales Service
iii) Age Groups (Table 10)	Younger	Older	Younger and Middle	Younger and Middle
iv) Days of Week (Table 11)	All esp. Sunday	Weekdays esp. Friday	Weekdays esp. Thursday	Weekends
v) Frequency of Buying Per Week (Table 12)	2 or more	2 or more	once	once
vi) Quantity Purchased at a Time (Table 13)	1-2	1-2	2 or more	1-2
vii) Reasons for Using Outlet (Table 15)	"closeness to home"	"closeness to home"	"other shopping also"	"freshness/ hotness" "types" "social"
viii) Changes in Varieties of Bread Bought (Table 28)	low	low	high	high

^a The profiles are based on the consumer characteristics which distinguish between the outlets.

towards bread (Chapter 5).

Another trend of importance to retailers is the freezing of bread (Section 4.2) which has resulted in large proportions of households buying bread once a week (Tables 5, 12). Thus a method of handling loaves in convenient multiples may have an advantage.

APPENDICES

APPENDIX I

THE QUESTIONNAIRE

BREAD SURVEY

Good morning/afternoon/evening.

I am from the Lincoln College Marketing Department. We are doing a survey about bread. Would you help us by answering a few questions. ASK TO SPEAK TO THE PERSON WHO USUALLY BUYS THE GROCERIES. IF THIS IS NOT POSSIBLE ARRANGE A SUITABLE CALLBACK TIME.

1.a Would you consider your household to be heavy (), medium (), light () bread eaters?
IF HOUSEHOLD NEVER EATS BREAD () GO TO Q6

b Who decides what types of bread to buy? IF DOES NOT BUY BREAD () GO TO Q1m.
Wife (), Hsbd (), Chldn (), S. Male (), S. Female (), Other _____

c Who usually buys/collects the bread?
Wife (), Hsbd (), Chldn (), S. Male (), S. Female (), Delivered (), Other _____

d (i) How often do you usually buy bread (or have it delivered)? ___/wk or every ___ wks.
(ii) Which days of the week do you usually buy it (or have it delivered) TICK DAYS BELOW.
(iii) Where do you buy it on these days? TICK MATRIX.
(iv) Why do you buy there on that day? ENTER CODES BELOW OR WRITE IN REASONS.
(1) Close to home (2) Do other shopping there (3) Freshness (4) Because bread is hot (5) Has type we like (6) Wide selection (7) Enjoyment/Social outing.

(ii) Days	(iii) Dairy	Grocer	Supermkt	Hot Bread Shop/Bakery	Delivered	(iv) Reason (Record only one reason)
Mon-Wed ()						
Thurs ()						
Fri ()						
Sat ()						
Sun ()						

e (i) Do you usually buy your bread in the morning (), afternoon () evening ()?
(ii) How long after you bought it would it be before someone started eating it?
0-4 hrs (), 4-8 hrs (), 8-12 hrs (), ½-1 day (), 2-3 days (), longer ()

f (i) Do you usually buy white (), brown () or wholemeal/health () bread?
(ii) How many loaves of white bread would you usually buy per week?
or (iii) How many loaves of brown bread would you usually buy per week?
or (iv) How many loaves of wholemeal/health bread would you usually buy per week?
(v) Are any of these non standard weight loaves? Yes (), No () IF NO GO TO Q1g.
(vi) How many? _____

g (i) Do you usually buy wrapped () or unwrapped () bread? IF ONLY UNWRAPPED GO TO Q1h
(ii) Do you prefer a greaseproof (), cellophane () or a plastic bag () wrapping?
Don't know ()
(iii) Is the wrapped bread you buy sliced () or unsliced ()? IF ONLY UNSLICED GO TO Q1h
(iv) Is the sliced bread you buy thick (), thick n thin () thin (), or all purpose ()

h What shapes of bread do you usually buy? SHOW CARD
Flat top (), Raised top (), Slipper Vienna (), Sandwich size ()

i (i) I am now going to read you a list of reasons which may influence your choice of type of bread. Using this scale (SHOW SCALE A) please indicate how important they are
(1) The shape (2) The crust (3) The freshness (4) The price
(5) Whether the bread is wrapped (6) The attractiveness of the wrapper
(ii) What else do you think is important? _____

j (i) Do you always buy the same bakers bread?
Always (), Nearly always (), Sometimes (), No ()
(ii) What bakers can you name? RECORD SEQUENCE OF RECALL, ENTER p FOR PROMPTED RECALL
Boons _____ Brooklyns _____ Norths _____ Stacey & Hawker Ltd (SX) _____ Hot Bread Sandyford St _____ Other _____
(iii) What brand names of bakers can you name? RECORD SEQUENCE OF CORRECT RECALL ENTER p FOR PROMPTED RECALL
Freshbake _____ SX Stayfresh _____ Sunshine _____ Norths _____ Other _____

k (i) Have you bought any bread rolls, buns or other types of bread in the last 3 months?
Yes (), No () IF NO GO TO Q1l
(ii) What types have you bought? TICK TYPES BELOW
Bread Rolls () Iced Buns () Plain Buns () Fruit Loaves ()
Other _____
(iii) What types do you usually buy at least every two weeks? ENTER 2 ABOVE

l (i) Are you buying different types of bread compared with 1-2 years ago?
Yes (), No (), Don't know (). IF NO OR DON'T KNOW GO TO Q1m
(ii) What types are you buying more of? White (), Brown (), Wholemeal () Other _____
(iii) What types are you buying less of? White (), Brown (), Wholemeal () Other _____
(iv) Why? _____

m (i) Do you ever make your own bread? Yes (), No () IF NO GO TO Q2.
(ii) How often? Every few days (), Weekly (), Fortnightly (), Monthly ()
2-3 months (), Longer ()
(iii) Why? _____

2a (i) Does your household ever have dinner out at a restaurant, hotel or club?
Yes (), No () IF NO GO TO Q2b
(ii) How often? Every few days (), weekly (), fortnightly (), 1 month (),
2-3 months (), longer ()

b (i) Does your household ever have takeaway meals? Yes (), No () IF NO GO TO Q3
(ii) How often? Every few days (), weekly (), fortnightly (), monthly (),
2-3 months (), longer ()

3 I am now going to ask you about your household's use of bread. But first of all:

2

- a (i) How many people live in your house? _____
- b (i) How many are preschool age? _____ (ii) at primary school? _____ (iii) at high school? _____
IF NO SCHOOL CHILDREN GO TO Q3c
- (iv) How many children in your household regularly take a cut lunch? _____
IF NONE GO TO Q3b(vi)
- (v) What do they usually have in their lunch? Sandwiches (), Rolls & Buns (),
Biscuits & Cake (), Fruit (), Other _____
- (vi) What do they do instead of having a cut lunch? Go home for lunch (), Buy lunch ()
Always have cut lunch (), Other _____
- c (i) How many (other) people regularly have cut lunches during the week _____?
IF NONE GO TO Q3c(iv)
- (ii) What do they usually have in their lunch? Sandwiches (), Rolls & Buns (),
Biscuits & Cake (), Fruit (), Other _____
- (iii) If there was no bread available for cut lunches what would be had instead? RECORD 1ST RESP
Buy Lunch (), Biscuits (), Fruit (), Other _____
- (iv) Do any people regularly buy their lunch? Yes (), No () IF NO GO TO Q3d
- (v) What do they usually buy? Sandwiches, Buns, etc. (), Pies (), Fish n Chips (),
Hamburgers (), Other Takeaways (), Fruit (), Works Canteen (), Restaurant ()
Other _____ RECORD ONE RESPONSE ONLY

I am now going to ask you about eating bread at home on weekdays.

- d (i) At what times of the day does your household usually have bread (i.e. fresh bread,
toast, rolls or buns) on weekdays? Breakfast (), Lunch (), Dinner (), Morning
tea (), Afternoon tea (), Supper (), Afterschool snacks (),
Snacks at other times (), Other _____
- (ii) At what times might you occasionally have bread on weekdays? ENTER 2 ABOVE

I am now going to ask you about eating bread during weekends or holidays

- e (i) At what times of the day does your household usually have bread during weekends or
holidays? Brkfst (), Lunch (), Dinner (), Evng Tea (), Morn Tea ()
Aft tea (), Supper (), Picnics (), Snacks at other times (), Other _____
- (ii) At what times might you occasionally have bread during weekends or holidays? ENTER 2 ABOVE
- (iii) IF HAS BREAD REGULARLY FOR BREAKFAST
If bread was not available for breakfast what would you have instead? RECORD 1ST RESP.
Cereals/Porridge (), Cooked Food (), Fruit (), Other _____
- (iv) IF HAS BREAD REGULARLY FOR WEEKEND LUNCH
If bread was not available for a weekend lunch what would you have instead? RECORD
1ST RESPONSE Dry Biscuits (), Other Biscuits (), Cake (), Fruit (),
Vegies (), Cheese (), Other _____

- f (i) Do you ever use bread for cooking? Yes (), No () IF NO GO TO Q3g
- (ii) How? Bread crumbs (), Stuffing (), Puddings (), Other _____

- g (i) Do you ever use bread in any other way? Yes (), No () IF NO GO TO Q4
- (ii) How? _____

4 I am now going to ask you where you keep your bread.

- a Where do you usually keep your bread for day to day use?
Bread bin vent. (), Bread bin unvent. (), Refrig. (), Deep Freeze (), Other _____
- b (i) Do you have a combination refrigerator/freezer or a chest deep freezer?
Comb. F/F (), Chest/F (), No (). IF NO GO TO Q4b(iv)
- (ii) When do you store bread in your freezer? Never () IF NEVER GO TO Q4b(iv)
Long weekends only (), Weekends (), Weekdays (), Other _____
- (iii) Up to how many loaves would you store at a time? _____
- (iv) Do you think there are any disadvantages in freezing bread?
Yes (), No () IF NO GO TO Q4c
- (v) What are they? _____
- c (i) How many days old does bread have to be before it is too stale to eat as fresh
bread? _____ days.
- (ii) How many days old does bread have to be before it it too stale to eat as toast?
_____ days.

5 Here is a list of statements about bread (SHOW CARD). Using this scale (SHOW SCALE B) please indicate how much you agree or disagree with each statement.

(1) _____ (ii) _____ (iii) _____ (iv) _____ (v) _____ (vi) _____ (vii) _____ GO TO Q7

- 6 (i) How many people live in your house? _____
- (ii) How many are preschool age? _____ at primary school? _____ at high school? _____
- (iii) Why do you not eat bread? _____

7a How many people do full time jobs? _____ (Full time > 30 hours/wk)

b What jobs do they do? PROMPT FOR POSITION IN HOUSEHOLD

Position in House

c Which age group do you belong to: Younger than 25? (), 25-34? (), 35-49? (),
50-64 (), Older than 64? ().

Respondent's address _____ Phone No. _____

Time of day interview completed _____ date _____ May _____ Interviewer's Signature _____

(i) THANK RESPONDENT. (ii) CHECK ALL QUESTIONS HAVE BEEN ASKED.

APPENDIX 2

SAMPLE DETAILS

<u>Suburb</u>	<u>Street</u>	<u>Number of Interviews</u>
Addington	Grove Road	15
Avonhead	Ostend Place	13
Beckenham	Colombo Street	15
Bishopdale	Reynolds Avenue	15
Bryndwr	Brent Place	15
Burnside	Mappleton Avenue	15
Fendalton	Ryeland Avenue	15
Halswell	Halswell Junction Road	15
Hillmorton	O'Leary Street	15
Hillsborough	Opawa Road	15
Hoon Hay	Barrowclough Street	15
Huntsbury	Huntsbury Avenue	11
Linwood	Mackworth Street	15
Oaklands	Dunbar's Road	15
Opawa	Grange Street	15
Papanui	Alpha Avenue	12
Richmond	Maling Street	10
Riccarton Lower	Whiteleigh Avenue	15
Riccarton Upper	Gladson Avenue	15
St Albans	Gordon Avenue	15
St Martins	Koromiko Street	15
Shirley	Hercules Street	14
Wigram	Oakhampton Street	15
Somerfield	Studholme Street	14
Spreydon	Edinburgh Street	16
Sydenham-Waltham	Wembley Street	15
Woolston	Sheldon Street	15
Wainoni-Aranui	Hampshire Street	15
		<hr/> 405 <hr/>

APPENDIX 3

Average Per Capita Number of Loaves Bought Per Week
by Occupation and Age of Head of Household
and Households having Cut Lunches

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired	
Households with:	%	%	%	%	
<u>No children</u>					
1-2 occupants	1.6 (16) ^a	1.8 (25)	1.9 (22)	2.0 (75)	
3-4 occupants	1.4 (13)	1.4 (19)	1.5 (41)	1.5 (10)	
Over 4 occupants	-	0.8 (4)	1.3 (3)	-	
<u>Children</u>					
3-4 occupants	1.1 (21)	1.2 (22)	1.2 (40)	1.4 (4)	
Over 4 occupants	1.4 (12)	1.5 (21)	1.5 (31)	2.0 (3)	
<u>All households</u>	1.3 (64)	1.4 (91)	1.5 (138)	1.9 (94)	
<hr/>					
(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
Households with:					
<u>No children</u>					
1-2 occupants	1.8 (15)	2.0 (13)	1.8 (8)	1.9 (47)	2.0 (56)
3-4 occupants	1.5 (8)	1.7 (3)	1.5 (26)	1.6 (40)	1.3 (4)
Over 4 occupants	-	-	0.9 (5)	1.1 (5)	-
<u>Children</u>					
3-4 occupants	1.1 (14)	1.2 (59)	1.2 (14)	-	-
Over 4 occupants	-	1.3 (29)	1.6 (34)	1.4 (3)	-
<u>All Households</u>	1.5 (39)	1. (104)	1.4 (89)	1.6 (97)	1.9 (60)

a

The numbers in brackets are the number of valid responses. Averages were not included when there were one or two responses.

APPENDIX 3 (Cont'd)

(iii) Households Having Cut Lunches	Yes	No
<u>Households with No children</u>		
1-2 occupants	1.9 (37)	1.9 (105)
3-4 occupants	1.4 (56)	1.5 (29)
Over 4 occupants	1.0 (9)	-
<u>Children</u>		
3-4 occupants	1.2 (77)	1.1 (14)
Over 4 occupants	1.5 (65)	1.5 (4)
<u>All households</u>	1.4 (246)	1.7 (153)

APPENDIX 4

Reasons for Changing Type of Bread Bought

(i) Changed Towards	White	Brown	Wholemeal
	%	%	%
"Health/goodness"	3.0	7.7	55.9
"Variety/enjoyment"	12.1	15.4	8.5
"Improved types"	30.3	7.7	5.1
"Change in family tastes"	24.2	23.2	10.2
"Freshness/hot bread"	9.1	0.0	3.4
"Quality decline/not available"	3.0	0.0	1.7
Other	18.2	46.2	15.3
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Resopnses	33	13	59
<hr/>			
(ii) Changed Away From			
	%	%	%
"Health/goodness"	51.8	5.9	0.0
"Variety/enjoyment"	8.9	11.8	33.3
"Improved types"	12.5	17.6	16.7
"Change in family tastes"	8.9	29.4	33.3
"Freshness/hot bread"	1.8	5.9	16.7
"Quality decline/not available"	1.8	0.0	0.0
Other	14.3	29.4	0.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	56	17	6

APPENDIX 5

Changes in Types of Bread Bought By
Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Retired & Other
	%	%	%	%
Changed to:				
Wholemeal	43.3	48.6	36.6	52.0
White or Other	56.7	51.4	63.4	48.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	30	35	41	25

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Change to:					
Wholemeal	46.7	33.3	56.7	39.3	64.3
White or Other	53.3	66.7	43.3	60.7	35.7
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	15	45	30	28	14

Note: The percentages are of households that changed their bread consumption in the last 1 - 2 years.

APPENDIX 6

Respondents Recall of Bakery's and Brand Names

(i) Bakery Names	Boons	Brooklyns	Hot Bread Shops	Norths	SX or Stacey & Hawker
	%	%	%	%	%
Unprompted Recall	52.0	22.8	15.6	15.1	68.8
Prompted Recall ^a	19.8	21.0	20.5	16.6	12.6
No recall	28.2	56.2	63.9	68.3	18.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Top of Head	21.5	6.2	2.2	5.7	49.8

(ii) Brand Names ^b	Freshbake	Norths	Sunshine	SX or SX Stayfresh
	%	%	%	%
Unprompted Recall	18.3	11.9	45.3	40.1
Prompted Recall	25.5	12.9	20.5	20.8
No Recall	56.2	75.2	34.2	39.1
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Top of Head	9.9	3.5	24.6	28.0

Valid Responses 404

^a Prompted recall is when the interviewer read out the bakery/brand names which had not been given.

^b Many respondents were confused when they were asked the bakery brand name after they had been asked the bakery name. For example many respondents gave SX as a brand name rather than SX Stayfresh and others thought SX was the bakers name and not the brand name.

APPENDIX 7

Households Buying Rolls, Buns and Fruit Loaves
By Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical & Service	Tradesman & Labourer	Other & Retired
	%	%	%	%
Households having Cut Lunches				
Rolls	56.2	65.1	65.8	50.0
Plain Buns	43.7	39.7	32.5	33.3
Iced Buns	18.7	30.2	29.9	33.3
Fruit Loaves	18.7	19.0	12.8	8.3
Valid Responses	48	63	117	12
Households <u>not</u> having Cut Lunches				
	%	%	%	%
Rolls	31.2	32.3	42.9	30.1
Plain Buns	31.2	29.0	23.3	25.3
Iced Buns	0.0	3.2	28.6	13.2
Fruit Loaves	18.7	6.5	19.0	10.8
Valid Responses	16	31	21	83
All Households				
	%	%	%	%
Rolls	50.0	54.3	62.3	32.6
Plain Buns	40.6	36.2	32.6	26.3
Iced Buns	14.1	21.3	29.7	15.8
Fruit Loaves	18.7	14.9	13.8	10.5
Valid Responses	64	94	138	95

Note: The percentages are of those households in each group that had bought the type of bread in the last three months.

APPENDIX 7 (Cont'd)

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Households having cut lunches					
Rolls	54.2	72.1	66.2	49.1	33.3
Plain Buns	25.0	39.5	40.5	35.8	0.0
Iced Buns	16.7	30.2	32.4	28.3	0.0
Fruit Loaves	8.3	16.3	18.9	15.1	0.0
Valid Responses	24	86	74	53	3
Households <u>not</u> having Cut Lunches					
Rolls	50.0	40.0	20.0	31.2	27.4
Plain Buns	25.0	40.0	33.3	25.0	24.1
Iced Buns	12.5	5.0	0.0	18.2	12.1
Fruit Loaves	6.2	20.0	13.3	11.4	12.1
Valid Responses	16	20	15	44	58
All Households					
Rolls	52.5	66.0	58.4	41.2	27.9
Plain Buns	25.0	39.6	39.3	30.9	23.0
Iced Buns	15.0	25.5	27.0	23.7	11.5
Fruit Loaves	7.5	17.0	18.0	13.4	11.5
Valid Responses	64	106	89	97	61

APPENDIX 8

Meals When Bread is Consumed^a by Occupation
and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired	
	%	%	%	%	
Weekday Meals					
Breakfast	87.5	88.3	82.6	77.9	
Midday	59.4	48.9	65.9	52.6	
Evening	7.8	18.1	15.9	29.5	
Weekend Meals					
Breakfast	89.1	86.2	80.4	74.5	
Midday	71.9	68.8	64.5	56.5	
Evening	17.2	25.5	26.8	36.8	
Valid Responses	64	94	138	94	
(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Weekday Meals					
Breakfast	90.0	81.1	83.1	84.5	82.0
Midday	40.0	66.0	53.9	63.9	54.1
Evening	22.5	16.0	15.7	14.4	27.9
Weekend Meals					
Breakfast	82.5	81.1	79.8	83.5	81.7
Midday	66.7	67.9	70.8	67.0	51.7
Evening	30.0	22.6	22.5	29.9	34.4
Valid Responses	40	106	89	97	60

^a Consumed regularly (i.e. most days)

APPENDIX 9

Non-Meal Times When Bread is Consumed^a By
Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired	
	%	%	%	%	
Weekdays					
Morning Tea	3.1	3.2	4.3	9.5	
Afternoon Tea	4.7	7.4	9.4	10.5	
Supper	17.2	29.8	23.9	15.8	
After School Snacks	15.6	6.4	13.0	4.2	
Other Snacks	15.6	16.0	13.0	10.5	
Weekends					
Morning Tea	1.6	7.4	5.1	5.3	
Afternoon Tea	4.7	7.4	7.2	7.4	
Supper	17.2	21.3	17.4	18.1	
Snacks	20.3	12.8	14.5	16.0	
Valid Responses	64	94	138	94	
(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Weekdays					
Morning Tea	7.5	4.7	3.4	3.1	9.8
Afternoon Tea	10.0	8.5	7.9	7.2	9.8
Supper	32.5	17.9	28.1	22.7	16.4
After School Snacks	2.5	9.4	28.1	4.1	1.6
Other Snacks	17.5	15.1	14.6	15.5	4.9
Weekends					
Morning Tea	5.0	6.6	3.4	4.1	6.7
Afternoon Tea	12.5	8.5	4.5	5.2	8.3
Supper	22.5	19.8	16.9	21.6	11.7
Snacks	17.5	17.8	12.4	16.5	11.7
Valid Responses	40	106	89	97	60

^a Consumed regularly or occasionally (i.e. at least once every few weeks).

APPENDIX 10

Households Using Bread for Cooking by
Occupation and Age of the Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired
	%	%	%	%
Households with 1 - 2 Occupants				
Bread Crumbs	25.0	36.8	44.4	50.8
Bread Stuffing	15.4	45.5	45.0	50.0
Bread Puddings	15.4	38.1	47.6	45.8
Valid Responses	13	21	21	59
Households with 3 - 4 Occupants	%	%	%	%
Bread Crumbs	67.9	47.2	59.7	50.0
Bread Stuffing	66.7	33.3	58.1	54.5
Bread Puddings	47.1	36.4	37.7	40.0
Valid Responses	17	33	61	10
Households with Over 4 Occupants	%	%	%	%
Bread Crumbs	70.0	52.6	66.7	50.0
Bread Stuffing	75.0	59.1	65.4	73.0
Bread Puddings	54.5	54.5	50.0	66.7
Valid Responses	11	22	20	3
All Households	%	%	%	%
Bread Crumbs	55.6	46.1	59.0	50.6
Bread Stuffing	55.8	43.0	57.5	51.9
Bread Puddings	39.0	41.0	42.2	45.8
Valid Responses	54	76	117	77

APPENDIX 10 (Cont'd)

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
Households with 1 - 2 Occupants					
Bread Crumbs	27.3	25.0	55.6	51.3	43.8
Bread Stuffing	42.9	25.0	37.5	52.5	45.8
Bread Puddings	46.2	23.1	44.4	41.7	43.2
Valid Responses	13	13	9	36	44
Households with 3 - 4 Occupants					
Bread Crumbs	42.1	45.3	71.0	72.5	
Bread Stuffing	35.3	49.1	63.6	61.5	
Bread Puddings	44.4	32.4	37.0	46.9	
Valid Responses	18	43	27	32	
Households with Over 4 Occupants					
Bread Crumbs		62.5	65.5	25.0	
Bread Stuffing		62.5	63.6	71.4	
Bread Puddings		42.9	55.6	50.3	
Valid Responses		21	27	6	
All Households					
Bread Crumbs	37.5	47.3	66.7	60.2	41.2
Bread Stuffing	42.4	48.4	60.3	58.1	46.2
Bread Puddings	48.5	32.9	46.0	44.6	40.4
Valid Responses	33	79	63	74	47

APPENDIX 11

Households with Deep Freezers by
Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Retired & Other
	%	%	%	%
Households with 1-2 Occupants				
Chest Freezer	40.0	34.6	34.8	35.5
Refrig/Freezer	53.3	57.7	43.8	55.3
No Freezer	6.7	7.7	21.7	9.2
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	15	26	23	76
Households with 3-4 Occupants				
Chest Freezer	51.5	43.9	55.7	42.9
Refrig/Freezer	45.5	51.2	40.5	42.9
No Freezer	3.0	4.9	3.8	14.3
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	33	41	79	14
Households with Over 4 Occupants				
Chest Freezer	84.6	54.0	44.7	0.0
Refrig/Freezer	15.4	32.0	47.1	75.0
No Freezer	0.0	4.0	8.8	25.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	13	25	34	4
All Households				
Chest Freezer	55.7	47.9	49.3	35.1
Refrig/Freezer	41.0	46.8	42.6	54.3
No Freezer	3.3	5.3	8.1	10.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	61	94	136	94

APPENDIX 11 (Cont'd)

(ii)	Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
		%	%	%	%	%
Households with 1-2 Occupants						
	Chest Freezer	46.7	38.5	40.0	25.5	35.7
	Refrig/Freezer	40.0	46.2	50.0	63.8	53.6
	No Freezer	13.3	15.4	10.0	10.6	10.7
		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses		15	13	10	47	56
Households with 3-4 Occupants						
	Chest Freezer	40.9	49.2	53.8	56.1	50.0
	Refrig/Freezer	50.0	44.2	46.2	43.9	25.0
	No Freezer	9.1	6.6	0.0	0.0	25.0
		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses		22	61	39	41	4
Households with Over 4 Occupants						
	Chest Freezer		44.8	65.8	62.5	
	Refrig/Freezer		44.8	31.6	37.5	
	No Freezer		10.3	2.6	0.0	
			<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	
Valid Responses			29	38	8	
All Households						
	Chest Freezer	46.2	47.6	57.5	41.7	36.7
	Refrig/Freezer	41.0	43.8	40.2	53.1	51.7
	No Freezer	12.8	8.6	2.3	5.2	11.7
		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses		39	105	87	96	60

APPENDIX 12

Attitudes Toward Health Value by
Occupation and Age of Head of Household

(i) Occupation	Professional & Managerial	Clerical Sales & Service	Tradesman & Labourer	Other & Retired
	%	%	%	%
1. Wholemeal more nutritious than white				
Agree	78.1	86.2	82.5	73.1
Undecided	12.5	10.6	10.9	16.1
Disagree	9.4	3.2	6.5	10.8
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
2. Wholemeal good for health because of high fibre				
Agree	78.1	70.3	69.4	69.9
Undecided	15.6	23.4	24.6	18.3
Disagree	6.3	6.4	5.8	11.8
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
3. White more fattening than wholemeal				
Agree	32.5	41.9	42.8	46.2
Undecided	25.0	31.9	34.1	27.7
Disagree	42.2	26.6	23.2	29.0
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	64	94	138	93

APPENDIX 12 (Cont'd)

(ii) Age	Under 25 Yrs	25-34 Yrs	35-49 Yrs	50-64 Yrs	Over 64 Yrs
	%	%	%	%	%
1. Wholemeal more nutritious than white					
Agree	92.5	84.0	84.3	76.0	66.1
Undecided	5.0	10.4	7.9	17.7	20.3
Disagree	2.5	5.7	7.9	6.3	13.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
2. Wholemeal good for health because of high fibre					
Agree	57.5	71.7	77.5	70.8	69.9
Undecided	40.0	21.7	19.1	19.8	18.3
Disagree	2.5	6.6	3.4	9.4	11.8
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
3. White more fattening than wholemeal					
Agree	52.5	45.3	29.1	43.8	49.2
Undecided	25.0	33.0	32.6	29.2	22.0
Disagree	22.5	21.7	39.3	27.1	28.8
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Valid Responses	40	106	89	96	59

APPENDIX 13

New Zealand Flour Usage

	Year ended 31 January						
	1972	1973	1974	1975	1976	1977	1978
	(10 ³ tonnes)						
Bread Bakers ^a	122.4	121.2	125.1	120.8	127.0	126.3	129.6 ^b
Biscuits	14.6	14.3	15.6	15.3	16.6	16.6	15.8
Hi Ratio Flour	2.3	2.5	2.7	3.2	2.7	2.9	2.9
Self Raising Flour	2.4	2.4	2.1	2.2	2.7	2.5	2.5
Others ^b	65.7	71.0	74.6	73.2	82.7	81.1	75.4
	<u>207.5</u>	<u>211.4</u>	<u>220.1</u>	<u>214.7</u>	<u>229.8</u>	<u>229.4</u>	<u>226.1</u>
	%	%	%	%	%	%	%
Bread Bakers	59.0	57.3	56.9	56.3	55.3	55.1	57.3
Biscuits	7.0	6.8	7.1	7.1	6.4	7.2	7.0
Hi Ratio Flour	1.1	1.2	1.2	1.5	1.2	1.3	1.3
Self Raising Flour	1.1	1.1	0.9	1.0	1.1	1.0	1.1
Others	31.8	33.6	33.9	34.1	36.0	35.4	33.3
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

a. Bread bakers are defined as those units whose output consists partly of standard bread.

b. The difference between the quantities supplied to bread bakers in 1977 and 1978 is, in the main, the result of a re-classification of a number of users from the other category into the bread baker category.

c. Includes flour sold to pastrycooks and cake kitchens, also flour used in starch, baking powder, ice cream cones, paste and a number of small miscellaneous uses.

Sources: New Zealand Wheat Board Annual Report and Statement of Accounts 1972 to 1978.

APPENDIX 14

New Zealand Household Composition

(i) Number of Occupants	New Zealand Census				
	1956	1961	1966	1971	1976
			10 ³		
1 - 2	195.3	229.1	266.9	324.8	414.7
3 - 4	220.0	232.9	250.2	274.3	323.2
Over 4	157.2	180.8	199.0	202.6	203.4
	<u>572.8</u>	<u>643.4</u>	<u>716.1</u>	<u>801.7</u>	<u>941.3</u>
	%	%	%	%	%
1 - 2	34.1	35.6	37.3	40.5	44.1
3 - 4	38.4	36.3	34.9	34.2	34.3
Over 4	27.5	28.1	27.8	25.3	21.6
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

(ii) Number of Children ^a	New Zealand Census		
	1966	1971	1976
	%	%	%
Husband & Wife only	29.0	31.6	34.7
+ 1 child	18.3	17.8	17.3
2 children	22.2	22.0	23.8
3 or more children	30.5	28.6	24.1
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

a. The percentages are for households of one complete family only. Census figures were only available from 1966.

Source: Department of Statistics, New Zealand. Census of Population and Dwellings 1956, 1961, 1966, 1971, 1976.

APPENDIX 15

Price of Bread Compared with Substitute
and Complementary Foods

	Average Retail Price (c)/100 gm.					
	1955	1960	1965	1970	1975	June 1978
Bread	0.8	0.8	0.8	1.6	2.0	4.8
Potatoes	0.6	1.0	1.0	1.2	2.7	3.2
Apples	2.1	2.4	3.0	3.1	5.2	5.4
Breakfast Flake Biscuits	3.4	3.9	4.4	4.6	6.0	9.6
Oat Meal	1.9	2.4	2.7	3.0	4.9	7.2
Water Biscuits	5.5	6.5	6.7	10.1	15.5	23.8
Chocolate Wheaten Biscuits	-	-	-	11.8	17.6	31.0
Cake - Madeira	4.9	5.7	6.8	9.1	14.9	24.6
Flour	0.6	0.6	0.6	1.2	1.7	3.6
Bacon	8.0	10.0	12.0	17.4	34.6	45.5
Eggs (each)	4.1	4.1	4.2	4.2	6.6	8.8
Cheese	4.2	4.5	5.2	9.4	16.6	22.0
Butter	4.4	4.4	4.4	6.3	7.1	10.7
Jam	5.4	6.8	7.7	6.7	10.7	17.5
Consumer Price Index for Food	443	484	544	685	1074	1668
(Base 31 September 1974 = 1000)						

Sources: Department of Statistics Prices, Wages and Labour
1955-1975, and personal communications with the
Department of Statistics.

RECENT PUBLICATIONS

RESEARCH REPORTS

48. *Proceedings of an N.Z. Seminar on Project Evaluation in Agriculture and Related Fields*, R. C. Jensen (ed.), 1968.
58. *Tower Silo Farming in New Zealand—Part II: Economic Possibilities*, D. McClatchy, 1969.
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