

R&D REPORT
NO. 161

**Risk factors associated with
the domestic handling of raw
meat: quantitative research**

2002

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H Newsholme

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EXECUTIVE SUMMARY

The number of reported food poisoning incidents originating in the domestic kitchen appears to be on the increase. In England and Wales there has been an increase in the reported incidence of food poisoning in recent years (CDR 1996; 2000), and it has been suggested that 15% of cases originate in the home (Djuretic, 1996). Red meat and poultry are known carriers of food poisoning bacteria and are believed to be the food vehicles responsible for a large proportion of food poisoning outbreaks. This study aimed to quantify consumer practices regarding the domestic handling of meat, identified in previous qualitative work.

A quantitative study targeting 1030 consumers was undertaken. Male and female respondents from a range of ages, household composition and social class from 5 city locations in the UK were recruited for the study.

A questionnaire was designed to examine various issues relating to handling of meat in the home. Questions pertaining to type of meat and frequency of purchase, storage, preparation and cooking of meat, and perception of food hygiene were included. Questions to assess the awareness and knowledge of food hygiene were also included in the questionnaire.

The results showed that a variety of meats were consumed, with chicken being the most popular and lamb being the least frequently purchased. The majority of consumers did not purchase frozen meat on a regular basis. Cooked meats (in particular cooked sliced meats) were frequently purchased weekly by almost 70% of consumers, and ready-meals by 25% of consumers. Purchase of most meat types tended to increase with decreasing socio-economic status.

The majority of consumers perceived their kitchen practices to be hygienic and believed their practices to be more hygienic than those in commercial kitchens. Perceptions that personal practices were better than commercial practices tended to increase with increasing age.

Approximately 213 of consumers reported to store raw meat at the bottom of the fridge. For those who stored raw meat above cooked meat or on the same shelf, or stored both raw and cooked meats wherever there was space, the potential for cross contamination from raw meat was greater. Consumer perception of hygienic practices did not vary between those storing meat at the bottom and those storing it at the top of the fridge.

Less than half of the respondents were aware of the correct temperature at which their fridge should have been running. Only 1/3 of those respondents who considered their practices very hygienic, and those who considered their practices as *much more* hygienic than commercial kitchens knew the correct temperature of their fridge.

Most respondents would discard meat with off odours or flavour or if the appearance was odd. However, many would consume meat after the use-by date if the appearance, flavour and smell were acceptable.

Regarding personal and kitchen cleanliness, self-reported behaviour appeared to be hygienic. The majority of respondents indicated that they always washed their hands prior to preparing meat. Similarly, the majority of consumers indicated that they always washed work surfaces before and after preparation of a meal containing meat. Some of those consumers with pets, however, may have compromised safety to some extent, reporting that they never removed pets from the kitchen before meal preparation.

Washing meat, in particular whole chickens, was carried out by the majority of consumers, generally under a running tap. Many consumers reported to dry their meat by shaking off excess moisture.

Separate chopping boards designated for meat were not in use in the majority of households. Although many respondents washed their boards, the methods of washing may not have always guaranteed effective cleaning. Over 1/5 of respondents wiped their board with a cloth or rinsed it under a tap after cutting up meat before using it for something else. A small percentage of consumers reported that they continued to use it without cleaning it at all.

Use of dishcloths was divided almost equally between those using disposable and those using non-disposable. The frequency of disposal or cleaning of dishcloths varied. Although many consumers were vigilant, many used their dishcloths for periods of time before washing or disposing of them that may have compromised safety.

A very small percentage of consumers used the cooking instructions to determine when meat was cooked thoroughly. Many, particularly in the older groups, judged by experience. The majority used a knife or other implement to stick in the meat to see if the juices ran clear.

When cooling leftover meat dishes, many cooled them to room temperature and then put them in the fridge, with 20% reporting to put them straight in the fridge. Although over 25% of consumers reported never to re-heat meat dishes, of those that did, over 10% used slow methods of re-heating.

There was a high consumer awareness of food hygiene, particularly in certain areas, although there was some uncertainty and misconception in others. In many instances, self-reported behaviour did not always reflect awareness. There was, however, a positive correlation between food hygiene awareness and washing meat. Those never reporting to wash meat decreased with increasing awareness and those always washing meat (in particular for those washing chickens) increased with increased awareness. This suggests that washing meat have been associated with hygienic practice.

In conclusion, although most consumers perceived their practices to be hygienic and superior to commercial kitchen practices, for some, the best practice was not always reported. In addition, as self reported practice might not always mimic behaviour, there may well have been an underestimation of risk in the domestic kitchen.

Although many were knowledgeable of various aspects of food hygiene, knowledge was not always related to behaviour.

There were some areas, particularly in the cooling and reheating of meat products, where knowledge of safe practice appeared to be lacking.

A deeper understanding of the risks associated with handling of meat is necessary for the consumer to be fully aware of the implications in certain areas. In other areas, awareness and knowledge appeared to make little difference to **consumer** behaviour. In the latter case, it will be necessary to look beyond increasing public awareness and examine the **fundamental** roots of consumer behaviour which result in these habitual practices.

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1 INTRODUCTION

1 . Background

In England and Wales there has been an increase in the reported incidence of food poisoning in recent years. Notification of cases has risen from 70,130 in 1993 (CDR 1996) to 86,316 in 1999 (CDR 2000). It has been suggested that 15% of cases originate in the home (Djuretic,1996).

Raw red meat and poultry can be vehicles for the carriage of pathogenic bacteria which cause food poisoning. Raw meat, in particular poultry, may act as a source of *Salmonella* which is a cause of food poisoning. Other food poisoning bacteria, including some strains of *Escherichia coli* and *Campylobacter*, may also be common in raw meat. It has been suggested that many people do not consider the domestic environment a place with a high risk of food poisoning and feel that the responsibility of lowering risks of food poisoning lies with the food manufacturers or restaurants (Worsfold and Griffith, 1997). Thus, the implications of incorrect handling of raw meat may not be apparent to the consumer and so risks may be increased.

There have been relatively few studies into the domestic handling of raw meat, although it has been shown that risky food handling behaviours are prevalent in the home. Worsfold and Griffith (1997) studied food safety behaviour of 100 people in their own homes and showed that basic food handling practices indicated great potential for cross contamination, of which the participants seemed to be unaware. A previous study by the same authors identified the principal causes of cross contamination in domestic food preparation as faulty food handling techniques, poor personal hygiene and a lack of facilities for the segregation of raw and cooked foods (Worsfold and Griffith, 1996). Further work on the identification of food safety risks in the home, quantification of these practices and verification of microbiological contamination in the domestic environment are essential to support the adoption of successful methods of reducing food poisoning incidence in the home.

1.2 Aims

- To **quantify** consumer practices regarding the domestic handling of meat.
- To determine demographic differences.
- To investigate awareness of food hygiene and the impact this has on behaviour.

1.3 Scope

This report constitutes the second phase of the FSA funded project: Microbiological Risk Factors Associated with the Domestic Handling of Meats. The first qualitative phase identified consumer practices **which** have been quantitatively addressed in **this** report. Further practical kitchen work and laboratory microbiological study will complete this project.

2 METHOD OF RESEARCH

2.1 Recruitment Criteria

Recruitment of participants for the survey was undertaken by an external market research company. A pre-recruitment questionnaire was used to obtain quotas for gender, age, social class and household composition (see Appendix 1). Only those who purchased and prepared meat and meat products were recruited. To ensure that both red meat and poultry preparation was covered in the survey, a quota was specified whereby 50% of respondents had to prepare red meat and 50% had to prepare poultry.

2.2 Fieldwork

The fieldwork took place in five city locations: Manchester, Birmingham, Bristol, London and Glasgow. The questionnaires were designed to be self-completed. Respondents were street recruited and then escorted by the interviewer to a central location where they completed the questionnaire. An incentive of £1 was given to those who participated in the study.

2.3 Respondents

A sample size of 1000 consumers was aimed for. The gender, age, household, socio-economic and regional groups can be seen in Table 1.

Table1: Respondents recruited for the study.

	Gender	Children	Age	Social Class	Region
	Male	With	18-24 18 (9%)	A/B 197 (19%)	Midlands 210 (20%)
	269 (26%)	445 (43%)	25-34 47 (24%)	C1/C2 567 (59%)	North 181 (18%)
	Female	Without	35-44 51 (26%)	D/E 265 (26%)	Scotland 215 (21%)
	762 (74%)	585 (57%)	45-54 44 (22%)		South East 216 (21%)
			55-64 38 (19%)		South West 209 (20%)
Total	1031	1030*	1031	1029*	1031

* = missing data

2.4 Questionnaire

A questionnaire was designed to quantify awareness and behaviour of consumers regarding the domestic handling of meat. An outline of the questionnaire is set out below (see Appendix 2 for full questionnaire).

2.4.1 Questionnaire Outline

Question 1

Question 1 was designed to examine what type and cuts of raw meat consumers were most frequently buying and where they most made these purchases. The question also included the purchase of frozen meat, cooked meat and ready-meals.

Question 2

Question 2 investigated consumer perception of how hygienic they considered their own kitchen practices to be and also how hygienic they felt they were in comparison with those in commercial kitchens.

Question 3

In this question the storage of meat, including how and where meat was stored in the fridge and consumer awareness of correct fridge temperature, was examined. Thawing practices and attitudes towards use-by dates were also investigated.

Question 4

Question 4 explored consumer practices during preparation of meat including washing meat, personal preparation and cleaning practices before and after preparation.

Question 5

This question examined consumer practices involved with cooking meat, including methods of determining when meat is cooked, and storage and re-heating of cooked meat dishes.

Question 6

This question comprised of a series of 10 statements relating to different food hygiene issues. Respondents were asked to indicate if these statements were true, false or if they were not sure. This question was included to indicate consumer awareness of food hygiene issues and enable awareness and behaviour to be compared.

2.5 Pilot

A pilot study of 20 consumers was undertaken by a professional recruiting agency. Feedback sheets provided information from the recruiters to help identify any problem areas from either the consumer or recruiter's point of view.

3 RESULTS

The first part of this report (section 3.1) looks at meat purchase within the population and examines demographic differences between different types of meat consumed. Sections 3.2 onwards looks at consumer behaviour regarding domestic handling of meat.

3.1 Meat Purchase

Consumers were asked to indicate how frequently they purchased various types and cuts of meat. The following sections report on these findings and investigate demographic differences within the population.

3.1.1 Fresh Meat

Figures 1 - 4 represent the percentage of consumers purchasing specific types of meat on a weekly, fortnightly and occasional basis and those reporting never to buy certain meat types. (See Appendix 3 for tabulated counts and percentages).

The most common meats bought both on a weekly and fortnightly basis were reported to be chicken fillets, sausages, minced beef and whole chickens. Chicken fillets were consumed by 45% of consumers on a weekly basis and 25% of consumers on a fortnightly basis. Sausages were consumed by 42% of consumers on a weekly basis, and 23% on a fortnightly basis. Minced beef was the most commonly purchased meat type on a fortnightly basis by 25% of consumers, with 35% buying it on a weekly basis. Whole chickens were purchased by 29% on a weekly and 20% on a fortnightly basis.

Figure 1: Percentage of consumers who purchased specific meats on a weekly basis.

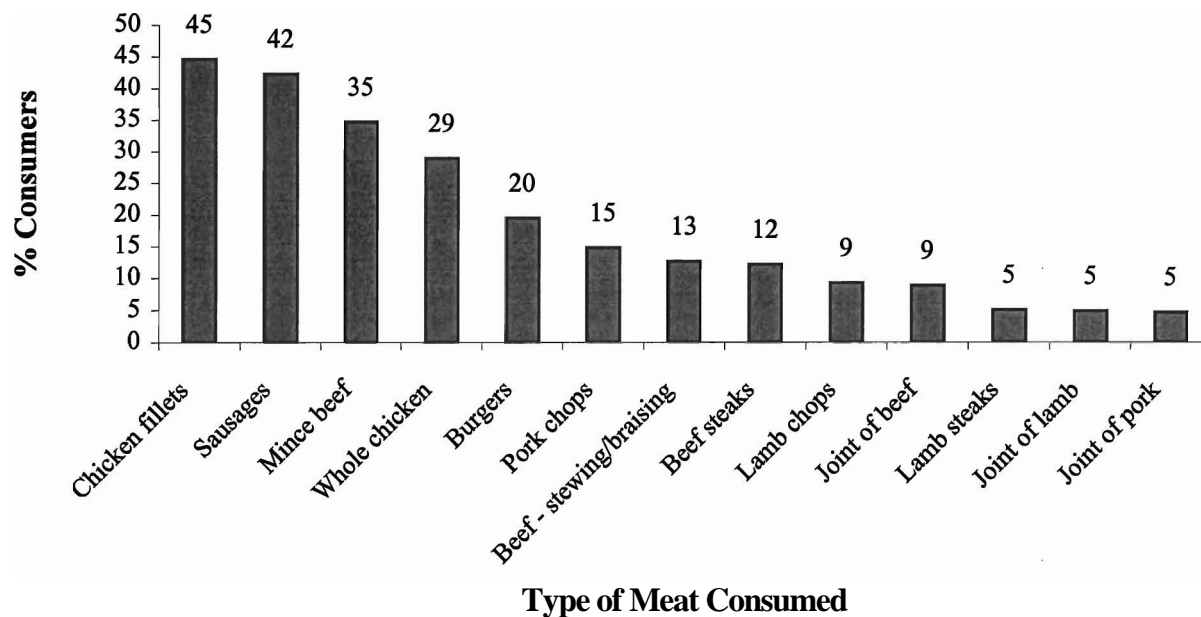


Figure 2: Percentage of consumers who bought specific meats on a fortnightly basis.

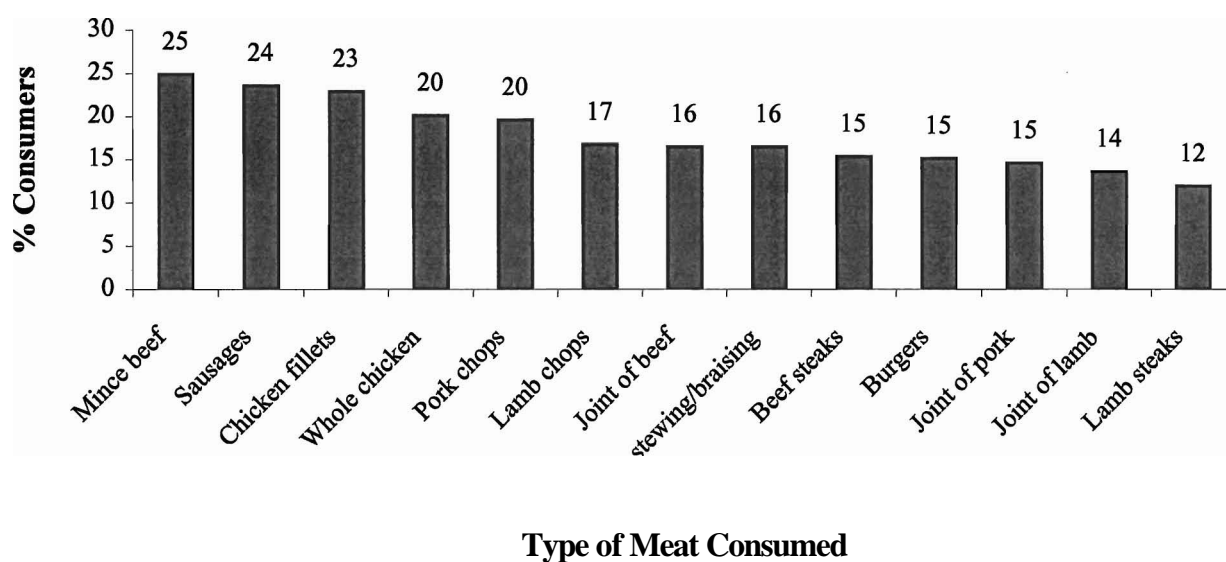
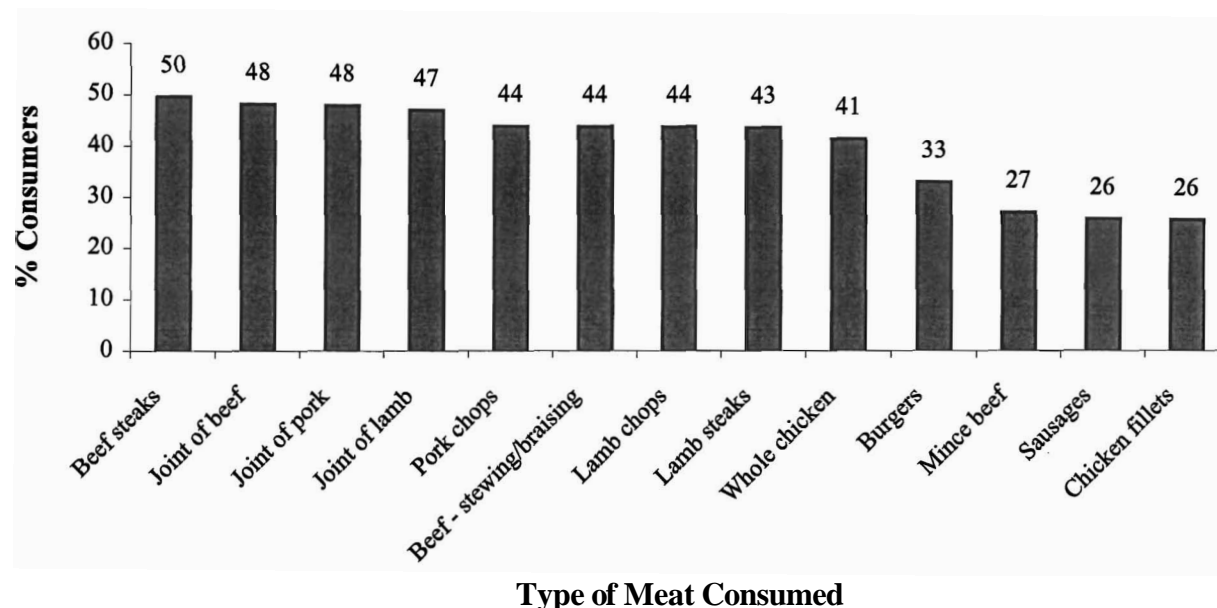


Figure 3: Percentage of consumers who bought specific types of meat on an occasional basis.

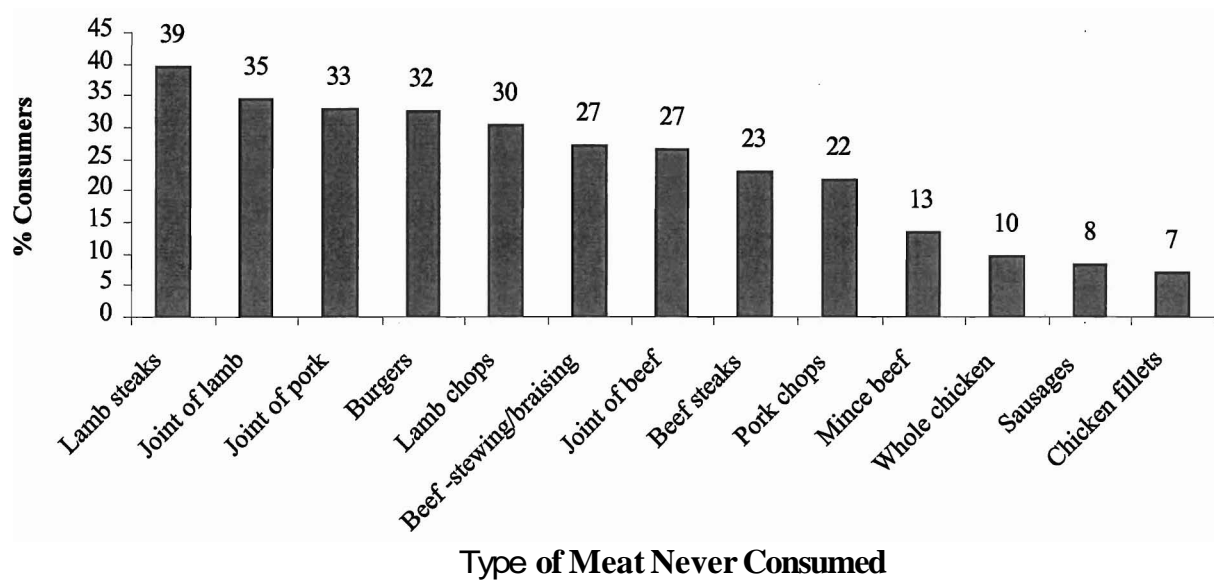


Between 40-50% of consumers reported to buy most meats (excluding those bought most regularly) on an occasional basis (Figure 3) (see Appendix 3 for tabulated counts and percentages results).

The percentage of consumers who **never** purchased the different types of meat is illustrated in Figure 4. Those meats with the highest percentage of consumers reporting never to be purchased included lamb steaks (**39%**), joints of pork (35%) and joints of lamb (33%). Burgers were reported by nearly one third of respondents to never be purchased.

A fairly high percentage of consumers reported never to buy beef, either **braising/stewing** steak (**27%**), joints of beef (27%) or beef steaks (23%).

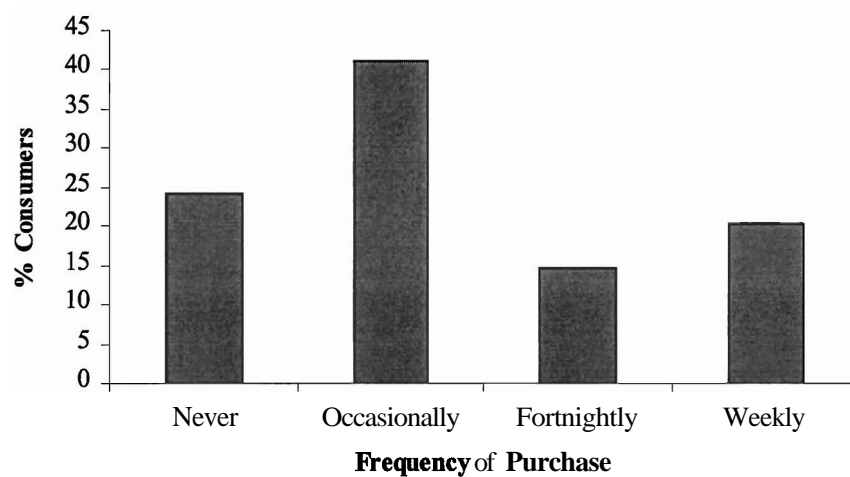
Figure 4: Percentage of consumers who never purchased specific types of meat.



3.1.2 Frozen Meat

The frequency of purchase of **frozen** meat is illustrated in Figure 5 (see Appendix 4 for tabulated counts and percentages).

Figure 5: Frequency of purchase of **frozen** meat.

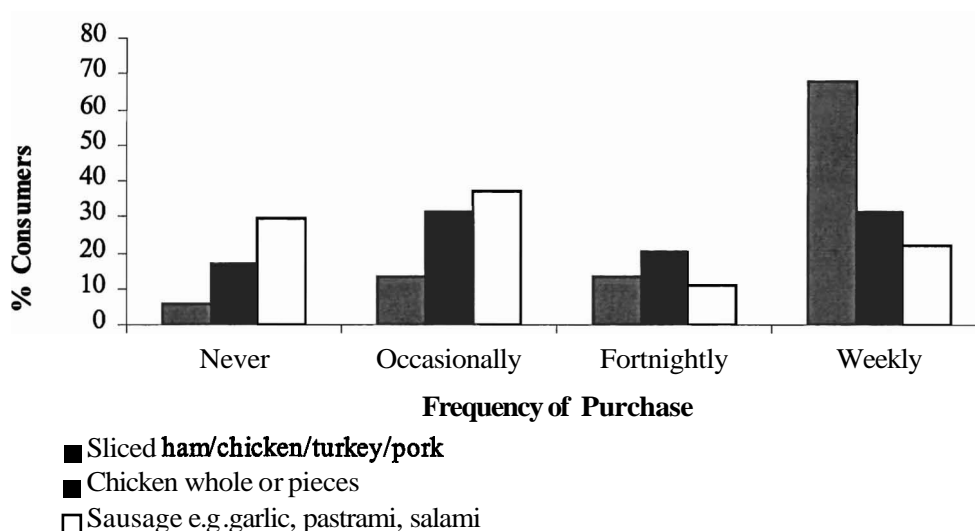


A higher percentage of consumers reported never to buy **frozen** meat (24%) than those buying on either a weekly (20%) or fortnightly basis (14%). A large proportion of consumers (41%) reported to buy **frozen** meat occasionally.

3.1.3 Cooked Meat

Figure 6 shows that a high percentage (68%) of consumers bought sliced cooked meats (ham, chicken, turkey and pork) on a weekly basis, with few consumers (6%) reporting never to buy these meats (see Appendix 4 for tabulated counts and percentages). Fewer consumers bought cooked chicken (31%) and cooked sausage (e.g. garlic, pastrami and salami) (22%), on a weekly basis.

Figure 6: Frequency of purchase of cooked meats.

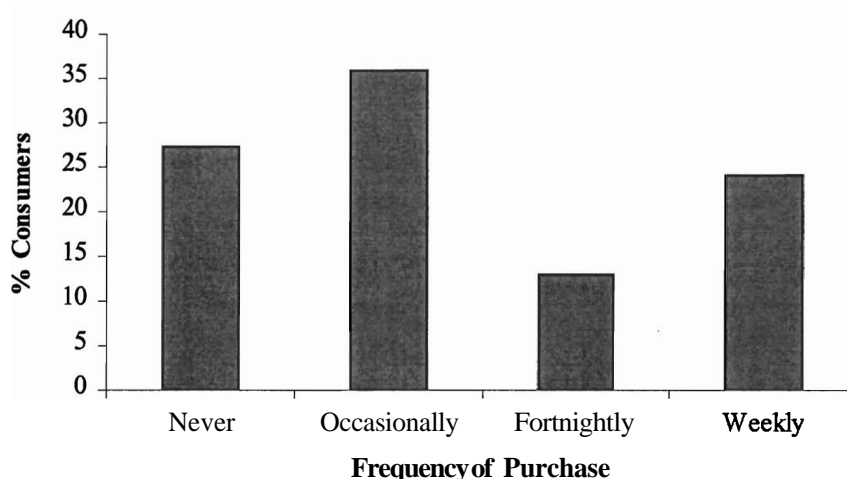


Purchase of all three types of cooked meat were similar on a fortnightly basis. A higher percentage of consumers reported never to buy cooked sausage, or to buy it only on an occasional basis, compared to the other types of cooked meat.

3.1.4 Ready-meals

Figure 7 illustrates the **frequency** of purchase of ready-meals containing meat (see Appendix 4 for tabulated counts and percentages). Almost 25% of consumers reported to purchase ready-meals on a weekly basis with 13% **making** a ready-meal purchase every fortnight. The occasional purchase was made by 36% of consumers and 27% of consumers reported never to purchase ready-meals.

Figure 7: Frequency of purchase of ready-meals containing meat.

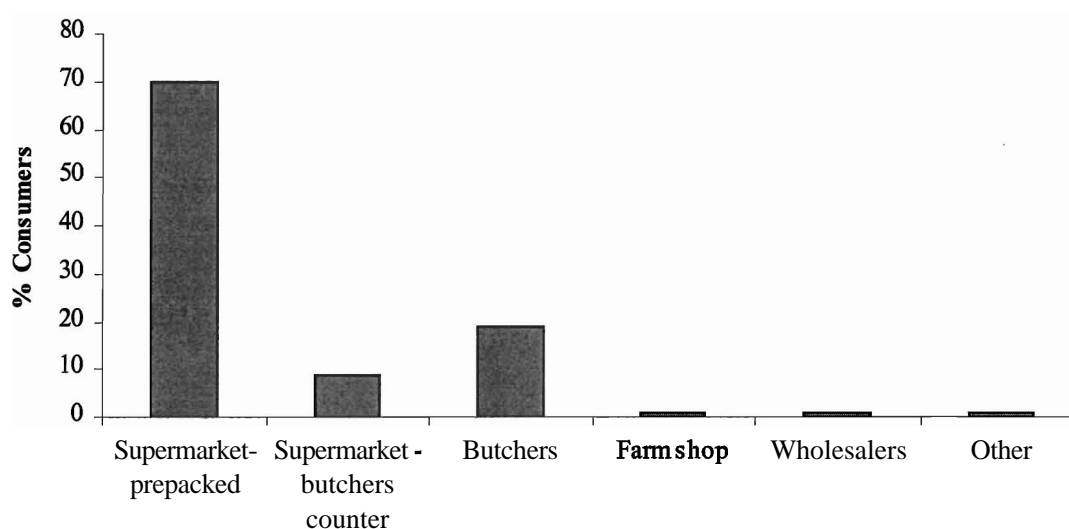


3.1.5 Place of Purchase

Consumers were asked to indicate where they most often purchased their meat. A small number of consumers indicated two choices. Figure 8 indicates the percentage of consumers (out of the 941 consumers making a single choice) purchasing meat at different outlets (see Appendix 5 for tabulated results).

By far the most popular place for purchasing meat was pre-packed, **from** the supermarket, with 70% of consumers indicating that this was their most frequent place of purchase. The butcher's shop was the preferential choice for 19% of consumers, with 9% most **frequently** purchasing meat **from** the butcher's counter in the supermarket. The farm shop, wholesalers and other outlets were indicated **by very** few consumers as their main supply of meat.

Figure 8: Where meat was most regularly purchased.



3.1.6 Demographic Differences

3.1.6.1 Gender Differences

Fresh Meat Purchase

Some gender differences between frequency of purchase were observed (see Appendix 6 for counts and percentages of frequency of purchase split by gender).

Differences between males and females regarding the frequency of purchase of whole chicken were small (Figure 9). The biggest difference was seen in fortnightly purchase, where 6% more females than males reported to purchase whole chicken every fortnight.

For the purchase of chicken fillets, although differences were small, Figure 10 shows there was a tendency for females to purchase chicken fillets on a weekly and fortnightly basis more than males. Conversely the percentage of men reporting to occasionally and never buy chicken fillets was slightly higher than the women.

Figure 9: Frequency of purchase of whole chicken between male and female groups.

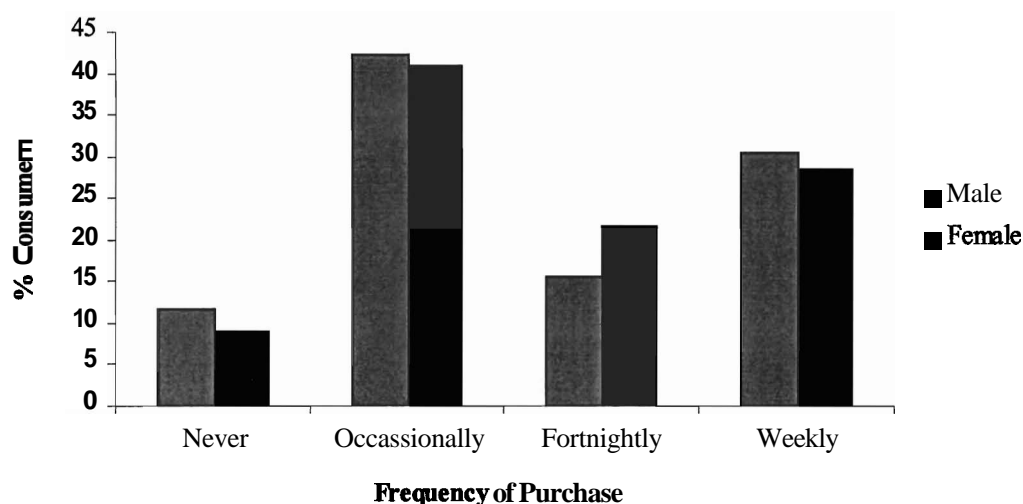
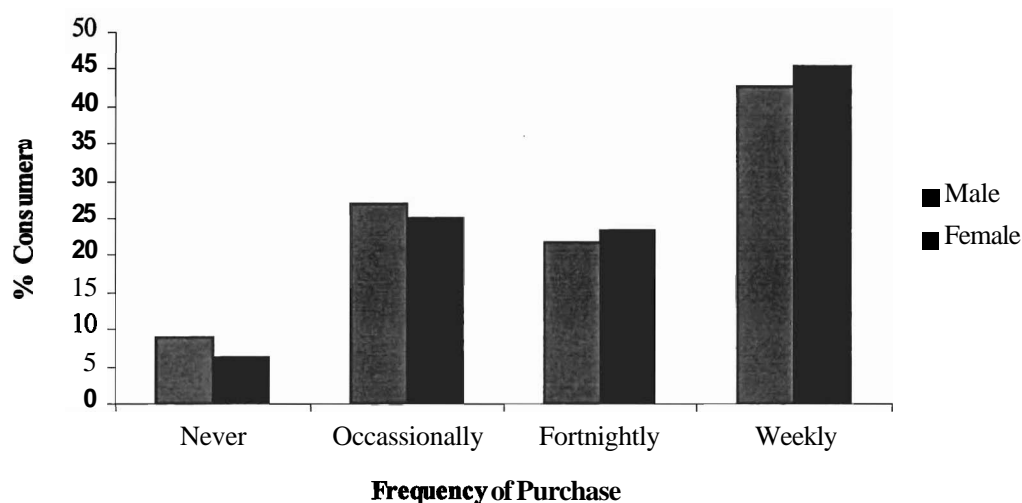


Figure 10: Frequency of purchase of chicken fillets between male and female groups.

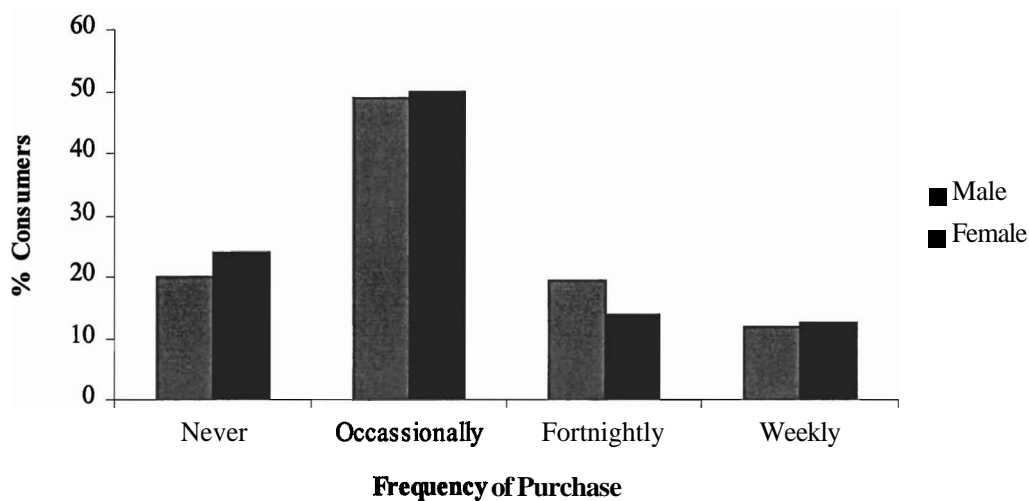


The purchase of beef steaks showed opposite gender trends for the better cuts, e.g. fillet, T-bone and sirloin, and the braising and stewing types (Figures 11 and 12).

Beef steaks including T- bone, fillet and sirloin were purchased by a greater percentage of men on a fortnightly basis (19 %) compared with females (14%). On a

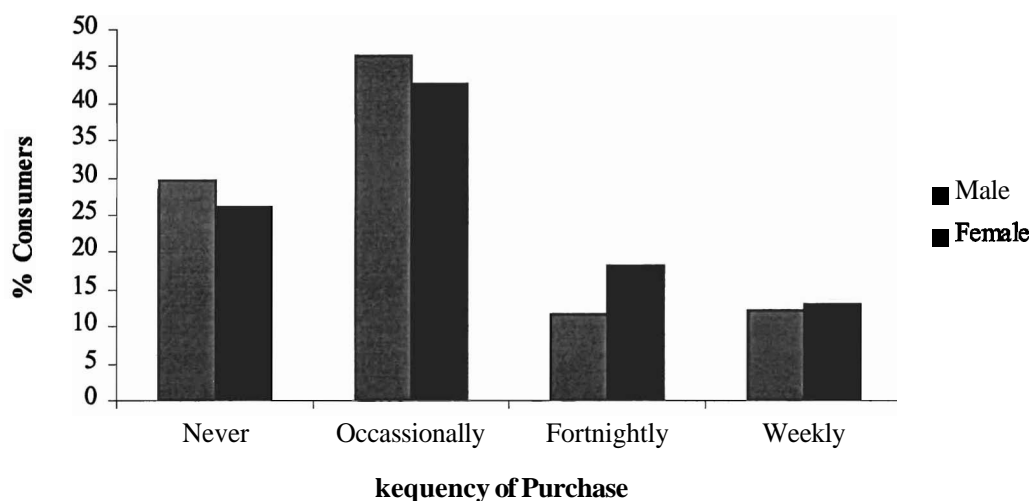
weekly basis, the percentages were very similar. Slightly more women claimed never to purchase this type of meat (24%) compared to men (20%).

Figure 11: Frequency of purchase of steak (sirloin, fillet and T-bone) between male and female groups.



For stewing beef, an opposite trend was seen, with 18% women purchasing on a fortnightly basis compared to 12% men, and 29% of men claiming to never purchase stewing beef compared to 26% of women.

Figure 12: Frequency of purchase of **stewing/braising** steak between male and female groups.



For the males, purchase of lamb steaks was more of a fortnightly and occasional purchase compared with the females, with a slightly higher percentage of females (6%) than males (3%) reporting to eat them once a week (Figure 13). However, lamb steaks were not a commonly consumed meat and so numbers eating them weekly and fortnightly were fairly low. There was, however, a slightly higher percentage of females (41%) reporting never to buy lamb steaks compared to the males (35%).

Figure 13: Frequency of purchase of lamb steaks between male and female groups.

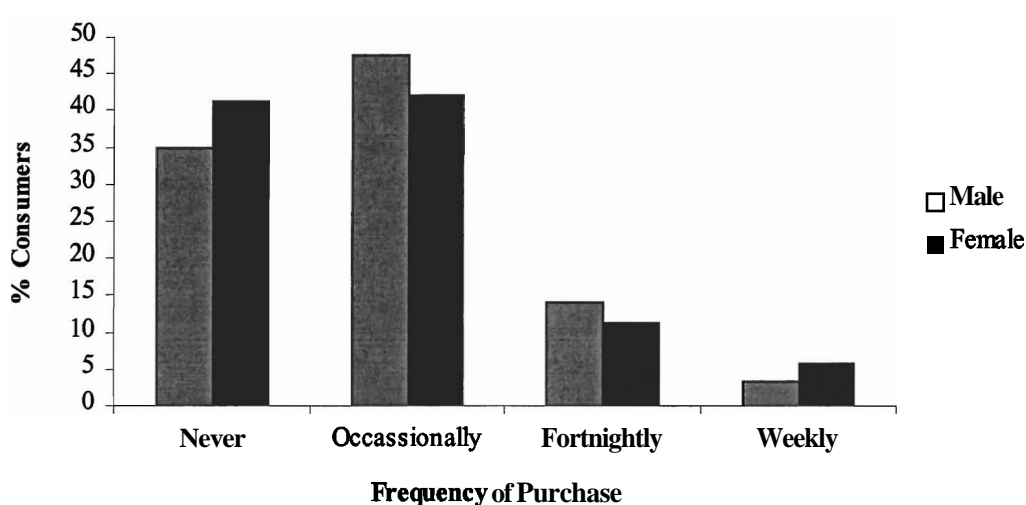
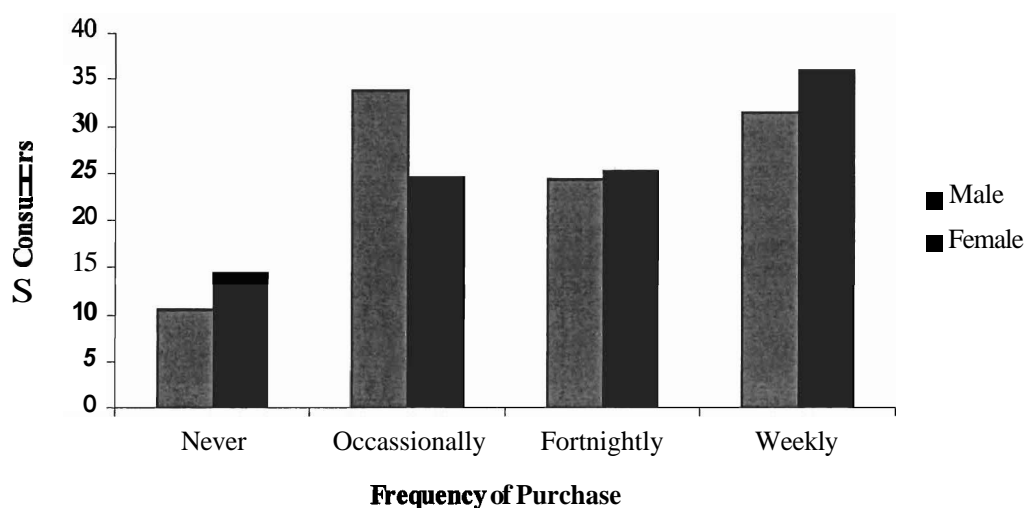


Figure 14 shows that more females (36%) reported to purchase mince on a weekly basis compared to males (31%). There was also a slightly higher percentage of females (4% higher) than males claiming never to purchase mince beef. The occasional purchase of mince was made by 9% more males than females.

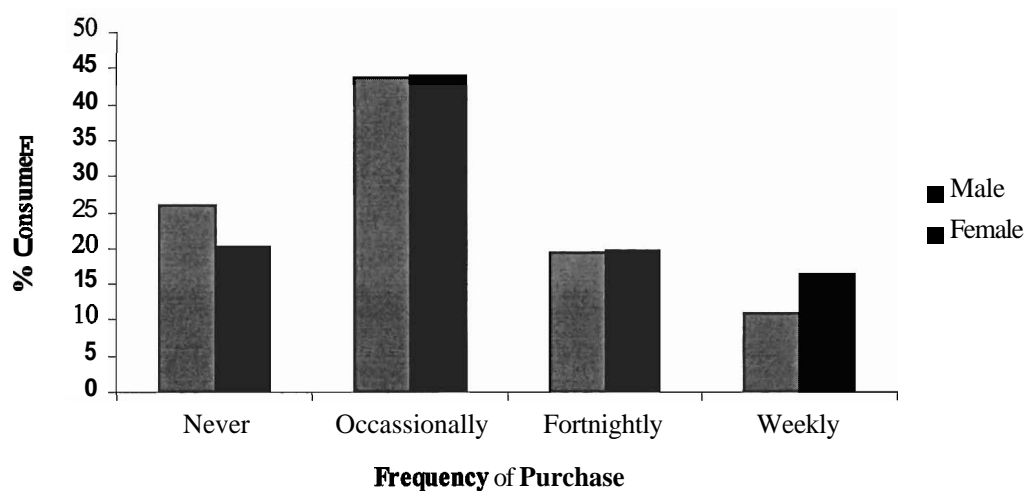
Figure 14: Frequency of purchase of mince beef between male and female groups.



Little difference was seen between males and females in the purchase of joints of meat including pork, beef and lamb joints.

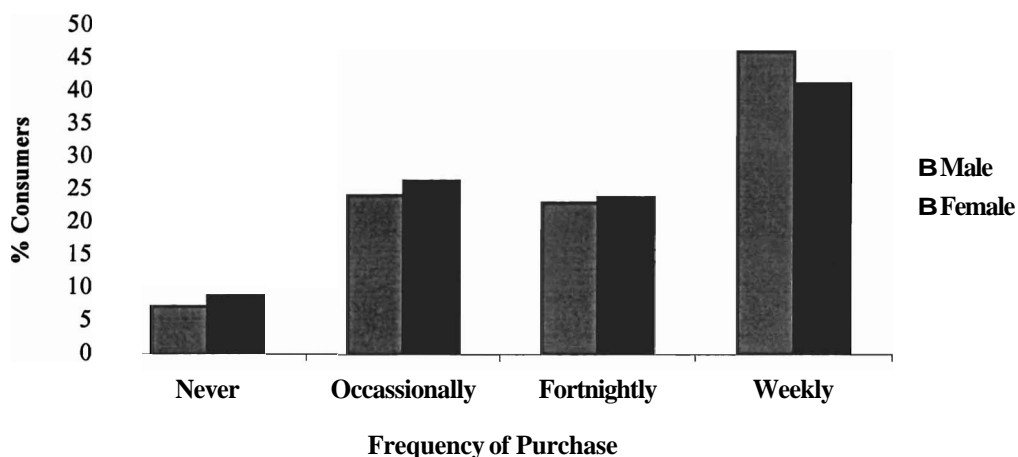
There were few differences in the frequency of purchase of lamb chops; however, pork chops appeared to be a more popular purchase with females than males (Figure 15). It was reported that 16% of females and 11% of males purchased pork chops on a weekly basis. More males (26%) than females (20%) reported never to purchase pork chops.

Figure 15: Frequency of purchase of pork chops between male and female groups.



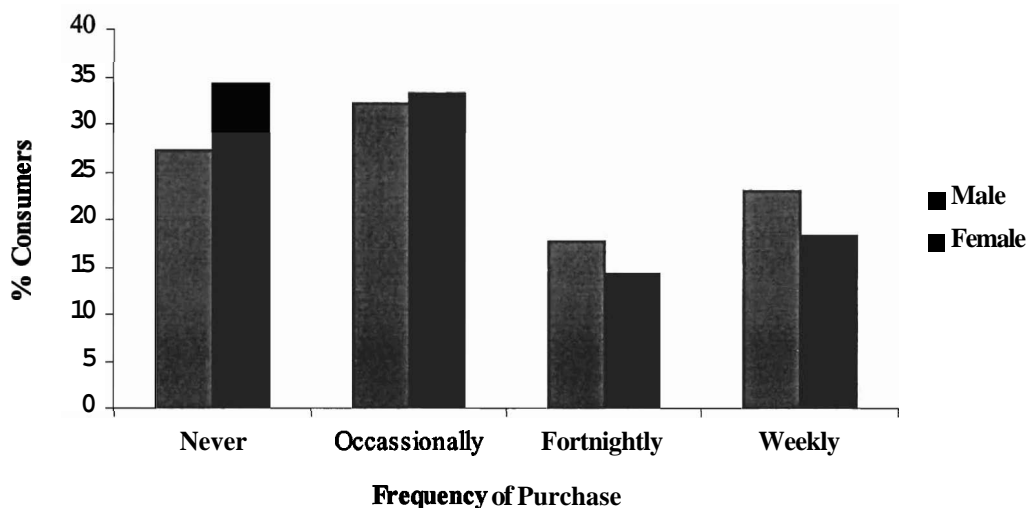
Sausage purchase appeared to be slightly higher among males than females with **46%** of males claiming to buy sausage on a weekly basis compared to **41%** of females, and slightly more females (9%) than males (**7%**) reporting never to purchase sausage (Figure 16).

Figure 16: Frequency of purchase of sausage between male and female groups.



Although purchase of burgers was reported less **frequently** than sausages by the group as a whole, the gender differences in the purchase of burgers reflected those of the purchase of sausages (Figure 17). A higher percentage of males (**23%**) than females (18%) reported to purchase burgers on a weekly basis and fewer males (**27%**) than females (**34%**) reported never to purchase burgers.

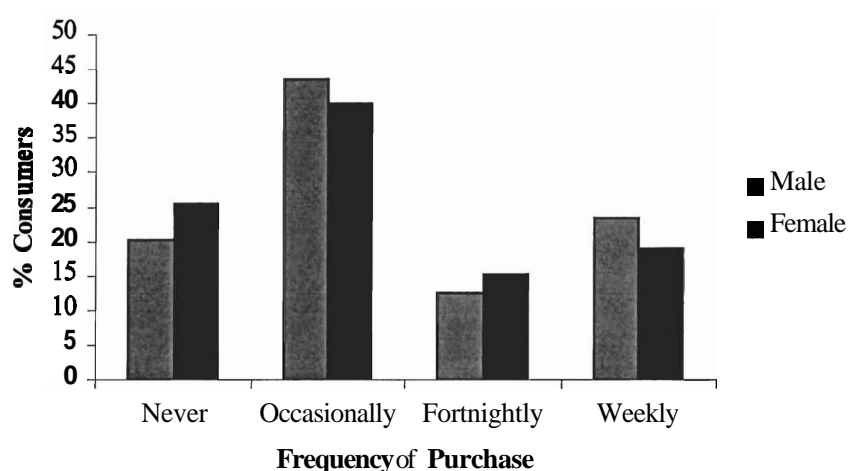
Figure 17: Frequency of purchase of burgers between male and female groups.



Frozen Meat Purchase

Frozen meat purchase was seen to be slightly higher among males than females on a weekly and fortnightly basis, with a slightly higher percentage of females reporting to occasionally and never buy **frozen** meat (Figure 18) (see Appendix 7 for tabulated results).

Figure 18: Frequency of purchase of **frozen** meat between male and female groups.



Cooked Meat Purchase

Figures 19-21 show the **frequency** of purchase of cooked meats between gender (see Appendix 7 for tabulated results).

Gender differences for cooked sliced meat were small although a higher percentage of females (70%) reported to buy cooked sliced meat on a weekly basis compared with males (62%).

Purchase of cooked chicken and cooked sausage showed an opposite trend. A slightly higher percentage of males (34% and 27%, respectively) reporting to purchase these meats every week compared with females (30% and 21%, respectively).

Figure 19: Frequency of purchase of sliced meat (ham, chicken, turkey and pork) between male and female groups.

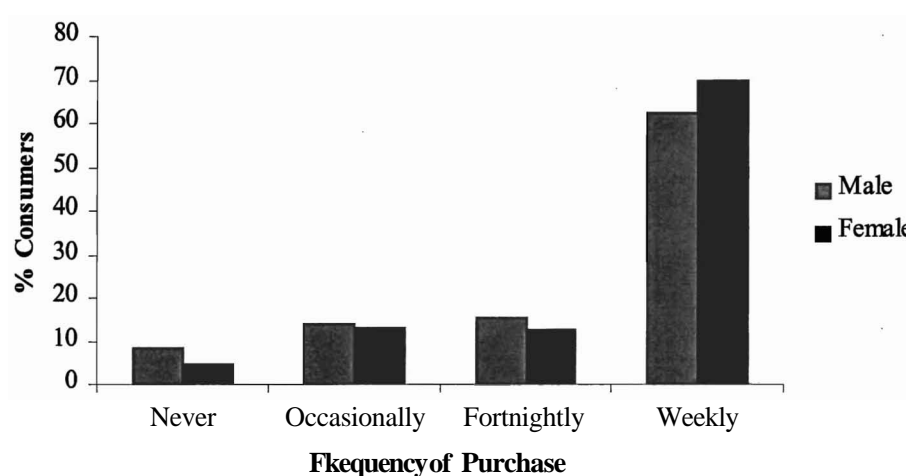


Figure 20: Frequency of purchase of cooked chicken between male and female groups.

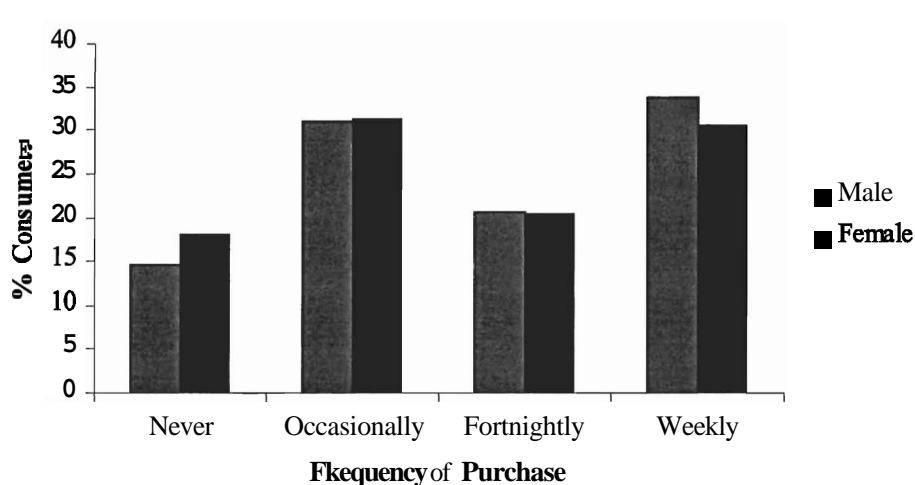
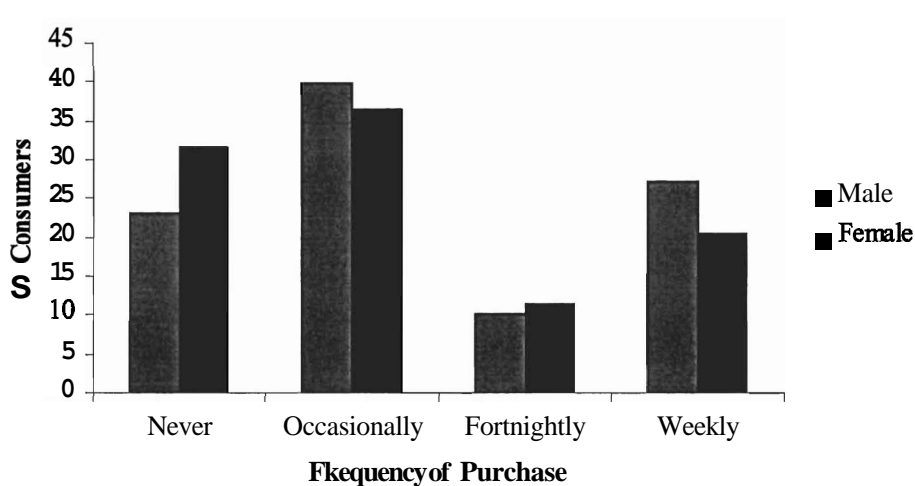


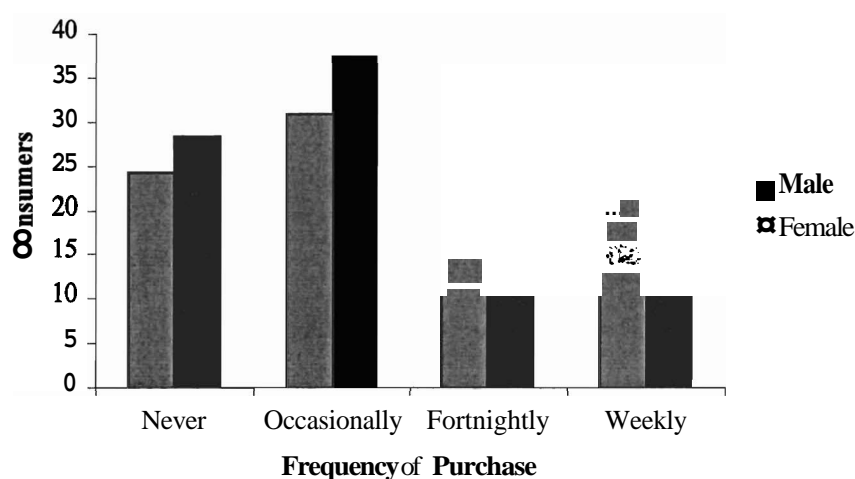
Figure 21: Frequency of purchase of cooked sausage (e.g. garlic, pastrami, salami etc.) between male and female groups.



Ready-Meal Purchase

The frequency of purchase for ready-meals was seen to be higher among the male consumers than the female both on a weekly and fortnightly basis (see Appendix 7 for tabulated results). A higher percentage of females than males reported both to make the occasional ready-meal purchase, and never to purchase ready-meals.

Figure 22: Frequency of purchase of ready-meals between male and female groups.



Place of Purchase

The majority of consumers bought meat either pre-packed **from** the supermarket or **from** the butcher's shop. Thus, demographic differences were investigated between these two outlets only.

Gender differences between place of purchase were not marked (see Appendix 8 for tabulated results). A slightly higher percentage (3%) of males reported to buy meat pre-packed from the supermarket compared with females. Purchase of meat **from** the butcher's was undertaken by 4% more females than males.

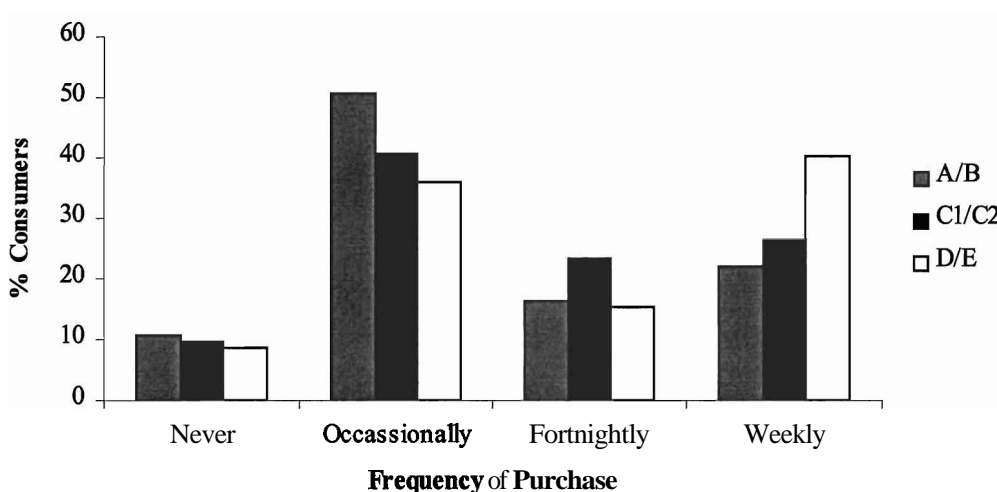
3.1.6.2 Socio-economic differences

Fresh Meat Purchase

For some types of meat, socio-economic differences in purchase frequency were quite pronounced (see Appendix 8 for counts and percentages of frequency split by socio-economic group).

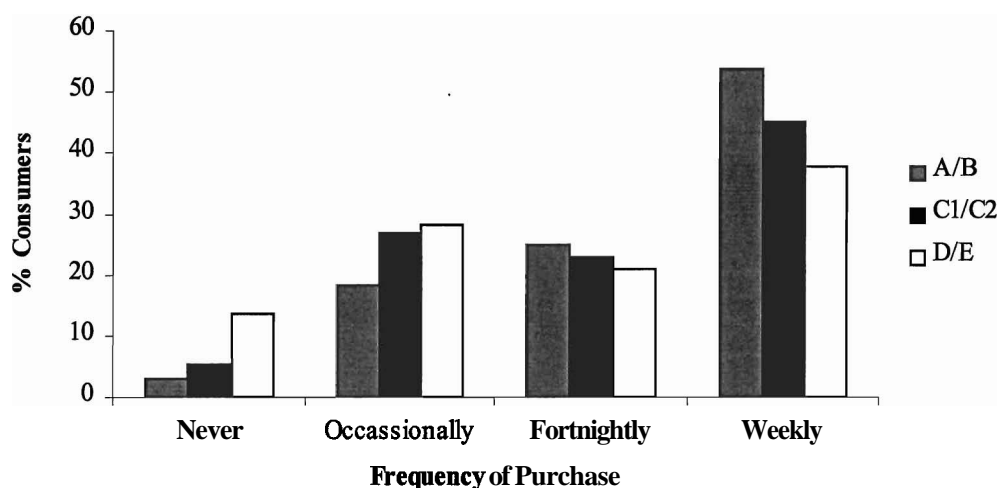
The weekly purchase of whole chickens increased as socio-economic group decreased (Figure 23). In the lowest social group (D/E) 40% **consumers** reported to eat whole chicken on a weekly basis compared with 22% in the highest group (A/B). An opposite trend was seen for those occasionally purchasing whole chicken.

Figure 23: Frequency of purchase of whole chicken by socio-economic group.



The purchase of chicken fillets increased with increase in socio-economic status both on a weekly and to a lesser extent a fortnightly basis (Figure 24). Those reporting never to buy chicken fillets were mainly in the lowest social group.

Figure 24: Frequency of purchase of chicken fillets by socio-economic group.



The purchase of both higher quality and lower quality cuts of beef steak showed similar patterns within socio-economic group. (Figures 25 and 26). Those in the highest socio-economic group reported to eat less on a weekly basis than those in the lower groups.

Figure 25: Frequency of purchase of steak (sirloin, fillet and T bone) by socio-economic group.

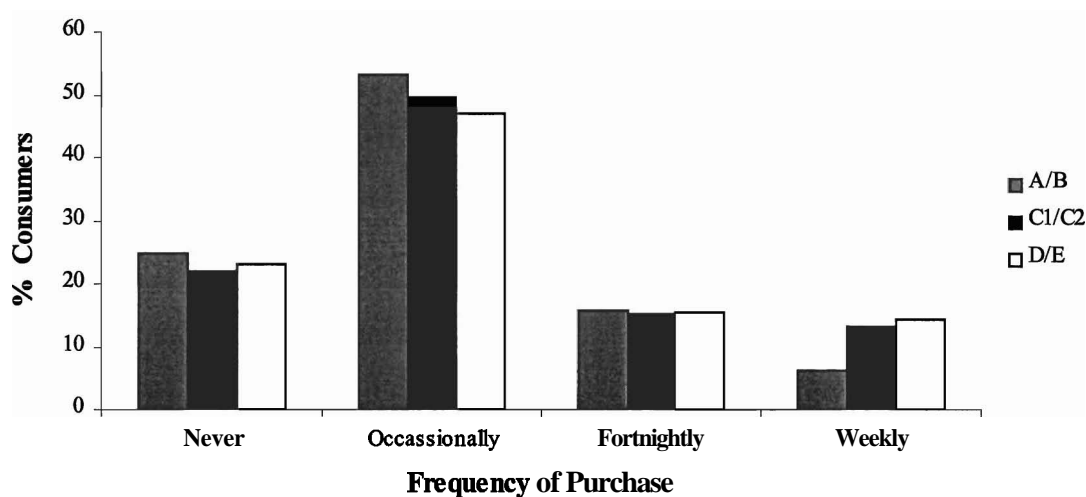
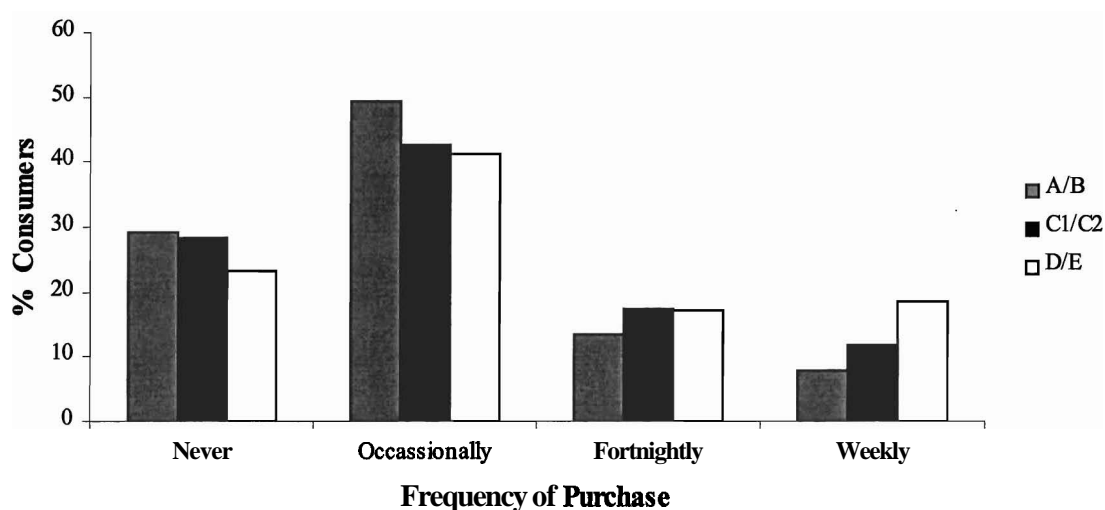


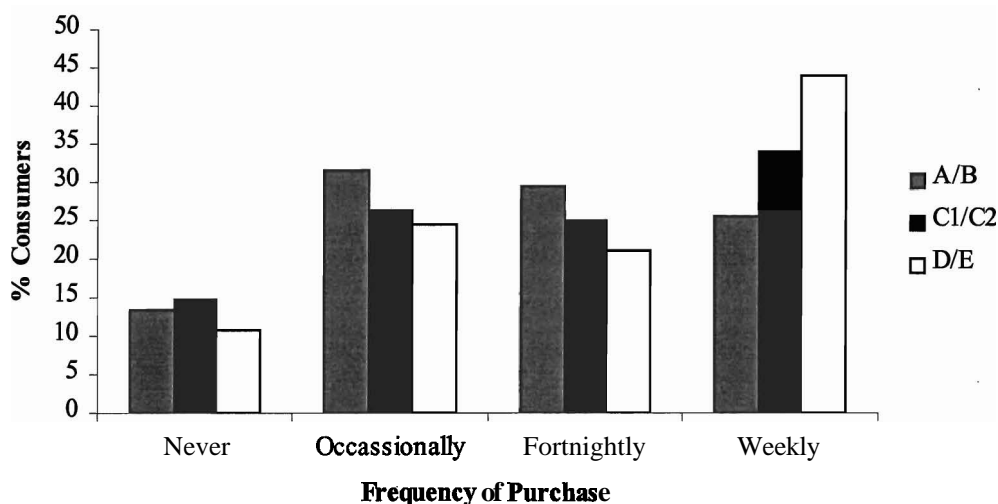
Figure 26: Frequency of purchase of **stewing/braising** steak by **socio-** economic group.



There were few differences in the **frequency** of purchase of lamb steaks between socio-economic groups.

The percentage of **consumers** purchasing mince beef on a weekly basis decreased with socio-economic status (Figure 27). A markedly higher percentage of those in group D/E (44%) reported to purchase mince on a weekly basis compared to those in group A/B (25%). The purchase of mince on a fortnightly and occasional basis showed an opposite trend. There was little difference between socio-economic groups for those reporting never to buy mince beef.

Figure 27: Frequency of purchase of minced beef by socio-economic group.



The purchase of joints of pork, lamb and beef tended to follow the same trends between socio-economic groups, with weekly purchase increasing as socio-economic group decreased (Figures 28, 29 and 30). Although this pattern was seen for all types, the numbers purchasing joints of meat weekly were small, and so ~~firm~~ assumptions cannot be made.

Figure 28: Frequency of purchase of beef joints by socio-economic group.

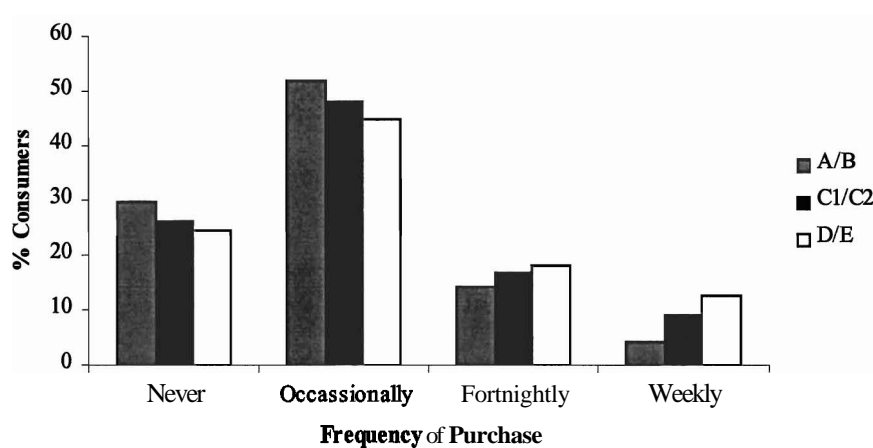


Figure 29: Frequency of purchase of lamb joints by socio-economic group.

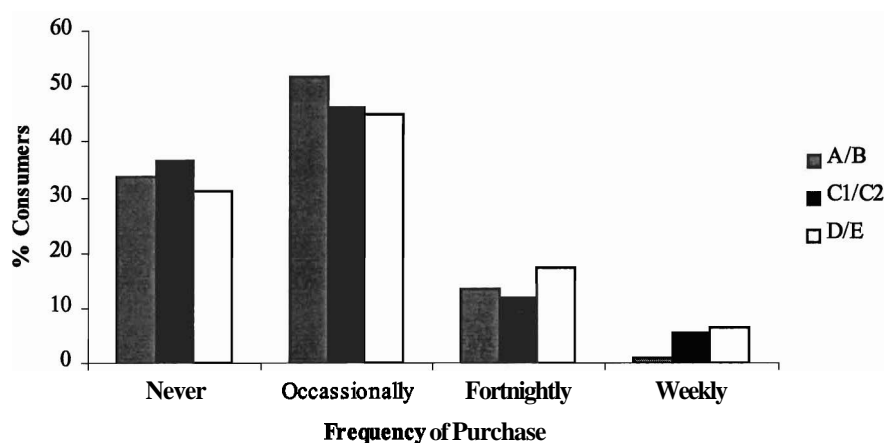
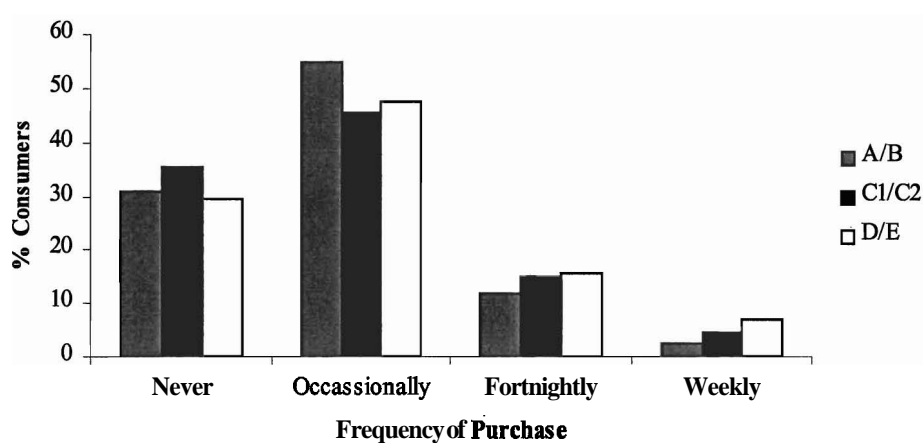
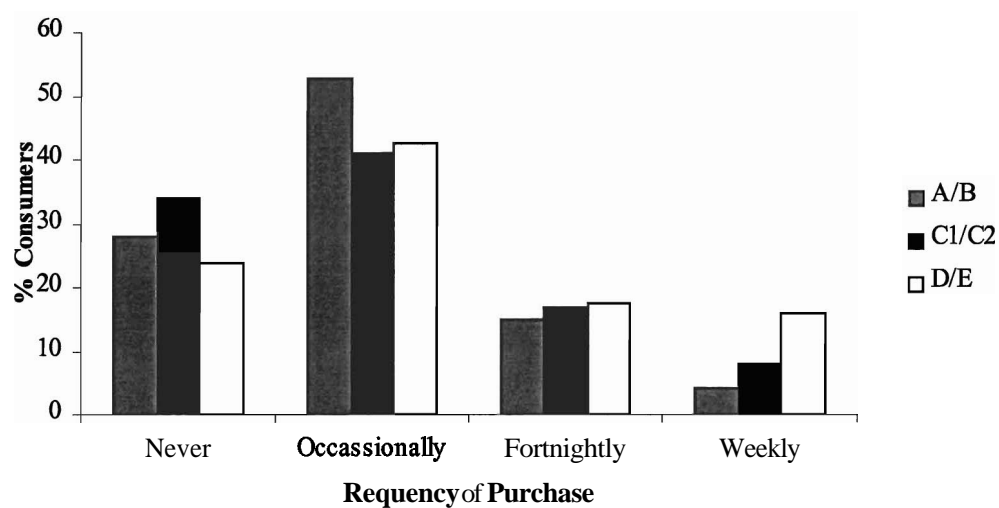


Figure 30: Frequency of purchase of pork joints by socio-economic group.



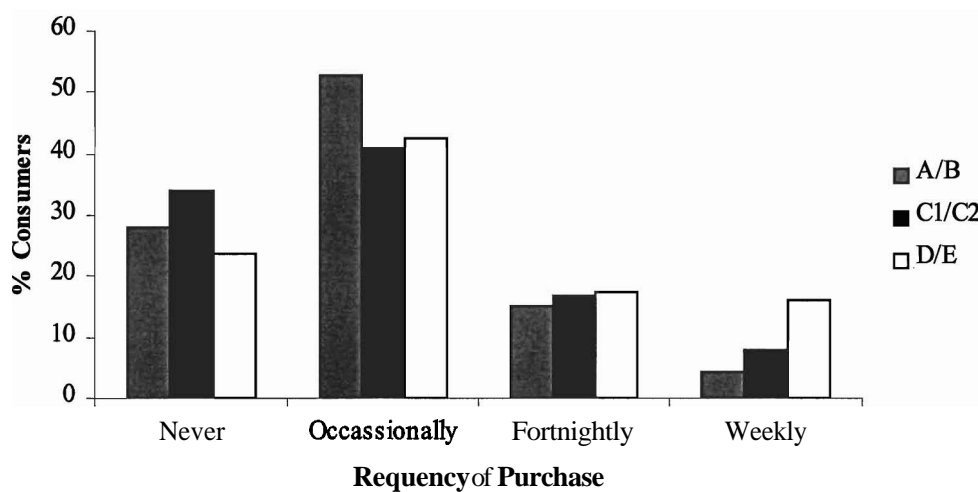
There was a trend towards purchase of lamb chops decreasing as social group increased (Figure 31).

Figure 31: Frequency of purchase of lamb chops by socio-economic group.



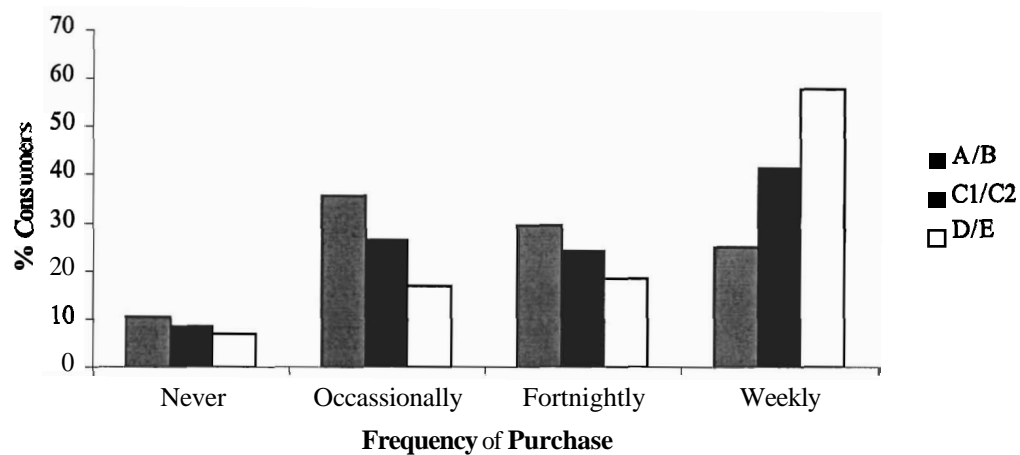
A similar trend was seen with the purchase of pork chops (Figure 32). However, a similar percentage of all social groups reported to purchase both lamb and pork chops on a fortnightly basis.

Figure 32: Frequency of purchase of pork chops by socio-economic group.



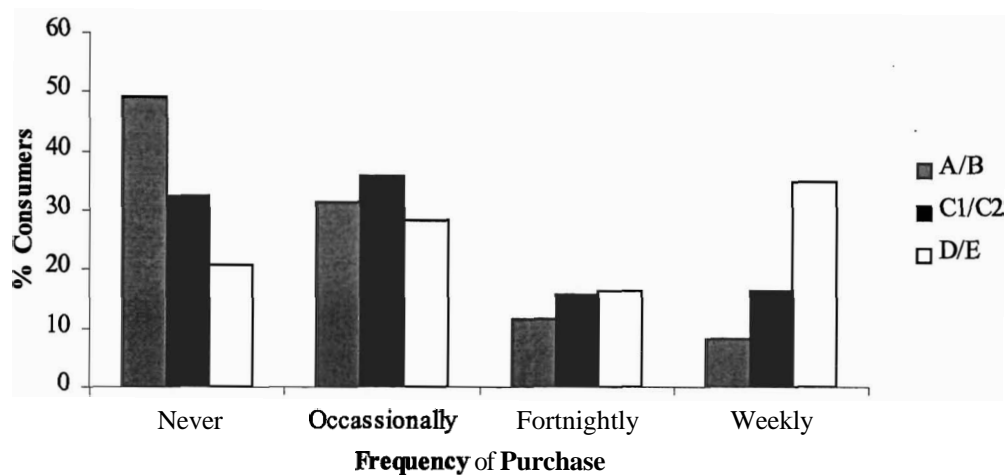
The purchase of sausages on a weekly basis was seen to decrease as socio-economic group increased. To a lesser extent this trend was reversed for the fortnightly purchase of sausage. The percentage of consumers never buying sausage decreased slightly with decrease in socio-economic group.

Figure 33: Frequency of purchase of sausages by socio-economic group.



The purchase of burgers on weekly basis, and to a lesser extent on a fortnightly basis, increased as socio-economic status decreased. A large difference was seen for those consumers who never bought sausages, between those in the highest socio-economic group and those in the lowest.

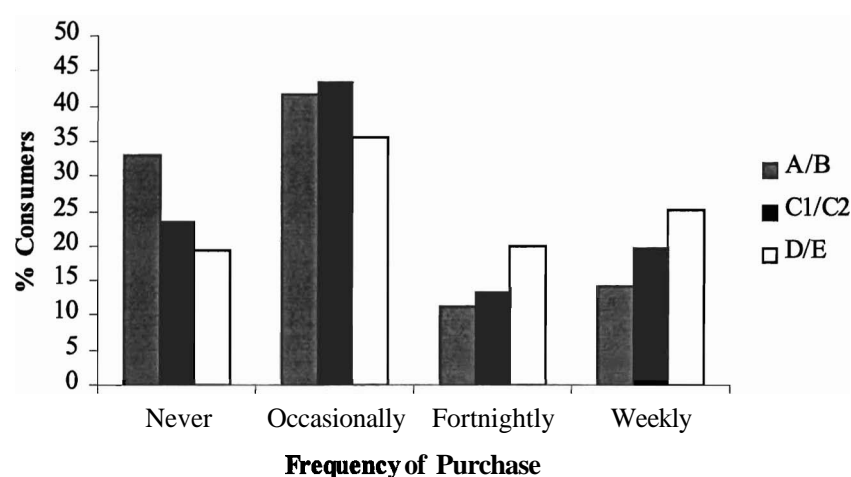
Figure 34: Frequency of purchase of burgers by socio-economic group.



Frozen Meat Purchase

Frozen meat purchase on a weekly basis increased as socio-economic group decreased with around 10% more consumers in the lowest social group reporting to buy frozen meat on a weekly and fortnightly basis (Figure 35). (See Appendix 9 for tabulated results). Conversely the percentage of those reporting never to buy **frozen** meat decreased as socio-economic group increased.

Figure 35: Frequency of purchase of frozen meat by socio-economic group



Cooked Meat Purchase

Although socio-economic differences were not marked, for all cooked meat purchase there was a tendency for **frequency** to increase as socio-economic status decreased (Figures 36, 37 and 38) (see Appendix 9 for tabulated results). The greatest percentage differences between groups was seen for the weekly purchase of pastrami where over 12% more of the lowest social group reported weekly purchase, compared to the other two groups.

Figure 36: Frequency of purchase of sliced meat (ham, chicken turkey and pork) by socio-economic group.

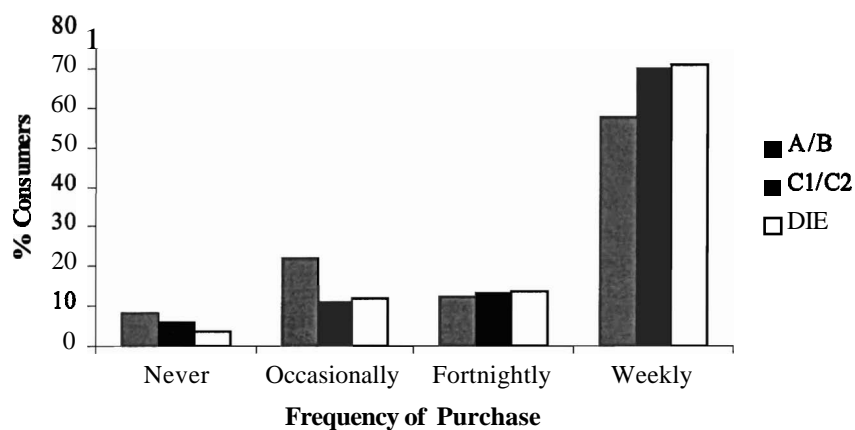


Figure 37: Frequency of purchase of cooked chicken by socio-economic group.

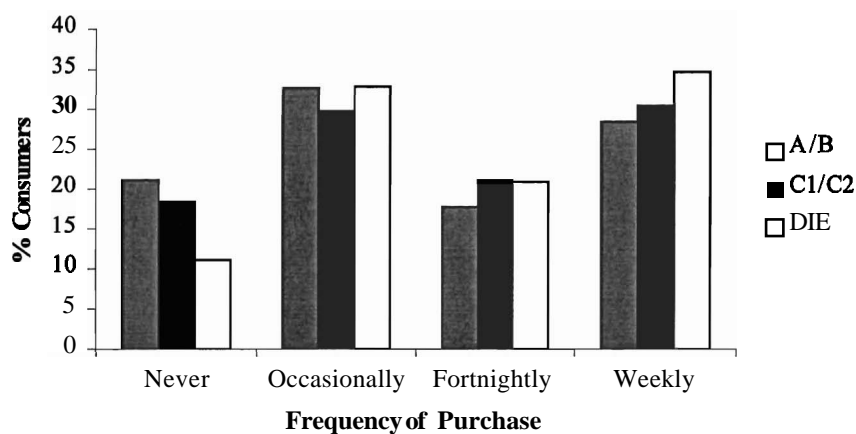
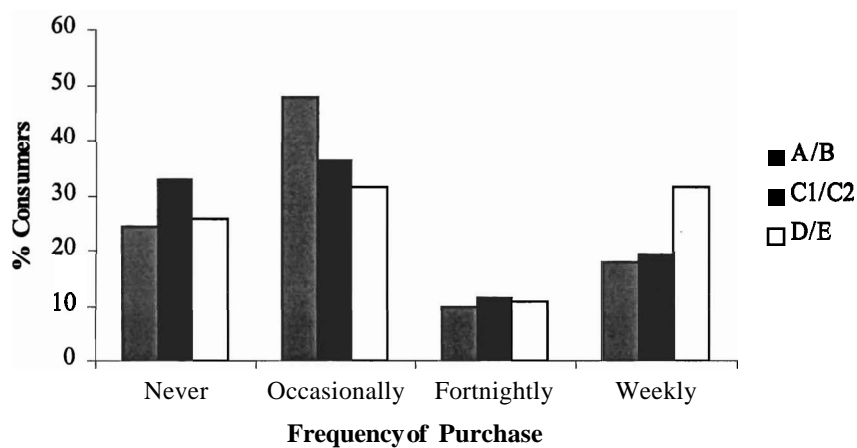


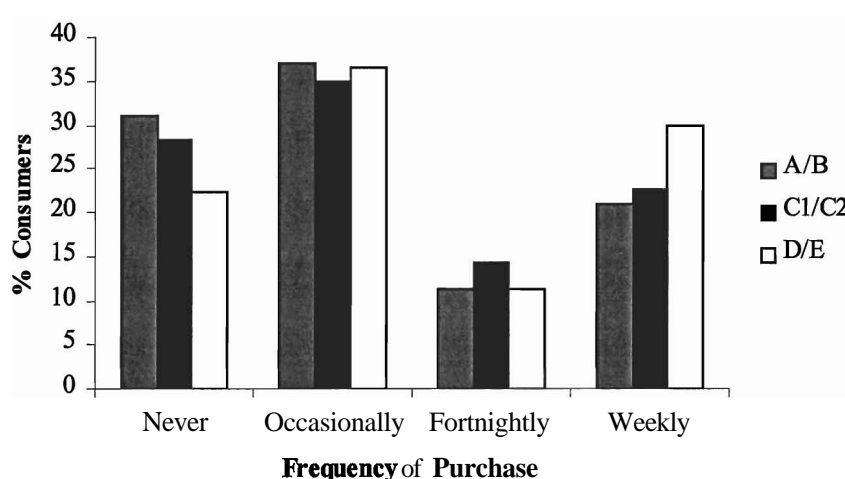
Figure 38: Frequency of purchase of cooked sausage (e.g. garlic, pastrami, salami, etc.) by socio-economic group.



Ready-meal Purchase

Purchase of ready-meals tended to increase as socio-economic status decreased, with almost 10% more in the lowest social group buying ready-meals on a weekly basis than in the highest group (Figure 39) (see Appendix 9 for tabulated results). The percentage of those reporting never to buy ready-meals decreased with socio-economic group.

Figure 39: Frequency of purchase of ready-meals by socio-economic group.



Place of Purchase

For socio-economic groups, little difference was seen between those buying from the butcher's shop. Around 8% fewer of those in the lowest socio-economic group, however, reported to buy pre-packed meat **from** the supermarket than in the highest socio-economic group. Those in the lower social groups not buying from either butcher's or pre-packed at the supermarket were most likely to be those purchasing meat from the butcher's counter in the supermarket (see Figure 8).

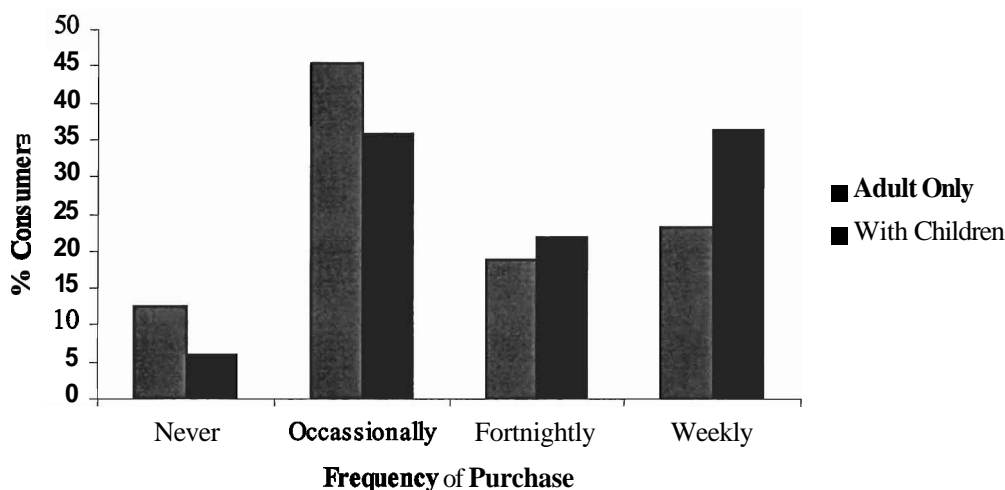
3.1.6.3 Household Composition Differences

Fresh Meat Purchase

Differences in frequency of purchase of some meat types were seen between adult only households and those with children living at home (see Appendix 10 for counts and percentages of frequency split by household composition).

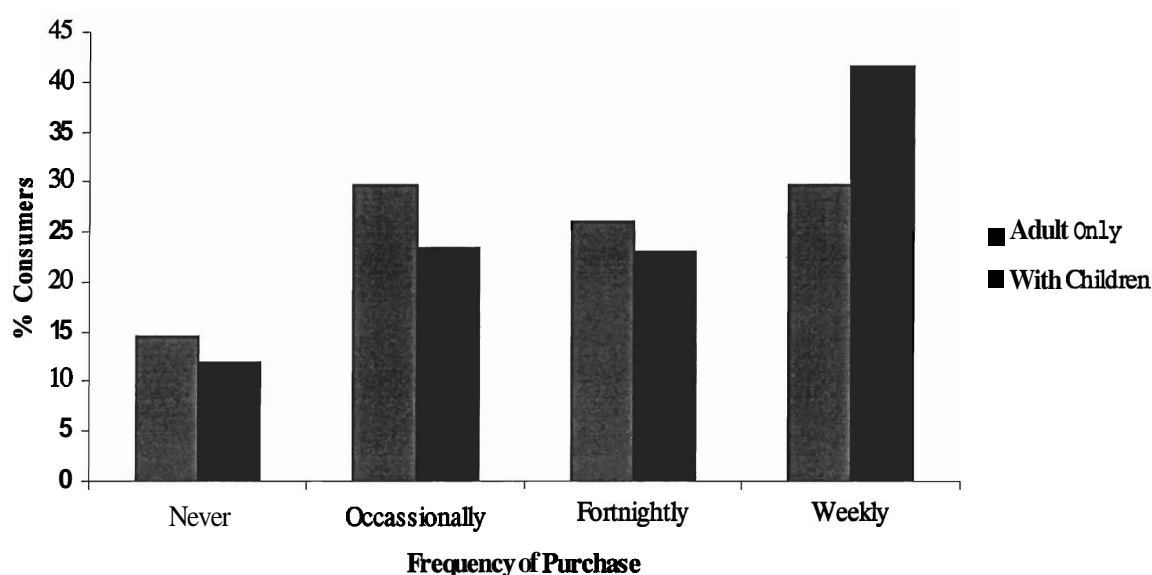
Whole chickens tended to be purchased more frequently by those with children living at home than adult only households (Figure 40). There were no differences, however, in consumption of chicken fillets between households.

Figure 40: Frequency of purchase of whole chicken for adult only households and those with children.



There were few differences in the purchase of beef steaks between households, either the more expensive cuts such as sirloin and T bone, or the cheaper cuts such as braising or stewing. Lamb steaks were also purchased equally frequently by both adult only households, and those with children. Mince beef, however, was a more frequent weekly purchase for those with children, although little differences were seen on a fortnightly basis (Figure 41).

Figure 41: Frequency of purchase of mince beef for adult only households and those with children.



Few differences were seen between household purchase of joints of meat including lamb, beef and pork. There was a tendency, however, for a higher percentage of the adult only households to be more likely never to consume all these joints of meat.

No differences were observed in the frequency of purchase of pork and lamb chops between household groups.

The frequency of purchase of sausages and burgers showed a marked difference between adult only households and those with children (Figures 42 and 43). For those consumers with children in their household, 15% more reported to buy sausages and 13% more purchased burgers, on a weekly basis, than the adult only households. The percentage of consumers buying both sausage and burgers on a fortnightly basis were also slightly higher in those households with children. More than double the percentage of adult only households reported never to buy sausages and burgers than those with children.

Figure 42: Frequency of purchase of sausages for adult only households and those with children.

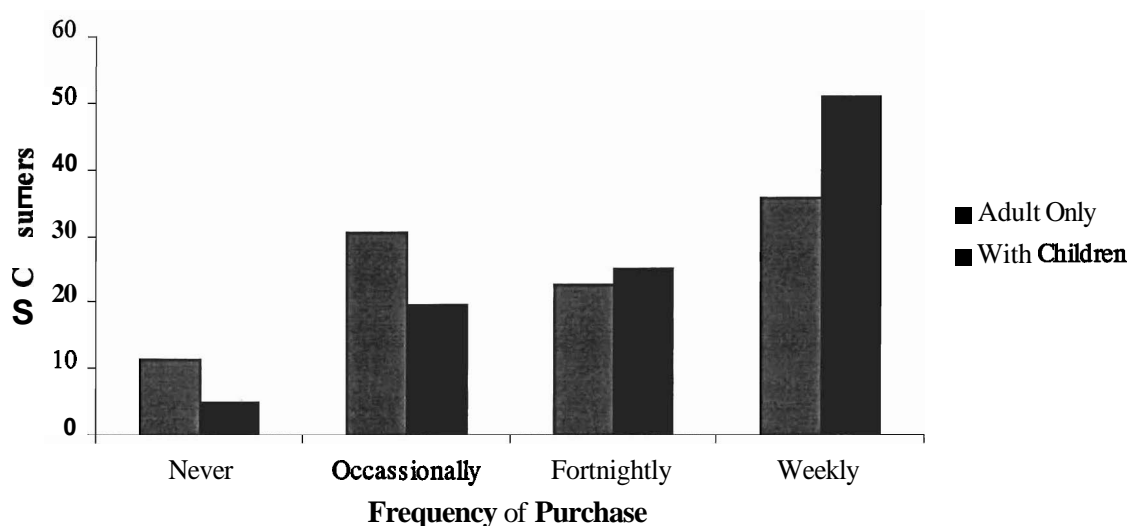
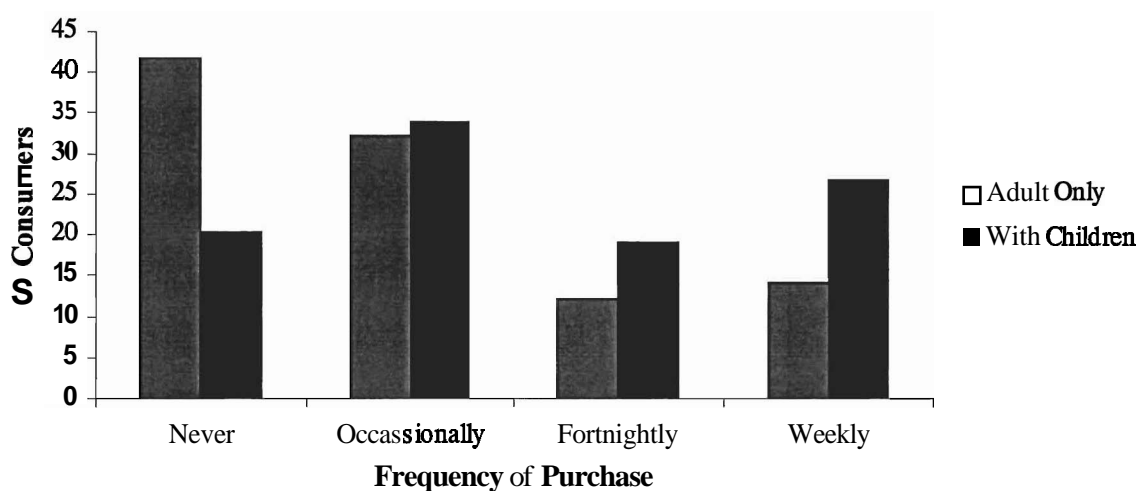


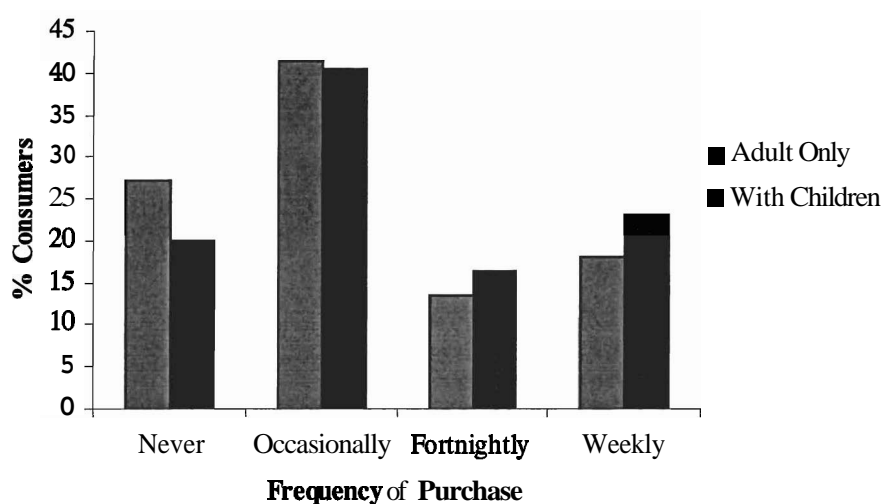
Figure 43: Frequency of purchase of burgers for adult only households and those with children.



Frozen Meat Purchase

Figure 44 shows that a slightly higher percentage of households with children reported to buy **frozen** meat on a weekly and fortnightly basis (see Appendix 11 for tabulated results). More of those reporting never to purchase **frozen** meat were found in the adult only households.

Figure 44: Frequency of purchase of frozen meat for adult only households and those with children.



Cooked Meat Purchase

Weekly purchase of cooked meats, particularly sliced cooked meats, tended to be greater in those households with children than those without (Figures 45-47) (see Appendix 11 for tabulated statistics).

Differences were most notable in the purchase of cooked sliced meat. 17% more of those with children reported to buy sliced cooked meats every week than those without.

Those without children were more likely never to buy any form of cooked meat.

Figure 45: Frequency of purchase of sliced meat (ham, chicken, turkey and pork) by adult only households and those with children.

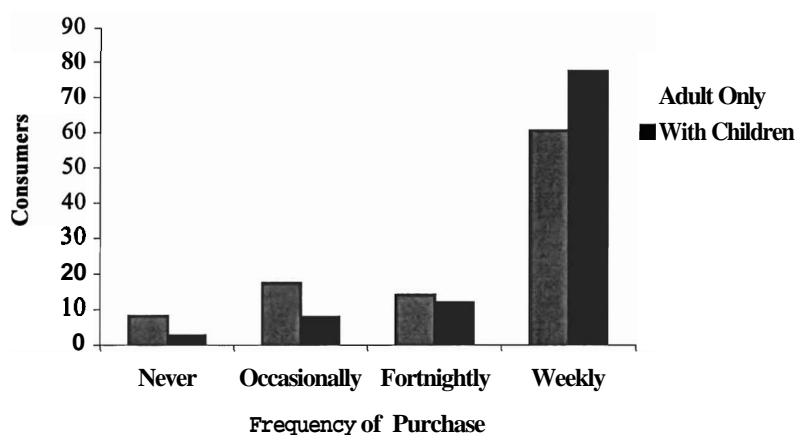


Figure 46: Frequency of purchase of cooked chicken by adult only households and those with children.

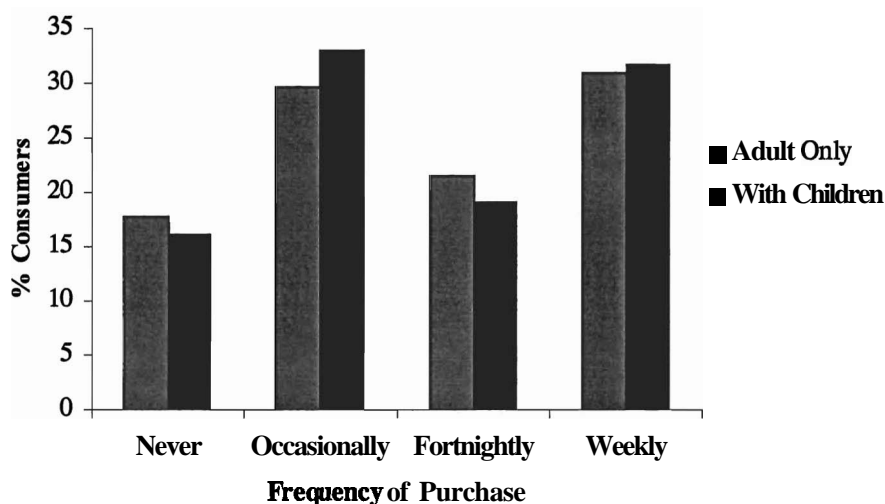
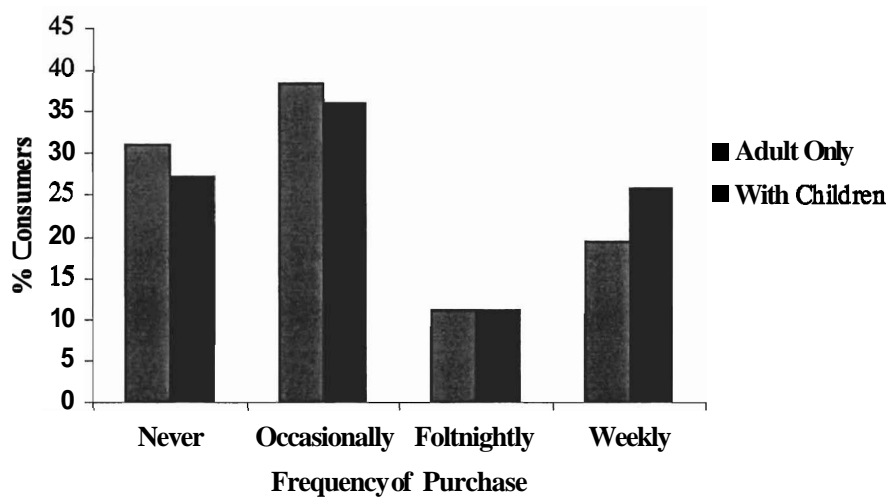


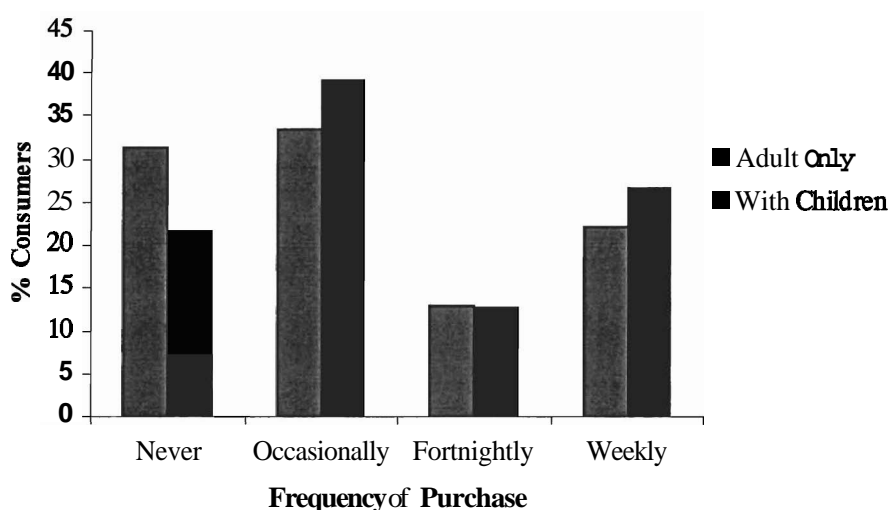
Figure 47: Frequency of purchase of cooked sausage (e.g. garlic, pastrami, salami, etc.) by adult only households and those with children.



Purchase of Ready-Meals

The purchase of ready-meals was slightly greater by those consumers with children than those without (see Appendix 11 for tabulated results). More consumers in the former group purchased ready-meals on a weekly basis with 10% less than the adult only households indicating that they never purchased ready-meals (Figure 48).

Figure 48: Frequency of purchase of ready-meals by adult only households and those with children.



Place of Purchase

Few differences were seen between household groups in the place in which meat was purchased.

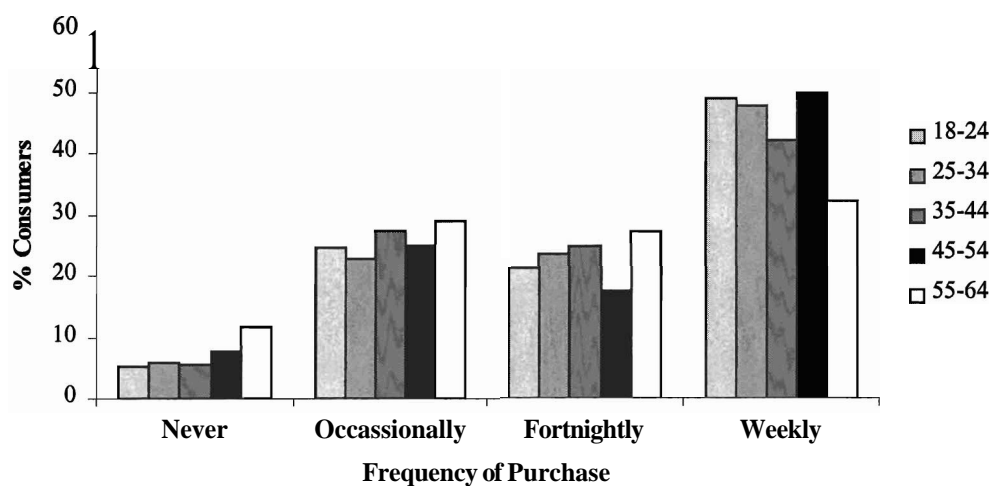
3.1.6.4 Age differences

Fresh Meat Purchase

For the majority of meat types, marked differences in **frequency** of purchase between age groups were not observed. Appendix 12 shows the counts and percentages of **frequency** of purchase split by age group. The most notable trends are illustrated in Figures 49-56 below.

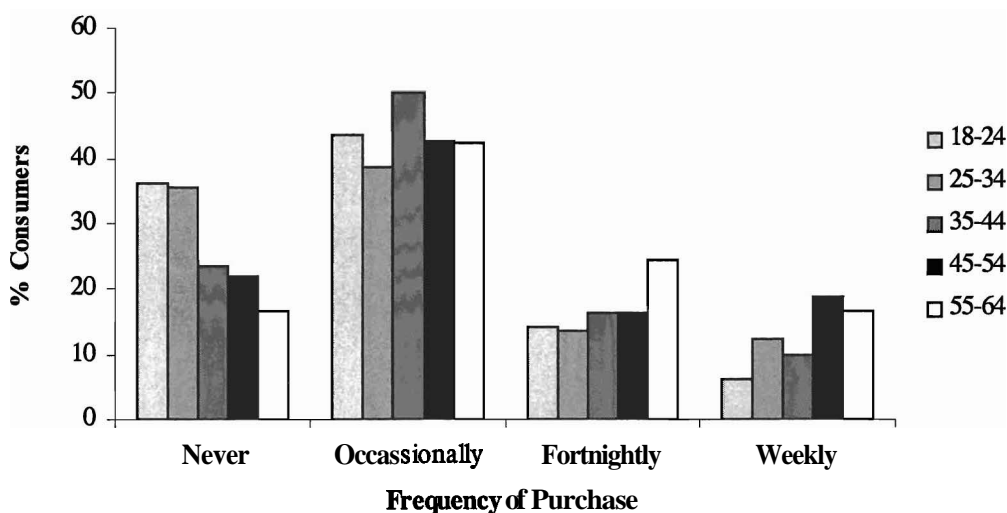
Although age group appeared to have little influence on purchase of whole **chicken**, there was a tendency for the weekly purchase of chicken fillets to decrease as age increased (Figure 49). For the those who reported never to buy chicken fillets, an opposite trend was observed.

Figure 49: Frequency of purchase of chicken fillets by age group.



The weekly purchase of fillet, sirloin and T bone steaks tended to increase slightly with increasing age, and the percentage of those consumers reporting never to consume this type of meat decreased with increasing age. A similar and more pronounced trend was seen for the purchase of braising and stewing steak (Figure50).

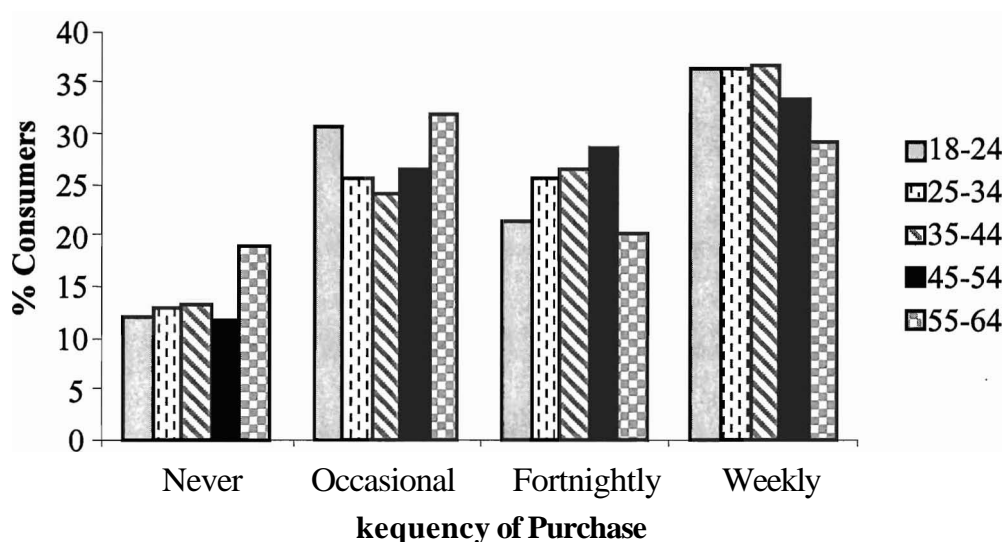
Figure 50: Frequency of purchase of **stewing/braising** steak by age group.



Little difference was apparent in the frequency of purchase of lamb steaks between age groups.

The frequency of purchase of mince between age groups is illustrated in Figure 51. The oldest age group tended to purchase mince less **frequently** than the other age groups and a higher percentage of this age group reported never to purchase mince.

Figure 51: Frequency of purchase of mince by age group.



The frequency of beef, lamb and pork joints followed similar patterns between age groups (Figures 52, 53 and 54). Little difference was seen between age groups in the weekly, fortnightly and occasional purchase of these meats; however, there were notable differences in the ages of those who reported **never** to consume them. For beef, pork and lamb, **40%**, **44%** and **45%** respectively of the youngest age groups reported never to buy these meats compared to **21%**, **25%** and **26%** of the oldest age groups.

Figure 52: Frequency of purchase of beef joints by age group.

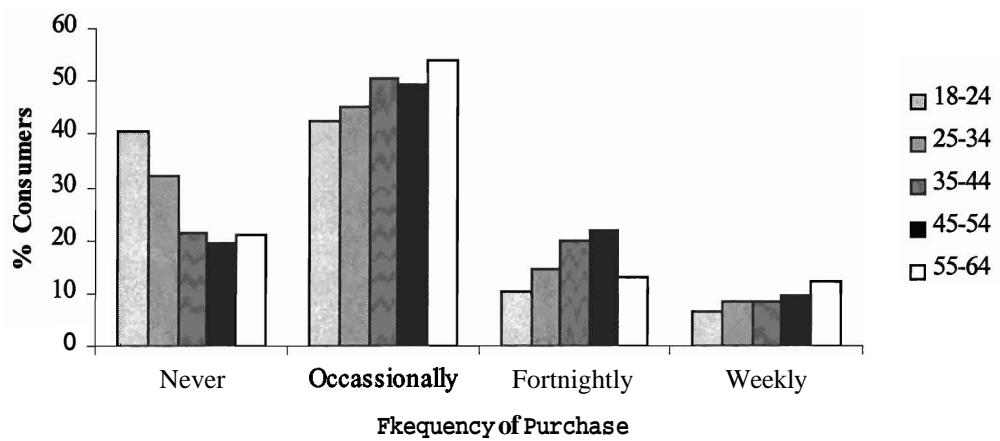


Figure 53: Frequency of purchase of lamb joints by age group.

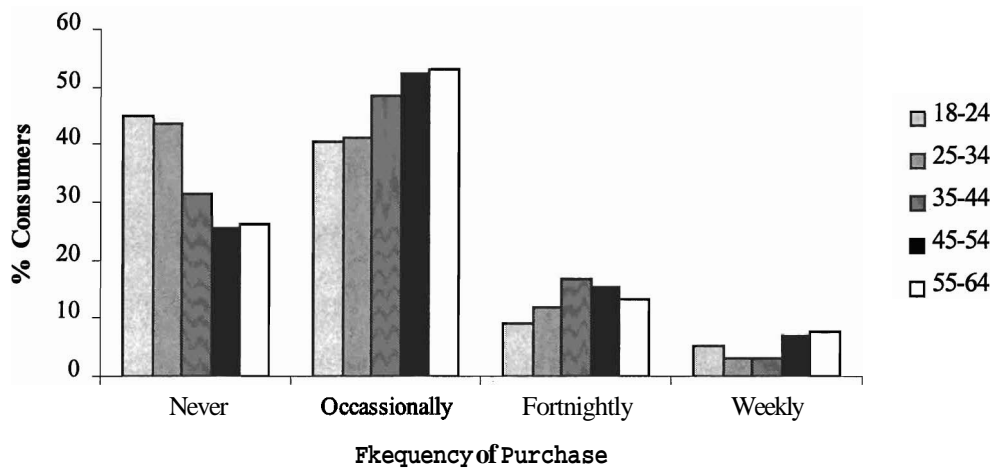
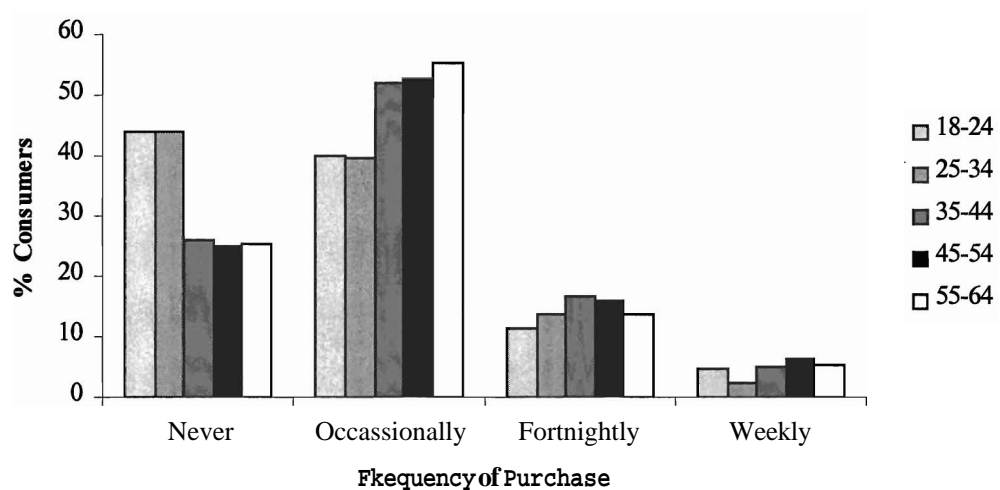


Figure 54: Frequency of purchase of pork joints by age group.



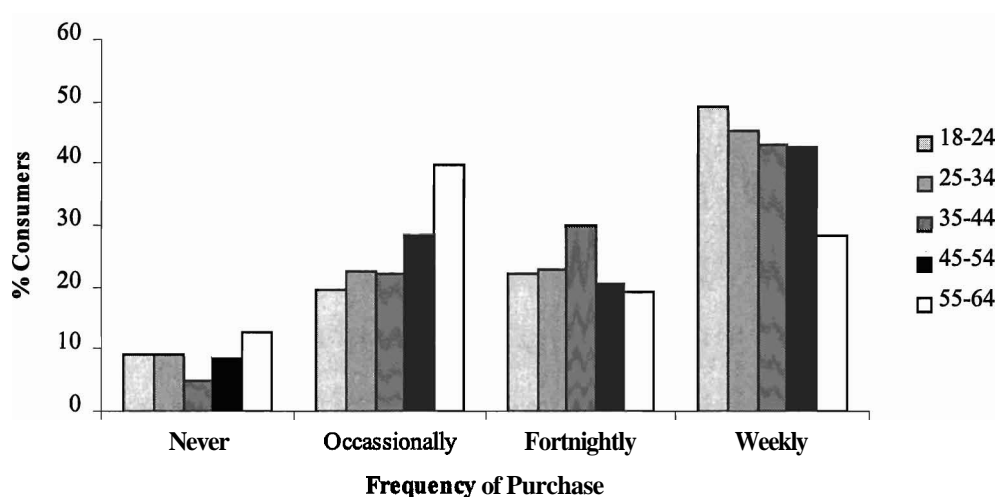
For all joint types, the percentage of consumers making the occasional purchase tended to increase as age increased.

Frequency of purchase of lamb chops showed little differences between age groups. There was, however, a tendency for the age group **35-44** to make less **frequent** weekly and fortnightly purchases than the other groups. Fewer in the older age groups reported never to buy lamb chops.

Similarly, there were few differences between age groups in the purchase of pork chops. On a weekly basis, however, pork chops were more popular in the older age groups (**45-64**) than the younger, although for purchase on a fortnightly basis was similar. As with the purchase of lamb chops, fewer of the older age groups reported never to buy pork chops.

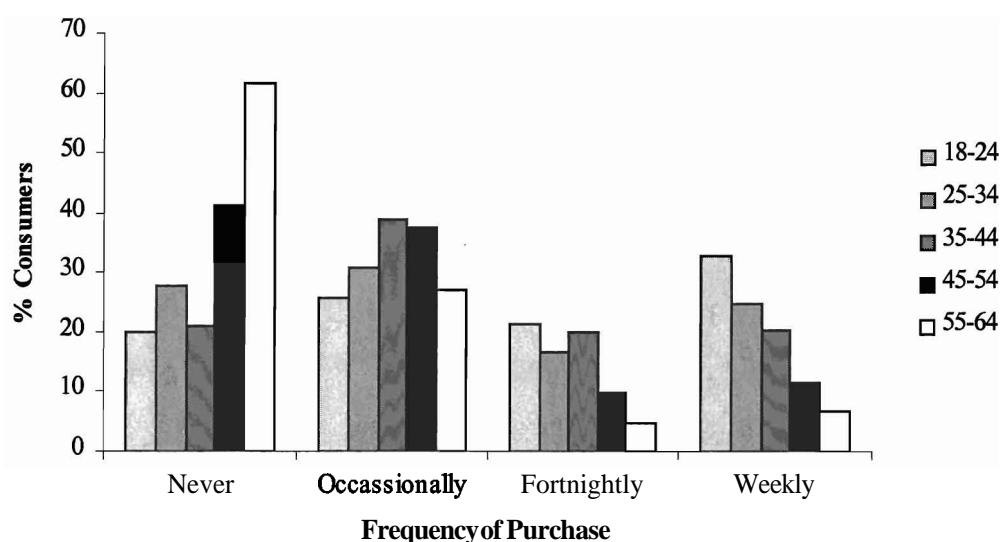
Purchase of sausages on a weekly and fortnightly basis tended to decrease with increasing age (Figure 55). For the occasional purchase and those reporting never to purchase, an opposite trend was observed.

Figure 55: Frequency of purchase of sausages by age group.



The frequency of purchase of burgers showed the most marked trends between age groups (Figure 56). There was a definite trend for purchase of burgers on a weekly and fortnightly basis to decrease with increasing age. Almost 25% more in the youngest age group reported to buy burgers on a weekly basis compared with the oldest age group. The percentage of those reporting never to buy mince decreased with decreasing age with over 40% more in the oldest group reporting never to buy mince than in the youngest group.

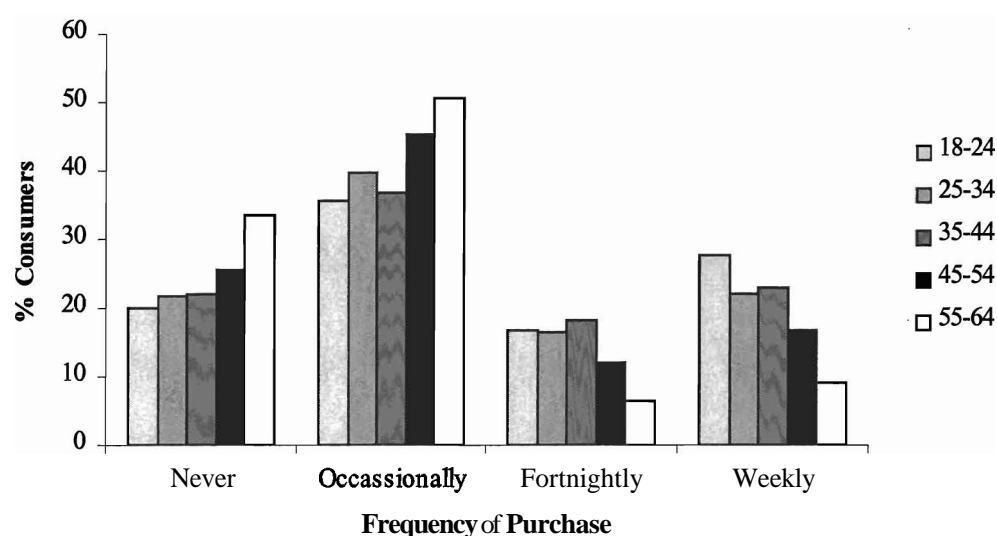
Figure 56: Frequency of purchase of burgers by age group.



Frozen Meat Purchase

Figure 57 illustrates that weekly purchase of frozen meat tended to decrease with increasing age group (see Appendix 13 for tabulated results). An opposite trend was seen in the purchase of frozen meat on an occasional basis and for those reporting never to purchase frozen meat. Little difference was seen in the percentage of consumers buying frozen meat on a fortnightly basis in the younger age groups; however, the percentage dropped in the two older groups, more so in the eldest.

Figure 57: Frequency of purchase of **frozen** meat by age group.



Cooked Meat Purchase

There were few differences between those reporting to buy cooked sliced meat with the exception of the percentage of consumers in the oldest age group being lower than the other age groups buying on a weekly basis (see Appendix 13 for tabulated results).

For the cooked chicken (Figure 58) there was a definite trend for the purchase on a weekly basis (and to a lesser extent on a fortnightly basis) to decline with increasing age group. An opposite trend was seen for those who never or only occasionally purchase this type of cooked meat.

The main differences in the purchase of cooked sausages were seen between the oldest age group and the other groups (Figure 59). The percentage of consumers in the oldest age group reporting weekly purchase was 12-17% lower than those in the other age groups. Those in the oldest age group reporting never to purchase this type of cooked meat was similarly higher than in the other age groups.

Figure 58: Frequency of purchase of cooked chicken by age group.

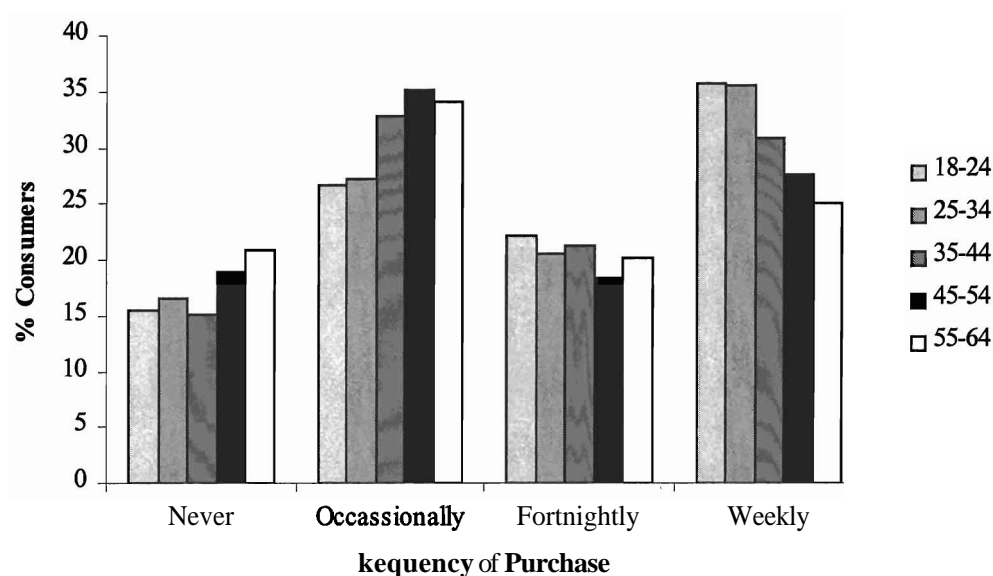
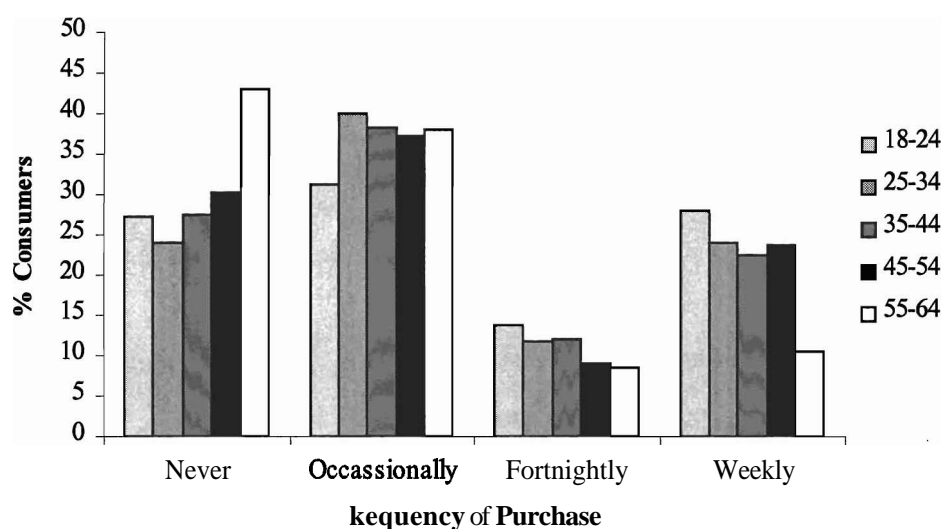


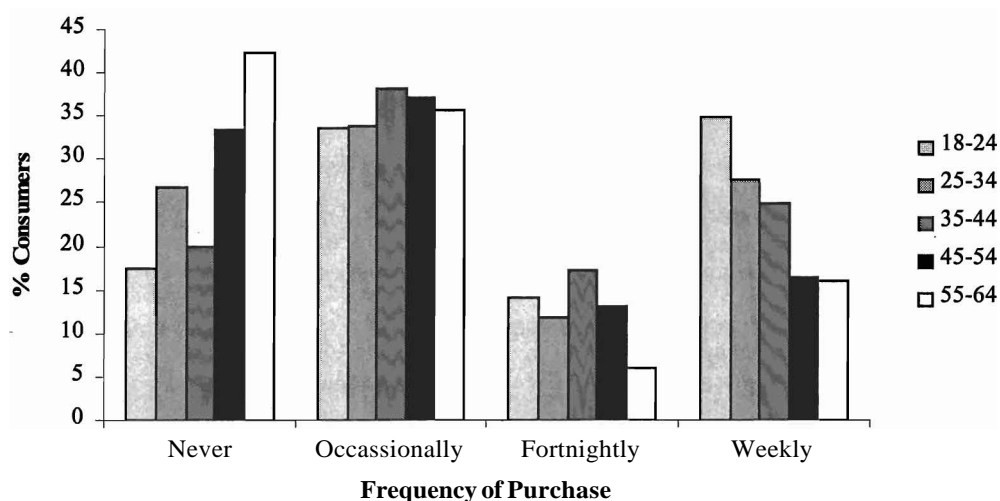
Figure 59: Frequency of purchase of cooked sausage (e.g. garlic, pastrami, salami) by age group.



Ready-meal Purchase

The purchase of ready-meals on a weekly basis tended to decrease with increasing age with more than twice the percentage of those in the youngest group reporting to purchase ready-meals, compared to those in the two oldest groups (see appendix 13 for tabulated results). Those reporting never to purchase ready-meals showed an opposite trend with the exception of the 25-34 age group, of whom there was a greater percentage reporting never to buy ready-meals than in the older group (35-44).

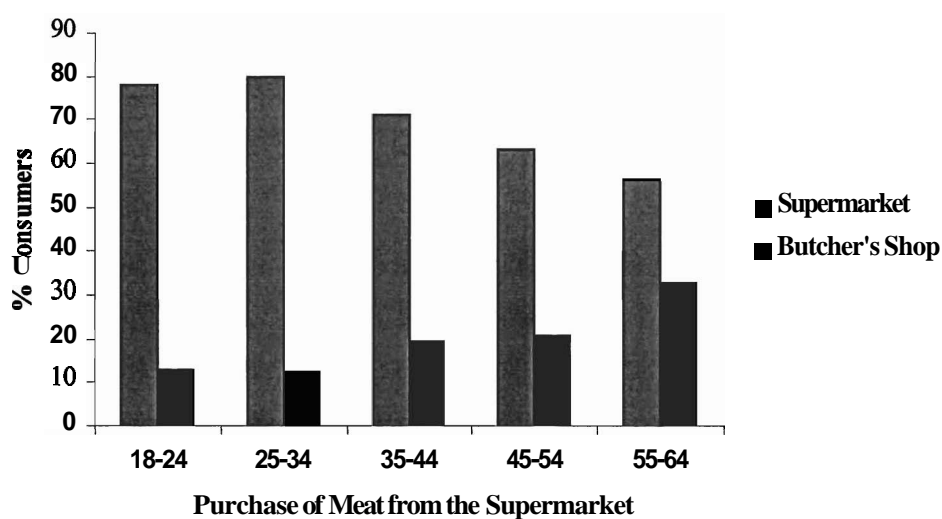
Figure 60: Frequency of purchase of ready-meals by age group.



Place of Purchase

Figure 61 shows the main two places of meat purchase split by age group. The Figure shows a clear tendency for percentage of consumers shopping for meat at the supermarket to decrease with increasing age. The opposite was true for those shopping at the butcher's; the percentage of consumers, although lower in every group than those shopping at the supermarket, clearly increased with increasing age.

Figure 61: Purchase of meat from the supermarket and butcher's shop by age group.



3.1.7 Summary of Meat Purchase

The most popular meats reported to be purchased regularly (weekly and fortnightly) were chicken fillets, sausages, minced beef and whole chickens. The purchase of chicken fillets tended to decrease with increasing age and decreasing socio-economic group. The purchase of whole chickens was associated with households with children and those in the lower socio-economic groups. Mince was purchased more frequently by those with children and by females.

Most types of meat, excluding the most popular, were purchased occasionally by 40-50% of consumers.

Lamb was the least popular meat type with over 30% of consumers indicating that they never bought lamb either as steaks (39%), chops (30%) or joints (35%). Joints of pork and burgers were reported never to be purchased by 33% and **32%** of consumers respectively.

The purchase of burgers and sausages showed the biggest differences between households, with adult only households **purchasing** these meats markedly less frequently than those with children. There were also distinct differences between older and younger groups. Sausages, and in particular burgers, were much more popular in the younger groups.

In general, purchase of most raw meats tended to increase with decreasing socio-economic status, with the exception of chicken fillets.

Frozen meat was not a very popular frequent purchase with more consumers indicating that they made the occasional **frozen** meat purchase, than those buying either weekly or every fortnight. The purchase of frozen meat was more popular in households with children and with males. There was a trend for the purchase of frozen meat to decrease with increasing age and decreasing socio-economic group.

Cooked sliced meats were the most common cooked meats purchased, with 68% of consumers buying them on a weekly basis. Cooked chicken was slightly more popular than cooked sausages, such as garlic sausage or salami. All cooked meats were more popular in households with children and also in younger age groups, particularly cooked chicken and cooked sausage. Cooked sliced meats were more frequently purchased by females, with the males preferring cooked **chicken** and cooked sausage. The purchase of cooked meats tended to increase with decreasing socio-economic group.

Ready-meals were fairly popular both on a weekly, fortnightly and occasional basis. Males tended to buy more ready-meals than females and they tended to be more popular among those households with children. The purchase of ready-meals decreased with increasing age and increased with decreasing socio-economic status.

The majority of consumers bought their meat pre-packed from the supermarket. The remainder bought mainly from the butchers, with a small percentage buying from the butcher's counter in the supermarket. There were no apparent demographic differences regarding place of purchase.

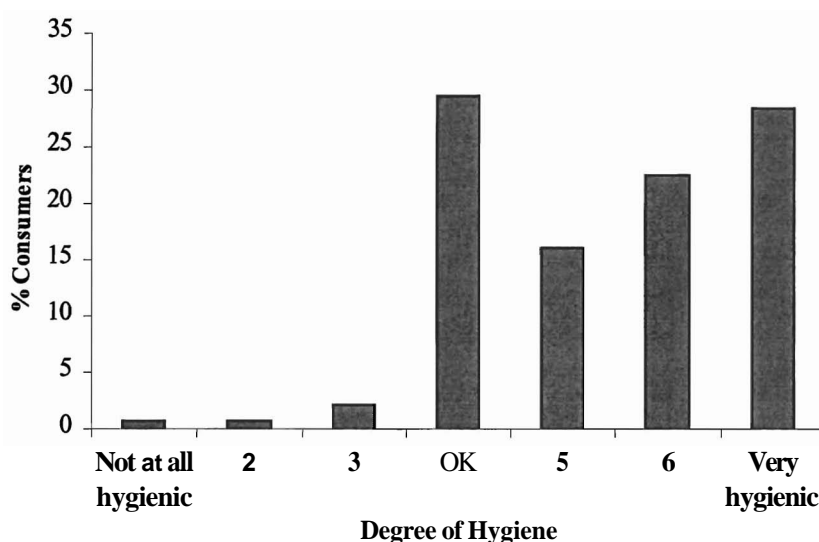
3.2 Kitchen Hygiene

3.2.1 Consumers' Perception of Hygiene Practice in the Kitchen

3.2.1.1 Perception of Kitchen Practices

Consumers were asked how hygienic they felt that their **kitchen** practices were on a scale of 1 to 7 **from** not at all hygienic to very hygienic. Figure 62 clearly illustrates that few consumers (3.7%) believed themselves less than OK on the scale, with 29% agreeing that their hygienic practices in the **kitchen** were OK. The majority of consumers considered themselves to be hygienic in the **kitchen** (67%), with 28% of these believing themselves to be very hygienic.

Figure 62: Consumers' perception of hygiene in their own kitchens.

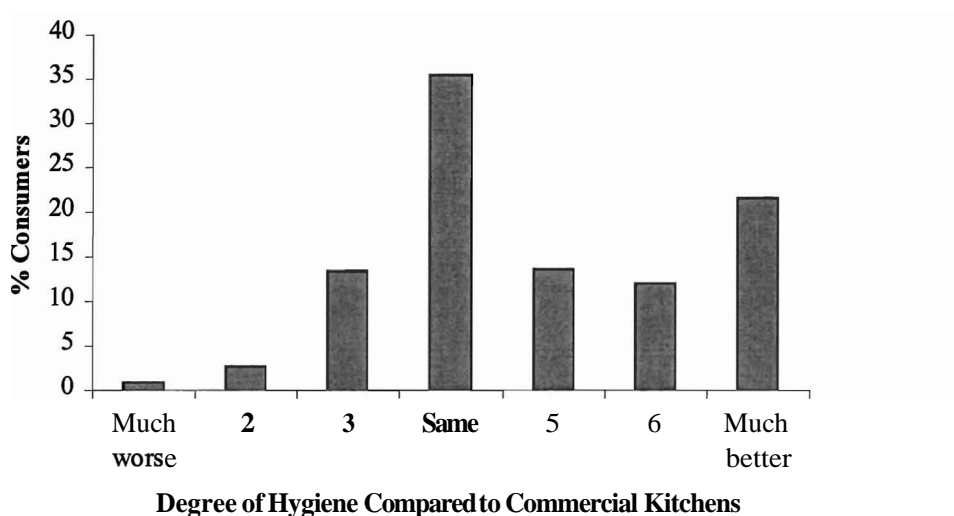


3.2.1.2 Perception of Kitchen Practices Compared to Commercial Practices

When asked how they considered their **kitchen** practices, in the context of hygiene, compared to commercial **kitchens**, 36% said they were the same (Figure 63). A total of 47% of consumers regarded their practices to be better, with 22% **perceiving** their practices as ***much*** better than commercial **kitchens**. A small percentage of consumers

perceived that their **kitchen** practices were worse than commercial practices (16%) with 1% agreeing that they were much worse.

Figure 63: Consumers' perception of hygiene in their own kitchens compared to commercial **kitchens**.



3.2.1.3 Demographic Differences

In order to obtain a clearer view of demographic differences, consumers were placed into 3 groups for both questions. For the question relating to perception of kitchen hygiene, the groups consisted of those who thought they were not hygienic (scoring 3 and below), those who perceived themselves as OK (scoring 4) and those who perceived themselves as hygienic (scoring 5 and above). Similarly, for the comparison of commercial **kitchen** practices, the groups consisted of those who thought their practices were worse (scoring 3 and below), those who considered themselves to be the same (scoring 4) and those considering themselves to be better (scoring 5 and above). Tabulated statistics for all demographic differences can be seen in Appendix 14.

Gender Differences

Little difference was seen between males and females in their perception of how hygienic they felt their kitchen practices were (Figure 64). There was a slightly higher

percentage of males who believed their practices not to be hygienic, compared to females; however, percentages in this group were very small.

There were, however, clearer gender differences when comparing **kitchen** practices to commercial **kitchens** (Figure 65). A higher percentage of male consumers (25%) believed their practices to be worse than commercial **kitchens**, compared to females (15%). In addition, 5% more females than males believed their practices to be better than those occurring in commercial **kitchens**.

Figure 64: Gender differences in perception of hygiene.

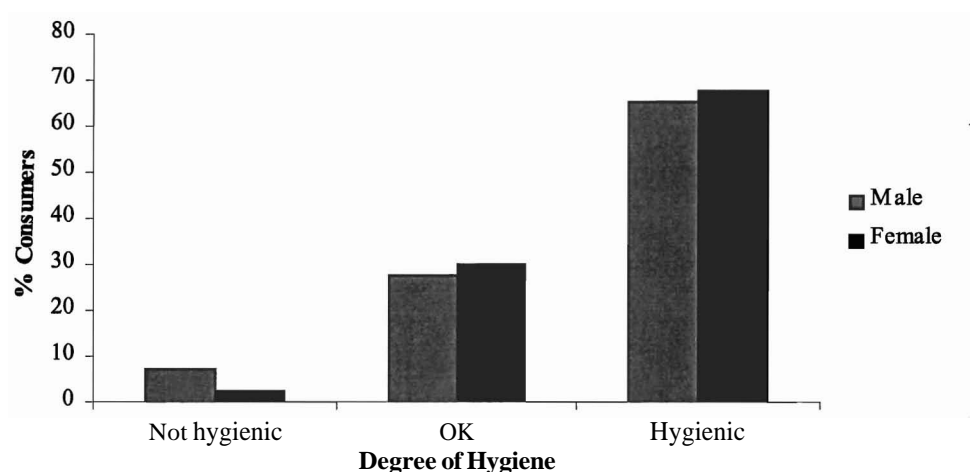
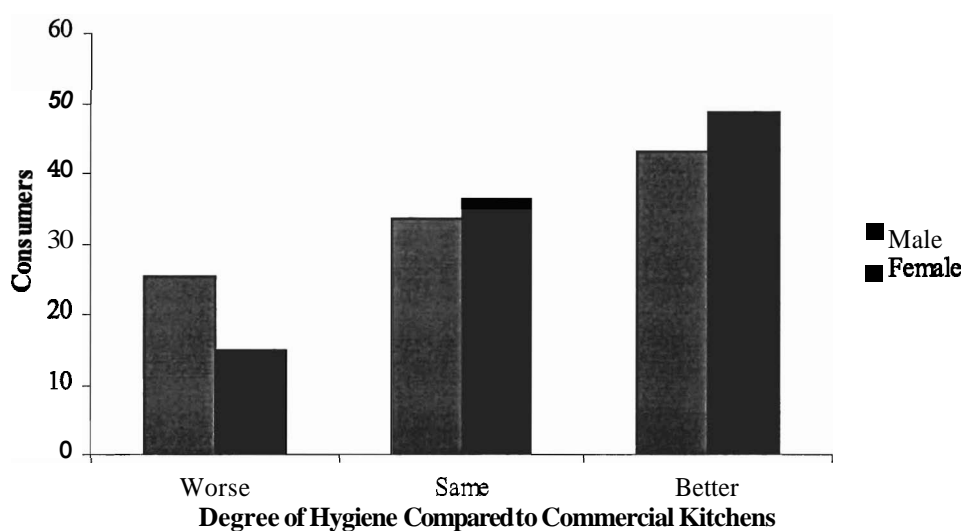


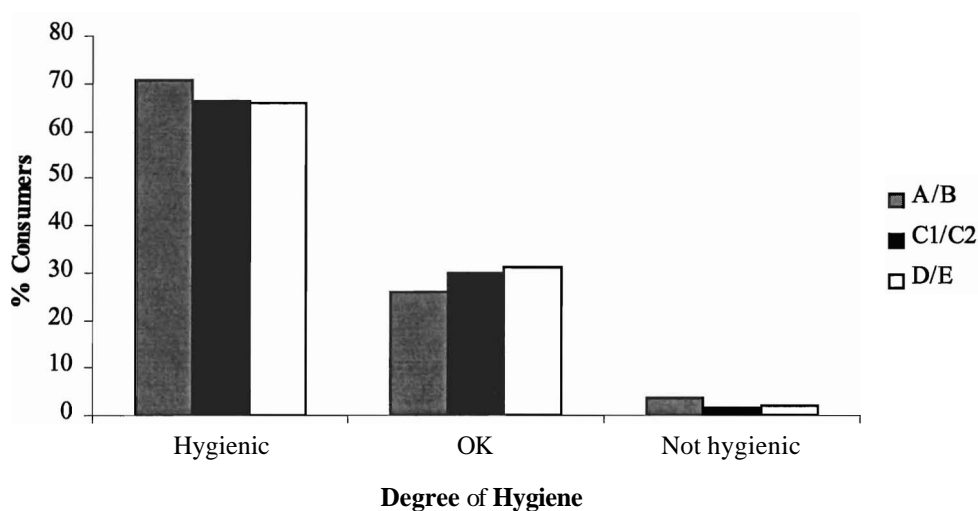
Figure 65: Gender differences in perception of hygiene compared to commercial kitchens.



Socio-economic Differences

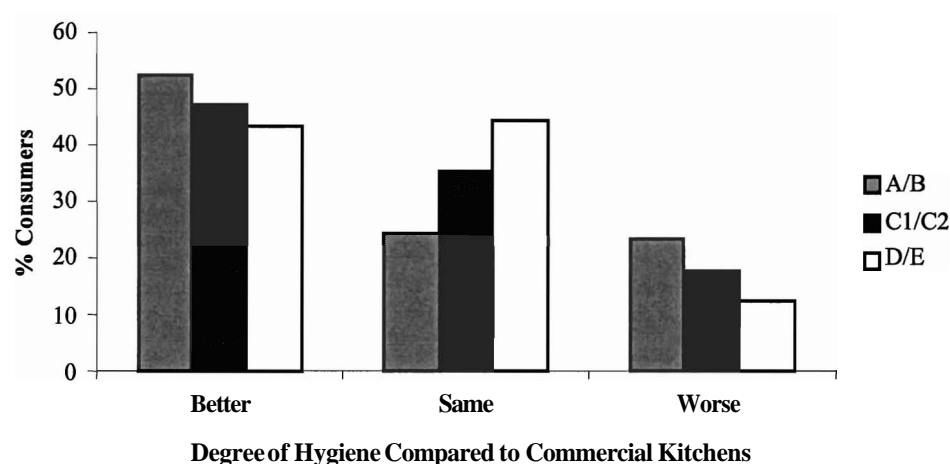
Socio-economic differences between perception of kitchen practices were very small (Figure 71) with a very slight tendency for the percentage of consumers considering their practices to be hygienic to increase with increasing socio-economic group and the opposite tendency for those who believed their practices to be OK.

Figure 66: Socio-economic differences in perception of hygiene.



Regarding comparison of domestic **kitchen** practices to commercial **kitchens** (Figure 67), much clearer, though conflicting trends can be seen. The percentage of consumers considering their practices to be hygienically superior to commercial kitchens decreased with decreasing socio-economic group. However, the percentage of consumers considering their practices to be worse than those in commercial establishments also decreased as socio-economic status increased. Those considering their practices to be equally hygienic to commercial practices showed the opposite trend.

Figure 67: Socio-economic differences in perception of hygiene compared to commercial kitchens.



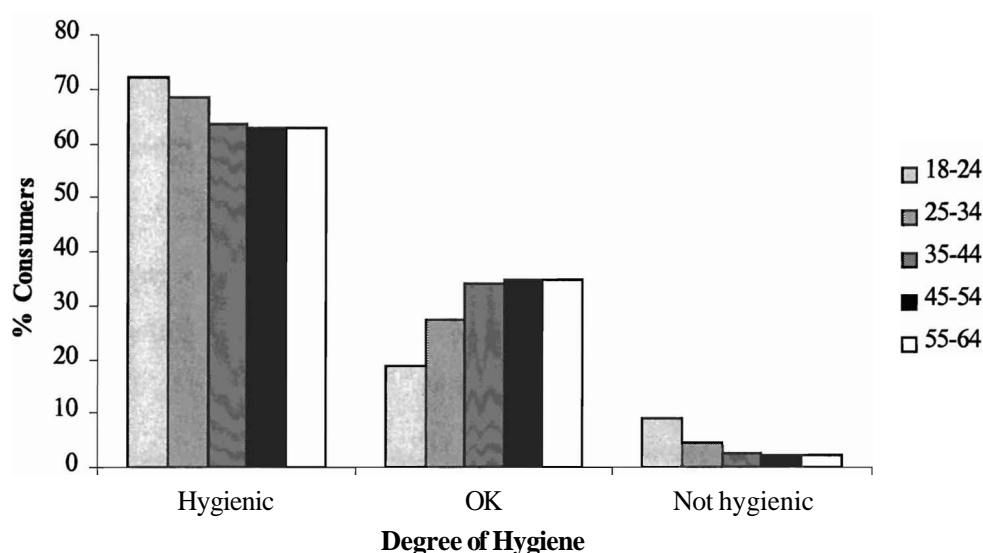
Household composition differences

There were few differences in the perception of hygiene between households with children and those without.

Age Differences

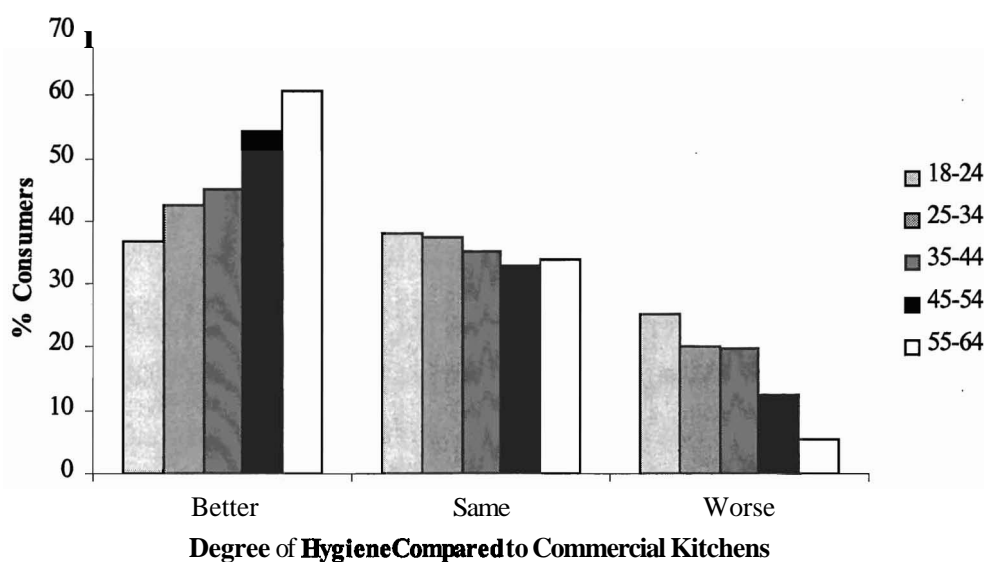
Figure 68 shows that those thinking that their **kitchen** practices were hygienic tended to decrease with increasing age and those thinking that their practices were OK showed the opposite trend. A slightly higher percentage of respondents in the younger groups believed their practices to be less than OK, compared to the older groups.

Figure 68: Differences in perception of hygiene between age groups.



The trends in age were more pronounced when respondents were asked how they believed their practices compared to commercial kitchens. Figure 69 shows a distinct increase in those believing their kitchen practices to be better than commercial practices, as age increased. Similarly there was a decrease with increasing age of those believing their practices to be worse than commercial kitchens.

Figure 69: Differences in perception of hygiene between socio-economic groups.



3.2.2 Summary of Perception of Hygiene Practices

Generally consumers perceived their own **kitchen** practices to be hygienic with almost 1/3 regarding themselves as very hygienic in the **kitchen**. There was a slight trend within those consumers perceiving themselves to be hygienic in the kitchen to increase as age decreased. Other demographic differences were **not** observed.

In comparison with commercial practices, many rated their practices as better, with just over 1/3 of consumers perceiving their practices to be of a similar hygienic standard. There were, however, approximately 16% of consumers believing their practices to be worse than those seen in commercial kitchens. There was a tendency for more males than females to consider their practices less hygienic than those in commercial kitchens. There was also a definite trend showing an increased perception of comparative hygiene increasing with age.

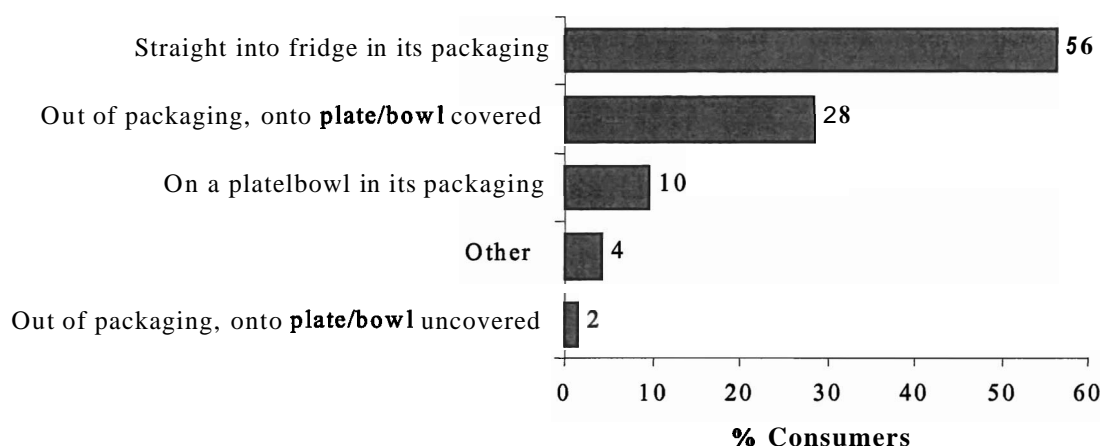
3.3 Storing Meat

3.3.1 How Meat is Stored in the Fridge

Consumers were asked to indicate which., of 5 options given, best described how they stored raw meat in the fridge.

Figure 70 reveals that over half of consumers indicated that they put the raw meat straight into the fridge in the packaging it came in, with approximately 10% putting it on a plate or bowl before doing so. A greater percentage (28%) of consumers took it out of the package and stored it **covered** than those reporting to store their meat in the fridge, out of the package **uncovered** (1.5%).

Figure 70: Storage of meat in the fridge.



3.3.2 Where Meat is Stored in the Fridge

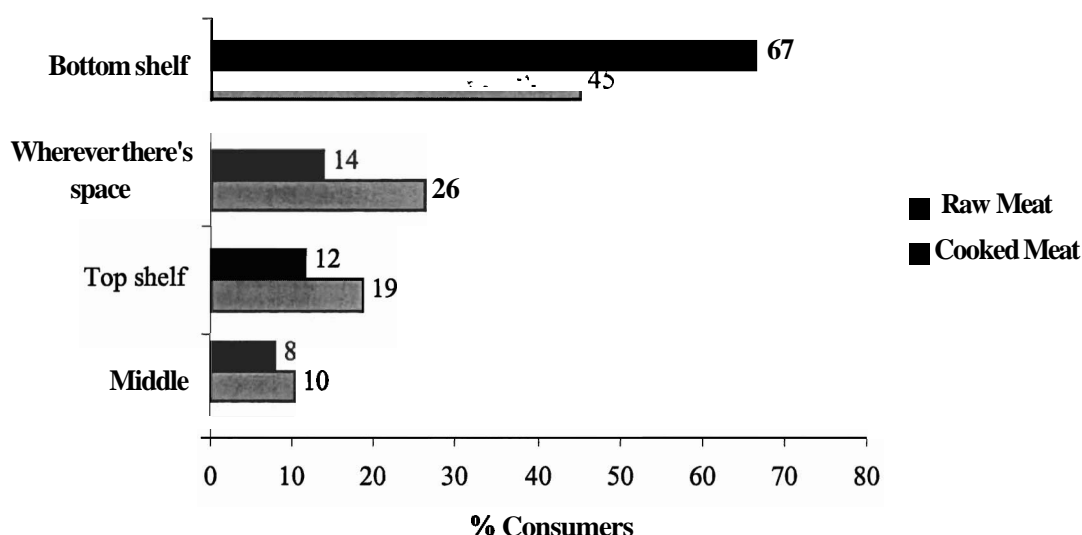
Consumers were asked where they would normally store raw and cooked meat in the **refrigerator** given four options of top shelf; bottom shelf; middle; **and** anywhere there is space.

A high percentage of consumers (**67%**) indicated that they stored raw meat on the bottom shelf. A similar percentage of consumers reported to store raw meat wherever there was space or at the top of the **fridge** (14% and 12% respectively) with few reporting to store meat in the middle (8%).

A similar pattern to that seen for raw meat was seen for the storage of cooked meat, although there were differences in the number of consumers storing meat on the bottom shelf and wherever there was space. Around 20% fewer consumers reported to store cooked meat at the bottom of the fridge compared to raw meat, although this was still the most popular position for cooked meats. Over 10% more consumers

stored cooked meat wherever there was space in the fridge compared to raw meat. A slightly higher percentage of consumers reported to store cooked meat on the top shelf than raw meat, and little difference was seen for storage of raw and cooked meat in the middle of the fridge. Figure 71 illustrates these differences.

Figure 71: Position of raw and cooked meat in the fridge.



An investigation was made into how many consumers were storing cooked and raw meat on the same shelf (See Appendix 15 for tabulated results).

For those reporting to store raw meat at the top of the **fridge**, 55% also stored their cooked meat at the top and 28% stored it in the middle. For the remaining consumers storing raw meat at the bottom of the fridge, 8% reported to store cooked meat wherever there was space and 9% at the bottom, **i.e.** on the same shelf as the raw meat.

The majority (79%) of those storing raw meat wherever there was space also stored cooked meat wherever there was space in the fridge. This could mean that they may have been stored together or separately. Of the remainder of those storing raw meat wherever there was space in the fridge, most of them (16%) stored cooked meat at the top of the fridge.

For those storing raw meat at the top of the fridge, **23%** stored cooked meat in this position, **almost** 40% stored it in the middle and 28% stored it at the bottom of the fridge.

Approximately one third of consumers reporting to store raw meat in the middle of the **fridge** stored cooked meat in the same position.

The total percentage of consumers storing raw and cooked meat on the **same** shelf was just over 11%. This was, however, not taking into account those storing both cooked and raw meat wherever there was space, who also accounted for approximately 11% of the consumer sample.

Demographic differences

Of the 11% storing both raw and cooked meat on the same shelf, there was a slightly higher percentage of men (14%) than women (10%) and a higher percentage of adult only households (12%) than those with children (9%). The lowest socio-economic group (D/E) had the highest percentage of those storing both cooked and raw meat together (15%) compared to the other two groups, C1/C2 and A/B (10% and 9%, respectively). The percentage of consumers storing both raw and cooked meat in the fridge on the same shelf tended to decrease with increasing age, with the exception of the youngest group.

Of those consumers storing both raw and cooked meat wherever there was space, there were slightly more males than females (in relation to the total population) (16 and 9% respectively) and a **higher** percentage of adult only households (13%)

compared with those with children (8%). The percentage of those storing both meats this way tended to decrease with increasing age and was lower in the lowest socio-economic group (DIE) than in the higher social groups.

Differences in perception of hygiene

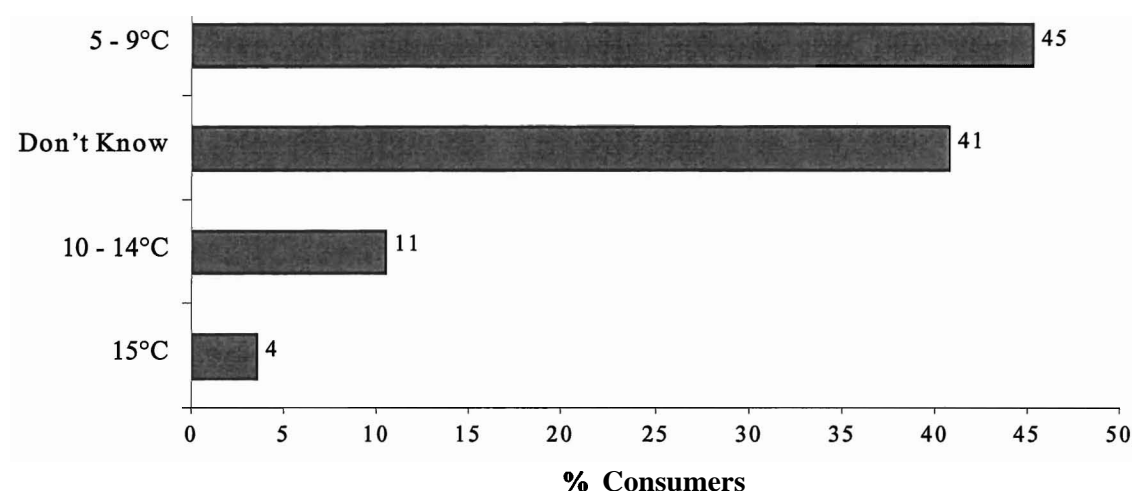
For those reporting to store raw meat at the bottom of the fi-idge, 39% reported that they believed their kitchen practices were very hygienic. Only 2% indicated that their practices were slightly less than OK. For those storing raw meat on the top shelf, 37% believed their kitchen practices were very hygienic with no-one perceiving their practices to be less than OK. However, of those reporting to store raw meat wherever there was space, only 14% believed their kitchen practices to be very hygienic with more (36%) believing them to be OK. The highest percentage of consumers believing their practices to be less than OK were found in this group (12%).

3.3.3 Perception of Fridge Temperature

Consumers were asked at what temperature their fi-idge should be running. Figure 84 illustrates that 45% of consumers correctly identified that their fridge should be running between 5-9°C. The remainder of consumers reported that they did not know (41%) or exceeded 10°C (15%).

When comparing those who knew the correct temperature of the fi-idge with how hygienic they felt they were, it was interesting that of those who regarded themselves as very hygienic, 43% did not know the correct temperature of their fi-idge, 20% were incorrect and 36% were correct. Similarly 44% of those considering their kitchen practices much better, hygienically, than commercial kitchens, did not know the temperature their fridge should be running at, 39% did and 17% were incorrect.

Figure 72: Consumers' perception of their fridge temperature.



3.3.4 Attitudes Towards Use-By Dates

Consumers were asked to indicate if they would eat meat under certain circumstances in relation to the use-by date. Two thirds of consumers agreed that they would eat meat a day after the use-by date if it still looked and smelled OK. Fewer consumers (17%) agreed to this if it was **2** days **after** the use by date with **6%** saying they would eat meat more than **2** days after the use by date if it still smelled and looked OK. Consumers appeared more cautious when meat looked discoloured or off, or smelled different or odd, even if it was within the date, with only **3%** and **2%** respectively stating that they would eat meat under these conditions.

3.3.5 Defrosting Meat

Consumers were asked to indicate how they would normally defrost a joint of meat or a small piece of meat from a comprehensive list of methods. Figure 73 illustrates the percentage of consumers using these methods.

For both joints of meat and smaller pieces of meat, the percentage of consumers using each method was similar with the exception of the use of the microwave. More than twice as many consumers claimed to **defrost** small pieces of meat in the microwave than those **defrosting** a larger joint.

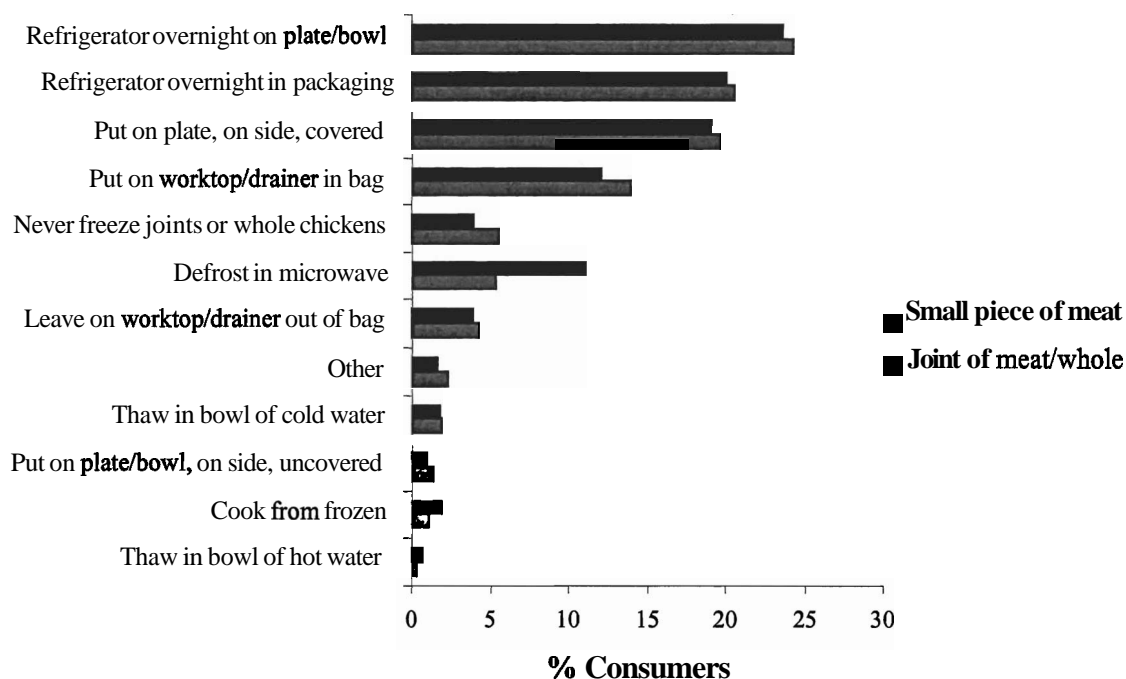
The most common method of thawing meat was reported to be in the **refrigerator** overnight, either on a plate or bowl or in the packaging.

Several consumers reported to defrost on a plate on the side (20%) or on the drainer or work top in a bag (14%). A small percentage (around 4%) defrosted meat by leaving it on the work top or drainer out of the packaging, with around 15% claiming to put it on a plate or bowl and leave it on the side uncovered.

Very few people claimed to thaw in hot water (less than 1%) with almost 2% claiming to thaw in cold water.

A small percentage (1%) claimed to cook joints of meat **from frozen**, with almost 2% reporting to cook smaller frozen pieces of meat this way.

Figure 73: Methods of **defrosting** meat.



3.3.6 Summary of Meat Storage

The majority of consumers stored their meat covered in the fridge, either in the packaging it came in (56%) or out of the packaging on a covered plate or container (28%). Most of those storing meat in the packaging it came in placed it directly into the fridge.

Over 2/3 of consumers indicated that they stored raw meat at the bottom of the fridge. The bottom of the fridge was also the most popular place for the storage of cooked meat. Approximately 11% of consumers indicated that they stored cooked and raw meat on the same shelf in the fridge. This figure, however, could be as much as 20% if all those who stored meat wherever there was space in the fridge were actually putting cooked and raw meat together. There tended to be more males than females, and more in the lowest social group, storing cooked and raw meat together and more of those in adult only households. Similar demographic trends were seen for those storing meat wherever there was space in the fridge.

There were few differences in perception of hygiene between those storing raw meat at the top of the fridge or at the bottom with no one storing raw meat at the top of the fridge believing their practices to be less than OK. The highest percentage of consumers believing their practices to be less than OK (12%), were found in the group of consumers reporting to store raw meat wherever there was space in the fridge.

Over half of consumers did not know that their fridge should be running at between 5-9°C. Of consumers who felt that their kitchen practices were very hygienic or much better than commercial practices, over 40% did not know the correct temperature of their fridge.

Most consumers were cautious about eating food that either looked or smelled odd, even if it was within its use-by date. However, it appeared that there was less respect for use-by dates if the food appeared and smelled OK. Many (67%) were happy to

consume food 1 day after the date and some (17%) 2 days after, if it still looked and smelled OK.

Several methods were used to defrost meat, with most consumers using similar methods to defrost both larger pieces and smaller pieces of meat. The microwave tended to be more popular, however, for the thawing of smaller pieces of meat. The most common method of thawing meat was reported to be in the refrigerator overnight, either on a plate or bowl or in the packaging. Almost 50% of consumers left their meat out on the side or drainer, either on a plate or in the packaging, with 15% of these leaving it uncovered.

Several consumers reported to defrost on a plate on the side (20%) or on the drainer or work top in a bag (14%). A small percentage (around 4%) defrosted meat by leaving it on the work top or drainer out of the packaging, with only around 1% claiming to put it on a plate or bowl and leave it on the side uncovered. Thawing in water and cooking from frozen were undertaken by a very small minority.

3.4 Preparation and Cooking of Meat

3.4.1 Personal Preparation

Consumers were asked if they undertook several different tasks (where applicable), before preparing a meal.

Hair

For those to whom **tying** hair back was applicable (50% of total population), 40% indicated that they never did so, 22% said they did sometimes and 38% indicated that they always tied their hair back before preparing a meal.

Aprons

Half of the respondents indicated that they never wore an apron, with 20% reporting to sometimes and 30% to always wear an apron for preparation of a meal.

Washing Hands

The majority of people (92%) indicated that they washed their **hands** before preparing a meal, with a small percentage (7.5%) sometimes washing their hands before preparation.

Removing Rings

Of those consumers wearing rings (80%), 50% indicated that they never took them off before preparing a meal. A smaller percentage (20%) indicated that they sometimes removed their rings and 30% indicated that they always took them off before food preparation.

3.4.2 Preparation of the Kitchen

Washing Work Surfaces

Most (71%) consumers indicated that they always washed their work surfaces before meal preparation with 25% indicating that they sometimes undertook this practice.

The remaining 4% of consumers indicated that they never washed their work surfaces before preparing a meal.

When **further** questioned, 43% indicated that they always, and a similar percentage sometimes, washed their work surfaces **during** meal preparation, with 13% never doing so. The majority of consumers (90%) always washed their work surfaces **after** meal preparation.

Many consumers washed their work surfaces with antibacterial spray (44%) with a small percentage indicating that they used antibacterial wipes. Hot soapy water was used by 23% of consumers and 18% indicated that they used kitchen cleaner to wash their work surfaces. Almost 10% of consumers washed their work surfaces in bleach and approximately 7% indicated that they used water.

Pets in the Kitchen

Of those consumers who had pets (47% of the total sample), 58% indicated that they always and 22% sometimes ensured that pets were out of the kitchen before preparing a meal. Approximately 20% indicated that they never removed pets from the kitchen before preparing a meal.

3.4.3 Preparation of the Meat

3.4.3.1 Washing and Drying Meat

Consumers were asked if they washed different types of meat and how they washed meat.

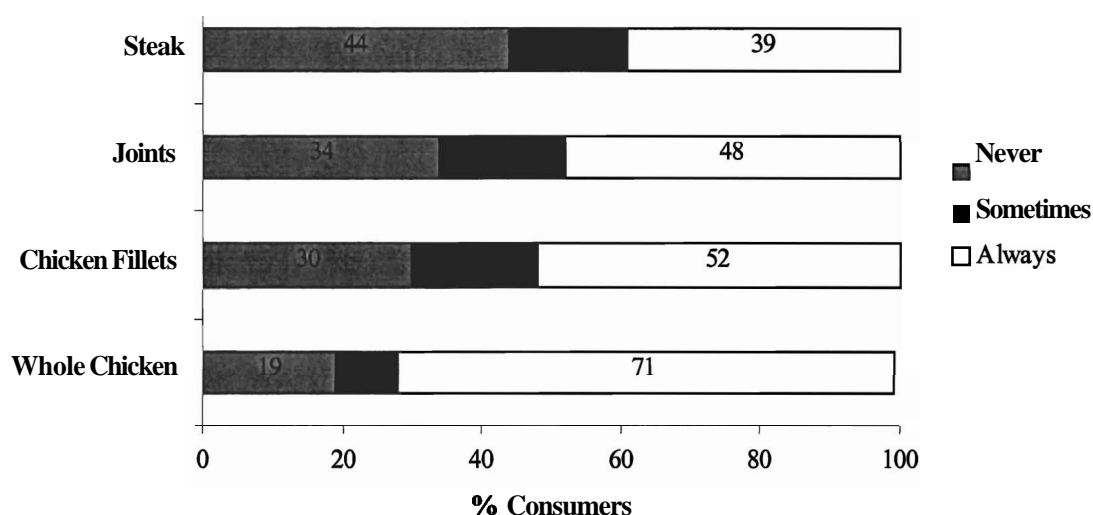
Most consumers (80%) washed meat. Of those consumers washing meat, the majority indicated that they washed it under a running tap (95%). A small percentage (3%)

soaked meat in a bowl of water, with 2% of consumers stating they used other methods.

When consumers were questioned regarding the drying of meat they had washed, 25% said that they did not dry meat, 38% dried it with kitchen paper **and** 33% dried it by shaking off excess moisture. A small percentage (4%) indicated that they dried it with a cloth.

Figure 74 illustrates the percentage of consumers washing different types of meat. The most commonly washed meat was whole chicken with 71% of consumers indicating that they **always** washed chickens. Fewer than 20% of consumers indicated that they never washed whole chicken. Steak was washed by the smallest percentage of consumers (39%) with 44% claiming never to wash it. Joints of meat and chicken fillets had similar a percentage of consumers who always (approximately 50%) washed them before cooking with 18% sometimes and around 1/3 never washing these types of meat.

Figure 74: Percentage of consumers washing different types of meat.



Figures 75 -78 illustrate the percentage of consumers always washing meat by different demographic groups (see Appendix 16 for full tabulated results).

The percentage of those washing all meat types was greater for females than males (Figure 75) and tended to increase with increasing age (Figure 76)

Figure 75: Percentage of consumers always washing meat between male and female groups.

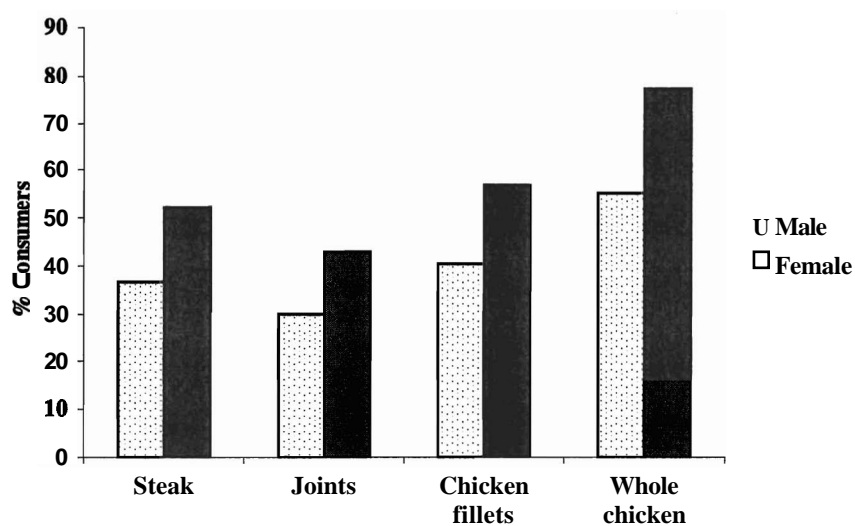
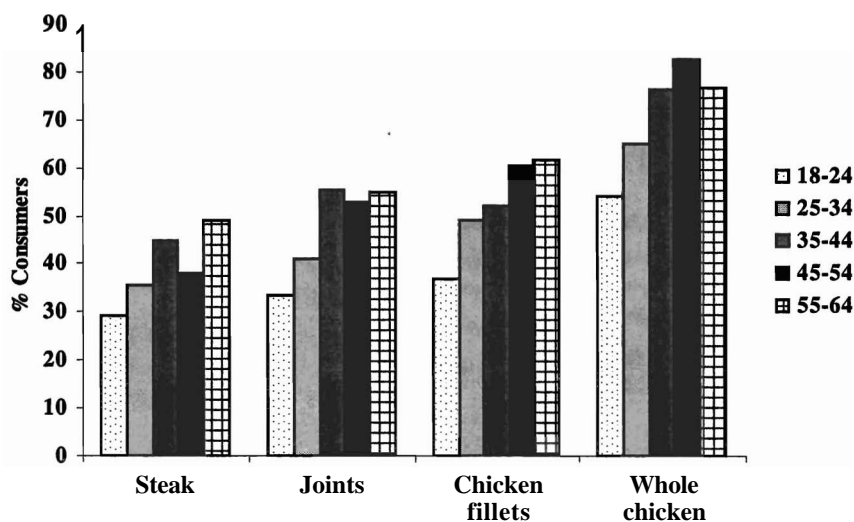


Figure 76: Percentage of consumers always washing meat by age group.



For all meat types, fewer of those in the socio-economic group A/B always washed meat compared to those in the social groups of C1/C2 and D/E (Figure 77). More of those in households with children, than adult only households always washed meat (Figure 78).

Figure 77: Percentage of consumers always washing meat by socio-economic group.

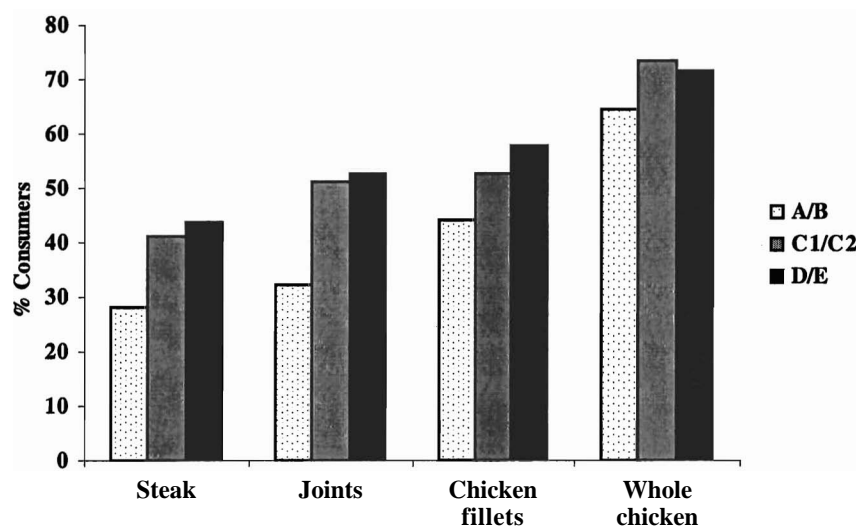
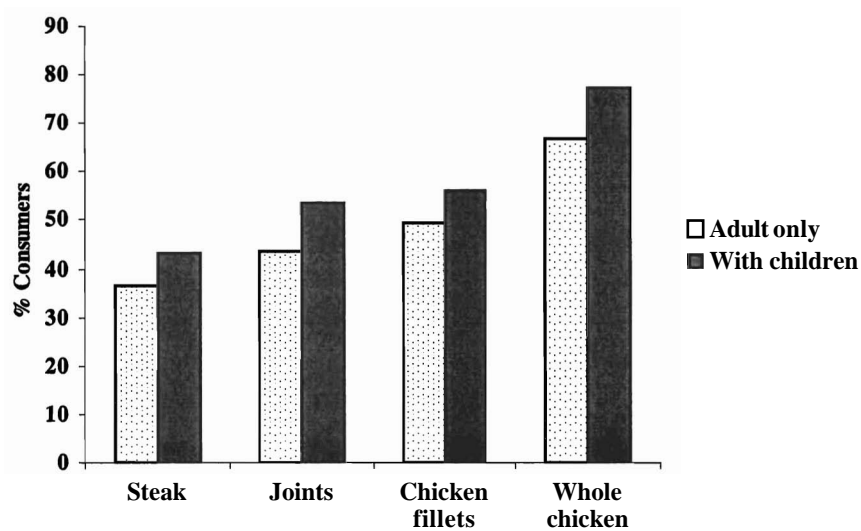


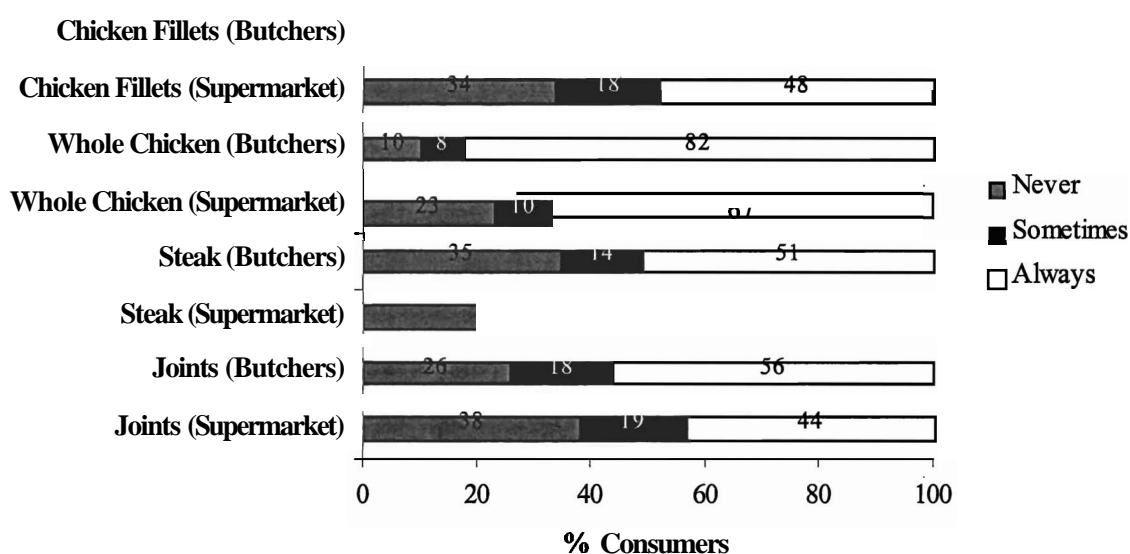
Figure 78: Percentage of consumers always washing meat for adult only households and those with children.



The main places of purchase identified in this study were the supermarket and the butcher's shop. Figure 79 illustrates the difference in the percentage of consumers who washed meat comparing these two suppliers.

It is clear that for all types of meat, a higher percentage of consumers washed meat that was purchased from the butcher's than from the supermarket. Fewer consumers purchasing meat from the butcher's shop claimed never to wash all types of meat than those purchasing from the supermarket.

Figure 79: Washing meat purchased at the supermarket and the butcher's shop.



3.4.3.2 Cutting Meat

Knives

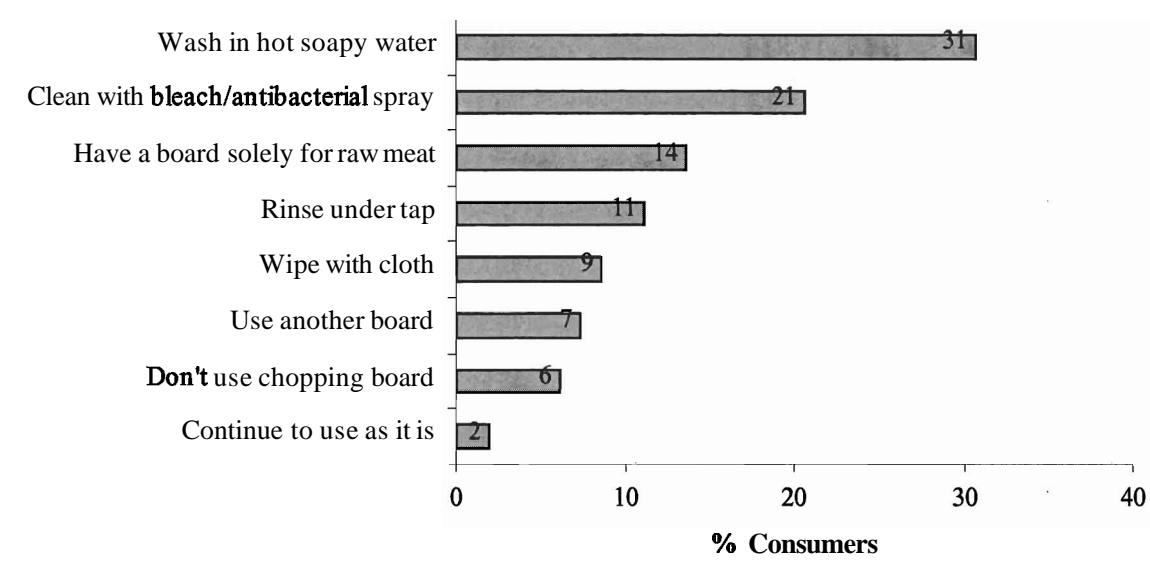
For cutting up raw meat, 38% of consumers indicated that they used a specific **knife** for that purpose and 47% used any sharp **knife** they had to hand. Kitchen scissors were used by 14% of consumers for this purpose.

3.4.4 Post Preparation

3.4.4.1 Chopping boards

Figure 80 illustrates the responses made when consumers were asked what they normally did with their chopping board after **cutting** up raw meat, and before using it for something else. Almost 1/3 indicated that they washed their chopping boards in hot soapy water and 21% used antibacterial spray. Some consumers either had a board designated to raw meat only (14%) and others simply used another board (11%). Approximately 11% of consumers rinsed their chopping board under the tap after use with raw meat and 9% indicated that they wiped it with a cloth. A small number of consumers didn't use a chopping board (6%) or continued to use it as it was (2%).

Figure 80: Chopping board action after use with raw meat before use with other food.

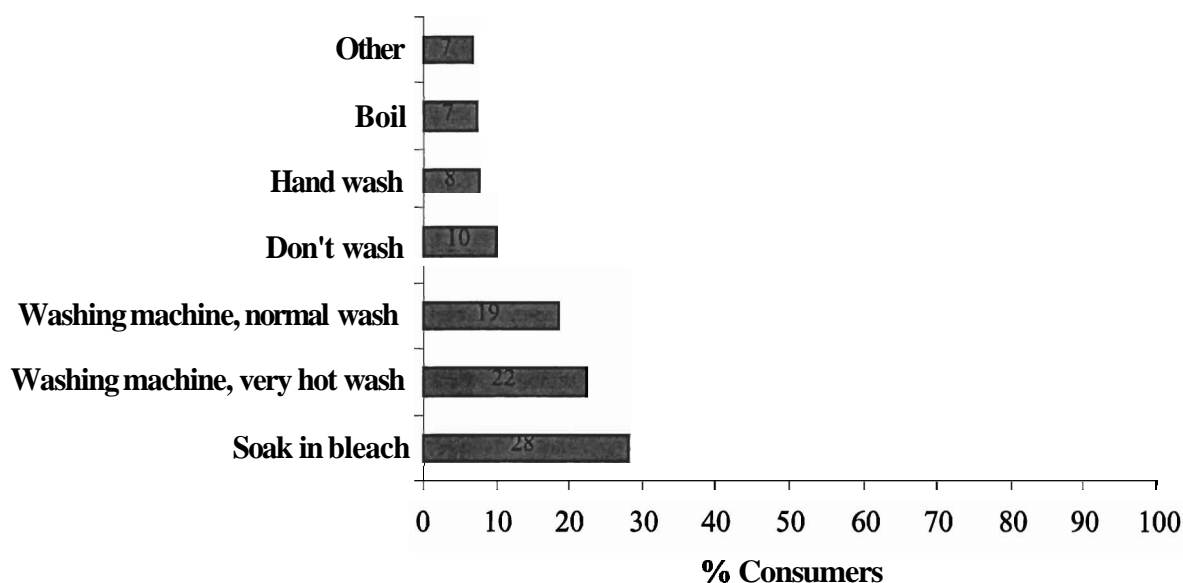


3.4.4.2 Dishcloths

The study revealed that just over half of consumers (59%) used non-disposable dishcloths whilst the remainder of consumers used disposable.

Figure 81 illustrates the percentage of consumers washing dishcloths by various methods.

Figure 81: Method of washing dishcloths.

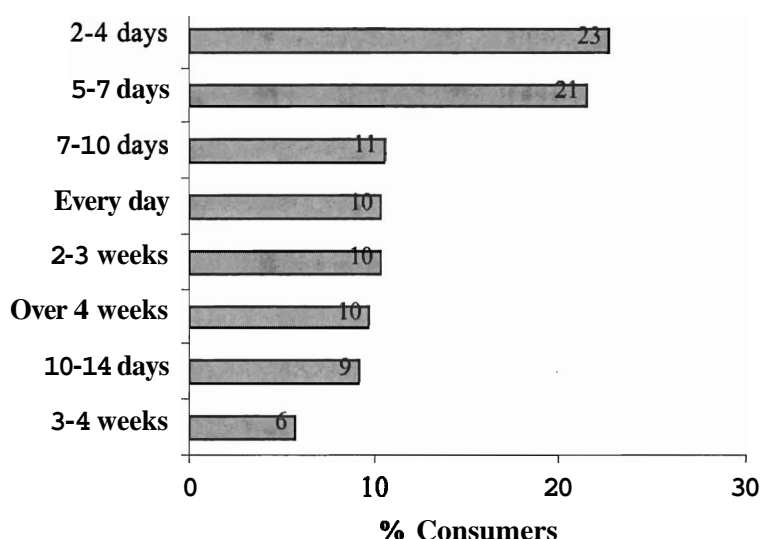


Bleaching was the most popular method of cleaning dishcloths with **28%** of consumers indicating that this was the method they normally used. Many washed either in a very hot wash (**22%**) or on a normal wash (**19%**). A small percentage either hand washed (**8%**), or boiled (**7%**) their dish cloths and **7%** indicated that they used another method to clean them. Almost **10%** of consumers indicated that they did not clean their dishcloths, which accounted for some of those using disposable cloths.

The majority of consumers indicated that they either washed their dishcloth every day (**42%**) or every **2-4** days (**37%**). Almost **12%** washed their dishcloths every **5-7** days, with **4%** indicating that theirs were cleaned every **7-10** days. A small percentage (**2%**) indicated that they either washed their cloths every **10-14** days or every **2-3** weeks. Less than **1%** indicated they left their cloths longer than this before washing them.

For those using disposable cloths, the length of time they were kept before being disposed of varied (**Figure 82**). Many consumers disposed of their dishcloths either every **2-4 days (23%)** or every **5-7 days (21%)**. A vigilant **10%** disposed of their dishcloths daily, whereas a total of **19%** kept their cloths for between **2** and 4 weeks with **10%** indicating that they did not dispose of their cloths until they were over **4** weeks old.

Figure 82: Frequency of dishcloth disposal.



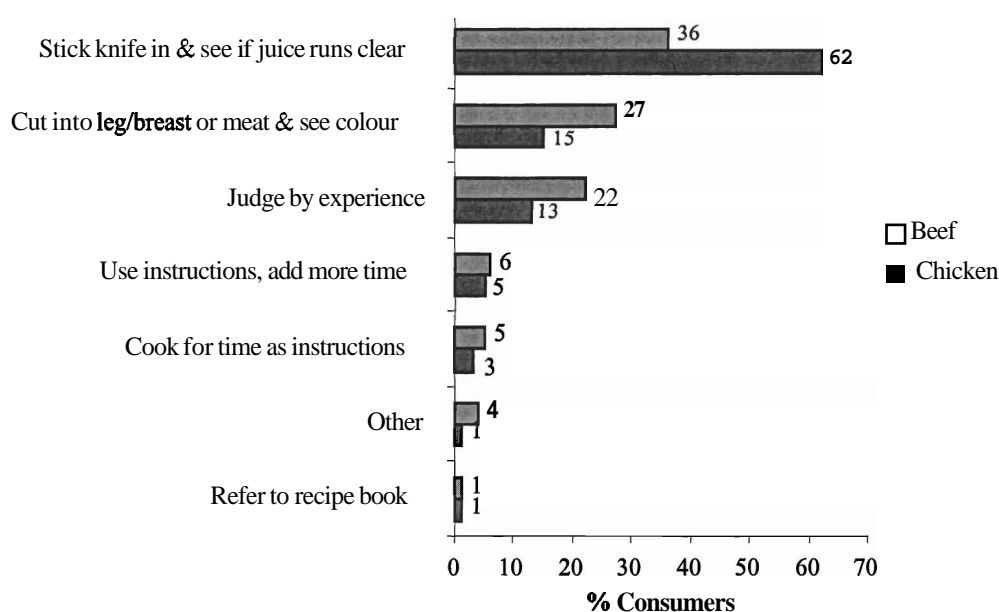
Many consumers using disposable dishcloths indicated that they washed their cloths. However, around **10%** of the total number of consumers indicated that they did not. Of those that did not, **10%** disposed of their cloths daily and over **50%** between **2** and **7** days. There were, however, **9%** of consumers keeping their disposable cloths without washing them for **7-10** days, **13%** for **10-14** days and **9%** for **2-3** weeks. A very small number of consumers (**4%**) kept their cloths for over **3** weeks.

3.4.5 Cooking and Reheating Meat

3.4.5.1 Cooking Meat

Consumers were asked to indicate which of several statements best described how they judged when a chicken, and when a piece of beef, was cooked thoroughly (Figure 83).

Figure 83: Method of judging when meat was thoroughly cooked.



Many consumers judged that their meat and chicken was cooked thoroughly by the fact that the juices ran clear when they stuck in a knife, although this was more popular for chicken (62%) than for red meat (36%). Cutting into the meat and looking at the colour was the way 27% and 15%, respectively, of consumers judged if their beef or chicken was thoroughly cooked. Many consumers judged by experience if their meat (22%) and chicken (13%) was thoroughly cooked. More of those using this method were in the older age groups living in adult only households. A small

percentage (5-6%) used the cooking instructions and then added more time, and of these, there tended to be more females than males and more in the lower socio-economic groups than in the higher group. Fewer consumers indicated that they cooked their meat for the length of time it said on the pack, and they tended to be more men than women. A very small percentage referred to recipe books.

3.4.5.2 Leftover Meat

Consumers were asked to indicate what they would normally do with leftovers from a meat dish (Figure 84). Most consumers (67%) indicated that they would cool the dish to room temperature and then store it in the fridge, with the majority (64%) indicating that they cover the meat, and 3% indicating they would not. For the remainder, most indicated they would put it straight in the fridge (25%); again, the majority (22%) indicated that they covered the meat. A very small percentage of consumers indicated that they would leave the meat out on the side until the next meal.

Figure 84: Leftover meat storage.

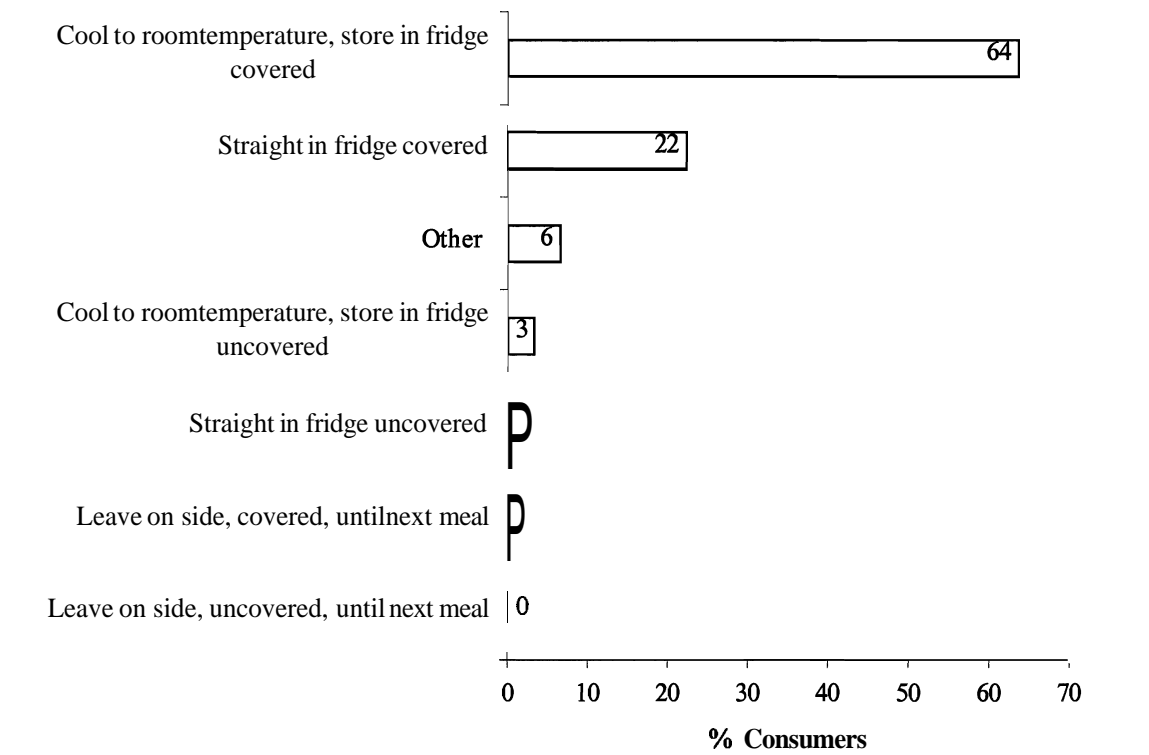
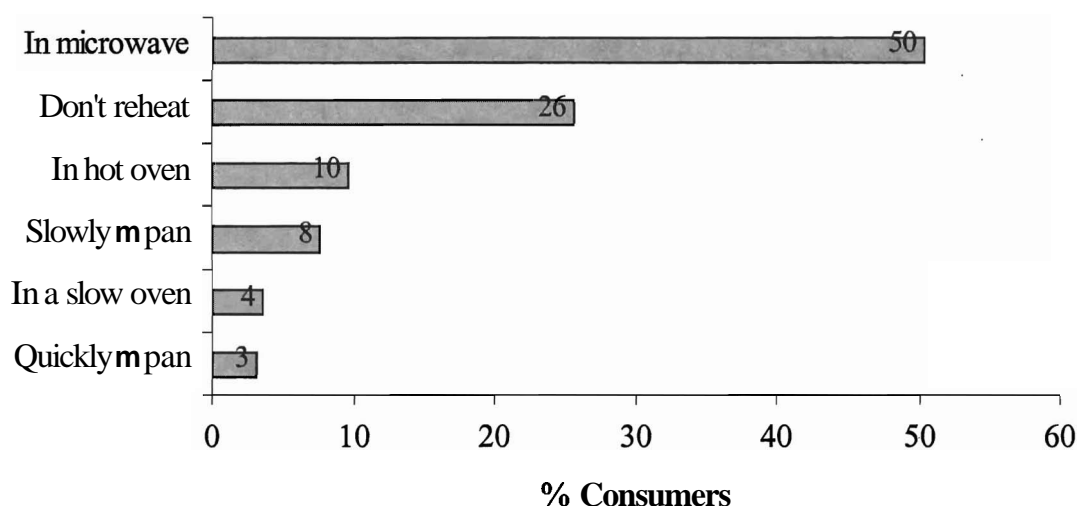


Figure 85 illustrates the normal methods of reheating meat dishes. Approximately half the consumers indicated that they used the microwave to reheat. Over ¼ of consumers did not reheat meat dishes.

Figure 85: Methods of reheating meat dishes.



Around 10% of consumers used a hot oven to reheat and 8% indicated that they reheated meat dishes slowly in pan. A small percentage of consumers either reheated in a slow oven (4%) or quickly in a pan (3%).

3.4.6 Summary of Meat Preparation and Cooking

Personal Preparation

The most important aspect of personal preparation was hand washing, with the majority of consumers indicating that they always washed their hands before preparation of a meat dish. The wearing of aprons for cooking was popular for approximately half of the consumers, 30% of whom reported that they always wore an apron before preparing a meal. Tying hair back and removal of rings was a regular practice for over 1/3 of consumers (of those to whom it applied) although 40% indicated that they never tied their hair back and 50% never took off their rings.

Preparation of the Kitchen

The majority of consumers indicated that they always washed **their** work surfaces before meal preparation with very few indicating that they never did so. Under half of consumers indicated that they cleaned their surfaces during preparation, and 10% of consumers indicated that they sometimes or never washed their work **surfaces** after meal preparation.

The use of antibacterial spray was the single most popular method of **washing** work surfaces. Hot soapy water, **kitchen** cleaner and to a lesser extent bleach were also used to clean work surfaces

For those consumers with pets, many indicated that they sometimes or always removed them **from** the kitchen before preparing a meal; however, **20%** of consumers reported that they never took their pets out of the **kitchen**.

Preparation of the Meat

The majority of consumers washed meat **under** a running tap with **25%** of consumers indicating that they did not dry meat. Those drying meat either simply shook of the excess moisture, or dried it on a paper towel. **A** small percentage (**4%**) indicated that they dried it with a cloth.

Whole chickens were washed by more consumers than any other meat and meat was washed by more consumers purchasing **from** the butcher's shop rather than the supermarket.

When cutting up meat almost half of the consumers indicated that **they** used any sharp knife they had to hand, with over 1/3 having a knife specifically for **the** purpose. Kitchen scissors were reported to be used by 14% of consumers.

Post Preparation

Almost 1/4 of consumers used a different chopping board after cutting up raw meat, when going on to make further meal preparations. Of these over half had a special board designated for raw meat. The majority of the other chopping board users cleaned their boards either in hot soapy water or with antibacterial spray. However, approximately 20% indicated that they simply rinsed it **under** the tap or wiped it with a cloth before using it for something else.

Consumer use of dishcloths was fairly evenly divided between those using disposable and those using non disposable cloths. Bleaching and machine washing were the methods used by the majority of consumers to clean their dishcloths. The frequency of cleaning varied, although most consumers indicated that they cleaned their dishcloths every 1-4 days. Approximately 15% left their cloths between 5 and 10 days before washing them and a very small percentage left them for longer. For those using disposable cloths the length of time before disposing of cloths varied and may have depended on whether or **not** they were cleaned in some way during the time they were used. For **those** who did not wash their disposable cloths (approximately 10%), the majority disposed of their cloths after 1 -7 days. Some, however, kept them for longer, apparently without cleaning or disposing of them.

The majority of consumers reported to either judge by the clear juices of the meat or by the colour of the meat when it was cut into to decide when meat was cooked thoroughly. Many, however, particularly in the older groups, judged by experience whether or not meat was cooked thoroughly. Approximately 10% of consumers tended to use the instructions on the pack and half of these would then add a little more time to ensure that the meat was thoroughly cooked.

The behaviour of consumers regarding storage of leftover meat dishes was fairly consistent with the vast majority storing the dish covered in the fridge. Two thirds of consumers cooled the dish to room temperature, whereas 25% reported to put it straight in the fridge.

Many consumers did not reheat dishes containing meat, but for those that did, the majority used the microwave. Approximately 11% of consumers used slow methods, either in the oven or in a pan to reheat leftover meat dishes.

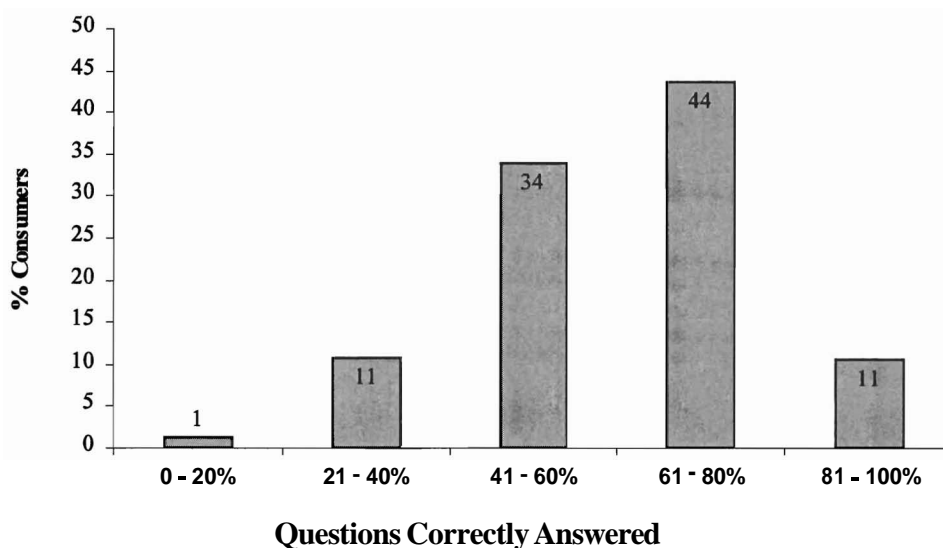
3.5 Food Hygiene Awareness

3.5.1 Consumer Awareness of Food Hygiene

In order to **identify** consumer awareness of food hygiene, a series of ten statements (see Figure 87) were presented and consumers were asked to indicate if the statements were true, false or if they were not sure. Individual consumers were grouped according to the percentage of questions they answered correctly (Figure 86).

The majority of consumers fell into one of two groups, with 34% answering 41-60% of questions correctly and 44% answering 61-80% of the questions correctly. A very small percentage of consumers answered less than 20% of the questions correctly.

Figure 86: Percentage of consumers within awareness group.



There were few differences in food hygiene **awareness** between males and females and between households with and without children. There was, however, a trend towards an increase in awareness as socio-economic group increased and also as age increased (see Appendix 17 for tabulated results).

3.5.2 Consumer Awareness of Specific Issues

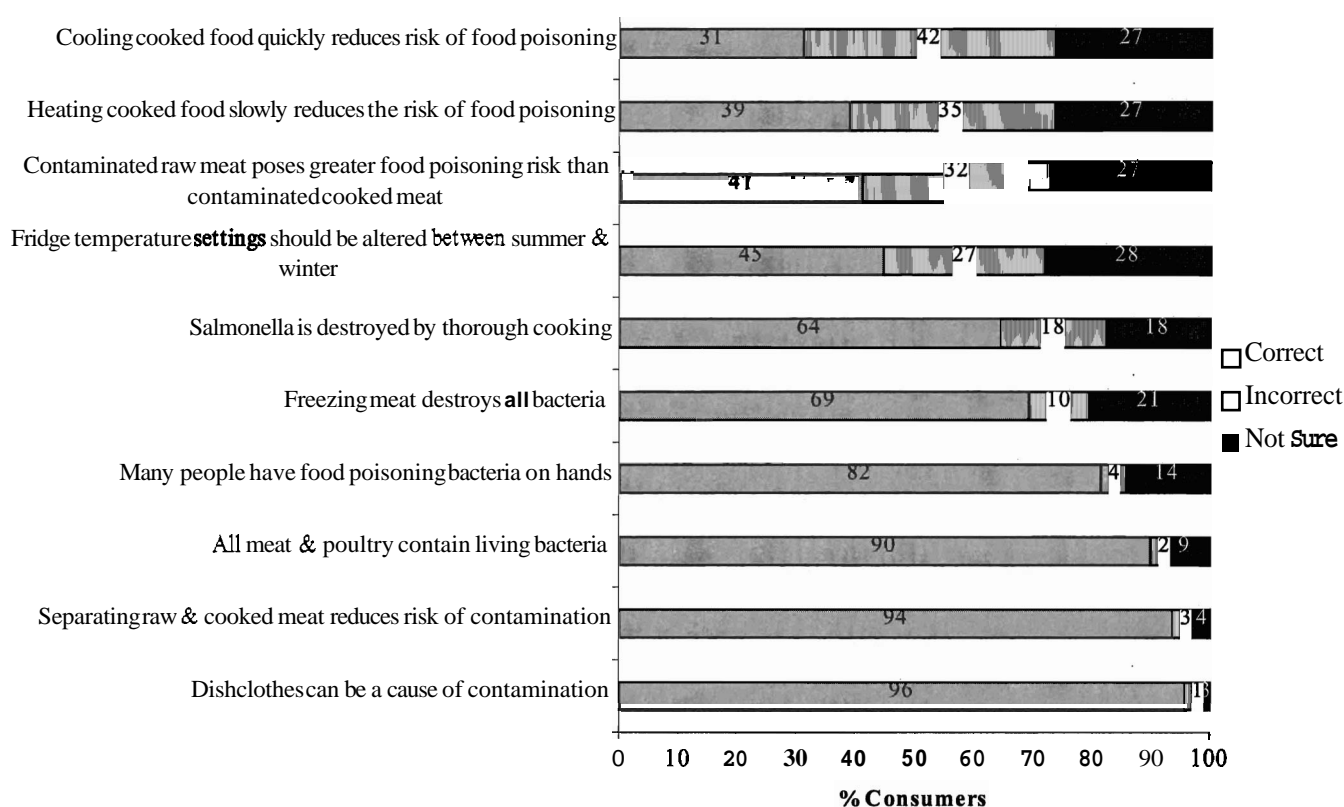
Figure 87 illustrates the percentage of consumers answering the questions correctly, incorrectly or if they were not sure.

The majority of consumers were aware that dishcloths can be a source of contamination (96%), separating raw and cooked meat can reduce the risk of contamination (94%) and all meat and poultry **contain** living bacteria (89%). The fact that food poisoning bacteria is carried on many people's hands was known by 81% of consumers, with the majority of the remainder being unsure (14%).

Approximately 10% of consumers believed that freezing meat destroys all bacteria and 20% were unsure. The majority were correct in stating the freezing meat does not, in fact, do this.

Although 64% of consumers were correct in thinking that *Salmonella* is destroyed by thorough cooking, 18% were either unsure or incorrect and less than half of consumers (45%) were aware that **fridge** temperature settings should be altered between summer and winter. Many consumers were not sure (27%) or incorrect (31%) in thinking that contaminated raw meat poses a greater food poisoning risk than contaminated cooked meat.

Figure 87: Consumer awareness of food hygiene.

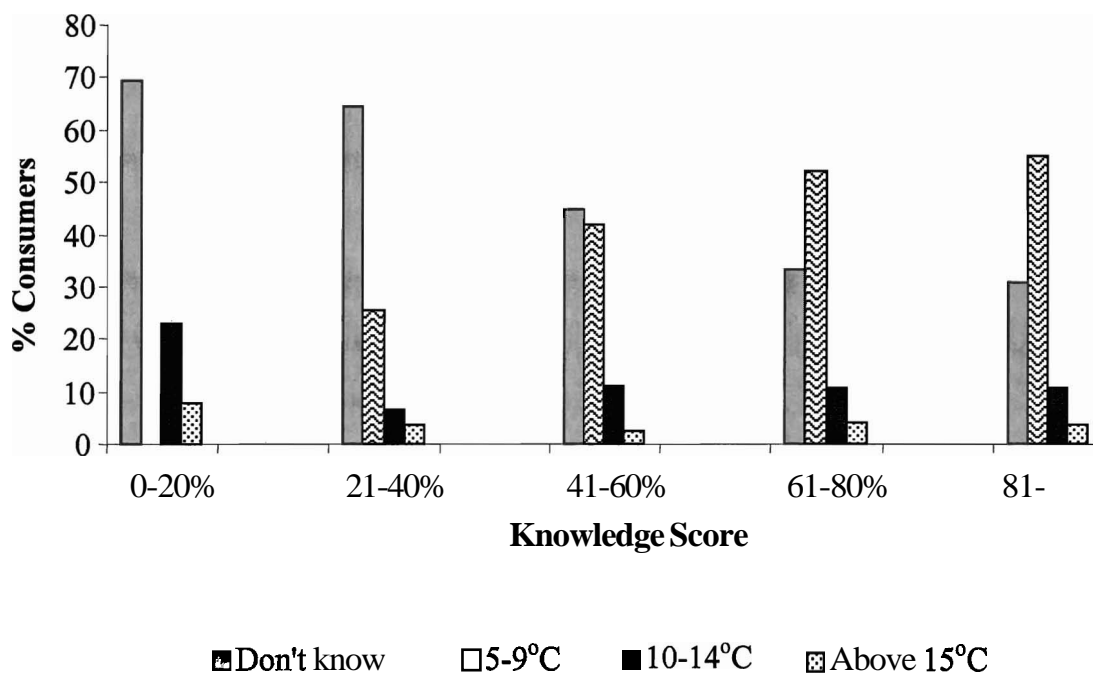


Consumers had the most difficulty with statements pertaining to cooling and reheating of foods. More than 1/3 of consumers incorrectly believed that heating cooked foods slowly could reduce the risk of food poisoning. Less than 1/3 agreed correctly that cooling foods quickly could reduce the risk of food poisoning, with 42% incorrectly answering this question and 26% unsure.

3.5.3 Comparison of Hygiene Awareness and Knowledge of Fridge Temperature

Consumer awareness of general kitchen hygiene was compared with awareness of correct fridge temperature and the results are illustrated in Figure 86.

Figure 88: Knowledge of correct **fridge** temperatures within food hygiene awareness group.

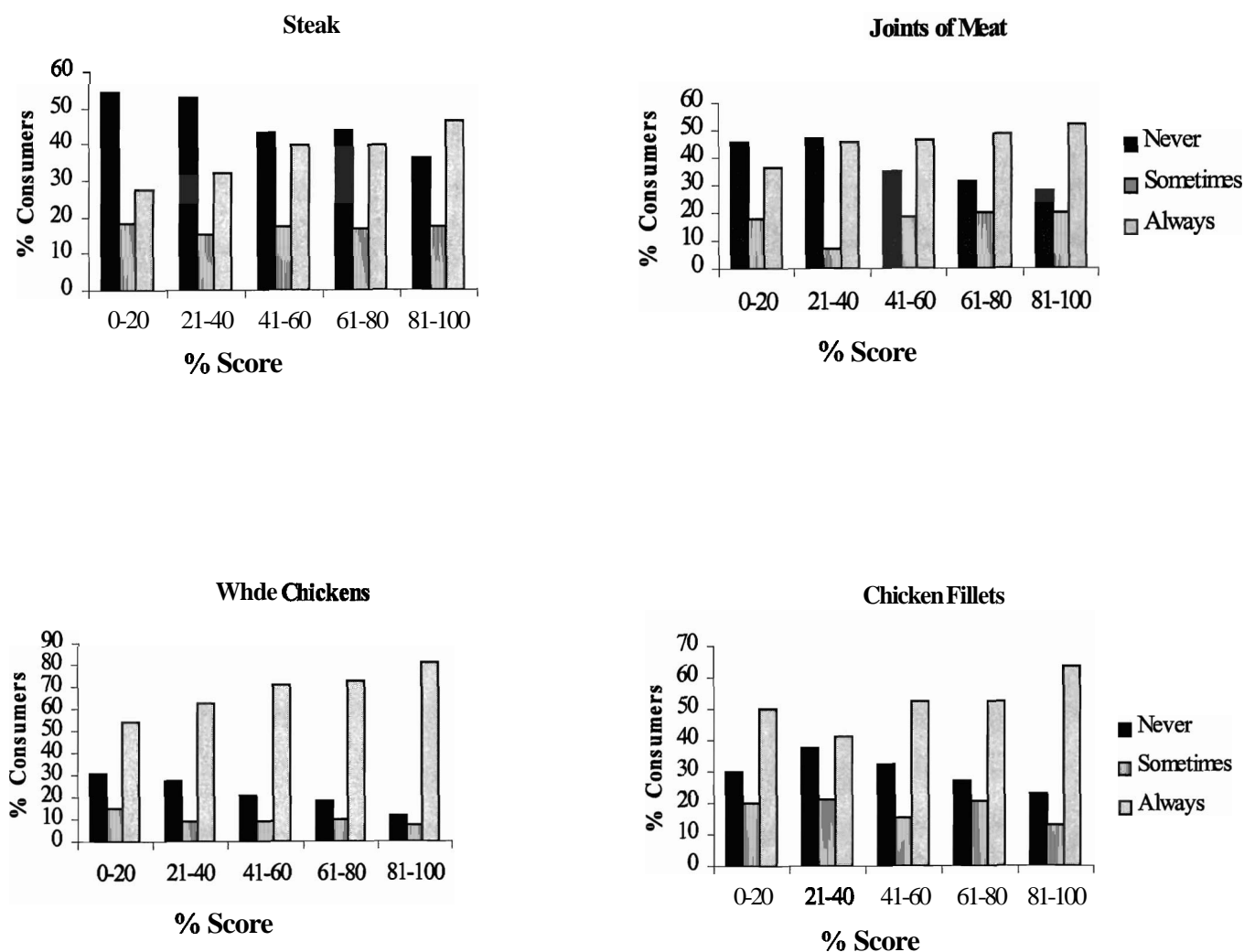


As awareness increased, the percentage of consumers who did not know what temperature their fridge should be **running** at decreased. Conversely the percentage of those indicating that their fridge should be running between 5-9°C increased as general awareness increased. There were little differences between groups for those indicating incorrect temperatures.

3.5.4 Comparison of Hygiene Awareness with Behaviour

Little difference was seen in the behaviour of consumers regarding use-by dates (3.3.4) and thawing practices (3.3.5) between different awareness groups. There was, however, a trend for the percentage of consumers washing meat to increase with increased hygiene awareness (Figure 89).

Figure 89: Percentage of consumers washing different meats within awareness groups.



3.5.5 Summary of Food Hygiene Awareness

There appeared to be a fairly high awareness of kitchen hygiene practices relating to handling of meat and contamination risks. The majority of consumers answered **41-80%** of the **10** questions correctly with only a very small percentage answering less than 2 questions correctly. There was a trend towards an increase in awareness as socio-economic group increased and also as age increased.

The majority of consumers were aware that dishcloths could be a source of contamination, separating raw and cooked meat could reduce the risk of contamination, all meat and poultry contained living bacteria and food poisoning bacteria are carried on the hands of many people. There was less consensus of opinion over whether freezing destroys all bacteria and if *Salmonella* is destroyed by thorough cooking. Less than half of consumers were aware that fridge temperature settings should be altered between summer and winter. Many consumers believed that contaminated raw meat was a greater food poisoning risk than contaminated cooked meat. There was also confusion for many consumers over the risks of heating food up slowly and cooling it down quickly with many unsure as to whether these practices could help reduce or would increase the risk of food poisoning.

Little difference was seen in the behaviour of consumers regarding use-by dates and thawing practice between consumers with different levels of awareness. Increased hygiene awareness, however, appeared to be linked with washing of meat and also an increased knowledge of correct fridge temperatures.

4 CONCLUSIONS AND IMPLICATIONS

Meat Purchase

The frequency of purchase of different meat types varied, however, chicken was clearly the most frequently bought meat, either as chicken fillets or whole chicken. The most frequently purchased red meats were sausages and mince. All other meats were purchased on an occasional basis. Lamb was the least frequently purchased meat type.

The frequency of purchase of some meats was associated more with certain groups than others. Whole chickens tended to be purchased by those in the lower socio-economic groups and in those households with children. Sausages and mince were more frequently purchased by the younger groups and those with children. For most fresh meat types purchase tended to increase with decreasing socio-economic status. This follows a similar pattern to the national consumption of meat (MAFF, 1999)

Most consumers made the occasional frozen meat purchase, but generally this was not popular on a weekly or fortnightly basis. Ready-meals were more popular and purchased by almost $\frac{1}{4}$ of consumers on a weekly basis and tended to be preferred by males and households with children. The purchase of ready-meals decreased with increasing age and increased with decreasing socio-economic status.

Cooked meats, in particular cooked sliced meats such as chicken, turkey and ham, were popular with the majority of consumers and again a trend towards the purchase of cooked meats increasing with decreasing socio-economic group was seen.

Thus, purchase of both raw and cooked meats by the majority of consumers in the survey was apparent. This implies that for many consumers, both raw and cooked meats may be stored in the house at the same time. The potential for cross

contamination from raw to cooked meat is therefore present in meat-eating households. In addition, ready-meals containing meat were also consumed by many. A large proportion of ready-meals are pre-cooked and simply need re-heating before use. Again cross contamination from raw meat could be a potential danger.

Perception of Hygiene

In accordance with other studies, only a very small number of respondents in this study considered their kitchen practices not to be hygienic. In a study evaluating safe food-handling instructions on raw meat and poultry products (Yang *et al.*, 2000), it was reported that a high proportion of respondents perceived that they already had safe food handling practices. Thus, labelling with instructions did not effect any behavioural change. Although respondents' food handling practices were not assessed prior to reading the label, other studies have shown that potentially unsafe practices do occur within the domestic food environment (Worsfold and Griffith, 1996), and there is some disparity between observed food safety behaviour and self-reported food handling practices (Worsfold and Griffith, 1997). Thus, the perception that many consumers have that their practices are hygienic is a potential barrier to changing these practices if behaviour does not reflect their perception.

It was also apparent in the current study that many respondents rated their practices as better/more hygienic than those in commercial kitchens. Other studies have shown that perceived risk of food poisoning was higher for foods eaten outside the home than food consumed at home and the perceived risk of consuming foods prepared by others was considerably more than the risk of foods prepared at home (Miles *et al.*, 1999). The fact that many believe that their own practices are more hygienic than those of commercial practices could to some extent explain these beliefs. There was a definite trend towards the perception of being more hygienic than commercial kitchens increasing with increasing age, and for those considering themselves worse to decrease in a similar way. Thus, for the older groups the perception of risk from their own practices may well be lower than that of the younger groups.

Storage of Meat in the Fridge

Generally consumers were careful with the storage of raw meat in the fridge with less than 2% storing it uncovered in the refrigerator. However, over half of the respondents put meat straight into the refrigerator in the packaging it came in. The potential for contamination of other food items in the refrigerator may, therefore, be fairly high, particularly if packaging has been punctured or damaged or if the meat was particularly juicy or bloody.

Over 2/3 of respondents indicated that they stored meat on the bottom of the fridge. However, if stored in packaging without use of a plate or a bowl, potential for cross contamination of other food items stored in this area of the fridge would be great if packaging was leaking. Many refrigerators have salad drawers at the bottom of the fridge and although meat may be stored on the shelf at the bottom of the fridge, the salad drawers are often below this shelf. Risk of contamination of salad from raw meat juices may, therefore, be high for some consumers.

The potential for cross contamination from raw meat may be greater the higher up the fridge the meat is stored. Around 20% of respondents stored raw meat on either the middle or top shelf, so the potential of contaminating any of the other foods on lower shelves is obviously apparent.

Cooked meats are a high-risk food, as they need no further cooking before consumption. Thus, contamination of cooked meat from raw meat is a serious potential food poisoning risk. Storage of cooked meat on the same shelf or below raw meat is therefore a potential risk. Approximately 11% of consumers stored both raw and cooked meat on the same shelf and a further 7% stored cooked meat below raw meat.

Some of the respondents did not have a set place for storage of meat and stored both cooked and raw meat wherever there was space in the refrigerator. For these consumers it is not possible to quantify those storing raw and cooked meat on the

same shelf, or those storing raw meat above cooked meat. However, with storing meat in such a random manner it can be assumed that at times, this may occur.

As the majority of respondents perceived their kitchen practices to be hygienic, there were few differences seen in perception of hygiene between those storing raw meat at the top or bottom of the fridge. There were no respondents who stored their meat at the top of the refrigerator believing their kitchen practices to be less than okay. Thus, for this group the practice of storing raw meat at the top of the fridge was not regarded as contributing to hygienic practice in the kitchen, or there was an unawareness that this was not good practice. Perception of hygienic practices was slightly lower, however, in those respondents who reported to store raw meat wherever there was space in the fridge. Thus, some awareness that this was not always hygienic practice may have existed.

Less than half of the respondents were aware of the correct temperature at which their fridge should have been running. A recent study undertaken in Argentina showed similar results with 40% of consumers stating that they did not know the correct temperature of their fridge (compared to 41% in this study) (Califano *et al.*, 2000). This suggests that temperatures were not checked and regulated, with the likelihood that some were not running at the recommended temperature. Previous studies have also revealed that lack of knowledge concerning the correct temperature at which chilled foods should be stored is prevalent (Worsfold and Griffith, 1997). Incorrect storage temperatures of meat can increase the risk of multiplication of food poisoning bacteria.

Interestingly, of those who considered their practices *very* hygienic and those who considered their practices as *much more* hygienic than commercial kitchens, only 1/3 knew the correct temperature of their fridge.

Most consumers agreed that they would discard meat if its appearance or odour gave them any concern. The use-by date, however, was not respected by the majority

of consumers. Over 2/3 reported that they would eat meat a day after and several reported they would eat meat 2 days or even more after the use-by date, if the meat still looked and smelled okay. Spoilage organisms which produce off odours and flavours, and alter the appearance of foods (such as slime and greenish tinge found on meat) are often responsible for the rejection of foods. Those organisms that are responsible for food poisoning are not necessarily linked with food spoilage. Thus, food may look and taste okay, but may be harbouring pathogenic bacteria, with the potential to cause food poisoning, without the consumer knowing. The disrespect for use-by dates, in the belief that if the appearance and odour was all right then the meat was safe to eat showed a lack of understanding and awareness by many consumers.

Thawing Meat

Although buying frozen meat was not popular, previous qualitative work (Newsholme, 2001) has shown that many consumers freeze fresh meat for later consumption, and so thawing practices were investigated. Thawing meat completely before cooking is important. Incomplete thawing of meat may mean that ice present in the centre will prevent the core temperature reaching a high enough level to destroy food poisoning organisms. For large pieces of meat such as joints or whole chickens, thawing of meat has greater significance. Many respondents reported to thaw meat by leaving it in the refrigerator overnight, whereas others left it out on the side or drainer. Thawing meat in the refrigerator is a slower process and there may be more likelihood of cross contamination of other foods and fridge surfaces if care is not taken. Leaving meat out on the side may be more suitable depending on the temperature of the room. Thawing at room temperatures of 25-30°C will result in raising the outside temperature of the meat enough for micro-organisms to multiply whilst the centre is still frozen.

In a commercial environment it is recommended that the thawing of frozen poultry is best carried out at 10-15°C in an area entirely separate from other foods (Sprenger, 1998). In a domestic kitchen this is unlikely to be practical at all times of the year. However, thawing meat in a cool place, away from other foods, for the recommended

time is important to minimise risk of multiplication of pathogenic bacteria and contamination of other foods.

Kitchen Hygiene

Personal hygiene is an important aspect when handling food of any kind and in particularly foods containing inherent pathogens and high-risk ready-to-eat foods (e.g. cooked meats). Hands are a vehicle for transportation of pathogens to and between foods and so cleanliness of hands is very important. The hands of people may also carry food poisoning bacteria. The majority of respondents reported that they always washed their hands before preparation of a meat dish. Although surveys have shown that most consumers report that they always or usually wash their hands before handling food (FDF,1996), observation of consumers has revealed that many subjects omitted to wash their hands before food preparation (Worsfold and Griffith, 1997). Thus self-reported hand washing may not always coincide with actual behaviour. Further practical kitchen work may help to clarify such points.

Cleaning work surfaces is important to reduce indirect cross contamination. The majority of consumers indicated that they always washed work surfaces before preparation and after preparation of a meal containing meat. Almost half of consumers used antibacterial spray to do this, with many others using hot soapy water, bleach or kitchen cleaner. The majority of consumers appeared therefore to be fairly scrupulous with cleaning of work surfaces; however, the effectiveness of the cleaning and the correlation between self reported cleaning and actual behaviour cannot be surmised in this study. This will be investigated in further work.

Domestic animals can be a risk as they carry pathogens on their bodies and intestines and large numbers of *Staphylococcus aureus* are commonly found on the skin and noses of cats and dogs (Sprenger, 1998). Around half of the respondents in the study were pet owners and more than 20% of these reported that they never removed pets from the kitchen during food preparation. The implications of having animals in the

kitchen during food preparation are clear and it is important that consumers are made more aware of these.

Washing meat was reported to be common practice among consumers. In particular, the **washing** of whole **chickens** was undertaken by many. **Washing** of meats was **most** commonly carried out **under** a **running** tap. Many of those drying meat simply shook off the excess moisture. Washing and drying meat particularly in this manner potentially risks indirect cross **contamination** with pathogenic organisms. Water splashed on equipment and work surfaces and additional handling of the meat may promote the spread of food poisoning bacteria from the meat. Further investigation of washing meat will be **undertaken** to determine the extent to which micro-organisms are reduced or increased by this process and the spread of bacteria carried in water droplets.

It is advised not to use the same chopping board for preparation of raw **meat**, cooked food and vegetables (MAFF, 1991). In this study, only **14%** of **consumers** had a board solely for raw meat and **7%** said they would use another board. Although **many** respondents washed their boards with hot soapy water, bacterial spray or bleach, **after** cutting up meat, more than 20% either rinsed it under the tap or wiped it with a cloth. A small percentage of consumers reported that they continued to use it as it was. The potential for indirect cross contamination using an unwashed board is great. The effectiveness of merely rinsing **the** board under the tap or wiping with a cloth is questionable. Splashes from the board whilst rinsing could cause spread of bacteria to other utensils, work tops or other foods.

Dishcloths, if not **frequently** disposed of or cleaned, can harbour bacteria and **may** act as a vehicle for indirect cross contamination. Around half of the respondents in the study used disposable dishcloths; however, the length of time they were kept before disposal varied. Many consumers washed their disposable cloths. However, over 30% of those that did not wash them kept them for longer than **7** days (and some up to **3weeks!**) before disposing of **them**. The moist environment of a damp dishcloth

is ideal for bacterial multiplication and there is enormous potential for the spread of bacteria when the cloth is in use.

For those using non disposable cloths, the majority washed their dish cloths every 1-4 days; almost 20%, however, left their cloths much longer than this (up to 2-3 weeks) before washing them. Although most of the cleaning methods used were sufficient to destroy bacteria (e.g. bleach, boiling, washing machine on a hot wash), using a dishcloth for this length of time clearly encourages the build up of potentially harmful bacteria between washes.

Cooking Meat

Cooking meat thoroughly is essential to ensure effective reduction or elimination of harmful bacteria. Temperatures achieved during cooking of food are usually high enough to achieve this; however, in certain circumstances, (e.g. with inadequately defrosted meat or the desire to eat rare meat), this may not always be the case. Many consumers in the study used the method of sticking a knife into the meat to see if the juices ran clear or cut into the meat to look at the colour. This is an efficient method; however, failure to wash the implement used to test the meat between testing may increase the risk of contaminating the outer cooked areas with bacteria still present in the centre of the meat. Few respondents used the instructions on the packet. Several respondents, particularly in the older groups, judged by experience. This lack of notice of instructions of how to cook meat thoroughly and the tendency of many to use their own experienced judgement may be a barrier to implementing safer practices regarding the cooking of meat.

Cooling and Re-heating Meat Dishes

Cooling and storage of cooked meat dishes has important implications in the potential multiplication of food poisoning bacteria. Many consumers in the study cooled the food to room temperature, then stored it covered, in the fridge. Cooling dishes in this way is appropriate for small amounts of food, but this depends on the temperature of the kitchen, which in turn may depend on many things including season of the year.

More than **20%** reported that they put food covered, straight in the refrigerator. This may cause the contents of the **fridge** to increase in temperature and may jeopardise the safety of the food.

Reheating meat dishes is also an area of concern as food must be re-heated to the correct temperature to destroy pathogens. Heating cooked foods quickly and thoroughly is the best way to **ensure** safety. Over **25%** of respondents in the study reported that they did not reheat meat dishes. For those who did, many reported to use the microwave. Those respondents (**12%**) reporting to heat up meat dishes slowly in the pan or in the oven would be further compromising the safety of the food.

Slow cooling of cooked dishes may cause areas of the food to remain warm enough for micro-organisms to reproduce to high enough levels to cause food poisoning, if food is ineffectively reheated or **eaten** cold. Placing hot food straight into the **fridge** will increase the temperature of the other the food within the **fridge** and so compromise safety.

Awareness of Food Hygiene

There was a high amount of consumer awareness of food hygiene, particularly in certain areas, although there was some uncertainty and misconception in others.

Most consumers were aware that dishcloths could be a source of contamination. This did not prevent many people from failing to discard or wash their cloths on a frequent basis.

The majority of respondents were also aware that separating cooked and raw meat reduces the risk of **contamination** and that all meat and poultry contain living bacteria. However, despite this knowledge, some consumers did not separate raw and cooked meat in the **fridge** (Section **3.3.2**).

Over 80% of people were aware that food poisoning bacteria are found on many people's hands. The majority of people did report to wash **their** hands before food preparation although previous observational studies have shown that self-reported hand washing does not always correlate with behaviour.

Fewer consumers were aware that *Salmonella* is destroyed by thorough cooking with over a 1/3 unaware of this fact. Thus, the adequacy of cooking meat may become more important to consumers if they understood that this was the case.

Around 30% of consumers were unsure or incorrect in thinking that freezing meat destroyed all bacteria. The importance of using safe defrosting techniques may be underestimated by consumers who believe that bacteria are destroyed by freezing.

Confusion between the relative importance of contaminated raw and cooked meat was apparent. Almost 1/3 of consumers believed that contaminated raw meat posed a greater risk of food poisoning than contaminated cooked meat with 27% not sure either way.

The areas of greatest misunderstanding were in those which have **important** implications in the multiplication of potential food poisoning bacteria, i.e. cooling and reheating meat dishes. More than 60% of respondents were unaware that heating cooked food up slowly could increase the risk of food poisoning and that cooling cooked food quickly could reduce the risk. A greater awareness of these facts would highlight the importance of the effective cooling and reheating of foods containing meat.

There was a positive correlation between those who knew the correct temperature at which their fridge should be running and awareness of general food hygiene. However, there was little correlation between consumer behaviour regarding use-by dates and thawing practices with knowledge. Previous studies (Williamson *et al.*,

1992) showed that knowledge of safe food handling terms or concepts did not always correlate with behaviour.

There was a fairly distinct positive correlation between food hygiene awareness and washing meat, with those reporting never to wash meat decreasing with increasing awareness and those always washing meat (in particular, those washing chickens) increasing with increased awareness. It appears therefore that those consumers with greater knowledge had more of a tendency to wash meat, suggesting that they associate the washing of meat with hygienic practice. The implications of washing meat regarding the removal of bacteria and the potential spread of bacteria will be investigated in further work. Washing of meat, which is a preparation task undertaken by many consumers, may prove to be more of a risk than a hygienic practice. This is an important area which must be addressed, particularly as it was those with more knowledge and awareness of food hygiene who were more likely to undertake this practice.

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APPENDIX I: RECRUITMENT QUESTIONNAIRE

INSTRUCTIONS:Please use a blue or black **pen**Please fill in the **box** like **this** ☐or like this ☐**DOMESTIC HANDLING OF MEAT
RECRUITMENT QUESTIONNAIRE****P56633**


Campden & Chorleywood
Food Research Association
Chipping Campden
Gloucestershire
GL55 6LD

Respondent ID

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Good **Morning/Afternoon,**

I am conducting a survey on behalf of **Campden & Chorleywood Food Research Association**, an independent market research company. We are carrying out a **survey** in this **area**. May I ask you some questions?

Name Address Telephone Number **INTERVIEWERS DECLARATION**

I declare that the interview **was** carried out in accordance with the written instructions with the person named here who **was** previously unknown to me.

Interviewers name

 / /

Date of interview

Signed

Gender

Male ☐Female ☐} REFER TO
QUOTA

Socioeco

A/B ☐C1/C2 ☐D/E ☐

REFER TO QUOTA

Age

18 - 24 ☐25 - 34 ☐35 - 44 ☐45 - 54 ☐55 - 64 ☐


} REFER TO QUOTA

Household

Adult only ☐With children ☐} REFER TO
QUOTA

INSTRUCTIONS:

Please use a blue or black pen

Please fill in the box like this or like this ☐**DOMESTIC HANDLING OF MEAT
RECRUITMENT QUESTIONNAIRE**

P56633



Campden & Chorlwood
Food Research Association
Chipping Campden
Gloucestershire
GL55 6LD

Respondent ID

--	--	--	--

1. Do you or any of your family or close friends work in any of the industries shown on this Card? **(SHOW CARD A)**

Media Market Research Marketing Public Relations

Journalism Advertising Food Industry (**manufacture** or sales)Catering /**Food Service****IF 'YES' THANK AND
CLOSE INTERVIEW**

2. Have you participated in any food related Market Research in the last 6 months?

IF YES THANK AND CLOSE INTERVIEW

3. Are you solely or partly responsible for shopping and cooking in your household?

IF NO - THANK AND CLOSE INTERVIEW

4. Do you buy and prepare meat **and** meat products?

IF NO - THANK AND CLOSE INTERVIEW

5. Which of the following do you buy on a regular basis (at least once a week)? **(SHOW CARD B)**

Cooked meats e.g. wafer thin **ham** ☐Canned vegetables ☐Prepared meat products e.g. sausages, burgers, bacon ☐Oven-baked chips ☐Offal e.g. liver, **kidney**, tripe ☐Frozen vegetables ☐Poultry **fresh** or frozen e.g. chicken, **turkey**, duck, goose ☐Red meat fresh or frozen e.g. beef: **lamb**, pork ☐**MUST CONSUME
ONE OF THESE****} REFER TO
QUOTA**Meat-based ready meals e.g. Roast beef dinner, shepherds pie ☐Vegetarian ready meals e.g. Vegetarian lasagne, vegetable pizza ☐

**CHECK QUOTA & ASK RESPONDENT IF THEY WOULD
BE INTERESTED IN ATTENDING A GROUP DISCUSSION ON MEAT**

54579



APPENDIX 2: QUESTIONNAIRE

INSTRUCTIONS:

Please use a blue or black pen

Please fill in the box like this ☐or like this ☐**DOMESTIC HANDLING OF MEAT****P56633**


Campden & Chorleywood
Food Research Association
Chipping Campden
Gloucestershire
GL55 6LD
Tel: 01386 842000

Respondent ID

--	--	--	--

Thank you for agreeing to help us with our research.We are interested in your experiences in matters relating to the buying, preparation and cooking of meat. Please **try** to be as honest as you can. Once completed, questionnaires will remain anonymous.**Question 1 - The Meat You Buy****1a)** How often do you buy the following types of **FRESH** meat?

Please indicate by placing X in one box only for each type of meat.

	Every week	Every fortnight	Occasionally	Never
Whole chicken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chicken fillets/diced or whole	U	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beef steaks - fillet/T-bone/ sirloin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beef steaks - stewing/braising	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lamb steaks	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mince beef	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint of beef	•	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint of lamb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Joint of pork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lamb chops	a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pork chops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sausages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Burgers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1b) How often do you buy **FROZEN** meat (NOT including meat you buy **fresh** and put in the freezer)? Please indicate by placing X in one box only.

Every week	Every fortnight	Occasionally	Never
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1c) How often do you buy the following **types** of cooked meat?

Please indicate by placing X in one box only for each product.

	Everyweek	Every fortnight	Occasionally	Never
Sliced ham/chicken/turkey/pork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chicken whole or pieces	U	<input type="checkbox"/>	C	<input type="checkbox"/>
Sausage e.g. garlic, pastrami, salami	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1d) How often do you eat ready meals containing meat e.g. shepherds pie, lasagne, roast beef dinner?

Please indicate by placing X in one box only.

Everyweek	Every fortnight	Occasionally	Never
a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please turn to next page

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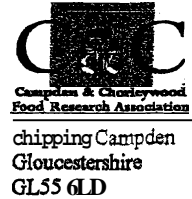


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Please use a blue or black pen

Please fill in the box like this ☐
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1e) Where do you most often purchase your meat?

Please indicate by placing X in **one box** only.

Supermarket - pre-packed	<input type="checkbox"/>	Butchers	<input type="checkbox"/>
Supermarket - butchers counter	<input type="checkbox"/>	Wholesalers	<input type="checkbox"/>
Farm shop	<input type="checkbox"/>	Others - please state	<input type="checkbox"/>

Question 2 - Your kitchen

2a) How hygienic do you feel that your kitchen practices are?

Please indicate by placing X in one box only on the scale below.

Not at all hygienic					OK				Very hygienic
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2b) Compared to commercial kitchens how much better or worse **hygienically**, do you regard your kitchen practices? Please indicate by placing X in one box only on the scale below.

Much worse					Same				Much better
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Question 3 - Storing Meat3a) Please indicate which of the following best describes what you usually do when you bring raw meat home **from** the shops before you put it in the fridge?Please indicate by placing X in **one box** only

Put it straight in the fridge in the packaging/bag it came in	<input type="checkbox"/>
Put it on a plate or bowl in the packaging or bag it came in	<input type="checkbox"/>
Take it out of the packaging/bag and put it on a plate or container uncovered	<input type="checkbox"/>
Take it out of the packaging/bag and put it on a plate or container covered	<input type="checkbox"/>
Other - please state	<input type="checkbox"/>

3b) Thinking about the food in your **fridge**, where do you normally store **raw** meat?Please indicate by placing X in **one box** only.

On the top shelf	<input type="checkbox"/>	Wherever there is space	<input type="checkbox"/>
On the bottom shelf	<input type="checkbox"/>	In the middle	<input type="checkbox"/>



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3c) Where do you normally store cooked meat in the refrigerator?

Please indicate by placing X in **one box** only.

- | | | | |
|---------------------|--------------------------|-------------------------|--------------------------|
| On the top shelf | <input type="checkbox"/> | Wherever there is space | <input type="checkbox"/> |
| On the bottom shelf | <input type="checkbox"/> | In the middle | <input type="checkbox"/> |

3d) At what temperature should your fridge be running at?

Please indicate by placing X in one box only.

- Above 15°C ☐ 10-14°C ☐ 5-9°C ☐ Don't know ☐

3e) Please indicate by placing X in the appropriate box(es) if you would eat meat stored in the refrigerator if it was...

- | | |
|---|--------------------------|
| A day after the use by date, but still looked and smelled OK | <input type="checkbox"/> |
| 2 days after the use by date, but still looked and smelled OK | <input type="checkbox"/> |
| More than 2 days after the use by date, but still looked/smelled OK | <input type="checkbox"/> |
| Discoloured or looked off, but was within the date | <input type="checkbox"/> |
| Smelled different/odd, but was within the date | <input type="checkbox"/> |

3f) When thawing a joint of meat or whole chicken what would you usually do?

Please indicate by placing X in one box only.

- | | | | |
|---|--------------------------|--|--------------------------|
| Put in refrigerator overnight in packaging | <input type="checkbox"/> | Use microwave to defrost | <input type="checkbox"/> |
| Put in refrigerator overnight on plate/bowl | <input type="checkbox"/> | Thaw in a bowl of cold water | <input type="checkbox"/> |
| Put on work top/drainers in bag | <input type="checkbox"/> | Thaw in a bowl of hot water | <input type="checkbox"/> |
| Leave on worktop/drainers out of bag | <input type="checkbox"/> | Put on a plate/bowl/on side /uncovered | <input type="checkbox"/> |
| Put on a plate, on side, covered | <input type="checkbox"/> | Never freeze joints or whole chickens | <input type="checkbox"/> |
| Cook from frozen | <input type="checkbox"/> | Other (please state) | <input type="checkbox"/> |

3g) When thawing a small piece of meat e.g. chicken fillets or chops what would you usually do?

Please indicate by placing X in one box only.

- | | | | |
|---|--------------------------|--|--------------------------|
| Put in refrigerator overnight in packaging | <input type="checkbox"/> | Use microwave to defrost | <input type="checkbox"/> |
| Put in refrigerator overnight on plate/bowl | <input type="checkbox"/> | Thaw in a bowl of cold water | <input type="checkbox"/> |
| Put on work top/drainers in bag | <input type="checkbox"/> | Thaw in a bowl of hot water | <input type="checkbox"/> |
| Leave on worktop/drainers out of bag | <input type="checkbox"/> | Put on a plate/bowl/on side /uncovered | <input type="checkbox"/> |
| Put on a plate, on side, covered | <input type="checkbox"/> | Never freeze small pieces of meat | <input type="checkbox"/> |
| Cook from frozen | <input type="checkbox"/> | Other (please state) | <input type="checkbox"/> |

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Question 4 - Preparation

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4a) Which of the following do you generally do *before* preparing a meal?Please indicate by placing X in the appropriate **box(es)**

	Always	Sometimes	Never	Not applicable
Tie hair back	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wear an apron	<input type="checkbox"/>	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/>
Wash hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> U	<input type="checkbox"/>
Take off rings	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/> U	<input type="checkbox"/>
Wash work surfaces	<input type="checkbox"/> U	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/>
Ensure pets out of kitchen	<input type="checkbox"/>	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/>

4b) When would you normally clean your work **surfaces**?Please indicate by placing X in the appropriate **box(es)**

	Always	Sometimes	Never
Before preparation of a meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
During preparation of a meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After preparation of a meal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4c) What do you **normally** use to **clean/wipe** your work **surfaces**?Please indicate by placing X in **one box** only.

Water	<input type="checkbox"/>	Antibacterial wipes	<input type="checkbox"/> U
Kitchen cleaner	<input type="checkbox"/>	Antibacterial spray	<input type="checkbox"/>
Soapy water	<input type="checkbox"/>	Bleach	<input type="checkbox"/>

4d) Thinking about preparing meat before cooking. Do you wash any of the following types of meat?

Please put X in one box only for each meat **type** (if **never** to **all** go to question 4g).

	Always	Sometimes	Never
Joints of meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steak (beef, lamb etc.)	<input type="checkbox"/>	<input type="checkbox"/> U	<input type="checkbox"/>
Whole chickens	<input type="checkbox"/> U	<input type="checkbox"/>	<input type="checkbox"/> U
Chicken fillets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> U

4e) If you wash meat, how do you **normally** do this?Please indicate by placing X in **one box** only.

Under a running tap	<input type="checkbox"/>	Soaking in a sink of water	<input type="checkbox"/>
Soaking in a bowl of water	<input type="checkbox"/>	Other (please state)	<input type="checkbox"/>

4f) If you wash **meat**, how do you normally dry it?Please indicate by placing X in **one box** only.

With a cloth	<input type="checkbox"/> D	With kitchen paper	<input type="checkbox"/>
Shake of excess moisture	<input type="checkbox"/>	Don't dry it	<input type="checkbox"/>


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4g) What do you usually use for cutting up raw meat? Please indicate by placing X in **one box** only.

Kitchen scissors	<input type="checkbox"/>	U	Special knife used only for raw meat	<input type="checkbox"/>
Any sharp knife I have to hand	<input type="checkbox"/>		Other (please state)	<input type="checkbox"/>

4h) When you use a chopping board for cutting up raw meat what do you normally do before using it for something else?Please indicate by placing X in **one box** only.

Rinse it under the tap	<input type="checkbox"/>	U	Continue to use it as it is	<input type="checkbox"/>
Wipe it with a cloth	<input type="checkbox"/>		Wash in hot soapy water	<input type="checkbox"/>
Clean with bleach/antibacterial spray	<input type="checkbox"/>	U	Use another board	<input type="checkbox"/>
Don't use chopping boards	<input type="checkbox"/>		Have a board solely for raw meat	<input type="checkbox"/>

4i) How do you usually clean your dishcloth?Please indicate by placing X in **one box** only.

In washing machine on normal wash	<input type="checkbox"/>	Hand wash	<input type="checkbox"/>
In washing machine on a very hot wash	<input type="checkbox"/>	Soak in bleach	<input type="checkbox"/>
Don't clean them (go to 4k)	<input type="checkbox"/>	Boil	<input type="checkbox"/>
Microwave	<input type="checkbox"/>	Other (please state)	<input type="checkbox"/>

4j) How **often** do you clean your dishcloth?Please indicate by placing X in **one box** only.

<input type="checkbox"/> Every day	<input type="checkbox"/> 10-14 days
<input type="checkbox"/> 2-4 days	<input type="checkbox"/> 2-3 weeks
<input type="checkbox"/> 5-7 days	<input type="checkbox"/> 3-4 weeks
<input type="checkbox"/> 7-10 days	<input type="checkbox"/> over 4 weeks

4k) What **kind** of dishcloth do you normally use?Disposable (go to question 4l below) ☐ U Non disposable (go to question 5) ☐**4l)** How **often** do you dispose of your dishcloth?

<input type="checkbox"/> Every day	<input type="checkbox"/> 10-14 days
<input type="checkbox"/> 2-4 days	<input type="checkbox"/> 2-3 weeks
<input type="checkbox"/> 5-7 days	<input type="checkbox"/> 3-4 weeks
<input type="checkbox"/> 7-10 days	<input type="checkbox"/> over 4 weeks

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Question 5 - Cooking Meat

Respondent **W**

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5a) Which of the following best describes how you would know when a chicken is cooked thoroughly?

Please indicate by placing X in **one box** only.

- | | |
|---|--------------------------|
| Stick a knife in and see if juices run clear | <input type="checkbox"/> |
| Cut into leg/breast and look at colour of meat | <input type="checkbox"/> |
| Use cooking instructions and then add more time | <input type="checkbox"/> |
| Cook for length of time it says in cooking instructions on the pack | <input type="checkbox"/> |
| Judge by experience | <input type="checkbox"/> |
| Refer to recipe book for guidance | <input type="checkbox"/> |
| Other (please state) | <input type="checkbox"/> |

5b) Which of the following best describes how you would know if a piece of beef is cooked thoroughly?

Please indicate by placing X in **one box** only.

- | | |
|---|--------------------------|
| Stick a knife in and see if juices run clear | <input type="checkbox"/> |
| Cut meat and look at the colour | <input type="checkbox"/> |
| Use cooking instructions and then add more time | <input type="checkbox"/> |
| Cook for length of time it says in cooking instructions on the pack | <input type="checkbox"/> |
| Judge by experience | <input type="checkbox"/> |
| Refer to recipe book for guidance | <input type="checkbox"/> |
| Other (please state) | <input type="checkbox"/> |

5c) If you have prepared a meat dish and there is some **left** over **after** the meal what do you **usually** do?

Please indicate by placing X in **one box** only.

- | | |
|---|--------------------------|
| Put it straight in the fridge/covered | <input type="checkbox"/> |
| Put it straight in the fridge/uncovered | <input type="checkbox"/> |
| Cool it to room temperature then store in fridge/covered | <input type="checkbox"/> |
| Cool it to room temperature then store in fridge/uncovered | <input type="checkbox"/> |
| Leave on the side, covered, until the next meal | <input type="checkbox"/> |
| Leave on the side, uncovered, until the next meal | <input type="checkbox"/> |
| Other please state | <input type="checkbox"/> |

5d) How would you normally reheat **leftover** meat dishes?

Please indicate by placing X in **one box** only.

- | | | | |
|------------------|--------------------------|-------------------------|--------------------------|
| In the microwave | <input type="checkbox"/> | In a slow oven | <input type="checkbox"/> |
| In a hot oven | <input type="checkbox"/> | Quickly in a pan | <input type="checkbox"/> |
| Slowly in a pan | <input type="checkbox"/> | Don't reheat | <input type="checkbox"/> |

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Question 6 - Food Hygiene Awareness

Below are a series of statements relating to food hygiene.

Please indicate by placing X in the appropriate box whether you believe the following statements to be true or false, or if you are not sure.

	True	False	Not sure
All meat and poultry contain living bacteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many people have food poisoning bacteria on their hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dishcloths can be a cause of contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salmonella is destroyed by thorough cooking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Freezing meat destroys all bacteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Separating raw and cooked meat can reduce the risk of contamination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature settings in your fridge should be altered between summer and winter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contaminated raw meat poses a greater food poisoning risk than contaminated cooked meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooling cooked foods quickly can reduce the risk of food poisoning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating up cooked foods slowly can reduce the risk of food poisoning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR YOUR TIME

APPENDIX 3: FREQUENCY OF PURCHASE OF RAW MEATS

Whole Chicken	Count	Percent
Never	98	9.7
Occasionally	419	41.3
Every Fortnight	204	20.1
Every Week	294	29.0

Chicken Fillets-Diced/Whole	Count	Percent
Never	70	6.9
Occasionally	258	25.5
Every Fortnight	231	22.9
Every Week	451	44.7

Beef Steaks-Fillet/T-Bone/Sirloin	Count	Percent
Never	228	22.8
Occasionally	495	49.6
Every Fortnight	153	15.3
Every Week	122	12.2

Beef Steaks-Stewing/Braising	Count	Percent
Never	268	27.1
Occasionally	433	43.7
Every Fortnight	163	16.5
Every Week	126	12.7

Lamb Steaks	Count	Percent
Never	394	39.5
Occasionally	434	43.5
Every Fortnight	119	11.9
Every Week	51	5.1

Mince Beef	Count	Percent
Never	135	13.4
Occasionally	271	27.0
Every Fortnight	250	24.9
Every Week	349	34.7

Joint of Beef	Count	Percent
Never	266	26.6
Occasionally	482	48.1
Every Fortnight	165	16.5
Every Week	89	8.9

Joint of Lamb	Count	Percent
Never	349	34.6
Occasionally	474	47.0
Every Fortnight	137	13.6
Every Week	49	4.9

Joint of Pork	Count	Percent
Never	330	33
Occasionally	480	48
Every Fortnight	146	15
Every Week	47	5

Lamb Chops	Count	Percent
Never	303	30.3
Occasionally	436	43.6
Every Fortnight	167	16.7
Every Week	93	9.3

Pork Chops	Count	Percent
Never	219	21.7
Occasionally	443	43.9
Every Fortnight	198	19.6
Every Week	150	14.9

Sausages	Count	Percent
Never	86	8.4
Occasionally	263	25.7
Every Fortnight	241	23.6
Every Week	433	42.3

Burgers	Count	Percent
Never	329	32.5
Occasionally	333	32.9
Every Fortnight	153	15.1
Every Week	198	19.6

APPENDIX 4: FREQUENCY OF PURCHASE OF FROZEN MEAT, COOKED MEAT AND READY MEALS

Frozen Meat	Count	Percent
Never	248	24.1
Occasionally	423	41.1
Every Fortnight	151	14.7
Every Week	208	20.2

Sliced Ham/Chicken/Turkey/Pork	Count	Percent
Never	59	5.8
Occasionally	136	13.3
Every Fortnight	135	13.2
Every Week	696	67.8

Chicken-Whole/Pieces	Count	Percent
Never	172	17.1
Occasionally	313	31.1
Every Fortnight	206	20.5
Every Week	315	31.3

Sausage (e.g. garlic, pastrami, salami)	Count	Percent
Never	296	29.3
Occasionally	377	37.3
Every Fortnight	112	11.1
Every Week	225	22.3

Ready Meals	Count	Percent
Never	280	27.2
Occasionally	369	35.9
Every Fortnight	133	12.9
Every Week	247	24.0

APPENDIX 5: PLACE OF PURCHASE

Purchasing Meat	Count	Percent
Supermarket - pre-packed	663	70.5
Supermarket - butchers counter	85	9.0
Farm Shop	4	0.4
Butchers	179	19.0
Wholesalers	6	0.6
Others	4	0.4

APPENDIX 6: PURCHASE OF FRESH MEAT BY GENDER

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Whole Chicken						
Male	31	111	41	80	263	Count
	11.8	42.2	15.6	30.4	100	%
Female	67	308	163	214	752	Count
	8.9	41.0	21.7	28.5	100	%
All	98	419	204	294	1015	Count
	9.7	41.3	20.1	29.0	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Chicken Fillets						
Male	24	72	58	114	268	Count
	9.0	26.9	21.6	42.5	100	%
Female	46	186	173	337	742	Count
	6.2	25.1	23.3	45.4	100	%
All	70	258	231	451	1010	Count
	6.9	25.5	22.9	44.7	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - fillet/t-bone/sirloin						
Male	53	129	51	31	264	Count
	20.08	48.86	19.32	11.74	100	%
Female	175	366	102	91	734	Count
	23.84	49.86	13.9	12.4	100	%
All	228	495	153	122	998	Count
	22.85	49.6	15.33	12.22	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - Stewing/Braising						
Male	78	123	31	32	264	Count
	29.6	46.6	11.7	12.1	100	%
Female	190	310	132	94	726	Count
	26.2	42.7	18.2	13.0	100	%
All	268	433	163	126	990	Count
	27.1	43.7	16.5	12.7	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Steaks						
Male	92	125	37	9	263	Count
	35.0	47.5	14.1	3.4	100	%
Female	302	309	82	42	735	Count
	41.1	42.0	11.2	5.7	100	%
All	394	434	119	51	998	Count
	39.5	43.5	11.9	5.1	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Mince Beef						
Male	28	90	65	84	267	Count
	10.49	33.7	24.3	31.5	100	%
Female	107	181	185	265	738	Count
	14.5	24.5	25.1	35.9	100	%
All	135	271	250	349	1005	Count
	13.43	27.0	24.9	34.7	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Beef						
Male	71	130	43	20	264	Count
	26.89	49.2	16.3	7.6	100	%
Female	195	352	122	69	738	Count
	26.42	47.7	16.5	9.4	100	%
All	266	482	165	89	1002	Count
	26.55	48.1	16.5	8.9	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Lamb						
Male	90	132	35	11	268	Count
	33.58	49.3	13.1	4.1	100	%
Female	259	342	102	38	741	Count
	35.0	46.2	13.8	5.1	100	%
All	349	474	137	49	1009	Count
	34.59	46.98	13.58	4.86	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Pork						
Male	94	124	36	12	266	Count
	35.34	46.6	13.5	4.5	100	%
Female	236	356	110	35	737	Count
	32.0	48.3	14.9	4.8	100	%
All	330	480	146	47	1003	Count
	32.9	47.9	14.6	4.7	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Chops						
Male	84	117	45	19	265	Count
	31.7	44.2	17.0	7.2	100	%
Female	219	319	122	74	734	Count
	29.84	43.5	16.6	10.08	100	%
All	303	436	167	93	999	Count
	30.33	43.6	16.7	9.3	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Pork Chops						
Male	69	117	52	29	267	Count
	25.84	43.8	19.5	10.9	100	%
Female	150	326	146	121	743	Count
	20.19	43.9	19.7	16.3	100	%
All	219	443	198	150	1010	Count
	21.68	43.9	19.6	14.9	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Sausages						
Male	19	64	61	122	266	Count
	7.1	24.1	22.9	45.9	100	%
Female	67	199	180	311	757	Count
	8.9	26.3	23.8	41.1	100	%
All	86	263	241	433	1023	Count
	8.4	25.7	23.6	42.3	100	%

Gender	Never	Occasion	Every Fortnight	Every Week	All	
Burgers						
Male	72	85	47	61	265	Count
	27.17	32.1	17.7	23.0	100	%
Female	257	248	106	137	748	Count
	34.36	33.2	14.2	18.3	100	%
All	329	333	153	198	1013	Count
	32.48	32.9	15.1	19.6	100	%

APPENDIX 7: PURCHASE OF FROZEN MEAT, COOKED MEATS AND READY MEALS BY GENDER

Gender - Frozen Meat	Never	Occasion	Every Fortnight	Every Week	All	
Male	54	117	34	63	268	Count
	20.2	43.7	12.7	23.5	100	%
Female	194	306	117	145	762	Count
	25.5	40.2	15.4	19.0	100	%
All	248	423	151	208	1030	Count
	24.1	41.1	14.7	20.2	100	%

Gender - Sliced ham/chicken/turkey/pork	Never	Occasion	Every Fortnight	Every Week	All	
Male	22	38	41	167	268	Count
	8.2	14.2	15.3	62.3	100	%
Female	37	98	94	529	758	Count
	4.9	12.9	12.4	69.8	100	%
All	59	136	135	696	1026	Count
	5.8	13.3	13.2	67.8	100	%

Gender - Chicken-whole/pieces	Never	Occasion	Every Fortnight	Every Week	All	
Male	39	83	55	90	267	Count
	14.6	31.1	20.6	33.7	100	%
Female	133	230	151	225	739	Count
	18.0	31.1	20.4	30.5	100	%
All	172	313	206	315	1006	Count
	17.1	31.1	20.5	31.3	100	%

Gender - Sausages	Never	Occasion	Every Fortnight	Every Week	All	
Male	61	106	27	72	266	Count
	22.9	39.9	10.2	27.1	100	%
Female	235	271	85	153	744	Count
	31.6	36.4	11.4	20.6	100	%
All	296	377	112	225	1010	Count
	29.3	37.3	11.1	22.3	100	%

Gender -Ready Meals	Never	Occasion	Every Fortnight	Every Week	All	
Male	65	83	47	73	268	Count
	24.25	30.97	17.54	27.24	100	%
Female	215	286	86	174	761	Count
	28.25	37.58	11.3	22.86	100	%
All	280	369	133	247	1029	Count
	27.21	35.86	12.93	24	100	%

APPENDIX 8: PURCHASE OF FRESH MEAT BY SOCIO-ECONOMIC GROUP

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Whole Chicken						
A/B	21	98	32	43	194	Count
	10.82	50.5	16.5	22.2	100	%
C1/C2	55	229	131	148	563	Count
	9.8	40.7	23.3	26.3	100	%
D/E	22	92	39	103	256	Count
	8.6	35.9	15.2	40.2	100	%
All	98	419	202	294	1013	Count
	9.7	41.4	19.9	29.0	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Chicken Fillets - Diced/Whole						
A/B	6	35	48	103	192	Count
	3.1	18.2	25.0	53.7	100	%
C1/C2	29	150	127	250	556	Count
	5.2	27.0	22.8	45.0	100	%
D/E	35	73	54	98	260	Count
	13.5	28.1	20.8	37.7	100	%
All	70	258	229	451	1008	Count
	6.9	25.6	22.7	44.7	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - fillet/t-bone/sirloin						
A/B	47	101	30	12	190	Count
	24.74	53.2	15.8	6.3	100	%
C1/C2	121	272	83	73	549	Count
	22.04	49.5	15.1	13.3	100	%
D/E	59	121	40	37	257	Count
	22.96	47.1	15.6	14.4	100	%
All	227	494	153	122	996	Count
	22.79	49.6	15.4	12.3	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - Stewing/braising						
A/B	56	95	26	15	192	Count
	29.17	49.5	13.5	7.8	100	%
C1/C2	153	232	94	64	543	Count
	28.18	42.7	17.3	11.8	100	%
D/E	59	104	43	47	253	Count
	23.32	41.1	17.0	18.6	100	%
All	268	431	163	126	988	Count
	27.13	43.6	16.5	12.8	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Steaks						
A/B	64	95	25	7	191	Count
	33.51	49.7	13.1	3.7	100	%
C1/C2	239	229	63	18	549	Count
	43.53	41.7	11.5	3.3	100	%
D/E	90	109	31	26	256	Count
	35.16	42.6	12.1	10.2	100	%
All	393	433	119	51	996	Count
	39.46	43.47	11.95	5.12	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Mince Beef						
A/B	26	61	57	49	193	Count
	13.47	31.6	29.5	25.4	100	%
C1/C2	82	147	139	189	557	Count
	14.72	26.4	25.0	33.9	100	%
D/E	27	62	53	111	253	Count
	10.67	24.5	21.0	43.9	100	%
All	135	270	249	349	1003	Count
	13.46	26.9	24.8	34.8	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Beef						
A/B	57	100	27	8	192	Count
	29.69	52.1	14.1	4.2	100	%
C1/C2	145	266	92	49	552	Count
	26.27	48.2	16.7	8.9	100	%
D/E	63	115	46	32	256	Count
	24.61	44.9	18.0	12.5	100	%
All	265	481	165	89	1000	Count
	26.5	48.1	16.5	8.9	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Lamb						
A/B	65	100	26	2	193	Count
	33.68	51.8	13.5	1.0	100	%
C1/C2	202	256	66	30	554	Count
	36.46	46.2	11.9	5.4	100	%
D/E	81	117	45	17	260	Count
	31.15	45	17.3	6.5	100	%
All	348	473	137	49	1007	Count
	34.56	47.0	13.6	4.9	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Pork						
A/B	60	106	23	5	194	Count
	30.93	54.64	11.86	2.58	100	%
C1/C2	195	252	82	24	553	Count
	35.26	45.57	14.83	4.34	100	%
D/E	75	121	40	18	254	Count
	29.53	47.64	15.75	7.09	100	%
All	330	479	145	47	1001	Count
	32.97	47.85	14.49	4.7	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Chops						
A/B	54	102	29	8	193	Count
	28.0	52.9	15.0	4.2	100	%
C1/C2	187	224	93	44	548	Count
	34.12	40.9	17.0	8.0	100	%
D/E	61	109	45	41	256	Count
	23.83	42.6	17.6	16.0	100	%
All	302	435	167	93	997	Count
	30.29	43.63	16.75	9.33	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Pork Chops						
A/B	48	96	35	17	196	Count
	24.49	49.0	17.9	8.7	100	%
C1/C2	124	233	113	86	556	Count
	22.3	41.9	20.3	15.5	100	%
D/E	47	112	50	47	256	Count
	18.36	43.8	19.5	18.4	100	%
All	219	441	198	150	1008	Count
	21.73	43.8	19.6	14.9	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Sausages						
A/B	20	70	58	49	197	Count
	10.15	35.5	29.4	24.9	100	%
C1/C2	48	149	135	232	564	Count
	8.5	26.4	23.9	41.1	100	%
D/E	18	44	48	150	260	Count
	6.9	16.9	18.5	57.7	100	%
All	86	263	241	431	1021	Count
	8.4	25.8	23.6	42.2	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Burgers						
A/B	94	60	22	16	192	Count
	48.96	31.3	11.5	8.3	100	%
C1/C2	181	200	88	91	560	Count
	32.32	35.7	15.7	16.3	100	%
D/E	54	73	42	90	259	Count
	20.85	28.2	16.2	34.8	100	%
All	329	333	152	197	1011	Count
	32.54	32.94	15.03	19.49	100	%

APPENDIX 9: PURCHASE OF FROZEN MEAT, COOKED MEATS AND READY MEALS BY SOCIO-ECONOMIC GROUP

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Frozen Meat						
A/B	65	82	22	28	197	Count
	33.0	41.6	11.2	14.2	100	%
C1/C2	132	246	76	112	566	Count
	23.3	43.5	13.4	19.8	100	%
D/E	51	94	53	67	265	Count
	19.3	35.5	20.0	25.3	100	%
All	248	422	151	207	1028	Count
	24.1	41.1	14.7	20.1	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Sliced ham/chicken/turkey/pork						
A/B	16	43	24	113	196	Count
	8.2	21.9	12.2	57.7	100	%
C1/C2	33	62	74	395	564	Count
	5.9	11.0	13.1	70.0	100	%
D/E	10	31	36	187	264	Count
	3.8	11.7	13.6	70.8	100	%
All	59	136	134	695	1024	Count
	5.8	13.3	13.1	67.9	100	%

Socio-economic	Never	Occasion	Every Fortnight	Every Week	All	
Chicken - Whole/Pieces						
A/B	41	63	34	55	193	Count
	21.2	32.6	17.6	28.5	100	%
C1/C2	102	165	117	169	553	Count
	18.4	29.8	21.2	30.6	100	%
D/E	29	85	54	90	258	Count
	11.2	33.0	20.9	34.9	100	%
All	172	313	205	314	1004	Count
	17.1	31.2	20.4	31.3	100	%

APPENDIX 10: PURCHASE OF FRESH MEAT BY HOUSEHOLD COMPOSITION

House	Never	Occasion	Every Fortnight	Every Week	All	
Whole Chicken						
	72	261	108	133	574	Count
Adult Only	12.5	45.5	18.8	23.2	100	%
	26	158	96	160	440	Count
With Children	5.9	35.9	21.8	36.4	100	%
	98	419	204	293	1014	Count
All	9.7	41.3	20.1	28.9	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Chicken Fillets - Diced/Whole						
Adult Only	45	149	126	253	573	Count
	7.9	26.0	22.0	44.2	100	%
With Children	25	109	105	197	436	Count
	5.7	25.0	24.1	45.2	100	%
All	70	258	231	450	1009	Count
	6.9	25.6	22.9	44.6	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - fillet/t-bone/sirloin						
Adult Only	128	268	102	67	565	Count
	22.7	47.4	18.1	11.9	100	%
With Children	100	226	51	55	432	Count
	23.2	52.3	11.8	12.7	100	%
All	228	494	153	122	997	Count
	22.9	49.6	15.4	12.2	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steaks - stewing/braising						
1	160	238	99	69	566	Count
	28.3	42.1	17.5	12.2	100	%
2	107	195	64	57	423	Count
	25.3	46.1	15.1	13.5	100	%
All	267	433	163	126	989	Count
	27.0	43.8	16.5	12.7	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Steaks						
Adult Only	221	243	72	28	564	Count
	39.2	43.1	12.8	5.0	100	%
With Children	172	191	47	23	433	Count
	39.7	44.1	10.9	5.3	100	%
All	393	434	119	51	997	Count
	39.4	43.5	11.9	5.1	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Mince Beef						
Adult Only	84	170	150	170	574	Count
	14.6	29.6	26.1	29.6	100	%
With Children	51	101	99	179	430	Count
	11.9	23.5	23.0	41.6	100	%
All	135	271	249	349	1004	Count
	13.5	27.0	24.8	34.8	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Beef						
Adult Only	159	269	92	51	571	Count
	27.85	47.11	16.11	8.93	100	%
With Children	107	212	73	38	430	Count
	24.88	49.3	16.98	8.84	100	%
All	266	481	165	89	1001	Count
	26.57	48.05	16.48	8.89	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Lamb						
Adult Only	211	262	69	30	572	Count
	36.9	45.8	12.1	5.2	100.0	%
With Children	138	211	68	19	436	Count
	31.7	48.4	15.6	4.4	100.0	%
All	349	473	137	49	1008	Count
	34.6	46.9	13.6	4.9	100.0	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Pork						
Adult Only	213	261	69	27	570	Count
	37.4	45.8	12.1	4.7	100	%
With Children	117	218	77	20	432	Count
	27.1	50.5	17.8	4.6	100	%
All	330	479	146	47	1002	Count
	32.9	47.8	14.6	4.7	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Chops						
Adult Only	170	239	103	57	569	Count
	29.9	42.0	18.1	10.0	100	%
With Children	133	197	63	36	429	Count
	31.0	45.9	14.7	8.4	100	%
All	303	436	166	93	998	Count
	30.4	43.7	16.6	9.3	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Pork Chops						
Adult Only	137	235	117	85	574	Count
	23.9	40.9	20.4	14.8	100	%
With Children	82	208	80	65	435	Count
	18.9	47.8	18.4	14.9	100	%
All	219	443	197	150	1009	Count
	21.7	43.9	19.5	14.9	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Sausages						
Adult Only	65	177	130	207	579	Count
	11.2	30.6	22.5	35.8	100	%
With Children	21	86	111	225	443	Count
	4.7	19.4	25.1	50.8	100	%
All	86	263	241	432	1022	Count
	8.4	25.7	23.6	42.3	100	%

House	Never	Occasion	Every Fortnight	Every Week	All	
Burgers						
Adult Only	239	184	69	80	572	Count
	41.8	32.2	12.1	14.0	100	%
With Children	89	149	84	118	440	Count
	20.2	33.9	19.1	26.8	100	%
All	328	333	153	198	1012	Count
	32.4	32.9	15.1	19.6	100	%

APPENDIX 11: PURCHASE OF FROZEN MEAT, COOKED MEATS, AND READY MEALS BY HOUSEHOLD COMPOSITION

Household Composition	Never	Occasion	Every Fortnight	Every Week	All	
Frozen Meat						
Adult Only	159	242	78	105	584	Count
	27.2	41.4	13.4	18.0	100	%
With Children	89	180	73	103	445	Count
	20.0	40.5	16.4	23.2	100	%
All	248	422	151	208	1029	Count
	24.1	41.0	14.7	20.2	100	%

Household Composition	Never	Occasion	Every Fortnight	Every Week	All	
Sliced ham/chicken/turkey/pork						
Adult Only	47	101	82	351	581	Count
	8.1	17.4	14.1	60.4	100	%
With Children	12	35	53	344	444	Count
	2.7	7.9	11.9	77.5	100	%
All	59	136	135	695	1025	Count
	5.8	13.3	13.2	67.8	100	%

Household Composition	Never	Occasion	Every Fortnight	Every Week	All	
Chicken - whole/pieces						
Adult Only	101	168	122	175	566	Count
	17.8	29.7	21.6	30.9	100	%
With Children	71	145	84	139	439	Count
	16.2	33.0	19.1	31.7	100	%
All	172	313	206	314	1005	Count
	17.1	31.1	20.5	31.2	100	%

Household Composition	Never	Occasion	Every Fortnight	Every Week	All	
Sausage						
Adult Only	176	218	63	110	567	Count
	31.0	38.5	11.1	19.4	100	%
With Children	120	159	49	114	442	Count
	27.2	36.0	11.1	25.8	100	%
All	296	377	112	224	1009	Count
	29.3	37.4	11.1	22.2	100	%

Household Composition	Never	Occasion	Every Fortnight	Every Week	All	
Ready Meals						
Adult Only	183	195	76	129	583	Count
	31.4	33.5	13.0	22.1	100	%
With Children	96	174	57	118	445	Count
	21.6	39.1	12.8	26.5	100	%
All	279	369	133	247	1028	Count
	27.1	35.9	12.9	24.0	100	%

APPENDIX 12: PURCHASE OF FRESH MEAT BY AGE GROUP

Age	Never	Occasion	Every Fortnight	Every Week	All	
Whole Chicken						
18 - 24	21	66	25	42	154	Count
	13.64	42.9	16.2	27.3	100	%
25 - 34	23	101	46	80	250	Count
	9.2	40.4	18.4	32.0	100	%
35 - 44	21	98	62	77	258	Count
	8.1	38.0	24.0	29.8	100	%
45 - 54	17	83	46	61	207	Count
	8.21	40.1	22.22	29.47	100	%
55 - 64	16	71	25	34	146	Count
All	98	419	204	294	1015	Count
	9.7	41.3	20.1	29.0	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Chicken Fillets - Diced/Whole						
18 - 24	8	37	32	74	151	Count
	5.3	24.5	21.2	49.0	100	%
25 - 34	15	57	59	119	250	Count
	6	22.8	23.6	47.6	100	%
35 - 44	14	71	64	109	258	Count
	5.4	27.5	24.8	42.3	100	%
45 - 54	16	51	36	102	205	Count
	7.8	24.9	17.6	49.8	100	%
55 - 64	17	42	40	47	146	Count
All	70	258	231	451	1010	Count
	6.9	25.5	22.9	44.7	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steak - fillet/t-bone/sirloin						
18 - 24	40	72	26	14	152	Count
	26.32	47.4	17.1	9.2	100	%
25 - 34	63	118	38	30	249	Count
	25.3	47.4	15.3	12.1	100	%
35 - 44	52	142	35	22	251	Count
	20.72	56.6	13.9	8.8	100	%
45 - 54	45	93	30	36	204	Count
	22.06	45.6	14.7	17.7	100	%
55 - 64	28	70	24	20	142	Count
	19.72	49.3	16.9	14.1	100	%
All	228	495	153	122	998	Count
	22.85	49.6	15.3	12.2	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Beef Steak - Stewing/Braising						
18 - 24	54	65	21	9	149	Count
	36.2	43.6	14.1	6.0	100	%
25 - 34	87	95	33	30	245	Count
	35.5	38.8	13.5	12.2	100	%
35 - 44	59	126	41	25	251	Count
	23.5	50.2	16.3	10.0	100	%
45 - 54	44	86	33	38	201	Count
	21.9	42.8	16.4	18.9	100	%
55 - 64	24	61	35	24	144	Count
	16.7	42.4	24.3	16.7	100	%
All	268	433	163	126	990	Count
	27.07	43.7	16.5	12.7	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Steaks						
18 - 24	66	55	21	9	151	Count
	43.71	36.42	13.91	5.96	100	%
25 - 34	106	103	30	8	247	Count
	42.91	41.7	12.15	3.24	100	%
35 - 44	95	125	26	8	254	Count
	37.4	49.21	10.24	3.15	100	%
45 - 54	74	95	21	14	204	Count
	36.27	46.57	10.29	6.86	100	%
55 - 64	53	56	21	12	142	Count
	37.32	39.44	14.79	8.45	100	%
All	394	434	119	51	998	Count
	39.48	43.49	11.92	5.11	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Mince Beef						
18 - 24	18	46	32	55	151	Count
	11.92	30.46	21.19	36.42	100	%
25 - 34	32	63	63	90	248	Count
	12.9	25.4	25.4	36.29	100	%
35 - 44	33	61	67	93	254	Count
	12.99	24.02	26.38	36.61	100	%
45 - 54	24	54	58	68	204	Count
	11.76	26.47	28.43	33.33	100	%
55 - 64	28	47	30	43	148	Count
	18.92	31.76	20.27	29.05	100	%
All	135	271	250	349	1005	Count
	13.43	26.97	24.88	34.73	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Beef						
18 - 24	62	65	16	10	153	Count
	40.52	42.5	10.5	6.5	100	%
25 - 34	80	112	36	21	249	Count
	32.13	45.0	14.5	8.4	100	%
35 - 44	54	127	50	21	252	Count
	21.43	50.4	19.8	8.3	100	%
45 - 54	39	99	44	19	201	Count
	19.4	49.3	21.9	9.5	100	%
55 - 64	31	79	19	18	147	Count
	21.09	53.7	12.9	12.2	100	%
All	266	482	165	89	1002	Count
	26.55	48.1	16.5	8.9	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Lamb						
18 - 24	69	62	14	8	153	Count
	45.1	40.5	9.15	5.23	100	%
25 - 34	109	103	30	8	250	Count
	43.6	41.2	12.0	3.2	100	%
35 - 44	81	125	43	8	257	Count
	31.5	48.6	16.7	3.11	100	%
45 - 54	52	107	31	14	204	Count
	25.5	52.5	15.2	6.86	100	%
55 - 64	38	77	19	11	145	Count
	26.2	53.1	13.1	7.59	100	%
All	349	474	137	49	1009	Count
	34.6	47.0	13.6	4.86	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Joint of Pork						
18 - 24	67	61	17	7	152	Count
	44.08	40.13	11.18	4.61	100	%
25 - 34	109	98	34	6	247	Count
	44.13	39.68	13.77	2.43	100	%
35 - 44	67	134	43	13	257	Count
	26.07	52.14	16.73	5.06	100	%
45 - 54	50	106	32	13	201	Count
	24.88	52.74	15.92	6.47	100	%
55 - 64	37	81	20	8	146	Count
	25.34	55.48	13.7	5.48	100	%
All	330	480	146	47	1003	Count
	32.9	47.86	14.56	4.69	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Lamb Chops						
18 - 24	46	62	26	19	153	Count
	30.1	40.5	17.0	12.4	100	%
25 - 34	88	97	41	18	244	Count
	36.1	39.8	16.8	7.4	100	%
35 - 44	81	127	32	13	253	Count
	32.0	50.2	12.7	5.14	100	%
45 - 54	57	82	41	25	205	Count
	27.8	40.0	20.0	12.2	100	%
55 - 64	31	68	27	18	144	Count
	21.5	47.2	18.8	12.5	100	%
All	303	436	167	93	999	Count
	30.3	43.6	16.7	9.3	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Pork Chops						
18 - 24	35	66	33	18	152	Count
	23.0	43.4	21.7	11.8	100	%
25 - 34	65	101	48	36	250	Count
	26.0	40.4	19.2	14.4	100	%
35 - 44	55	120	51	29	255	Count
	21.6	47.1	20.0	11.4	100	%
45 - 54	36	97	35	37	205	Count
	17.6	47.3	17.1	18.1	100	%
55 - 64	28	59	31	30	148	Count
	18.9	39.9	21.0	20.3	100	%
All	219	443	198	150	1010	Count
	21.7	43.9	19.6	14.9	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Sausages						
18 - 24	14	30	34	76	154	Count
	9.1	19.5	22.1	49.4	100	%
25 - 34	23	57	58	115	253	Count
	9.1	22.5	22.9	45.5	100	%
35 - 44	13	58	78	112	261	Count
	5.0	22.2	29.9	42.9	100	%
45 - 54	17	58	42	87	204	Count
	8.3	28.4	20.6	42.7	100	%
55 - 64	19	60	29	43	151	Count
	12.6	39.7	19.2	28.5	100	%
All	86	263	241	433	1023	Count
	8.4	25.7	23.6	42.3	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Burgers						
18 - 24	31	40	33	51	155	Count
	20.0	25.8	21.3	32.9	100	%
25 - 34	70	77	42	62	251	Count
	27.9	30.7	16.7	24.7	100	%
35 - 44	54	100	51	52	257	Count
	21.0	38.9	19.8	20.2	100	%
45 - 54	83	76	20	23	202	Count
	41.1	37.6	9.9	11.4	100	%
55 - 64	91	40	7	10	148	Count
	61.5	27.0	4.7	6.8	100	%
All	329	333	153	198	1013	Count
	32.5	32.9	15.1	19.6	100	%

APPENDIX 13: PURCHASE OF FROZEN MEAT, COOKED MEATS AND READY MEALS BY AGE GROUP

Age	Never	Occasion	Every Fortnight	Every Week	All	
Frozen Meat						
18 - 24	31	55	26	43	155	Count
	35.5	16.8	27.7	100		%
25 - 34	55	101	42	56	254	Count
	21.7	39.8	16.5	22.1	100	%
35 - 44	58	96	48	60	262	Count
	22.1	36.6	18.3	22.9	100	%
45 - 54	53	94	25	35	207	Count
	25.6	45.4	12.1	16.9	100	%
55 - 64	51	77	10	14	152	Count
	33.6	50.7	6.6	9.2	100	%
All	248	423	151	208	1030	Count
	24.1	41.1	14.7	20.2	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Sliced ham/chicken/ turkey/pork						
18 - 24	14	21	17	101	153	Count
	9.2	13.7	11.1	66.0	100	%
25 - 34	16	30	35	172	253	Count
	6.3	11.9	13.8	68.0	100	%
35 - 44	12	21	35	194	262	Count
	4.6	8.0	13.4	74.1	100	%
45 - 54	11	29	26	141	207	Count
	5.3	14.0	12.6	68.1	100	%
55 - 64	6	35	22	88	151	Count
	4.0	23.2	14.6	58.3	100	%
All	59	136	135	696	1026	Count
	5.8	13.3	13.2	67.8	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Chicken - Whole/Pieces						
18 - 24	24	41	34	55	154	Count
	15.6	26.6	22.1	35.7	100	%
25 - 34	42	69	52	90	253	Count
	16.6	27.3	20.6	35.6	100	%
35 - 44	39	85	55	80	259	Count
	15.1	32.8	21.2	30.9	100	%
45 - 54	37	69	36	54	196	Count
	18.9	35.2	18.4	27.6	100	%
55 - 64	30	49	29	36	144	Count
	20.8	34.0	20.1	25.0	100	%
All	172	313	206	315	1006	Count
	17.1	31.1	20.5	31.3	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Sausage						
18 - 24	42	48	21	43	154	Count
	27.3	31.2	13.6	27.9	100	%
25 - 34	61	101	30	61	253	Count
	24.1	39.9	11.9	24.1	100	%
35 - 44	71	99	31	58	259	Count
	27.4	38.2	12.0	22.4	100	%
45 - 54	61	75	18	48	202	Count
	30.2	37.1	8.9	23.8	100	%
55 - 64	61	54	12	15	142	Count
	43.0	38.0	8.5	10.6	100	%
All	296	377	112	225	1010	Count
	29.3	37.3	11.1	22.3	100	%

Age	Never	Occasion	Every Fortnight	Every Week	All	
Ready Meals						
18 - 24	27	52	22	54	155	Count
	17.4	33.6	14.2	34.8	100	%
25 - 34	68	86	30	70	254	Count
	26.8	33.9	11.8	27.6	100	%
35 - 44	52	100	45	65	262	Count
	19.9	38.2	17.2	24.8	100	%
45 - 54	69	77	27	34	207	Count
	33.3	37.2	13.0	16.4	100	%
55 - 64	64	54	9	24	151	Count
	42.4	35.8	6.0	15.9	100	%
All	280	369	133	247	1029	Count
	27.2	35.9	12.9	24.0	100	%

APPENDIX 14: DEMOGRAPHIC DIFFERENCES IN PERCEPTION OF FOOD HYGIENE

Personal Perception of Hygiene in Domestic Kitchens

Gender	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
Male	64	62	49	74	12	3	5	269	Count
	23.8	23.1	18.2	27.5	4.5	1.1	1.9	100	%
Female	228	170	117	229	10	5	3	762	Count
	29.9	22.3	15.4	30.1	1.3	0.7	0.4	100	%
All	292	232	166	303	22	8	8	1031	Count
	28.3	22.5	16.1	29.4	2.1	0.8	0.8	100	%

Age	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
18 - 24	39	44	29	29	8	2	4	155	Count
	25.2	28.4	18.7	18.7	5.2	1.3	2.6	100	%
25 - 34	68	68	38	69	8	1	2	254	Count
	26.8	26.8	15.0	27.2	3.2	0.4	0.8	100	%
35 - 44	63	55	49	89	4	2	1	263	Count
	24.0	20.9	18.6	33.8	1.5	0.8	0.4	100	%
45 - 54	56	38	36	72	2	2	1	207	Count
	27.1	18.4	17.4	34.8	1.0	1.0	0.5	100	%
55 - 64	66	27	14	44	0	1	0	152	Count
	43.4	17.8	9.2	29.0	--	0.7	--	100	%
All	292	232	166	303	22	8	8	1031	Count
	28.3	22.5	16.1	29.4	2.1	0.8	0.8	100	%

Socio-economic	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
A/B	39	57	43	51	5	2	0	197	Count
	19.8	28.9	21.8	25.9	2.5	1.0	--	100	%
C1/C2	163	129	83	170	13	4	5	567	Count
	28.8	22.8	14.6	30.0	2.3	0.7	0.9	100	%
D/E	90	45	39	82	4	2	3	265	Count
	34.0	17.0	14.7	30.9	1.5	0.8	1.1	100	%
All	292	231	165	303	22	8	8	1029	Count
	28.4	22.5	16.0	29.5	2.1	0.8	0.8	100	%

Household	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
Adult Only	162	136	89	171	15	6	6	585	Count
	27.7	23.3	15.2	29.2	2.6	1.0	1.0	100	%
With Children	129	96	77	132	7	2	2	445	Count
	29.0	21.6	17.3	29.7	1.6	0.5	0.5	100	%
All	291	232	166	303	22	8	8	1030	Count
	28.3	22.5	16.1	29.4	2.1	0.8	0.8	100	%

Perception of Personal Kitchen Hygiene Compared to Commercial Practices

Gender	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
Male	49	27	40	90	43	14	6	269	Count
	18.2	10.0	14.9	33.5	16.0	5.2	2.2	100	%
Female	173	97	100	275	95	14	4	758	Count
	22.8	12.8	13.2	36.3	12.5	1.9	0.5	100	%
All	222	124	140	365	138	28	10	1027	Count
	21.6	12.1	13.6	35.5	13.4	2.7	1.0	100	%

Age	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
18 - 24	16	23	18	59	26	11	2	155	Count
	10.3	14.8	11.6	38.1	16.8	7.1	1.3	100	%
25 - 34	44	30	34	95	42	4	5	254	Count
	17.3	11.8	13.4	37.4	16.5	1.6	2.0	100	%
35 - 44	54	29	35	92	43	8	1	262	Count
	20.6	11.1	13.4	35.1	16.4	3.1	0.4	100	%
45 - 54	53	25	34	68	21	3	2	206	Count
	25.7	12.1	16.5	33.0	10.2	1.5	1.0	100	%
55 - 64	55	17	19	51	6	2	0	150	Count
	36.7	11.3	12.7	34.0	4.0	1.3	0.0	100	%
All	222	124	140	365	138	28	10	1027	Count
	21.6	12.1	13.6	35.5	13.4	2.7	1.0	100	%

Socio-economic	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
A/B	32	31	40	48	36	8	1	196	Count
	16.3	15.8	20.4	24.5	18.4	4.1	0.5	100	%
C1/C2	130	67	69	200	77	16	5	564	Count
	23.1	11.9	12.2	35.5	13.7	2.8	0.9	100	%
D/E	60	25	30	117	25	4	4	265	Count
	22.6	9.4	11.3	44.2	9.4	1.5	1.5	100	%
All	222	123	139	365	138	28	10	1025	Count
	21.7	12.0	13.6	35.6	13.5	2.7	1.0	100	%

Household	Very Hygienic	2	3	OK	5	6	Not at all Hygienic	All	
Adult Only	139	70	74	200	71	21	6	581	Count
	23.9	12.1	12.7	34.4	12.2	3.6	1.0	100	%
With Children	82	54	66	165	67	7	4	445	Count
	18.4	12.1	14.8	37.1	15.1	1.6	0.9	100	%
All	221	124	140	365	138	28	10	1026	Count
	21.5	12.1	13.7	35.6	13.5	2.7	1.0	100	%

APPENDIX 15: POSITION OF MEAT STORED IN FRIDGE

Cooked Meat		Middle	Wherever there is space	Bottom Shelf	Top Shelf	All	
Raw Meat							
	Middle	26	15	9	29	79	Count
		32.9	19.0	11.4	36.7	100	%
	Wherever there is space	5	110	3	22	140	Count
		3.6	78.6	2.1	15.7	100	%
	Bottom Shelf	190	56	59	378	683	Count
		27.8	8.2	8.6	55.3	100	%
	Top Shelf	46	10	33	27	116	Count
		39.7	8.6	28.5	23.3	100	%
	All	267	191	104	456	1018	Count
		26.2	18.8	10.2	44.8	100	%

APPENDIX 16: DEMOGRAPHIC DIFFERENCES IN THE FREQUENCY OF WASHING MEAT

Gender	Joints of Meat				
	Never	Sometimes	Always	All	
Male	108	52	92	252	Count
	42.9	20.6	36.5	100	%
Female	216	120	364	700	Count
	30.9	17.1	52.0	100	%
All	324	172	456	952	Count
	34.0	18.1	47.9	100	%

SocioEco	Joints of Meat				
	Never	Sometimes	Always	All	
A/B	81	43	59	183	Count
	44.3	23.5	32.2	100	%
C1/C2	169	87	266	522	Count
	32.4	16.7	51.0	100	%
D/E	74	42	129	245	Count
	30.2	17.1	52.7	100	%
All	324	172	454	950	Count
	34.1	18.1	47.8	100	%

Age	Joints of Meat				
	Never	Sometimes	Always	All	
18-24yrs	71	23	47	141	Count
	50.4	16.3	33.3	100	%
25-34yrs	95	44	96	235	Count
	40.4	18.7	40.9	100	%
35-44yrs	75	32	133	240	Count
	31.3	13.3	55.4	100	%
45-54yrs	49	44	103	196	Count
	25.0	22.5	52.6	100	%
55-64yrs	34	29	77	140	Count
	24.3	20.7	55.0	100	%
All	324	172	456	952	Count
	34.0	18.1	47.9	100	%

Household	Joints of Meat				
	Never	Sometimes	Always	All	
Adult only	197	108	236	541	Count
	36.4	20.0	43.6	100	%
With children	127	64	219	410	Count
	31.0	15.6	53.4	100	%
All	324	172	455	951	Count
	34.1	18.1	47.8	100	%

Gender	Steak (beef, lamb etc)				
	Never	Sometimes	Always	All	
Male	124	44	72	240	Count
	51.7	18.3	30.0	100	%
Female	275	108	287	670	Count
	41.0	16.1	42.8	100	%
All	399	152	359	910	Count
	43.9	16.7	39.4	100	%

SocioEco	Steak (beef, lamb etc)				
	Never	Sometimes	Always	All	
A/B	93	32	49	174	Count
	53.5	18.4	28.2	100	%
C1/C2	211	84	206	501	Count
	42.1	16.8	41.1	100	%
D/E	95	36	102	233	Count
	40.8	15.5	43.8	100	%
All	399	152	357	908	Count
	43.9	16.7	39.4	100	%

Age	Steak (beef, lamb etc)				
	Never	Sometimes	Always	All	
18-24yrs	73	24	40	137	Count
	53.3	17.5	29.2	100	%
25-34yrs	110	34	80	224	Count
	49.1	15.2	35.7	100	%
35-44yrs	93	36	104	233	Count
	39.9	15.5	44.6	100	%
45-54yrs	76	36	69	181	Count
	42.0	19.9	38.1	100	%
55-64yrs	47	22	66	135	Count
	34.8	16.3	48.9	100	%
All	399	152	359	910	Count
	43.9	16.7	39.4	100	%

Household	Steak (beef, lamb etc)				
	Never	Sometimes	Always	All	
Adult only	232	96	189	517	Count
	44.9	18.6	36.6	100	%
With children	167	56	169	392	Count
	42.6	14.3	43.1	100	%
All	399	152	358	909	Count
	43.9	16.7	39.4	100	%

Gender	Whole Chickens				
	Never	Sometimes	Always	All	
Male	81	32	140	253	Count
	32.0	12.7	55.3	100	%
Female	104	58	543	705	Count
	14.8	8.2	77.0	100	%
All	185	90	683	958	Count
	19.3	9.4	71.3	100	%

SocioEco	Whole Chicken				
	Never	Sometimes	Always	All	
A/B	41	24	118	183	Count
	22.4	13.1	64.5	100	%
C1/C2	98	42	388	528	Count
	18.6	8.0	73.5	100	%
D/E	46	24	175	245	Count
	18.8	9.8	71.4	100	%
All	185	90	681	956	Count
	19.3	9.4	71.3	100	%

Age	Whole Chicken				
	Never	Sometimes	Always	All	
18-24yrs	51	15	78	144	Count
	35.4	10.4	54.2	100	%
25-34yrs	59	25	154	238	Count
	24.8	10.5	64.7	100	%
35-44yrs	35	23	185	243	Count
	14.4	9.5	76.1	100	%
45-54yrs	19	15	158	192	Count
	9.9	7.8	82.3	100	%
55-64yrs	21	12	108	141	Count
	14.9	8.5	76.6	100	%
All	185	90	683	958	Count
	19.3	9.4	71.3	100	%

Household	Whole Chicken				
	Never	Sometimes	Always	All	
Adult only	132	49	363	544	Count
	24.3	9.0	66.7	100	%
With children	53	41	319	413	Count
	12.8	9.9	77.2	100	%
All	185	90	682	957	Count
	19.3	9.4	71.3	100	%

Gender	Chicken Fillets				
	Never	Sometimes	Always	All	
Male	101	45	99	245	Count
	41.2	18.4	40.4	100	%
Female	170	121	380	671	Count
	25.3	18.0	56.6	100	%
All	271	166	479	916	Count
	29.6	18.1	52.3	100	%

SocioEco	Chicken Fillets				
	Never	Sometimes	Always	All	
A/B	58	42	79	179	Count
	32.4	23.5	44.1	100	%
C1/C2	146	95	266	507	Count
	28.8	18.7	52.5	100	%
D/E	67	29	132	228	Count
	29.4	12.7	57.9	100	%
All	271	166	477	914	Count
	29.6	18.1	52.3	100	%

Age	Chicken Fillets				
	Never	Sometimes	Always	All	
18-24yrs	60	27	51	138	Count
	43.5	19.6	37.0	100	%
25-34yrs	77	38	112	227	Count
	33.9	16.7	49.3	100	%
35-44yrs	64	46	121	231	Count
	27.7	19.9	52.4	100	%
45-54yrs	37	34	108	179	Count
	20.7	19.0	60.3	100	%
55-64yrs	33	21	87	141	Count
	23.4	14.9	61.7	100	%
All	271	166	479	916	Count
	29.6	18.1	52.3	100	%

Household	Chicken Fillets				
	Never	Sometimes	Always	All	
Adult only	173	92	258	523	Count
	33.1	17.6	49.3	100	%
With children	98	74	220	392	Count
	25.0	18.9	56.1	100	%
All	271	166	478	915	Count
	29.6	18.1	52.3	100	%

APPENDIX 17: DEMOGRAPHIC DIFFERENCES IN AWARENESS OF FOOD HYGIENE

Gender		Male	Female	All	
Knowledge Groups	0 - 20	3	10	13	Count
		1.1	1.3	1.3	%
	21- 40	29	81	110	Count
		10.8	10.6	10.7	%
	41 - 60	93	256	349	Count
		34.6	33.6	33.9	%
	61 - 80	121	330	451	Count
		45.0	43.3	43.7	%
	81 - 100	23	85	108	Count
		8.6	11.2	10.5	%
	All	269	762	1031	Count
		100	100	100	%

Age		18-24	25-34	35-44	45-54	55-64	All	
Knowledge Groups	0 - 20	4	5	2	1	1	13	Count
		2.6	2.0	0.8	0.5	0.7	1.26	%
	21- 40	32	36	27	7	8	110	Count
		20.7	14.2	10.3	3.4	5.3	10.67	%
	41 - 60	73	92	94	59	31	349	Count
		47.1	36.2	35.7	28.5	20.4	33.85	%
	61 - 80	40	106	109	110	86	451	Count
		25.8	41.7	41.4	53.1	56.6	43.74	%
	81 - 100	6	15	31	30	26	108	Count
		3.9	5.9	11.8	14.5	17.1	10.48	%
	All	155	254	263	207	152	1031	Count
		100	100	100	100	100	100	%

Socio-economic Groups		A/B	C1/C2	D/E	All	
Knowledge Groups	0 - 20	0	4	9	13	Count
		--	0.71	3.4	1.26	%
	21- 40	16	58	36	110	Count
		8.12	10.2	13.6	10.69	%
	41 - 60	49	199	100	348	Count
		24.9	35.1	37.7	33.82	%
	61 - 80	105	251	94	450	Count
		53.3	44.3	35.5	43.73	%
	81 - 100	27	55	26	108	Count
		13.7	9.7	9.81	10.5	%
	All	197	567	265	1029	Count
		100	100	100	100	%

Household		Adult Only	With Children	All	
Knowledge Groups	0 - 20	7	6	13	Count
		1.2	1.4	1.3	%
	21 - 40	60	50	110	Count
		10.3	11.2	10.7	%
	41 - 60	190	159	349	Count
		32.5	35.7	33.9	%
	61 - 80	273	178	451	Count
		46.67	40	43.8	%
	81 - 100	55	52	107	Count
		9.4	11.7	10.4	%
	All	585	445	1030	Count
		100	100	100	%

FINISHED DOCUMENT APPROVAL FORM

Box 1

Date: ~~25/3/02~~ 21/4/02

To: Hayley Neusholme

From: Lin Hall

Re: Conf R&D N° 161. Risk Factors Ass. with Domestic Handling of Raw Meat: Quantitative Research

This document is presented to you as a finished draft (attached). This is your *final* opportunity to make any corrections or amendments prior to printing.

It is your responsibility to ensure that this final draft is correct and I will therefore assume it is correct once you have signed and returned this form.

Please return by asap

Box 2

Date: 3/4/02

To: Print Room Supervisor

From: Hayley Neusholme

Re: Conf R&D 161 Risk factors Ass with Domestic Handling of Raw meat Quantitative Research.

I have seen the final **draft** for the above and approve it for printing.

Name Hayley Neusholme Signature H. Neusholme