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Factors Shaping Expenditure on Meat and Prepared Meals

The National Food Centre

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Contents

FACTORS SHAPING EXPENDITURE ON MEAT AND PREPARED MEALS

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SUMMARY

The factors shaping Irish households' expenditure decisions on meat and prepared meals are analysed using the two most recent datasets of the Irish Household Budget Survey (1987/8 and 1994/5). The motivation for the research stems from the changing pattern of food consumption, leading to a decline in the importance of price and income factors, and a simultaneous increase in the significance of socio-demographic factors, assumed to underpin consumers' tastes and preferences. Irish households' expenditure patterns on all meat, specific meat categories and prepared meals are analysed using tobit, double-hurdle and infrequency of purchase models.

The way in which economic factors impact on food expenditure has changed between 1987 and 1994. While income has a positive and significant effect on expenditure for all food categories, the magnitude of the effect has declined over time. The implication of this finding is that the industry needs to identify the other factors influencing expenditure decisions in order to encourage increased participation and expenditure in aggregate and disaggregated meat markets and in the market for prepared meals.

Convenience and perceived healthiness are the main explanations given for the observed differences in household expenditure patterns on aggregate and disaggregated meat categories. Households' preferences for convenience are explored further by analysing their expenditure decisions regarding prepared meals. Younger households, all-working households, urban households, female-headed households, educated households, professional households and single adult households all exhibit expenditure patterns suggestive of a greater desire for convenience compared with other households. This implies that economic incentives alone may not be as effective in maintaining or stimulating demand for food products as campaigns marketing the attributes of food that changing lifestyles demand. In the case of meat, examples may include identifying ways in which meat can be conveniently prepared or providing information about the nutritional value of meat. For prepared meals, focusing on quality and nutritional aspects could encourage consumption.

INTRODUCTION

General trends in the food industry indicate that the sector is in transition with shifts in consumer expenditure from fresh to frozen products, from basic products to more prepared products and from buying food for home consumption to eating out. These changes have been attributed to changes in social structures resulting in consumers demanding new attributes in food products to meet the needs of their new time-consuming lifestyles.

This work examined the changing pattern of consumer expenditure on food in Ireland with specific application to Irish household expenditure on meat and on prepared meals. Using the 1987/8 and 1994/5 Irish Household Budget Survey datasets (Central Statistics Office, Dublin 2), Irish households' preferences with regard to their expenditure on meat and prepared meals are modelled by examining the influence that socio-economic characteristics have on their expenditure patterns and how this is changing over time. The aim is to make recommendations to policy makers and the food industry on how they can better influence household expenditure patterns by understanding what determines their expenditure decisions.

The Demand for Meat

Recent demand studies indicate that while price and income still have some explanatory importance in meat demand, the influence of socio-demographic variables is becoming more and more significant (Bansback, 1995[1], Burton *et al.*, 1996, Burton *et al.*, 1998). This has been attributed to two main factors:

- Changing social patterns and lifestyles, specifically the decline in average household size and the decline in importance of the family meal-eating occasion along with the growing importance attached to leisure time leading to the conclusion that consumers require an increased level of convenience in their cooking patterns (Bansback, 1995).

[1] Bansback (1995) concludes that standard economic factors explained 60% of the changes in meat consumption between 1975-94 compared with 90% between 1955-74.

- Since the 1980s there has been a general deterioration in the image of meat and meat products across Europe resulting in a shift away from red meat consumption in favour of white meats, in particular chicken (Burton *et al.*, 1998).[2]

The lifestyle choices which consumers make have led to a decline in the importance of factors traditionally influencing the demand for meat, such as price, and an increase in the demand for attributes such as convenience and health in meat. However, there are three distinguishable markets for meat, which differ from each other in terms of the way each serves different needs of the consumer. Meat can be purchased fresh or frozen from the retailer for preparation at home, or as a processed product for consumption at home, or purchased and consumed away from home. This project is concerned with expenditure on meat for preparation in the home.

The first aim is to analyse Irish households' aggregate meat expenditure, including beef, lamb, pork, pork products, bacon & ham, chicken and minced meat. Processed meat products, such as hamburgers, meat pies and cooked meats (with the exception of chicken) are not included. Furthermore, the meat components of ready meals and meat consumed away from home are excluded from the aggregate meat expenditure category.

The two most important preferences of consumers with regard to meat expenditure are convenience and perceived healthiness. Defining aggregate meat expenditure in the above way therefore has implications for both of these issues. Firstly, in terms of convenience, each meat product in the aggregate meat expenditure category requires preparation time prior to consumption. As such, consumers have the option to choose other more convenient alternatives to this food category, such as prepared meals, other prepared meat products or eating out of home. Secondly, in terms of health issues, consumers in general perceive fresh meat products to be healthier than

[2] This trend was accentuated by the BSE crisis in 1996. This analysis deals with pre-1996 meat demand. However, the decline in the image of meat and the consequential shift in consumption from red meats to white meats is a long term trend which has been accentuated by the BSE crisis.

frozen or processed meat products. Therefore, aggregate meat expenditure may be perceived as being 'healthier' than the processed meat alternatives excluded from the analysis. However, it must also be noted that other 'healthier' meat alternatives exist, such as fish, which may affect the meat expenditure patterns of the more health conscious households.

Meat expenditure is also disaggregated into seven categories (shown in Tables 3 and 4), which are individually analysed. As with aggregate meat expenditure, the socio-economic factors affecting expenditure on each meat category are interpreted through households' preferences for convenience and perceived healthiness.

In terms of convenience, while processed meats are not included in the analysis, the seven meat categories considered are quite different in terms of the amount of preparation time they require and the amount of convenience they offer the consumer. Traditional meat categories, such as beef, lamb and bacon & ham are cuts of meat appropriate for traditional family meals, such as roasting joints and stewing steaks, which require time and care to prepare. Pork and chicken can also be in the form of traditional meat meal centres, for example pork joints for roasting and roast chicken, but both categories also include other more conveniently prepared cuts, for example pork chops, chicken pieces, cooked chicken, and as such possess more convenient attributes than other traditional cuts. The Meat and Livestock Commission (1995) attributed the decline in the consumption of beef and lamb relative to pork and poultry in the UK to, among other things, the lack of convenience. Pork products traditionally form the basis of a breakfast meal and as such cannot be compared to other cuts in terms of the length of time they take to prepare. There are many convenient alternatives to a home-cooked breakfast available on the market, for example cereal products, and so pork products in general cannot be considered a convenient meat category. However, a component of this category, sausages, are no longer considered only suitable for breakfast use and often form the meat centre of evening meals (Meat and Livestock Commission, 1993). Used in this context, pork products could be considered a more convenient meat for home preparation than other cuts. The most conveniently prepared category is minced meat due to its versatility

and widespread use in Italian and other ethnic meals. In the UK there is a trend toward the consumption of minced meat over other cuts of meat due the decline in formal meal eating occasions and the increasing popularity of such minced meat based meals (Meat and Livestock Commission, 1996).

With regard to health issues, there has been a general deterioration in the image of meat in general but in particular red meats resulting in a decline in red meat consumption and an increase in white meat consumption. Higher expenditure on chicken than on red meats by certain household groups could therefore be interpreted as a health-orientated preference in this analysis.

The Demand for Prepared Meals

The prepared consumer foods sector is very diverse including all items which have undergone secondary processing such as ready meals, processed meats, soups, yoghurts and pet food (McCarthy and Pitts, 1999a). Prepared meals (often referred to as ready meals) form a small part of the overall prepared consumer foods sector and are defined as meals which can be cooked or microwaved directly and require no further preparation. The Irish Household Budget Survey reveals an increase in expenditure on prepared meals as a proportion of total food expenditure of 1 percent between 1987 and 1994. A number of factors contributed to the growth of the prepared consumer food sector, with overall changes in social structures seen as the driving force:

- Household members are adopting more individualistic lifestyles leading to a breakdown of formal family meal eating (Senauer *et al.*, 1998).
- Lifestyles in general are more affluent with consumers unwilling to spend as much time preparing food. Consumers place increased value on leisure time and face increasing time and mobility pressures and are therefore less willing to devote large amounts of time to preparing home cooked meals (PROMAR International, 1997).
- A redefinition of gender roles leading to an increase in the number of women working outside the home has led to a general loss in traditional cooking skills and less time available to prepare food in the home, also contributing to a breakdown in the family meal eating occasion (PROMAR International, 1997).

- Declining household size has led to an increase in the need for easy-to-serve, portion controlled convenience foods (Meat and Livestock Commission, 1997). It has also led an increase in the numbers of dual income households with increased disposable income to spend on value-added convenience foods (PROMAR International, 1997).
- Increasing ownership of microwaves and freezers encouraged manufacturers to develop new ready-to-eat products (Meat and Livestock Commission, 1997).
- A rise in younger consumers with disposable incomes who are more likely to experiment with new products, have non-traditional eating habits and eat out more often is also contributing to the increase in demand for prepared consumer foods (McCarthy and Pitts, 1999b).

These factors have resulted in a 'cash-rich, time-poor' consumer who drives the demand for prepared consumer foods (McCarthy and Pitts, 1999a). The impact of socio-economic characteristics of Irish households on their prepared meals expenditure patterns in 1987 and 1994 is analysed in this report. Characteristics such as marital status, the presence of children in a household and social status are considered in order to accurately determine the factors influencing Irish consumers' decisions to purchase prepared meals.

Summary

The food market is increasingly dependent on consumers' tastes and preferences regarding the attributes of particular food items. The expenditure patterns of Irish households are analysed in an attempt to explain the factors influencing expenditure on meat and prepared meals. The way in which lifestyles impact on Irish food expenditure decisions is quantified by examining the behaviour of household groups with regard to their expenditure on meat and prepared meals, in 1987/8 and 1994/5. Differences in the lifestyles of these household groups, leading to a demand for certain attributes of food products, are used to explain their different expenditure patterns. For meat and prepared meals the most important of these attributes are convenience and perceived healthiness. This report identifies the characteristics of Irish households that are driving the demand for these attributes in meat and prepared meal products using household economic and socio-economic data.

DATA AND METHODS

The data are extracted from the 1987/8 and 1994/5 Irish Household Budget Surveys collected by the Central Statistics Office of Ireland.[3] The survey covered a random sample of 7,705, and 7,877 urban and rural households throughout the country in 1987/8 and 1994/5 respectively. Data were collected on households' socio-economic characteristics and a two-week expenditure diary was reported for each household. The variables used in this analysis are described in Table 1.

[3] The Irish Household Budget Survey is conducted every 7 years. The 2000 Irish Household Budget Survey micro-dataset will become available in December 2001.

Table 1: Description of variables used in the analysis of Irish households' expenditure on meat and prepared meals.

Meat	Seasonally adjusted per capita household weekly expenditure on meat (IR£), calculated as the sum of beef, lamb, pork, pork products, bacon & ham, chicken and minced meat described below.
Beef	Seasonally adjusted per capita household weekly expenditure on beef (IR£)
Lamb	Seasonally adjusted per capita household weekly expenditure on lamb (IR£)
Pork	Seasonally adjusted per capita household weekly expenditure on pork (IR£)
Pork products	Seasonally adjusted per capita household weekly expenditure on rashers, sausages and black and white pudding (IR£)
Bacon & ham	Seasonally adjusted per capita household weekly expenditure on uncooked bacon and uncooked hams (IR£)
Chicken	Seasonally adjusted per capita household weekly expenditure on chicken (IR£)
Minced meat	Seasonally adjusted per capita household weekly expenditure on minced meat (IR£)
Prepared meals	Seasonally adjusted per capita household weekly expenditure on prepared meals (IR£)
Income	Proxied by seasonally adjusted per capita total weekly household expenditure and scaled by 100 (IR£)
$Income^2$	Income squared (IR£)
Age	Age group of head of household (1-8)
All-working	1=Household in which all adults work 0=At least one adult does not work
Urban	1=Urban household 0=Rural household
Gender	1=Female head of household 0=Male head of household

Children	1=Children present 0=No children present
Education[a]	1=Head of household left school at age 17 or over 0=Head of household left school under the age of 17
Education[b]	1=Head of household has Leaving Certificate or a higher level of education 0=Head of household has less than Leaving Certificate education
Social 1	Social 1 =1 for head of household categorised as higher professional, lower professional, employer or manager, 0 otherwise
Social 2	Social 1 =1 for head of household categorised as higher professional, lower professional, employer or manager, 0 otherwise
	Base category = head of household categorised as manual workers, farmers and other agricultural workers or fishermen
Single, married	Single =1 for single adult household with or without children, 0 otherwise Married =1 for married couple with no other adults with or without children, 0 otherwise Base category = households with 2 or more adults with or without children
Meat dummy[c]	Dummy variable capturing whether household purchased any other meat items, other than the dependent variable, in the week surveyed
Microwave[d]	1=Household is in possession of a microwave 0=Otherwise
Freezer[d]	1=Household is in possession of a freezer 0=Otherwise

[a] 1987 dataset

[b] 1994 dataset

[c] Included in disaggregated meat expenditure equations only

[d] Included in prepared meals expenditure equations only

Using cross-section data of this kind allows an examination of the effects on consumption decisions of detailed demographic variables that are not available in aggregate time series data.[4] The problem with cross-section survey data is that it is complicated by the existence of zero observations on expenditure.[5] This raises problems when attempting to estimate models of household expenditure. There are three main models applied in this project which address this problem; the tobit model, the double-hurdle model[6] and the infrequency of purchase model[7]. Each model, with necessary specification adjustments, is used to analyse Irish households' expenditure patterns on aggregate meat, disaggregated meat categories and prepared meals in an attempt to find the most accurate estimates of the significant explanatory factors.[8]

[4] Previous estimates of food expenditure elasticities in Ireland have used time series data only.

[5] A zero observation is recorded when the survey respondent reports zero expenditure on the good in question.

[6] Recent applications of the double-hurdle model include Burton, Dorsett and Young (1996) and Yen and Jones (1997).

[7] Recent applications of the infrequency of purchase model include Su and Yen (1996).

[8] For maximum likelihood estimates and marginal effects contact the author.

Aggregate meat expenditure analysis

The infrequency of purchase model is found to be the most accurate method of modelling Irish households' aggregate meat expenditure patterns. General findings are presented in Table 2.

Table 2: Effect of social and economic variables in Irish households on expenditure patterns for meat.

Household Variables	1987	1994	Change
Income	+ significant	+ significant	decreasing
Age	+ significant	+ significant	increasing
All Working	- significant	- significant	decreasing
Urban	- significant	- significant	increasing
Children	- significant	insignificant	decreasing
Gender	insignificant	insignificant	no change
Education	- significant	- significant	increasing
Social 1	- significant	- significant	increasing
Social 2	- significant	- significant	no change
Single	- significant	- significant	no change
Married	+ significant	+ significant	increasing

+ indicates a significantly positive effect of the variable on expenditure
- indicates a significantly negative effect of the variable on expenditure

Income has a positive and significant effect on aggregate meat expenditure in both 1987 and 1994; however the effect of income on meat expenditure decisions has declined over time. Furthermore, as income increases, the income effect declines in magnitude, providing further evidence of the declining importance of income as an explanatory factor in meat expenditure decisions at higher income levels.

It is proposed that the lifestyles of certain household groups lead to an increased demand for convenience and many of the socio-economic characteristics in this analysis allow deductions to be made about this. Younger headed households, households where all adult members work, urban households, households with children, educated households of an intermediate or professional social status and single adult households all spend less on meat than other household groups. In most cases, this behaviour can be attributed to a greater preference for convenience in meal preparation due to either time constraints imposed by the lifestyles these household groups lead or a greater preference for leisure time resulting in an unwillingness to devote as much time as other household groups to meal preparation. As a result, it is proposed that these households choose more convenient alternatives to meat centred meals, like prepared meals or eating out of home. Understanding the effect of households with children on meat expenditure patterns emphasises the limitations of the data in that it is difficult to ascertain whether the observed negative relationship is due to a preference of households with children for convenient alternatives to meat in general or a preference for cheaper alternatives within the meat category, due to the lack of price and quantity data collected in the survey. The positive effect of married households on meat expenditure is attributed to the possibility that this household group places more emphasis on the family meal-eating occasion than a household shared by a number of unmarried adults.

As well as convenience, the negative effects observed for socio-economic household variables on meat expenditure could also be attributed to health issues, in terms of a negative perception of meat of these groups compared with other households. However, it is difficult to comment on this issue due to the aggregate nature of the dependent variable (categories of meats) and the differences in the types and quality of meat products the category contains.

Individual meat expenditure analysis

In the second analysis, both double-hurdle and infrequency of purchase models are chosen to analyse Irish households' disaggregated meat expenditure patterns. General results are presented in Tables 3 and 4.

Table 3: Effect of social and economic variables in Irish households on expenditure patterns in the different categories of meats 1987/8.

Household Variables	Beef	Lamb	Pork	Pork products	Bacon meat	Poultry & ham	Minced meat
Income	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig
Age	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig	- sig
All Working	insig	insig	- sig	- sig	- sig	- sig	- sig
Urban	- sig	- sig	+ sig	- sig	- sig	insig	+ sig
Children	- sig	- sig	+ sig	- sig	- sig	- sig	+ sig
Gender	insig	insig	insig	- sig	- sig	+ sig	+ sig
Education	insig	+ sig	insig	- sig	- sig	insig	insig
Social 1	+ sig	+ sig	insig	- sig	- sig	insig	insig
Social 2	insig	+ sig	+ sig	- sig	- sig	insig	- sig
Single	insig	- sig	- sig	insig	- sig	insig	insig
Married	insig	+ sig	insig	insig	- sig	+ sig	+ sig
Meat Dummy	- sig	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig

+ indicates a significantly positive effect of the variable on expenditure

- indicates a significantly negative effect of the variable on expenditure

Table 4: Effect of social and economic variables in Irish households on expenditure patterns in different categories of meat 1994/5.

Household Variables	Beef	Lamb	Pork	Pork products	Bacon meat	Poultry & ham	Minced meat
Income	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig
Age	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig	- sig
All Work	insig	insig	insig	insig	- sig	- sig	- sig
Urban	- sig	- sig	+ sig	- sig	- sig	insig	+ sig
Children	insig	insig	+ sig	- sig	insig	insig	+ sig
Gender	- sig	insig	- sig	- sig	- sig	+ sig	+ sig
Education	insig	+ sig	insig	- sig	- sig	insig	- sig
Social 1	+ sig	- sig	+ sig	- sig	- sig	- sig	- sig
Social 2	+ sig	insig	+ sig	insig	- sig	insig	insig
Single	insig	- sig	- sig	+ sig	- sig	insig	insig
Married	+ sig	+ sig	insig	insig	insig	+ sig	+ sig
Meat Dummy	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig	+ sig

+ indicates a significantly positive effect of the variable on expenditure
- indicates a significantly negative effect of the variable on expenditure

As with aggregate meat expenditure, income has a positive and significant effect on individual meat expenditure categories. The magnitude of this effect is declining over time for all categories with the exception of minced meat. For all categories, a non-linear relationship exists between income and expenditure implying that as income increases, the income effect declines in

magnitude, providing evidence that meat expenditure decisions are influenced to a lesser degree by income at higher income levels.

The socio-economic variables included in this analysis attempt to capture differences between household groups in terms of the attributes they demand of products. It is argued that both convenience and perceived healthiness can be given as valid explanations for observed differences in expenditure patterns. Younger-headed households, urban households and single adult households all exhibit preferences for convenience in home cooking activities. This is deduced from the fact that these household groups spend less on traditional cuts of meat and more on convenient, timesaving meats compared with other households. For younger-headed households and urban households this preference could be attributed to the pace of life they lead compared with other households. For single adult households this may be attributed to the fact that these household groups are not typical family households and so are less likely to engage in family meal eating occasions, with traditional meat meal centres, than other households are. On the other hand, they are more likely to purchase more convenient cuts which better suit their non-family oriented eating activities.

Female-headed households spend less on red meats, like beef, and more on white meats, like chicken, than male-headed households. It is suggested that female-headed households are more health conscious than male-headed households and this is reflected in their meat expenditure patterns.

All-working households have a negative relationship with expenditure on meat. However unlike the variables described in the last paragraph, this negative effect is on all meat expenditure categories, convenient or otherwise, indicating that all-working households have a preference against cooking any type of meat in the home when compared with other households.

The results for the education and social status variables may be explained by a combination of preferences; a preference for convenience combined with a 'snob' or 'bourgeois' preference. While educated households and households of a professional social status spend less on most meat categories suggesting a greater preference for time saving while cooking, they also choose traditional

rather than convenient cuts of meat when choosing to cook in the home as they may perceive them to be of better quality or more in keeping with their social standards.

Finally, households with children and married households are more likely to purchase meat items than all other households, indicating a greater preference for the family meal-eating occasion with a traditional meat meal centre compared with other households.

It is difficult to correctly deduce the reasons for the expenditure patterns of different household groups without specific data on the attitudes of individual households. This is particularly the case when making deductions about degrees of health consciousness of different households. Households' preferences for convenience, however, can be explored through analysing their expenditure patterns on convenient alternatives to meat, such as prepared meals.

Prepared meals expenditure analysis

In the final analysis, the double-hurdle model is applied to Irish households' expenditure on prepared meals in 1987 and 1994. General findings are presented in Table 5.

The effect of income on prepared meals expenditure is positive and significant in both 1987 and 1994; however the magnitude of this effect has declined between the two years. As income increases, the influence it has on prepared meals expenditure decisions declines in importance. As with meat, understanding other factors shaping expenditure decisions becomes increasingly important with increasing income levels.

Differences in the pattern of expenditure on prepared meals are explained through preferences for convenience. Younger households, urban households, households with children, female-headed households and educated households of a professional social status, all have a greater preference for convenience than other households as illustrated in their expenditure patterns on prepared meals. All-working households purchase and spend less than other households on prepared meals; however average weekly household

Table 5: Effect of social and economic variables in Irish households on expenditure patterns for prepared meals.

Household Variables	1987	1994	Change
Income	+ significant	+ significant	decreasing
Age	- significant	- significant	decreasing
All Working	- significant	insignificant	decreasing
Urban	+ significant	+ significant	no change
Children	+ significant	+ significant	decreasing
Gender	+ significant	+ significant	increasing
Education	insignificant	+ significant	increasing
Social 1	insignificant	+ significant	increasing
Social 2	insignificant	+ significant	increasing
Single	insignificant	insignificant	no change
Married	+ significant	+ significant	decreasing
Microwave	insignificant	+ significant	increasing
Freezer	- significant	insignificant	decreasing

+ indicates a significantly positive effect of the variable on expenditure
- indicates a significantly negative effect of the variable on expenditure

expenditure of this household group on food consumed out of home is substantially higher than other households. This suggests that all-working households substitute eating out of home for all types of home cooking. Mixed results are observed for the marital status variable. While the presence of a large number of older single-adult households leads to a negative effect

on the probability of this household group participating in the prepared meals market, younger urban-dwelling single-adult households exhibit a greater preference for convenience than other participating households by spending more on prepared meals. Similarly, while married couples are more likely to participate in the prepared meals market compared to households with two or more unmarried adults, they spend less.

CONCLUSIONS

This research is the first of its kind to model household food expenditure patterns at a micro level. Sophisticated econometric techniques were applied to the latest survey data available in an attempt to calculate more accurate income elasticities and to examine the impact of socio-economic factors on food expenditure decisions for the first time. The main conclusions are as follows:

- Households make two decisions that determine expenditure levels on meat and prepared meals. The first decision is whether they should buy and the second is how much to buy.
- Income has a positive and significant effect on meat and prepared meals expenditure.
- At higher income levels, the effect of income on expenditure declines in magnitude.
- Convenience and perceived healthiness are the main explanations found for the observed differences in household expenditure patterns:
    - Younger households, all-working households, urban households, female-headed households, educated households, professional households and single-adult households exhibit expenditure patterns suggestive of a greater desire for convenience compared to other households.
    - Households with children and married households do not exhibit stronger preferences for convenience compared to other household groups; while these households consume convenient food products, they have a greater preference for traditional meal centres compared to other households.

- Educated and professional households possess a 'snob' or 'bourgeois' preference for traditional cuts of meat.
- Female-headed households exhibit meat expenditure behaviour suggestive of a greater level of health consciousness compared to other households.

RECOMMENDATIONS TO INDUSTRY

The main conclusion of this research is that economic incentives alone may not be as effective in maintaining or stimulating demand for food products as campaigns marketing the attributes of food that changing lifestyles demand. In the late 1990s and early 2000s, lifestyles across Europe and more specifically in Ireland have been converging. An increase in the proportion of the Irish population of working age, an increase in third level graduates, an explosion of population in urban areas, and government incentives aimed at expanding labour supply increasing the number of all-working households in Ireland, will all shape the food market of the future. It is therefore increasingly important for the food industry to identify the attributes of food products desired by these consumers who form an increasing proportion of the Irish and European population. Recommendations are:

- Adopt a dual approach to increasing the market share of meats and prepared meals, involving complementary but distinct strategies, on the one hand focusing on increasing market participation (using socio-economic factors) and on the other increasing expenditure (using a combination of economic and socio-economic factors). This dual approach would use the results of the double-hurdle model (see Newman *et al.*, 2001 for meat).
- Increase the level of research and development into ways of increasing convenience for meat cooked in the home.
- Increase the level of research and development into how the production process can further enhance the nutritional aspects of meat and meat products. Complement marketing efforts to promote the nutritional

aspects of meat with the exploitation of existing production related research e.g. research relating animal diet to a fatty acid composition more compatible with current human dietary recommendations (Moloney *et al.*, 2001).

- Target the educated and professional segment of the population with two quite distinct messages, one focusing on convenience and the other focusing on their 'snob' values to increase their expenditure on meat. The message should be appropriate to the meat category.
- Increase the availability of healthy options in the prepared meals category to exploit an emerging health oriented market. This should be complemented by research into market segments in the convenience food sector (see Ryan, 2001), focusing on the demand for quality and the promotion of quality attributes of prepared meals, in the face of the declining importance of economic factors.
- Increase the availability of family sized portions of prepared meal products given that households with children are more likely to purchase prepared meals than households without.
- Fine tune promotional events in retail outlets throughout the country to reflect the difference between the food expenditure patterns of urban and rural households.

FUTURE RESEARCH

It is difficult to make inferences about Irish households' future expenditure patterns based on data from 1987/8 and 1994/5. The first recommendation with regard to future research is therefore the extension of this research to incorporate the 2000 Household Budget Survey dataset, which will become available at the end of 2001. This will allow crucial developments in the food sector to be incorporated into the analysis. With food scares like the BSE crisis and Foot and Mouth disease, consumers' perceptions of the food industry and particularly the meat industry have changed. Due to increased health concerns and awareness about food safety and animal welfare issues, the structure of preferences and the way in which expenditure decisions are made are likely to differ substantially in 2000 compared with the year 1994. Analysing preferences in the year 2000 would also contribute substantially to the analysis of prepared meals as the economic boom in Ireland since 1994 is likely to have altered Irish consumers' preferences for food. Recent trends in Ireland such as increasing incomes, increasing female participation in the labour force and rural to urban migration may be significant in determining the consumption of convenience food items.

The second recommendation for future research is to extend the methods applied to incorporate recent developments in econometric research. One such extension could be to apply an integrated approach to modelling household expenditure, integrating both double-hurdle and infrequency of purchase approaches. Another possibility is to extend the linear functional form typically used in these kinds of analyses to incorporate more sophisticated elements of consumer demand theory, for example an Almost Ideal Demand System Approach. This, however, would depend on the availability of price data in the forthcoming 2000 Irish Household Budget Survey dataset.

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