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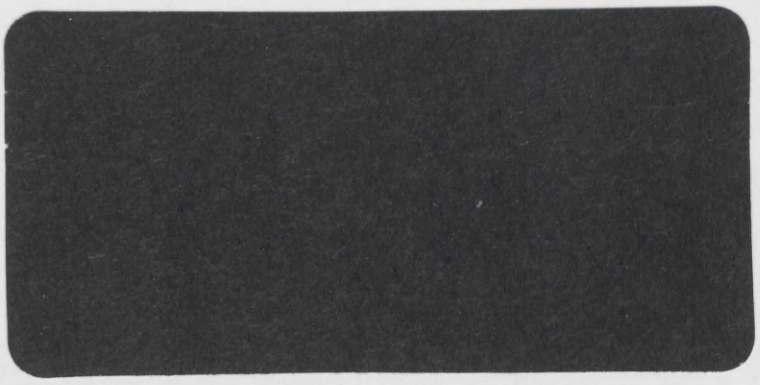

DISCUSSION PAPER

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Revisiting Socio-Economic Criteria and Food Across Meals

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Revisiting Socio-Economic Criteria and Food Across Meals

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Abstract

The usefulness of socio-economic criteria for explaining food consumption is examined. Data from a sample of 102 households in the Newcastle upon Tyne area were collected by means of a food diary instrument. Twenty-seven food groups are considered. It is demonstrated that few significant differences in consumption exist for households with and without children. Fewer differences exist for households in different social classes, households of differing education levels and households in different age groups.

1. Introduction

Socio-economic variables are frequently used by market researchers to describe and explain the choice of goods and services. Rarely is the appropriateness of these types of variables questioned prior to survey work being carried out. It is often assumed that behaviour is well explained by them and hence they are included by default. This is unsurprising given the volume of literature in the area of consumer behaviour which classifies such determinants as important in a generic sense (for a discussion of this see Shepherd, 1989). Furthermore, market researchers rarely measure the statistical extent to which these variables can be used to explain choice. This is often left to econometricians.

Lund and Derry (1985) found that certain variables of this type, among them household composition, region and age of housewife, are statistically significant determinants of food choice for a large number of the forty foods which they studied using National Food Survey data. However, the variables income, region, type of area and household tenure are statistically significant determinants of choice for far fewer of these foods. Overall, the seven variables which they examined explained collectively no more than 18% of the variation in consumption.

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This study considers the extent to which similar variables can be used to segment households according to their consumption of food. The specific objectives are threefold: firstly to consider the appropriateness of using certain socio-economic criteria in order to better explain food consumption behaviour; secondly to consider the appropriateness of one of these criteria, namely the presence of children in the household; thirdly, to consider one way in which market researchers might better utilise chosen socio-economic criteria.

2. Data

The data used in this study were collected by Marshall and Gofton in 1987 in order to provide information about the way in which fish and fish products fit into household food consumption patterns (Marshall, 1990), although, in order to do this, data relating to all foods consumed were gathered.

The sample comprised 102 households in the Newcastle upon Tyne area, who completed a food diary, placed for a two week period. During this time the foods consumed by each household member at meals eaten in the home were recorded. Information relating to the foods consumed included a description of the food item, its 'condition' when bought (e.g. fresh, frozen), and the time at which consumption took place. No information was collected on quantities consumed since, for the original study, this was considered unnecessary and to the detriment of accuracy (see Pekkarinen, 1970). Furthermore, socio-economic information was collected on each household member, with particular attention being paid to the person principally responsible for food purchase, preparation and cooking, referred to by Marshall (1990) as the 'Key Kitchen Person' (KKP). The importance of the KKP (or at least the person most responsible for food procurement, preparation and cooking) in the food choice decision-making process has been well documented (Murcott, 1982).

3. Method

Four socio-economic criteria were selected for consideration: 'presence of children in the household'; academic and professional qualifications of the KKP ('KKP qualifications'); 'KKP age'; and 'household social class'. A comparison was then made between the sample and census data (OPCS, 1991), revealing that the sample under-represents single-parent households, is slightly skewed towards the younger age groups (although the comparison had to be made with what the census describes as the 'head of the household'), and heavily skewed towards the lower social classes (Hutchins, 1993). One-third of KKP's had no qualifications.

Nearly 600 different foods were recorded by the sample households during the period of the survey. However, in order to be able to segment households and compare segments according to their consumption of particular foods, these foods were aggregated into 27 food groups (Lund and Derry used National Food Survey data, aggregated into 40 groups). Since no data were available on quantity of each food consumed, the data for each food were expressed as percentages of the total number of foods consumed over the period. Foods which were consumed on fewer than 20 occasions were excluded from the analysis since the proportion of frequencies which they accounted for was extremely small.

Furthermore, it was hypothesised that the time of the day at which consumption took place would have an influence upon the results of the study. Therefore, the analysis was divided into three parts, defined as 'breakfast' (foods consumed between 04.00 hrs and 10.00 hrs), 'lunch' (12.00 hrs and 15.00 hrs) and 'dinner' (15.00 hrs and 22.00 hrs). Therefore 16 foods were considered at breakfast, 24 at lunch and all 27 at dinner.

4. Results

A summary of results (table 1) indicates that all four variables are weak at differentiating between households. As one might expect, there are some statistically significant differences between households with and without children at breakfast, but for just 38% of foods. Most notably, those with children consume a far greater proportion of cereals.

Table 1 Percentage of Foods for which Statistically Significant Differences Occur Between Households[4]

Variable	Breakfast	Lunch	Dinner
'presence of children'	38	25	11
'KKP qualifications'	25	8	11
'KKP age'	19	17	19
'household social class'	6	0	7

[4] Table 1 indicates that, for example, there are statistically significant differences between the proportions of 38% of foods consumed at breakfast when households are separated into those with and those without children.

Significant differences occur between households where the KKP has one or more qualifications and those where the KKP has none for 25% of foods, the latter consuming a far smaller proportion of cereals and the former a far greater proportion of fruit.

In this study, 'household social class' is a poor discriminator between households at all three mealtimes, especially lunch, when there are no foods for which statistically significant differences exist between households. Although differences do occur for the three remaining variables, none are particularly noteworthy. However, 'presence of children in the household' performs best.

All four variables are poor discriminators between households at dinner. 'KKP age' performs best and indicates a greater proportionate consumption of rice and potatoes amongst younger households.

At breakfast (appendix 1), households with children consume more non-alcoholic drinks, milk and cereals, but less fruit, bread and tea; those where the KKP has qualifications more cereals, but less bread and fruit; those with younger KKPs fewer cereals and non-alcoholic drinks and more fruit; those of higher social class more vegetables.

At lunch (appendix 2), households with children drink more non-alcoholic drinks and less tea. They also consume more preserves, but fewer vegetables and less beef. Households where the KKP has qualifications drink more tea and eat less chicken. Younger households consume tea and preserves more frequently, but vegetables less so.

At dinner (appendix 3), the most notable differences occur with respect to age trends, with younger households eating biscuits less frequently and rice more frequently. The higher the social class, the more fruit and vegetables consumed.

To summarise, the greatest proportion of differences occurs for the variables 'presence of children' and 'KKP age', which concurs with Lund and Derry's (1985) findings that 'household composition' and 'age of housewife' are the best determinants. However, in their study, these two variables were statistically significant determinants for over 50% of foods considered.

Measuring household composition, with particular attention being paid to the number of children, is therefore of greater use to the market researcher than measuring social

class by recording occupation, particularly when considering foods consumed at breakfast and lunch. Of the 27 foods considered, 11 reveal significant differences between households with and without children. Measuring social class only seems relevant when considering fruit and vegetable consumption.

As would be expected, significant improvements in the usefulness of the four variables can be achieved by simultaneously considering them using cluster analysis. A full account of the results of this can be found in Hutchins (1993), however, in summary, there are significant differences between four clusters of 27, 32, 16 and 6 households for 81% of foods at breakfast, 75% at lunch and 74% at dinner.

5. Conclusion

It has been demonstrated that common usage of some socio-economic criteria to differentiate between households may not be a wholly appropriate strategy for market researchers concerned with household food consumption. Of the four variables considered, 'presence of children in the household' performed best, but not as well as suggested by Lund and Derry (1985). The variable 'household social class' performed least well.

However, these conclusions are based on a simultaneous consideration of up to 27 foods. The performance of variables differs between foods and food groups. Similarly, the selected classifications within variables, for example, the fact that households are divided into four social classes in the way that they are, may have a further bearing on outcomes.

Two recommendations are made: firstly, that market researchers shift consideration of 'traditional' socio-economic variables towards household structure and the influence of children on adult food choice and away from measures of social class; secondly, that if socio-economic variables are measured, analysis should be on the basis of simultaneous consideration of all criteria. Consideration of these variables in isolation is questionable.

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Appendix 1 Foods Consumed at Breakfast

Foods	Children Present		K.K.P. Qual's		K.K.P. Age			Household Social Class			
	No	Yes	Yes	No	≤35	36-49	≥50	A, B	C1	C2	D, E
Coffee	7.7	7.0	7.6	6.9	6.6	10.5	4.6	6.8	7.4	6.9	8.8
Tea	17.5	12.6	15.8	15.2	16.8	12.6	18.1	11.1	17.0	16.0	15.9
Non-alc. Drinks	3.4	8.8	6.1	4.0	6.4	7.5	2.7	4.7	6.7	5.6	2.3
Milk	2.9	5.7	4.5	2.8	3.6	5.5	2.6	4.9	4.1	2.9	4.0
Biscuits	1.4	1.2	1.2	1.5	1.5	1.6	0.8	1.2	1.1	1.5	1.6
Bread	27.4	21.1	21.9	31.9	21.3	24.4	27.9	24.5	23.9	23.3	31.2
Preserves	8.3	4.9	7.3	6.4	5.4	5.9	9.2	7.3	8.8	5.1	3.7
Cereals	11.5	22.0	18.6	8.7	23.8	14.9	10.9	14.2	15.9	21.0	8.2
Cheese	0.2	0.7	0.4	0.3	0.2	0.4	0.5	0.5	0.4	0.1	0.7
Eggs	4.4	4.0	3.3	6.4	3.3	4.9	4.2	6.0	3.5	2.5	7.1
Fats	2.0	0.7	1.6	1.4	0.7	0.7	2.9	1.5	0.6	3.8	1.3
Fruit	5.2	2.2	2.9	6.6	2.7	1.9	7.1	3.6	3.0	3.8	7.8
Pork	2.9	2.2	2.6	2.8	2.3	2.3	3.4	4.6	1.9	2.7	2.8
Other Meat	1.1	1.9	1.1	1.6	0.9	1.5	1.1	1.3	1.2	0.8	1.7
Miscellaneous	1.3	2.5	2.1	1.0	2.5	2.1	0.9	2.1	1.3	2.8	1.4
Vegetables	2.1	1.6	1.7	2.2	1.3	2.0	2.0	3.7	1.9	0.6	1.3

Note: figures underlined represent statistically significant differences.

Appendix 2 Foods Consumed at Lunch

Foods	Children Present		K.K.P. Qual's		K.K.P. Age			Household Social Class			
	No	Yes	Yes	No	≤35	36-49	≥50	A, B	C1	C2	D, E
Coffee	5.1	3.7	4.9	4.0	2.5	6.0	4.3	5.0	5.2	4.0	3.3
Tea	8.1	5.3	7.0	7.2	8.3	5.9	7.4	4.4	7.7	7.3	8.1
Non-alc. Drinks	0.9	4.3	3.1	0.4	3.5	2.8	0.8	2.7	2.4	2.7	0.6
Alc. Drinks	0.2	0.8	0.5	0.3	0.5	0.5	0.3	0.2	0.7	0.1	0.3
Desserts	3.9	3.5	3.8	3.7	4.2	2.8	4.4	2.7	3.9	3.4	5.0
Biscuits	4.4	4.5	3.9	5.6	4.0	5.0	4.1	3.5	4.7	4.2	5.2
Bread	9.6	9.5	9.4	9.9	10.0	9.2	9.7	8.6	9.2	9.8	11.1
Preserves	0.7	2.3	1.5	0.9	2.4	1.3	0.6	0.7	1.3	2.3	0.8
Cheese	2.5	3.6	2.9	3.0	2.3	4.0	2.2	4.4	2.1	2.8	3.3
Eggs	2.0	2.4	2.0	2.6	1.9	1.9	2.5	1.8	2.2	2.8	1.8
Fats	0.6	0.4	0.6	0.4	0.3	0.4	0.9	1.2	0.3	0.4	0.4
Fruit	5.2	4.9	5.6	4.1	5.0	5.1	5.2	5.8	5.6	4.7	3.7
Rice	0.3	0.1	0.2	0.3	0.3	0.2	0.2	0.5	0.2	0.1	0.1
Chicken	1.6	1.6	2.0	0.7	1.3	1.9	1.3	1.5	1.8	1.9	0.9
Lamb	1.0	0.8	0.7	1.3	0.3	1.1	0.8	1.0	0.8	0.3	1.8
Pork	2.1	2.0	1.8	2.7	1.6	2.2	2.2	1.4	1.9	2.8	2.4
Beef	3.2	1.8	2.4	3.1	2.5	2.1	3.3	3.0	2.3	2.6	3.1
Other Meat	6.6	8.6	7.0	8.1	8.3	7.2	7.0	7.6	7.2	8.6	6.1
Fish	2.5	3.4	2.7	3.1	2.2	2.8	3.3	2.9	2.3	2.9	4.0
Sauces	1.1	0.2	0.7	1.0	0.3	0.9	0.9	1.4	0.8	0.2	0.5
Miscellaneous	6.9	7.7	7.4	6.8	7.9	9.0	5.1	8.1	8.0	6.9	4.9
Vegetables	23.1	18.4	20.6	23.0	18.8	19.5	24.6	24.0	20.1	18.9	23.8
Potatoes	7.7	8.5	8.3	7.4	9.4	7.0	8.2	7.1	7.5	9.2	8.8
Pizza	0.3	0.3	0.3	0.2	0.2	0.4	0.1	0.2	0.5	0.1	0.0

Note: figures underlined represent statistically significant differences.

Appendix 3 Foods Consumed at Dinner

Foods	Children Present		K.K.P. Qual's		K.K.P. Age			Household Social Class			
	No	Yes	Yes	No	≤35	36-49	≥50	A, B	C1	C2	D, E
Coffee	3.4	3.4	3.9	2.4	2.5	4.6	2.7	3.6	3.7	3.7	2.2
Tea	9.1	6.3	7.7	8.7	6.3	7.3	10.0	5.1	7.3	9.9	11.3
Non-alc. Drinks	0.7	3.0	2.0	0.7	2.3	2.0	0.6	1.7	1.6	2.5	0.2
Alc. Drinks	0.4	0.4	0.5	0.1	0.9	0.3	0.1	0.5	0.5	0.3	0.0
Milk	0.7	1.2	1.2	0.3	1.0	0.9	0.8	0.1	1.2	1.1	1.0
Desserts	3.1	4.0	3.5	3.3	2.6	3.4	3.9	4.6	3.0	3.4	3.1
Biscuits	8.6	6.3	6.9	9.6	5.8	6.4	10.5	5.5	7.6	8.3	10.4
Bread	6.4	7.3	6.9	6.3	6.7	6.9	6.6	5.4	6.4	8.2	7.3
Preserves	1.1	1.3	1.3	0.9	0.9	1.1	1.4	1.0	1.3	1.3	0.9
Cereals	0.1	0.9	0.6	0.1	0.6	0.7	0.0	0.2	0.5	0.7	0.1
Cheese	2.4	2.6	2.3	2.8	2.1	2.5	2.6	2.2	2.4	2.4	3.1
Eggs	2.4	2.0	2.2	2.5	2.5	2.0	2.4	1.7	2.2	2.8	2.7
Fats	1.0	0.6	0.9	0.8	0.7	0.6	1.3	0.6	0.5	1.7	1.0
Margarine	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.0	0.0
Fruit	4.2	4.4	4.6	3.6	3.9	4.4	4.4	6.9	3.9	3.8	2.5
Rice	1.1	1.0	1.2	0.7	2.0	1.1	0.5	1.1	1.4	0.9	0.4
Chicken	2.1	1.9	2.1	1.8	2.3	2.3	1.6	2.1	1.9	2.7	1.2
Lamb	0.6	0.5	0.6	0.5	0.8	0.5	0.5	0.7	0.7	0.2	0.3
Pork	2.3	2.6	2.4	2.5	2.8	2.6	1.8	2.4	2.3	2.2	2.7
Beef	2.8	2.9	2.7	3.1	3.5	2.9	2.3	2.9	2.9	2.3	3.3
Other Meat	6.3	6.7	6.3	6.7	6.3	6.2	6.7	6.3	5.6	7.0	8.0
Fish	2.7	2.5	2.5	2.8	3.5	2.4	2.3	2.2	2.7	2.3	3.2
Sauces	0.9	1.3	1.1	1.0	1.1	1.0	1.0	1.3	1.1	0.4	1.1
Miscellaneous	5.1	4.3	4.7	4.8	4.3	4.1	5.8	3.2	5.2	5.4	4.8
Vegetables	24.1	22.6	22.6	25.4	22.3	24.3	23.4	28.5	24.3	18.2	21.8
Potatoes	8.5	9.8	9.3	8.4	12.0	9.3	6.7	10.0	9.6	8.2	7.1
Pizza	0.1	0.4	0.2	0.2	0.2	0.3	0.1	0.1	0.2	0.4	0.2

Note: figures underlined represent statistically significant differences.