

Segmenting the UK egg market: results of a survey of consumer attitudes and perceptions

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Despite the long-term decline in per capita consumption, eggs remain an important staple in the British diet. Having recovered from the salmonella scare in 1989, the image of eggs has suffered in recent years due to the growing awareness of (and concern over) diet and health, and bird welfare. Reports the results of a recent consumer survey and concludes that there is a polarization of egg consumers, with free-range consumers at one extreme, largely influenced by bird welfare, and battery consumers at the other, for whom functional properties (size and shell) and value for money are the major factors determining egg purchasing behaviour.

Introduction

There can be few people in the food industry who have failed to notice the change in food purchasing behaviour in recent years. It is evident that the perception of and attitudes towards food attributes such as taste, nutritional qualities and convenience are the key determinants of food choice and these attitudes and perceptions are in turn influenced by a number of personal characteristics, such as education, socio-economic status, age and sex.

However, during the past decade the pattern of food consumption has been increasingly influenced by changes in lifestyle. In particular, there has been an increase in the proportion of married working women, which has resulted in fundamental changes in "kitchen culture". A reduction in the time devoted to food purchasing and preparation, the erosion of formal eating occasions and a variety of choice stimulated by the supermarkets have all contributed to the dramatic increase in the demand for new and innovative convenience foods.

This development creates a problem for manufacturers of commodity products, of which the egg is a prime example. A staple food with multiple uses, the egg has suffered in recent years following the salmonella scare in 1989. High in cholesterol and intensively produced, eggs continue to be the source of scandals and scares. Yet there has been little empirical research into consumer attitudes towards eggs. The demise of the Eggs Authority in 1986 left egg producers to fend for themselves and few have had the foresight to acknowledge the importance of determining how their customers perceive their products.

One exception is Stonegate Farmers Ltd, the largest shell egg producer in the country, which in 1994 decided it was time it acted independently to identify what were the key factors determining the purchase of one type of egg over another. The answer to this question would play an important part in their longer-term marketing strategy and the results of the market research which they commissioned form the main subject of this article.

The article is in three parts. The following section provides an overview of the UK egg market. The results of the consumer survey are then presented and the final part draws some conclusions regarding possible target groups for alternative types of egg.

Characteristics of the UK egg market

The overall market for eggs includes retail sales and the manufacturing and catering sectors, among which prices vary widely. The British Egg Information Council (BEIC) estimates the total value of the egg market to be around twice the size of the retail sector, while retail volume accounts for around 60 per cent of the total.

There has been a continuous decline in domestic egg consumption, from a peak of 4.78 eggs per person per week in 1965 to 1.92 eggs in 1993 (see Table I), although increased demand from the manufacturing sector has partly offset this. The market has gradually recovered from the slump in demand in 1989, which followed the salmonella scare, and has stabilized around an annual level of just under 11 billion eggs (see Table II)

The decline in the household consumption of eggs can be attributed to several influences: the move away from the traditional cooked breakfast; changing lifestyles; fewer set family meals; more snacks outside the home and less home baking. Moreover, as consumer incomes rise they are more likely to forsake basic foodstuffs and broaden their diet. Indeed, the National Food Survey[1] reports that the lower a household's income, the more eggs are consumed. This is due to a combination of factors: eggs are a good source of protein and minerals and are relatively cheap. They are also part of a well-established eating pattern for older people[2].

Another factor in the decline has been the adverse publicity regarding modern production techniques, especially for the intensive battery hen system, which accounts for around 85 per cent of egg production (see Table III). Consumers are increasingly concerned with animal welfare and the way that food is produced.

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On the positive side, there has been a steady increase in the number of vegetarians and consumers who avoid red meat. The Vegetarian Society estimates that there are 5,000,000 vegetarians in the UK and, including the people who simply avoid red meat, the total could be as high as nine million, for whom egg dishes could form an important part of their balanced diet. However, as Table IV shows, the importance of welfare issues with regard to consumer purchasing decisions is dwarfed by the functional factors (freshness, no cracks, good value for money).

An important and interesting feature of the egg industry is the distinct lack of advertising and promotion. Most company expenditure is below-the-line and there have been no above-the-line campaigns since 1986, when the Eggs Authority was abolished.

The BEIC, which was set up after the abolition of the Eggs Authority, is funded by voluntary subscriptions from the major egg producing companies. The most significant initiative by the BEIC in recent years was the launch of the Little Lion campaign in 1990, under which a lion was printed on Class A egg packs to show consumers that the eggs meet the current standards of hygiene.

Retail promotion varies between stores. Some retailers market eggs with the dairy and breakfast products, while others put them with baking products. Retailers in general believe that shoppers are not too aware of branding and that they purchase eggs first by

Table IV

The most important factors taken into consideration when purchasing eggs

Factor	Percentage of respondents
Freshness	83
None are cracked	61
Good value for money	44
Use by date	38
Convenient to use	36
Natural food	32
Animal welfare concern	32
Packaging in good condition	26
They are versatile	24
Available in different size	20
Good colour of shell	16
The lion symbol	3
None of these	4

Source: [4]

size, then by number of eggs in pack and then by variety and brand[2].

The consumer survey

A series of focus discussion groups was conducted during October and November 1994, the objective of which was to generate hypotheses about consumer attitudes and perceptions which could subsequently be tested in the consumer survey. Eight professionally recruited groups were held with women, working and non-working, in urban and semi-rural locations in the south-east of England.

The discussion was divided into three parts: egg-shopping habits; diet, health and food safety; bird welfare and egg production. In general, there was either considerable consensus or clear disagreement with respect to the main topics, which greatly facilitated the key process of establishing the major hypotheses to be tested in the survey.

The general hypotheses generated from the qualitative research, to be tested by the survey, were as follows:

H1: Consumer attitudes, usage and purchasing behaviour vary according to gender, age, socio-economic status, household composition and level of education.

In addition, the following specific hypotheses emerged:

H2: Choice of eggs purchased is determined by size, price, production method, appearance and freshness.

H3: Eggs are perceived as being a good quality food, versatile, convenient, tasty and natural.

Table I

Weekly per capita egg consumption (1986-1993)

	1986	1987	1988	1989	1990	1991	1992	1993
Eggs/person/week	3.0	2.9	2.7	2.3	2.2	2.3	2.1	1.9

Source: [1]

Table II

Overall market size for eggs (1988-1992)

	1988	1989	1990	1991	1992
Value (£million)	1,142	1,052	1,168	1,208	1,126
Volume (billion)	11.3	10.2	10.7	10.8	10.8

Source: [2]

Table III

Packing station throughout (1991-1993)

	1991 %	1993 %	Percentage change
Battery	89	85	-4.5
Barn, etc.	4	5	+25
Free range	7	10	+43

Source: [3]

- H4:* Use of eggs is traditional and unimaginative (boiled, fried, scrambled, poached).
H5: Consumers are not well informed about egg production methods.
H6: Consumers are concerned about cholesterol levels in eggs.
H7: Consumers are not concerned about salmonella from eggs.
H8: The perfect egg is a clean, brown, size 3, free range egg at an affordable price.

The design of the consumer survey was guided by two primary objectives. First, it provided a means of updating the consumption and usage data last published by Mintel in 1991[4]. Second, it enabled us to look more closely at the impact of those factors which have only recently begun to play a significant role in food purchasing behaviour, in particular the increased awareness and concern over diet and nutrition, the continuing trend towards convenience foods and a growing concern for animal welfare.

The questionnaire was subjected to a particularly thorough sequence of piloting and revision, the result of which was a questionnaire which encountered no major problems when administered.

The questionnaire was administered in January, by undergraduate students at Wye College, University of London. Each student was required to provide 20 completed questionnaires, most of which were administered in their home localities. Approximate quotas were given for age, sex, socio-economic status and household composition. Completed questionnaires were coded and the data analysis undertaken using the SPSSX statistical package.

The sample

A total of 747 questionnaires were administered. The geographic distribution of the sample was constrained by the fact that the survey was administered during the Christmas vacation, when students typically return to their parental homes. This resulted in the regional distribution being heavily biased towards the South-East, which accounted for almost three-quarters of the respondents.

Almost three-quarters of the sample were female; 42 per cent were less than 34 years of age; and 40 per cent were between 35 and 44 years of age. Of the respondents, 57 per cent were married while just over one third were single. The remainder (8 per cent), classed as "other", were either separated, divorced or living with a common law wife or husband.

In terms of their work status, 38 per cent of respondents were in full-time employment, 19 per cent worked part-time, 15 per cent said

they were housewives and the remainder were retired, unemployed or students.

There was a good spread of education levels, with 17 per cent of the sample educated beyond the age of 20 years, 29 per cent educated to A-level, leaving school between the ages of 17 and 19, just over a quarter finishing after their O-levels and 11 per cent leaving school under 16 years of age; 15 per cent were still in full-time education.

On examination of the number of adults (classed as those over the age of 16) in respondents' households, half contained just two adults, a third contained three or more adults and in 15 per cent of households there was only one adult.

Only 18 per cent of households contained at least one child under five years of age while 22 per cent contained one or more children between the ages of five and ten. Just over one-quarter contained children between 11 and 18 years of age.

In order to establish the socio-economic class of the households surveyed respondents were asked to state the occupation of the main income earner. This was then converted into a class using the JICNARS ratings list[5]. As a result, 30 per cent of respondents were defined as being working class (belonging to socio-economic groups C2, or D); 33 per cent were said to be lower middle class (C1); and 37 per cent were defined as upper middle class (A and B).

The results

The analysis included sample frequencies and cross-tabulations for the following respondent characteristics: gender, age, education, socio-economic status and family status. Where possible, the cross-tabulations were subjected to a chi-square test of independence.

The discussion of the survey results is presented in four sections: purchasing behaviour; purchasing factors; consumption; knowledge attitudes and perceptions.

Purchasing behaviour

Over half of the respondents purchased eggs on a weekly basis and 40 per cent purchased them every two or three weeks. Almost half purchased their eggs by the half dozen, while 37 per cent purchased them by the dozen. Over two-thirds of respondents usually purchased their eggs from a supermarket, with 10 per cent purchasing from a grocery shop and 8 per cent from a farm shop.

Size 3 was the most popular size, with 41 per cent of respondents usually purchasing this size, followed by size 2 (24 per cent) and size 1 (20 per cent). There was an even spread of responses to the question "Do you usually

look for a particular variety of egg?", with 31 per cent responding "always"; 30 per cent "sometimes"; and 39 per cent "never".

Almost half of the respondents said they usually purchased free range eggs. This is an abnormally high proportion and could reflect the characteristics of the sample, which had a high proportion of A, B, C1 consumers. It could also be an exaggerated claim, with some respondents reluctant to "admit" to purchasing battery eggs or seeking the "correct" answer. Finally, it could reflect the fact that some consumers believe they are purchasing free range when in fact they are not.

Purchasing factors

In this section of the questionnaire respondents were asked to indicate the importance of a range of specified factors on their purchasing decision. Table V shows the mean scores for the nine factors presented.

The factor considered important by the largest proportion of respondents was the sell-by date, indicating the importance of freshness. Indeed, almost three-quarters of respondents gave this factor a score of 6 or 7. Price was the second most important factor, with 57 per cent giving a score of either 6 or 7.

Date-of-lay, production method, size and grade were, on balance, considered important (mean score greater than 4), but origin, colour and packaging were not, with the distribution of responses for colour and packaging particularly skewed towards the lower ends of the rating scale.

Respondents were also asked why they chose a specific size and type of egg. Tables VI and VII illustrate the range of responses to these questions. The preference for sizes 2 and 3 is reflected in the reasons given in Table VI, with baking, value for money and a preference for average or larger eggs the most common responses.

As far as egg type is concerned, the dominance of free range egg eaters in the sample is reflected in the high proportion (36 per cent)

Table V

Mean scores for the importance of purchasing factors (1 = not at all important, 7 = very important)

Factor	Mean score
Sell-by date	6.0
Price	5.4
Date-of-lay	4.8
Production method	4.6
Size	4.5
Grade	4.4
Origin	3.8
Colour	3.5
Packaging	3.5

Table VI

Reasons for choice of specific egg size

Reason	Percentage of respondents
Cooking/baking/recipes	18.2
Cost/price/value for money	16.6
Most common/average/medium size	13.5
Preference for large eggs/yolks	13.4
Portion size	8.2
Convenience/multiple use	5.4
Habit	5.3
No particular reason	15.6
Other	15.2

Table VII

Reasons for choice of specific egg type

Reason	Percentage of respondents
Bird welfare	36.5
Price	23.3
Tastier	11.6
Freshness	7.1
Habit	5.9
No particular reason	6.3
Other	11.9

of respondents citing "bird welfare". At the other end of the spectrum, price was stated as the key reason by almost a quarter of respondents and 11 per cent cited taste.

Consumption

Just under a third of households consumed between seven and 12 eggs per week, while almost 40 per cent consumed between four and six and one fifth consumed between one and three.

Questions regarding the household consumption of eggs in different forms over the past three years revealed few surprises. Overall, consumption of boiled eggs appears to have been static while there has been a slight decline in fried egg consumption, a slight increase in scrambled eggs and little change in the consumption of poached eggs and omelettes.

Knowledge, attitudes and perceptions

A number of questions were asked to test consumers' knowledge about eggs. First, respondents were asked to indicate which was the larger, size 1 or size 5, to which over 85 per cent answered correctly (size 1).

Respondents were also asked how old they thought eggs were when they bought them, an interesting question, given the importance attached to freshness. Almost 40 per cent thought the eggs they bought were between one

and three days old, while just over a quarter thought they were between five and seven days old. Only 10 per cent believed they were less than 24 hours old and 12 per cent did not know.

As far as storage was concerned, almost 80 per cent of respondents kept their eggs in the fridge, either with or without the box. However, the question "how long was it safe to keep eggs in the fridge?" revealed a degree of uncertainty, with one quarter of respondents believing one week was the maximum, a third believing two weeks was the limit and just over a fifth going up to three weeks. When asked how long it was safe to keep eggs outside the fridge there was a much greater degree of consensus, with three-quarters of respondents believing eggs could only be kept unrefrigerated for a few days and only 3 per cent believing they could be kept beyond one week.

'...around 90 per cent of respondents agreed that eggs are nutritious, versatile, a natural food and convenient to prepare and only 15 per cent of respondents agreed that eggs are boring...'

Respondents were then given a series of statements about eggs, to which they were required to indicate the extent to which they agreed/disagreed. Around 90 per cent of respondents agreed that eggs are nutritious, versatile, a natural food and convenient to prepare and only 15 per cent of respondents agreed that eggs are boring. However, 44 per cent agreed that eggs are fattening and over half of the respondents agreed that modern methods of egg production are cruel.

There was no clear view as to whether or not free range eggs are fresher than battery eggs, but 44 per cent of the respondents agreed that free range eggs taste better than battery eggs, with 40 per cent undecided.

Interestingly, over half of the respondents agreed that the taste of an egg is affected by what a chicken is fed, with a third undecided, yet only 28 per cent agreed that the taste of an egg could be affected by the breed of chicken, with 50 per cent undecided. Finally, 41 per cent agreed that the taste of an egg is affected by the way a chicken is kept, with 40 per cent undecided.

Respondents were shown the lion mark and asked if they recognized it and what it stood for. Over half of the respondents said they recognized the symbol and over 60 per cent said it stood for either the origin of the egg (British) or the (British) egg standard.

Conclusions

Overall, the results of the market research revealed little change in consumer attitudes

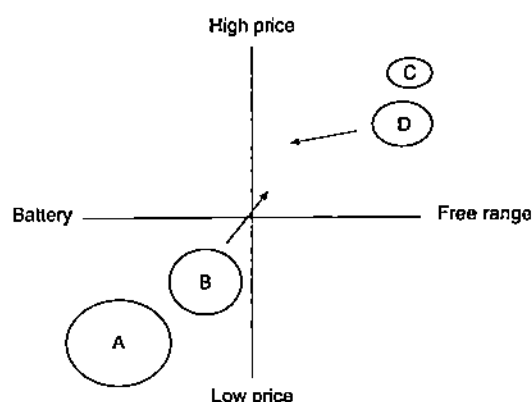
and perceptions since the last (published) consumer survey in 1991. Eggs are still regarded by most consumers as a staple food, providing a cheap, natural and versatile source of protein with ideal portion control. However, concerns over cholesterol and bird welfare represent major threats to the longer-term growth of the shell egg market.

The analysis of the focus groups and the survey data indicate that there are two fundamental discriminating factors in terms of consumer attitudes and perceptions – price and bird welfare. Figure 1 shows a perceptual map of the shell egg market, with consumer attitudes towards price and bird welfare measured on the vertical and horizontal axes. The map allows us to illustrate the four basic consumer segments which have emerged from this research.

Segment A represents the price-conscious battery egg consumer, the mass market comprising households in the lower socio-economic groups (C2, D, E). This is the segment which is unable (and unwilling) to accept that the taste of an egg can be manipulated by feed, breed or general husbandry. For these consumers "an egg is an egg".

Segment B represents the apathetic battery egg consumer, the second largest segment who are aware of (and have a latent concern for) bird welfare but are "too busy" to consider the wide range of shell eggs available. These are the lower middle and middle class (C1, B) households, for whom value for money is important but not such a dominant influence on food-purchasing behaviour. These consumers are ready to accept that the taste of an egg may be influenced by technical and environmental factors and could be persuaded to pay more for an egg which they perceive to be produced to a higher welfare standard and offering an improved taste.

Figure 1
Perceptual map of UK shell egg market



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Segment C is the small group of hard core free range egg consumers who feel strongly about bird welfare and purchase free range eggs regardless of whether they taste any better than battery eggs. For these consumers, who typically comprise households from the higher socio-economic categories (A, B) and a small proportion of the lower middle class (C1), price is not important and they would be most unlikely even to consider new egg products which were not free range.

The fourth segment, D, represents the soft free range consumers, who feel less strongly about bird welfare but have discerning tastes and a preference for natural foods. These consumers are also primarily from the higher socio-economic groups (A, B) and the lower middle class (C1) but are more concerned about value for money and, thus, more price-sensitive than segment C. Like segment B, these consumers could be persuaded to test an alternative egg which offered better value for money than a free range egg (i.e. a barn egg with a unique taste and cheaper than free range).

Eggs remain an important staple food and a cheap source of protein. However, this survey

reveals quite clearly how the perception of product attributes varies between different consumer segments. This represents a challenge to the marketing manager, seeking to add value in response to specific consumer requirements. The polarization of egg consumers which this survey reveals suggests that there is some scope for a "middle-ground" product (such as the barn or perchery egg), but carefully targeted marketing support is essential to prevent such a product from being perceived as offering poor value for money and limited bird welfare.

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