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Consumer attitudes and olive oil acceptance: The potential consumer

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SUMMARY

Consumer attitudes and olive oil acceptance: The potential consumer

This paper outlines the results of consumer research to investigate consumer attitudes towards olive oil, and to evaluate selected experimental samples for acceptability.

Consumer focus group discussions were used to investigate consumer attitudes to and awareness of olive oil, in relation to other culinary oils. A wide range of information was obtained, indicating the increasing importance of olive oil in the UK.

Product use was examined to investigate the different types of olive oils consumers use, and the importance of different attributes for purchase. Price, quality and colour were the most important considerations for purchasing an olive oil, whilst package design, package material and brand were the least important.

Eight samples of virgin olive oil were evaluated for acceptability of appearance, odour, flavour and mouthfeel. These data indicated clear differences in acceptability between the samples, particularly on flavour, mouthfeel and overall acceptability. These data were then linked to sensory information to determine the characteristics of oil associated with liking for the product.

KEY-WORDS: *Acceptance - Consumer-Olive oil.*

1. INTRODUCTION

As part of a three year European Union FLAIR programme, organisations in Greece, Italy, The Netherlands, Spain and the United Kingdom collaborated in a joint project to look at the Sensory and Nutritional Quality of Virgin Olive Oil in Relation to Ripeness and Extraction Technology. This particular paper concentrates on consumer aspects of olive oil consumption, and how product acceptability relates to the sensory characteristics of the samples of olive oils investigated as part of this study.

The objectives of the research were two-fold. Firstly, it was required to determine consumer attitudes to olive oil, and secondly to investigate the use of conventional methodology to measure product acceptability by consumers.

2. METHODOLOGY

2.1. Focus Group Discussions

The objectives of this piece of research were to find out about Olive oil consumers, their attitudes and product awareness. To achieve this, a focus group was conducted

amongst selected consumers who had purchased Olive oil within the last six months. This group was one of seven undertaken over the three years of the project. The discussion for this group focused on five main issues, four of which are reported in this paper:

- Awareness of, attitudes towards, and usage of Olive oils.
- Purchasing behaviour.
- The changing British diet, and the influences on the diet of the consumer.
- A profile of the Olive oil consumer.

To aid in the understanding of the purchasing dynamics for Olive oil, a number of samples were provided as stimulus material (Table I).

Table I
Samples used in group discussions.

Brand Name	Type of Oil
Benedicta	Extra Virgin Olive Oil
Carbonell	Extra Virgin Olive Oil
Napolina	Extra Virgin Olive Oil
Dante	Extra Virgin Olive Oil
Tesco	Extra Virgin Olive Oil
Montolivo	Extra Virgin Olive Oil
Carbonell	Extra Virgin Olive Oil (Can)
Filippo Berio	Extra Virgin Olive Oil
Sainsbury's	Extra Virgin Olive Oil
Mennucci	Extra Virgin Olive Oil
Mani	Extra Virgin Olive Oil
Rastrelli	Extra Virgin Olive Oil
Safeway	Extra Virgin Olive Oil
Athena	Extra Virgin Olive Oil
Kydonia	Extra Virgin Olive Oil
Bertolli	Extra Virgin Olive Oil
Novello	Extra Virgin Olive Oil
International Collection	Extra Virgin Olive Oil
Safeway	Olive Oil
Filippo Berio	Olive Oil
Tesco	Olive Oil
International Collection	Olive Oil
Dante	Olive Oil
Filippo Berio	Mild & Light Olive Oil
Napolina	Golden Light (Olive & Sunflower Oil)
Sainsbury's	Sun Olive

A number of projective techniques (Gordon and Langmaid, 1988) were used throughout the discussion, to help the consumers to express their attitudes and opinions. Sentence completion and bubble drawings were the methods used (Watson and McEwan, 1994).

All respondents were professionally recruited by market research interviewers employed by Campden Food and Drink Research Association. The group consisted of nine females, who had purchased Olive oil within the last six months. The group was made up of a range of ages and social classes, to encourage discussion of different views through the age groups. The group lasted approximately three hours, and was moderated by an experienced moderator.

The discussion was recorded on video tape to aid interpretation and reporting. The research was conducted in accordance with The Market Research Society Code of Conduct, which in particular assures the respondents of confidentiality and anonymity from any issues discussed as part of the research.

2.2. Product Acceptability Trial

Between ten and twelve market research trained interviewers were requested to recruit respondents for acceptability trials held at Campden. The trials were held at Campden over five days in July, 1993. One hundred consumers was the target number.

Respondents were recruited from the Campden household database, if they had purchased olive oil, virgin olive oil or extra virgin olive oil in the last six months. A range of ages and socio-economic classes were used. If the selected respondent was willing, they were requested to attend Campden on a specified date.

The selection of olive oil samples was based on the samples analysed in the sensory trials (McEwan and Watson, 1993; Watson and McEwan, 1994). Eight oil samples were chosen (Table II) to cover the different varieties, countries and extraction methods. It was decided to use normal ripeness, as this is what would be purchased by the consumer.

The sample preparation for the consumer trial was very similar to that used throughout the sensory

assessments. The oils were presented to the consumers in sealed glass jars upon which they rated their liking/disliking on appearance, odour, flavour, mouthfeel and overall acceptability. The degree of liking was rated on a nine point hedonic scale.

The oils were presented to the consumers according to an experimental design which minimized any possible bias due to order and carry over effects. The eight oils were presented to the consumers over two sessions, four samples being evaluated, monadically, in each. Between each sample the consumer had ample opportunity to cleanse their palates, with water, apple slices, lime cordial or cream crackers. The assessments took place in sensory booths under day light simulated (850-1000 Lux) conditions.

The experimental design aimed to provide each oil with an equal number of evaluations, in each position and next to each other sample an equal number of times. The design minimized any possible bias due to order and carry over effects. The design also took into account the two sessions used to evaluate all eight oils.

The questionnaires comprised two main stages. The first stage was designed to select the respondent on the basis of olive oil purchases, as well as obtaining additional information on the household, usage, etc. The main part of the questionnaire pertained to the evaluation of product acceptability according to appearance, odour, flavour, mouthfeel and overall impression. Acceptability was measured on a nine point hedonic scale ranging from 'like extremely' (9) to 'dislike extremely' (1) (Peryam and Pilgrim, 1957).

Data analysis was by tables, summary statistics and the Wilcoxon signed rank test.

3. RESULTS AND DISCUSSION

3.1. Focus Group Discussions

Awareness of Olive Oil

The group were aware of a number of types of Olive oil, such as Virgin Olive oil and Extra Virgin Olive oil. Although everyone in the group was aware of Olive oil, they had

Table II
Olive oil samples used during the acceptability trial.

	Code	Name	Ripeness	Country	Treatment
B	G-01-02-CE	Coroneiki	Normal	Greece	Centrifugation
D	G-01-02-PE	Coroneiki	Normal	Greece	Percolation
E	G-02-02-CE	Tzunnati	Normal	Greece	Centrifugation
G	I-03-03-CE	Coratina	Normal	Italy	Centrifugation
I	I-03-02-PR	Coratina	Normal	Italy	Expression
J	I-04-02-CE	C. di Bit	Normal	Italy	Centrifugation
L	S-05-02-CE	Picual	Normal	Spain	Centrifugation
O	S-06-02-CE	Arbequina	Normal	Spain	Centrifugation

difficulty recalling when it first became popular as a culinary oil. The older members of the group were aware of Olive oil before the Second World War, although they did not use it as frequently then, as they did now:

"Olive oil's always been around though, but it's only been these latter years, I should think, they've used it widely."

"I think the vast population, hasn't been used to using Olive oil until relatively recently."

Travel abroad was thought to have been one of the main catalysts:

"I think it's because we've travelled that I think we've been made aware of it."

"It's got to be in the fifties, when everyone used to go to Spain for £20."

"Yes, it was probably the late fifties, early sixties that we started going abroad, and we all started to become aware of the fact that we could buy these things."

The availability of Olive oil in supermarkets was also a factor. It was believed that it was only recently that the variety of Olive oils had been made available:

"I think it's been quite recent (that Olive oils have been in Supermarket). You've had the ten to fifteen years when you started to see it in the Supermarket, and it's been in the last five years that you've had the variety and the different oils."

Attitudes Towards Olive Oil

The group were given a bubble drawing, depicting a bottle of Extra Virgin Olive oil, and ordinary Olive oil. Each of the bottles had speech bubbles, which they were asked to complete. The main findings were that Extra Virgin Olive oil was seen as a more superior product, more expensive, having a stronger flavour, originating from the first pressing, and being a pure oil. During the general discussion, it emerged that Extra Virgin Olive oil was perceived to be a very pure oil:

"Extra, extra, extra, extra, untouched Olive oil!"

Olive oil was thought to be under utilised, better than ordinary oils for cooking, cheaper than Extra Virgin, reminiscent of medicinal cabinets, and for everyday use. The full results of the projective techniques can be found in the Appendices.

Light Olive oil was a new concept for the majority of the group, although one member had tried it:

"Light Olive oil ... doesn't seem to taste of anything very much at all."

When asked how they thought it differed from other Olive oils, they suggested it was either low in calories, something to do with the pressing, or the ripeness of the olives. For one member of the group, it implied that the product had been interfered with.

Usage of Olive Oil

Originally, Olive Oil had medicinal connotations, especially for the older members of the group who used it for a number of purposes, before it became more popular as a culinary oil:

"You could buy it in the Chemist, in a little bottle, for putting in your ear."

"It's good for the intestines, anyone who suffers from constipation. It's supposed to be very beneficial."

"Olive oil and raspberry vinegar, for your coughs and colds. That was very good. We had that as children."

However, today, Olive oil and Raspberry Vinegar was put to other uses by the younger members of the group:

"It makes a nice salad dressing."

Although Olive oil is slowly migrating from the medicine cabinet, it is now just as likely to be found in the bathroom amongst the shampoos, as it is in the kitchen. Many of the group, both young and old, had found uses for it in their beauty routines, whether it be in conditioning their nails, hair, or body.

The main usage of Olive oil, however, is in the kitchen. The uses of Olive oil seem to be numerous, with many people using it in salad dressings, pasta dishes, for shallow frying, and for brushing on food:

"I find Olive oil is very good for taking my jellies out of their moulds. I've found that the vegetable oil masks the taste of the jelly, ... you don't get it with the Olive."

"I find that my husband likes his eggs fried in Olive oil. I bought it 'cause he likes fried food, and I thought it would be better if he had that instead of the vegetable oil."

"I use it a lot in salads and cold pasta with Olive oil."

"I brush it on everything that goes into the oven or under the grill."

However, Olive oil was not perceived to be an oil that could be used with all dishes:

"There are certain things, I just wouldn't dream of using Olive oil for. I think things that are basically English. That's got to do with tradition and the taste you were brought up with, and somehow, using Olive oil may bastardise it because the recipe or the dish was never meant to use it."

"You wouldn't fry chips in it."

Olive oil was used as an ingredient in many dishes, and the group had noticed that many pre-prepared foods now contained it. Overall, Olive oil was seen as being almost essential in today's kitchen:

"Actually, when you sit and think about it, it really is an invaluable thing."

Storage of Olive oil

Generally, the group thought Olive oil would keep for about a year if it was kept cool, and in the dark. One of the group had relatives who made Olive oil in Portugal, and explained that they stored Olive oil in plastic containers on the floor of the house. All of the group stored their oil in a cupboard, and some had read that it was not advisable to store it in the fridge.

"If oil gets too cold, it starts to solidify, it goes cloudy. I don't know whether that's bad for it or not."

"It probably says to store in a cool, dark place."

It was thought that sunlight may affect the oil in some way, and it may start to change colour.

Purchasing Habits

Own brand Olive oils were popular amongst the group, such as Safeway's, Sainsbury's, Tesco and Marks and Spencer. Two of the older members of the group bought their oil from health food shops, a couple bought branded products, such as Napolina and Bertolli, and one bought her's from a specialist Italian shop.

Olive oil was also a popular product to bring back from holidays abroad, primarily because it was perceived as being much cheaper to buy.

Factors Affecting the Purchasing Decision

The main factor that consumers take into account when purchasing Olive oil, was the price. Many of the group tended to buy small bottles of Olive oil because they were cheaper, although probably not as economical. However, it was generally felt that the quality of the cheaper oils was probably inferior to the more expensive ones.

Apart from price, the group also looked for a good colour oil. A green oil was very popular amongst the group. Very yellow oils reminded them of everyday, cheap oils. The group perceived there to be a difference between the taste of the golden Olive oils and the green Olive oils. The pale oils were thought to have less flavour, and were suitable for dishes that had a subtle flavour. One of the group also looked for the acidity level of the Olive oil, although it was found later on in the discussion, that the acidity level was marked on very few labels.

Understanding How Consumers Segment the Olive Oil Market

During the discussion, the group were shown a variety of bottled and canned Olive oils to sample and comment on. Following their previous discussion, many of them tried to find the acidity level on the packaging, although it only appeared on a couple of bottles. There were a number of different types of Olive oil on display, such as, Extra Virgin Olive Oil, Virgin Olive oil, Olive oil, and some blended Olive oils. The group were asked to comment on the different varieties. Oils which were described as being from the first pressing were held with very high regard, and were perceived as being the best. The blended Olive oils were of interest to some of the group, and were perceived as having specific uses:

The group were asked to sort out the Olive oils into salient groups. The first way in which they grouped the Oils was by their colour. The colours of the oils ranged from a very light yellow (blended oil), to a very murky green (unfiltered oil). The group perceived pale yellow oils to be lighter in flavour than the green oils, and this would be a factor to take into account in its usage. When asked why there was so much variation in the colour of the oils, the group thought that perhaps it was due to the ripeness of the Olives. Green oil was thought to come from young, unripe olives, and the paler oil from ripe olives.

Following this, the group then split the oils into those which were blended, unblended, extra virgin, virgin, and ordinary Olive oil. When asked their reasons for grouping the oils in this manner, it was stated:

"That's generally how they're stacked on the shelves."

The group then felt that the oils could be grouped by the shape of their packaging. Packaging was perceived to be a very important factor when it came to purchasing products.

After grouping products on their packaging, the group thought that they could be grouped on their country of origin, and whether they were own label or branded. To find out the interaction between the product and the purchaser, the group were asked to pick out oils that they would choose if they had the choice in a supermarket, assuming each product held the same quantity, and was the same price. The unfiltered oil was a popular choice for many respondents, mainly because few of them had seen it before. For others however, the packaging was a major influence on product choice. Brand names were also an important issue for some respondents, as was the type of oil, and how it was processed. Others chose oils based upon how they were going to use them. However, overall it would seem that packaging has the greatest influence on their choice of Olive oil.

The Diet

As a whole, the respondents felt that there had been a change in their diet over the past few years. People were perceived to be far more health conscious today, than they used to be. Some of the respondents noted that their

diets had changed over the past few years, especially amongst the older members of the group. The younger members of the group also noted that their cooking habits were very different from their parents.

Traditional meals, such as meat and two vegetables were thought to be a thing of the past. One of the reasons put forward for this, was the change in lifestyle. People have less time to spend in the kitchen.

Overall, Olive oil was perceived to have a very healthy image, with many of the group believing that it was low in saturates (even though few knew what this meant). Some of the older people in the group had been recommended to use Olive oil by their doctor. Apart from medical advice, the group felt that their cooking habits were influenced by a host of different sources, such as, cookery programmes, cookery books, friends, and trips abroad.

Cookery books and programmes, tended to be watched for inspiration, rather than to studiously follow the recipes. Some of them actually liked to experiment rather than be dictated to by a recipe. Travel abroad was also thought to have influenced their cooking habits. Many of the group had tried to recreate dishes that they had eaten whilst abroad.

The Olive Oil Consumer

Initially, the group were given a sentence completion exercise, where they were asked to complete a sentence which started with «People who use Olive oil are...». The main issues that seemed to arise, were that they were health conscious and appreciated good food.

The group were then shown a stick drawing of a person who was supposed to represent an Olive oil consumer and were asked, as a group, to describe what sort of person he/she might be (TABLE III).

Table III
Results of sentence completion exercise on
‘Olive oil consumers are...’.

1	Very food conscious,
2	Health conscious
3	Cosmopolitan
4	Travelled
5	Balanced
6	Energetic
7	People who enjoy the taste of food
8	Not afraid to experiment / adventurous
9	Aware

After describing a number of traits found in an Olive oil consumer, the group then tended to feel that they could not stereotype an Olive oil consumer. Overall, the group felt that anyone and everyone could be a potential Olive oil user.

All the group agreed that consumers needed to be made more aware about the benefits of Olive oil, and also felt that some of the terms should be explained more clearly on the packaging.

3.2. Product Acceptability Trial

Respondents

A total of ninety three consumers participated in the acceptability trial, of these consumer 8.6% were male and 91.4% female. Of the respondents involved 35% had bought extra virgin olive oil, 26% virgin olive oil and 69% olive oil, within the last six months.

Olive Oil Usage and Other Information

The consumers used olive oil for a variety of reasons, 87% of the respondents used olive oil for health reasons, whilst 77% also considered flavour as an important aspect. The respondents consider the versatility of the oil important, 50% saw this as a factor when using olive oil. The frequency of olive oil use was also investigated; 15% of the respondents used olive oil at least once a day, 56% used olive oil at least once a week, 12% once a fortnight and 6% about once a month.

Considering the olive oil bought by the selected consumers; 79% was packaged in glass bottles and 18% in plastic bottles. The most popular size of container was the 500ml bottle with 49% of the respondents purchasing this size. Other sizes bought included 250ml (24%), 1 Litre (14%) and 750ml (4%). Table IV shows the brand information, familiarity and usage, the most popular brand tended to be Napolina. The supermarket own labels were also quite popular. Within the various brands, 53% of the respondents buy Extra Virgin Olive Oil, 46% buy Virgin Olive Oil and 61% buy Olive Oil.

Table IV
Brand familiarization and use.

Brand	Heard of...	Use...
Filippo Berio	26 (28%)	19 (20%)
Napolina	78 (84%)	55 (59%)
Oberon	4 (4%)	2 (2%)
Dante	21 (23%)	11 (12%)
Roberto Rastrelli	5 (5%)	2 (2%)
Carbonell	8 (9%)	5 (5%)
Athena	5 (5%)	3 (3%)
Meridian	4 (4%)	3 (3%)
Bertolli	39 (42%)	11 (12%)
Mennucci	3 (3%)	2 (2%)
Tesco Own Label	68 (73%)	47 (50%)
Sainbury's Own	67 (72%)	43 (46%)
Waitrose Own Label	21 (23%)	8 (9%)
Marks and Spencer	54 (58%)	23 (25%)
Asda Own Label	17 (18%)	3 (3%)
Safeway Own Label	61 (66%)	37 (40%)
Other	13 (14%)	13 (14%)

When deciding which oils to buy the consumer tends to look for several features, the most important of which include: price (68%), quantity (18%), package design (9%), colour (70%), country of origin (38%), package material (27%), brand (29%) and quality (75%).

Product Acceptability

Tables V to IX show the means, medians and significant differences the appearance, odour, flavour, mouthfeel and overall acceptability, respectively. The significant differences, at the 5% level of significance, were obtained using the Wilcoxon signed rank test (Seigel, 1988).

On the summary statistics (means and medians, the appearance and odour show very little difference, whilst the flavour, mouthfeel and overall acceptability do show differences between the samples. For example, the medians vary from 4.00 to 7.00. It is apparent that Sample G (I-03-02-CE, Coratina variety), did not perform well on the flavour, mouthfeel and overall acceptability measures.

For appearance (Table V), it was clear that there are very few differences in acceptability. Samples L did not significantly differ from Sample J, but it did significantly differ from the other samples.

Table V
Summary statistics for appearance
acceptability of the eight selected olive oils.

Samples	Median
L	7.00
J	7.00
O	7.00
I	7.00
G	7.00
E	7.00
D	7.00
B	7.00

For odour acceptability (Table VI), it can be seen that there was no significant differences in acceptability between the samples, with the exception of J and I.

Table VI
Summary statistics for odour acceptability of the
eight selected olive oils.

Samples	Median
B	6.00
D	6.00
E	7.00
G	6.50
L	6.00
O	6.00
J	6.00
I	7.00

Considering the flavour acceptability (Table VII), samples G and I were significantly different than the other samples, and the least liked. Whilst, there was no significant differences between samples J and L, however, L was also not different from sample B.

Table VII
Summary statistics for flavour acceptability of the
eight selected olive oils.

Samples	Median
G	4.00
I	4.00
J	5.00
L	6.00
B	6.00
O	7.00
D	7.00
E	7.00

On mouthfeel acceptability (Table VIII), the significant differences almost follow the same trend as that for flavour acceptability. For example, samples G and I are significantly similar, but significantly different from a large number of the other samples. Samples G and I were the least liked, whilst the Samples D, O, E and B were the significantly most liked.

Table VIII
Summary statistics for mouthfeel acceptability of the
eight selected olive oils.

Samples	Median
G	4.50
I	5.00
J	5.00
L	6.00
D	6.00
O	7.00
E	7.00
B	7.00

Finally, for overall acceptability (Table IX), samples G and I were significantly least liked than the other six samples. Once again, samples O, B, D and E were the most liked samples. Whilst samples J and L were neither liked, nor disliked.

Table IX
Summary statistics for overall acceptability of the eight selected olive oils.

Samples	Median
G	4.00
I	4.00
J	5.00
L	6.00
O	7.00
B	7.00
D	7.00
E	7.00

3.3. Link Between Sensory Profile Data and Product Acceptability

The consumer acceptability data can be related, qualitatively, to the sensory profile data collected as part of this project (Watson and McEwan, 1994; Lyon and Watson, 1994). In general the least liked samples G and I were described by the sensory panel as being strong (O/F), sweet (O), almond (F), under-ripe (F), harsh (F) and throatcatching (MF). The most acceptable samples B, D, E and O, were described as tomato (F), banana (F), grassy (F), perfumed (F) and thick (MF).

Correlations between the acceptability data, and the sensory attributes, was also undertaken as a more formal procedure. It can be seen from Table X, that acceptability is positively correlated with depth of colour, clarity and hay (O/F). Whilst, acceptability is negatively correlated with the attributes were brightness, green, unripe (F), harsh (F) and throatcatching.

Overall, for this particular study, the Italian samples G and I were least liked by the British consumers, and were associated with the sensory attributes strong odour and flavour, sweet odour, under-ripe flavour, harsh and throatcatching.

Overall, the Greek samples B, D and E, and Spanish sample O were most liked by British consumers, and were associated with the attributes tomato, banana, grassy and perfumed flavour, and thickness (mouthfeel).

Table X
The correlation coefficients which investigate the relationship between acceptability and the sensory attributes ($r > 0.497$).

Acceptability	Sensory Attribute	Correlation Coefficients
Appearance	Brightness	- 0.51
	Clarity	+ 0.76
	Depth of colour	+ 0.64
	Green	- 0.75
Odour, Flavour and Mouthfeel	Hay (O)	+ 0.58
	Hay (F)	+ 0.82
	Unripe (F)	- 0.89
	Harsh (F)	- 0.96
	Throat catching	- 0.97

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