

## THE LABEL EFFECTS ON THE CONSUMER INSTANT COFFEE PERCEPTION

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**RESUMO:** A prévia expectativa do consumidor em relação ao produto e seu respectivo rótulo, propaganda e preço pode contribuir para originar nova expectativa, a qual pode ser alta ou baixa. Este trabalho teve como objetivo criar situação de confirmação e na não-confirmação da expectativa, a fim de investigar se o rótulo causou algum efeito na percepção de quanto os consumidores gostaram de café solúvel. Quatro rótulos de café solúvel foram criados através da manipulação da marca comercial e informação. Cento e quarenta e dois consumidores ingleses participaram deste estudo. As amostras foram avaliadas codificadas e, em seguida, os consumidores receberam os rótulos dos produtos, os quais foram confeccionados em cartões, e avaliaram o quanto gostariam dos produtos apenas olhando para os rótulos. Na etapa seguinte, receberam o primeiro rótulo e uma amostra de café, tendo sido avisados de que o referido café tinha sido feito a partir daquele produto. Receberam, então, a segunda amostra, e o procedimento se repetiu até os quatro produtos terem sido avaliados. Análise de Cluster foi utilizada para identificar segmentos de consumidores com comportamento similar. Os resultados mostraram que o rótulo teve efeito significativo ( $p < 0,05$ ) na intensidade com que os participantes gostaram dos produtos, isto é, os consumidores foram afetados pelo rótulo na avaliação de café solúvel, dirigindo suas respostas na direção de suas expectativas.

**Palavras-chave:** café solúvel, consumidor, rótulo, expectativa, gostar.

**ABSTRACT:** Consumer's prior expectations together with the product itself with its label, advertising, and price will generate expectations, which can be high or low. This work aimed at creating a situation of confirmation and disconfirmation of expectation and investigate whether the label had an effect on the instant coffee liking perception. Four instant coffee labels have been created by manipulating brand name and information. One hundred and forty-two British consumers took part in the study. The samples were

evaluated blind. After that, consumers looked at the coffee labels made in cards, and rated the expected liking. Next, they received the first card and a sample of coffee, and they were told the coffee was made using this product. They then received the second sample and repeated the process. Cluster analysis was used to identify segments of consumers with similar behaviour. The results showed that label had a significant effect ( $p < 0.05$ ) on the evaluation of liking, that is, consumers were affected by the label when they evaluated instant coffee. Consumers scored their actual scores towards their expectations.

**Key words:** instant coffee, consumer, label, expectation, liking.

## INTRODUCTION

Consumers' expectations about a food product originate from several sources and plays a role both at point of choice and in the subsequent sensory experience. The process begins with the previous information and experience people have, leading to prior expectations. Those prior expectations together with the product itself with its label, advertising, and price will generate expectations, which can be high or low. Low expectation leads to product rejection and high expectation contributes to product choice.

The importance of several features of the labels such as brand name, price, and information on the expected product attributes is recognised in the literature and many papers refer to this topic. Previous research (Deliza, 1996) indicated that the majority of the consumers were able to articulate clear sensory expectations about an unfamiliar product (passion-fruit juice). However, familiarity with a product may create a less ambiguous experience and consumer's product perception from the label may follow a different pattern.

Many individual difference variables might be expected to moderate the cognitive route taken, and among those are need for cognition (NFC), mood, fatigue, involvement, and time availability. In this study the NFC has been used because it has been demonstrated it moderates the route to persuasion (Inman *et al.*, 1990). Because high NFC individuals are intrinsically motivated to engage in cognitive endeavour, they are more likely to process additional relevant information than are individuals who are low in NFC. In the case of this study, the additional information is the tasting experience (Cacioppo & Petty, 1982). This leads to be presented the following hypothesis:

*High NFC consumers will be less affected by the label than low NFC consumers, and therefore the actual minus blind scores for the high NFC individuals will be smaller than for the low NFC ones*

When a disconfirmation of expectation in terms of liking occurs, it can be positive or negative. This study has been planned to create both situations. Some theories regarding people's behaviour after being exposed to an expectation were presented by Deliza (1996). It is basically stated that consumers may score the sample towards their expectation (Assimilation effect) or they can move their ratings away from their expectations (Contrast effect). Previous work (Smith, 1993) has shown that when an advertisement (ad) preceded a negative trial, the positive ad beliefs set the stage for a more positive interpretation of trial experience.

When the sensory properties of the product are confirmed and people have what they expected, it can be postulated that satisfaction might occur. Kopalle and Lehmann (1995) stated that satisfaction is a function of the difference between experience with the product (tasting) and expectations. Previous studies demonstrate such aspect with products different from food (Oliver 1980, Oliver & DeSarbo 1988, Hoch & Deighton 1989). After saying that, one can infer that there is a positive correlation between satisfaction with a product and how such product compares to consumer's expectation.

The aim of the study was to look at the effects of expectations on the instant coffee liking, after both a confirmation and a disconfirmation of expectation condition.

## **MATERIAL & METHODS**

### **Subjects**

One hundred and forty-three British consumers, aged between 18 and 65, participated in this study. All subjects were residents of Reading (UK) and recruited based on the following criteria: they had to be coffee drinkers (at least one cup of white instant coffee - no sugar - a day); 50% female and 50% male.

### **Label manipulation**

The components of the label were obtained from commercial instant coffee labels. They were scanned into a photographic image retouching program, and the Adobe Photoshop™ Macintosh® software was used to edit them.

The components of the labels which had a significant effect in a preliminary study (Deliza, 1996) were used in this trial. By manipulating brand name and information, and using two background colours (light and dark brown) 4 labels were created. Figure 1 shows the 4 labels used in the consumer trial.



**Figure 1** - The 4 coffee labels used in the consumer trial.

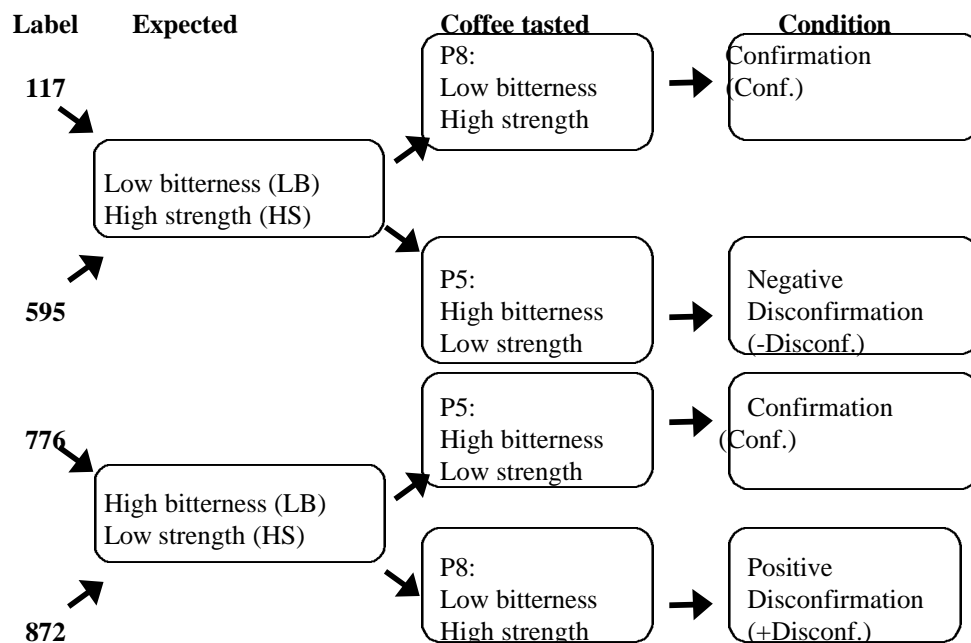
The four labels were printed at actual size (7.5 x 10 cm), stuck on a pale yellow paper (10 x 16 cm) and laminated. All cards were presented face down to the consumers in illuminated sensory booths. They were asked to turn the cards one at a time, look at each one and assess the expected dependent variables.

Figure 2 presents the design, showing the label with the correspondent consumer's expectation, and the product that was delivered through such label to confirm or disconfirm expectations. The abbreviations of the descriptions are between brackets, and they will be used in the presentation of the results.

### Sample preparation

Coffee powder was placed inside the thermal flasks and mineral water (Evans) heated at 70-73 °C was added to it. The white coffee was prepared by adding warm milk, heated at 68-70 °C in the microwave oven. The final temperature of all samples was  $70 \pm 1^\circ\text{C}$ . Samples were freshly prepared before each session, and kept in thermal flasks until the arrival of the consumers. The amount of powder used in this

study was as follows: sample 1 (P5): 14g/l; sample 2 (P8): 20g/l; and a dummy sample (P7): 17g/l. All samples had 17% of semi-skimmed milk added, to make white coffee. A dummy sample was included to warm up the test.



**Figure 2** - Design showing each label, the corresponding expected attributes, the coffee tasted and the created condition.

### Sensory evaluation

Consumers were asked to evaluate the 3 samples of instant coffee (dummy, P5, P8) in blind condition following a balanced design. Samples were presented in white porcelain cup, one at a time, in illuminated sensory booths. Subjects evaluated intention to purchase, bitterness, strength, and liking in a ninety-point non-structured scale (mm). After rating the 3 samples, subjects completed a demographic (gender, age, coffee consumption per day, educational level) questionnaire. After this, they evaluated the expected liking only looking at from the labels. They received the cards coded with a three digits number, one at a time, and rated the expected sensory attributes, plus liking and intention to purchase, on the answer sheet (Deliza et al., 2000). The order presentation followed a balanced design generated using SAS.

Next, they received the first card and a sample of coffee and they were told the coffee was made

using this product. They were asked to drink the coffee and evaluate the actual attributes. They then received the second sample and repeated the process. A 15-minute break was given, and they answered the Need for Cognition (NFC) questionnaire. After questionnaire completion, they evaluated the 2 remaining card/coffee samples. They were paid £5.00 for their participation.

This paper focused only on the consumer instant coffee liking. The remainder attributes were not in the scope of this manuscript.

### **Statistical analysis**

Cluster analysis was performed to group consumers with similar product perception. The *actual minus blind* scores ( $A - B$ ) were calculated for each yielded cluster and tested for significance. Analysis of variance was carried out to check for differences between cluster in terms of NFC.

## **RESULTS & DISCUSSION**

Cluster analysis on the liking ratings yielded 3 segments of consumers. Table 1 presents the average liking ratings for each cluster, for the three measurements (expected, blind, and actual scores) and also the ( $A - B$ ) tested for significance.

Assimilation effect has occurred in most of the samples for most of the segments of consumers on the liking evaluation. A contrast effect was observed in cluster 2 (sample 776) and 3 (sample 776).

Although the three segments presented very distinct scores on the expected evaluation, none of the clusters showed significance difference between samples P5 and P8 under blind condition. Consumers in cluster 3 assimilated towards their expectation after a negative disconfirmation (sample 117) and they moved away from their expectation after having a positive disconfirmation (sample 776), indicating contrast effect.

**Table 1** - Effect of expectation manipulation on mean liking scores of instant coffee for the 3 segments of consumers

Product	Label	Condition <sup>#</sup>	Expected(E)	Blind (B)	Actual (A)	Effect <sup>§</sup>	Sig A-B*
<b>Cluster 1 (n=67)</b>							
P5	117	Disconf.	55.0 <sup>b</sup>	43.1 <sup>a</sup>	44.7 <sup>b</sup>	Assimil.	p<0.05
P8	595	Conf.	57.0 <sup>b</sup>	42.0 <sup>a</sup>	56.0 <sup>c</sup>	Assimil.	p<0.05
P5	776	Conf.	27.0 <sup>a</sup>	43.1 <sup>a</sup>	30.0 <sup>a</sup>	Assimil.	p<0.05
P8	872	Disconf.	27.9 <sup>a</sup>	42.0 <sup>a</sup>	36.6 <sup>a</sup>	Assimil.	p<0.05
<b>Cluster 2 (n=57)</b>							
P5	117	Disconf.	60.0 <sup>b</sup>	34.4 <sup>a</sup>	47.1 <sup>b</sup>	Assimil.	p<0.05
P8	595	Conf.	56.8 <sup>b</sup>	39.0 <sup>a</sup>	48.6 <sup>b</sup>	Assimil.	p<0.05
P5	776	Conf.	27.6 <sup>a</sup>	34.4 <sup>a</sup>	34.8 <sup>a</sup>	Contr.	p<0.05
P8	872	Disconf.	27.3 <sup>a</sup>	39.0 <sup>a</sup>	34.8 <sup>a</sup>	Assimil.	p<0.05
<b>Cluster 3 (n=18)</b>							
P5	117	Disconf.	54.9 <sup>b</sup>	27.8 <sup>a</sup>	54.4 <sup>b</sup>	Assimil.	p<0.05
P8	595	Conf.	67.1 <sup>c</sup>	40.7 <sup>a</sup>	59.0 <sup>b</sup>	Assimil.	p<0.05
P5	776	Conf.	26.8 <sup>a</sup>	27.8 <sup>a</sup>	32.7 <sup>a</sup>	Contr.	p<0.05
P8	872	Disconf.	29.9 <sup>a</sup>	40.7 <sup>a</sup>	53.1 <sup>b</sup>	Assimil.	p<0.05

Different letters in the same column (per cluster) imply the means are statistically different (p<0.05).

\* (A-B) scores tested for significance.

§ Assimil.= assimilation effect; Contr. = contrast effect

# Disconf.= disconfirmation effect; Conf.= confirmation effect

The NFC variable had no effect on the actual minus blind (A – B) scores for liking. Although the literature presented some contribution of using this variable to help the understanding of consumer behaviour, it was not the case of instant coffee liking. According to Pangborn (1987) it might have been due to the complexity of these relationship. More efforts are recommended to clarify many points that affect sensory evaluation of food and beverages.

There are a number of practical implications to the both sides of the food chain - the consumer and the producer. This study clearly revealed that expectation created by the label had an effect on consumer's product liking. Focusing firstly on Marketing and R&D, it is suggested a stronger link between those two areas, in order to benefit consumers. Thus, marketing would not only find out what kind of products consumers look for, but also would determine what consumers expect from the label/package. R&D would make an effort to deliver the coffee they expect. By having what they expect, consumers certainly will have

more satisfaction with the product. As a consequence of such stronger link, more scientific research should be carried out on labelling, since it has been proved to be a powerful element on the coffee liking. It implies that R&D has to be developed not only on the products themselves, but also on the label.

### REFERENCES

- CACIOPPO, J.T. & PETTY, R.E. The need for cognition. *Journal of Personality and Social Psychology*, v. 2, n.1, p.116-131, 1982.
- DELIZA, R. The effects of expectation on sensory perception and acceptance. PhD Thesis. The University of Reading. pp.198, 1996.
- DELIZA, R., MACFIE, H.J.H., FERIA-MORALES, A., HEDDERLEY, D. 2000. The effect of consumer expectation on the evaluation of instant coffee. *Brazilian Journal of Food Technology*, Campinas, v.41, n.3, p.97-105.
- HOCH, S.J. & DEIGHTON, J.R. Managing what consumers learn from experience. *J. Marketing*, v. 53, p. 1-20, 1989.
- INMAN, J.J.; MCALISTER, L. & HOYER, W.D. Promotion signal: proxy for a price cut? *J. Consumer Research*, v. 7, n.6, p. 74-81, 1990.
- KOPALLE, P.K. & LEHMANN, D.R. The effects of advertised and observed quality on expectations about new product quality. *J. Marketing Research*, v. 32, n.8, p. 280-290, 1995.
- OLIVER, R.L. A cognitive model of the antecedents and consequences of satisfaction decisions. *J. Marketing Research*, v. 17, n.11, p. 460-469, 1980.
- OLIVER, R.L. & DESARBO, W.S. Response determinants in satisfaction judgements. *J. Consumer Research*, v. 14, n.3, p. 495-507, 1988.
- PANGBORN, R.M. Relationship of personnel traits and attitudes to acceptance of food attributes. In: J. Solms; D.A. Booths; R.M. Pangborn and O’Raunhardt (Eds.). *Food Acceptance and Nutrition*. Academic Press. London. Pp. 353-370, 1987.
- SMITH, R. E. Integrating information from advertising and trial: processes and effects on consumer response to product information. *J. Marketing Research*, v. 30, p. 204-219, 1993.