Assimilation-Contrast Theory: Support for the Effect of Brand in Consumer Preferences

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Abstract: This experimental research measured the contribution of brand and product to the globally perceived quality of two well-known brands – namely, Coca-Cola and Pepsi. The assimilation-contrast approach was used to analyze the effect of brand on consumer perceptions. The experimental design elicited consumer preferences through liking scores in three different information conditions. Consumers did not differentiate in a blind test between the two tested products. In the label test, Coca-Cola received a higher score than Pepsi, indicating a stronger preference for the Coca-Cola brand. However, in conditions of full information, Pepsi received a higher score. From a methodological perspective, this research suggests that the assimilation-contrast approach is appropriate for evaluating brands from a consumer perspective in different cultural contexts.

Keywords: taste experiment, brand, consumer preferences, liking scores, repeated measure ANOVA

1. Introduction

Products and services are bundles of attributes (cues) that shape consumer opinions about expected or experienced product quality (Veale, 2006). Intrinsic cues are any product characteristics such as flavor or taste, while extrinsic cues are product characteristics that are externally attributed to a product, such as price, brand, etc. Previous research shows that consumers rely both on extrinsic and intrinsic cues in their decision-making processes (Zeithaml 1988, Richardson et al, 1994). Cue utilization in product perception is viewed as a form of complex information processing (Acebron–Dopico, 2000), involving a process of making inferences about products from the cues that are available. Product brand is one of the extrinsic cues which influences perceptions, and consumers use their

knowledge of these to make product quality inferences. In this framework, knowing more about consumer brand preferences represents an important step in understanding consumer behavior. Marketers have long been interest in understanding how consumers form their preferences, and how brands play a role in consumers' decision-making processes (Keller, 2001, Aaker, 1996).

The general objective of this study is to describe an analysis of the importance of extrinsic attribute information, such as brands, on consumer preferences. The experiment that is described involved a tasting valuation using three information conditions. Results indicate that consumer liking scores can be improved with brand information and the sensory characteristics of a product.

Cola drink was chosen as an appropriate product on which to examine the selected features of interest. From its market launch in 1886, Coca-Cola spread all over the world, even though its chief competitor, Pepsi Cola, also entered into competition quite early, in 1898. There are worldwide naming discrepancies regarding the product: it is called Coke in its homeland, but Pepsi in India, and mainly Cola in Europe. As cola is the part of compulsory store selections, many brands of cola exist across the world. Seeing their success, micro markets have tried to produce similarly highly positioned branded products, such as 'Tikkadt szöcske' (Parched grasshopper) in Hungary, which according to its slogan seeks to be "the Coke in Hungary". Advertisers promote its high quality and its many medicinal ingredients. 'Kofola' has also already had some success and now has a remarkable share of the market in the Czech and Slovak Republic. There are also several private labels on the market that compete on price but appear to have no other market advantages. The question is whether it is the recipe or rather the story behind Coca-Cola – and the related feelings – that explain its success.

Trout and Ries (1986, p. 34.) refer to "a major marketing disaster" that occurred when Coca-Cola wanted to extend its brand by launching 'New Coke' in 1985. The taste of this product had been evaluated more highly in earlier research, but consumers insisted on buying the original brand with its traditional features. Emotional engagement and involvement can stimulate loyalty, which is the basis of 'lovemarks' (Roberts, 2006) such as Coca-Cola (Kelemen, 2013). A non-representative, but large-sample (N=17000) blind taste test conducted during the summer festival season in Hungary in 2017 found that 58% of participants favored Pepsi Black over Coca-Cola Zero (Pepsi, 2017).

This paper analyses the effect of the two globally well-known brand names Pepsi and Coca-Cola and the impact of their recipes and tastes among Albanian consumers. Many blind taste tests among cola brands have already been conducted (such as Stanley, 1978; Maison et al. 2004; McClure et al. 2004; Méndez et al. 2011), but the present research assesses the unique Albanian market, where cola is not a traditional drink, having only been launched twenty years ago, because during the comunist era, the import of beverages was not allowed.

The paper uses the theory of Expectations - Disconfirmation to identify to what extent the fame of such brands is perceived and how this affects consumer behavior. This paper is structured in four sections: The literature review (first section) describes brand effects on consumer choice and some of the theory that describe the mismatch between expectations and the sensory qualities of products. The second section presents the methodology used in the research, and the third describes results. Conclusions and recommendations are drawn in the final section.

2. Literature review: The disconfirmation model and its theoretical basis

The influence of extrinsic cues in consumer evaluations and expectations has been analyzed for a number of food products using different methods: hedonic scores (Deliza–MacFie, 1996; Fornerino–Hauteville, 2010; Schifferstein–Mojet, 1999), incentive compatible mechanisms such as auctions (Boxall et al, 2007; Hayes et al, 1995; Huffman et al, 2003; Jahaveri et al, 2007; Lecocq et al, 2004), and a combination of auctions and hedonic scores (e.g. Lange et al, 2002; Stefani et al, 2006).

Consumer expectations derived from extrinsic cues such as brand are not always met. Scholars (Anderson–Sullivan, 1993; Deliza– MacFie, 1996; Schifferstein, 2001, Ong et al, 2017) call the discrepancies that can be observed in terms of consumer satisfaction and expectations and objective quality (i.e. the real satisfaction generated by the product) the 'disconfirmation of expectations'. Expectations provide a baseline or anchor level of satisfaction (Anderson –Sullivan, 1993). In the case of verified disconfirmation, the level of satisfaction may be lower or higher than the threshold level. Disconfirmation is positive if objective performance exceeds expectations, and is negative if objective performance fails to meet prior expectations. According to Schifferstein (2001), three alternatives can be used to elicit sensory and non-sensory preferences: (1) Blind tests with the product; (2) Expectation tests, which involve the supply of non-sensory information; and (3) Full information tests (provision of sensory and non-sensory information regarding the product). Results are defined by comparing scores or prices as a proxy of expectations in the blind test and full information situation. Tests may be evaluated (Schifferstein, 2001) as follows: (1) Full information test liking score (F) – Expectation test liking score (E) = Degree of Disconfirmation; (2) Expectation test liking score (E) – Blind test liking score (B) = Degree of incongruence; (3) Full information test liking score (F) – Blind test liking score (B) = Degree of Response shift. Response shift represents a promising measure for singling out the direct impact of an extrinsic cue such as brand (Fornerino–d'Hauteville, 2010) in product evaluation. It has been reported that consumers cannot differentiate be-

tween two products in blind tests but reveal a strong sensory preference for branded products in full information tests (Fornerino–d'Hauteville, 2010; Aaker, 1996).

Assimilation theory is a theoretical framework which provides more insight into consumer behavior. This theory states that assimilation occurs when unconfirmed expectation discrepancies are assimilated by aligning perceptions with expectations (Anderson, 1973; Deliza– MacFie, 1996; Schifferstein, 2001). In the case of absence of assimilation, extrinsic cues do not interfere with sensory perceptions in overall evaluations. In this case, no difference is observed between blind scores and full information scores. An assimilation effect (positive or negative) is verified if the change in the product evaluation corresponds to the change in the expected value of information. On the other hand, a contrast effect is identified when the change in product evaluation is in the opposite direction compared to the expected value of information. In the case of assimilation-contrast theory, the theories of contrast and assimilation are combined. In this case, there are some levels of consumer preferences regarding acceptance and rejection. In some cases the disparity between expectations and performance is small enough and consumers can assimilate it. If the discrepancy is large enough to fall into the zone of rejection, then a contrast effect arises (Anderson, 1973; Schifferstein, 2001).

Table 1.
Assimilation and contrast cases
Source: Fornerino and Hauteville (2010)

Information conditions	**Assimilation**			**Contrast**	
	Partial Positive	Partial Negative	Complete Assimilation	Positive	Negative
E – B	>0	<0	>0	>0	<0
F – B	>0	<0	>0	<0	>0
F – E	<0	>0	0	>0	<0

This model is a generally accepted theory utilized by marketing managers to analyze consumer satisfaction and likelihood of purchase (Teas–Palan, 2003). It implies that consumers purchase goods and services with pre-purchase expectations about anticipated performance (Yüksel–Yüksel, 2001). The theoretical approach understands that the size of the discrepancy between expectation and actual performance may determine final consumer behavior. Expectation level becomes a standard against which the product is judged. However, according to Yüksel and Yüksel (2008), the use of expectation as a baseline comparison is considered to be one of the shortcomings of the expectation-disconfirmation model. The dynamic nature of expectation, its meaning to respondents, the use of different scores for assessing satisfaction, and the type of product are some of the shortcomings of the model. The meaning of expectations represents a methodological problem because expectations are defined differently by consumers. Zeithaml (2011) reviews four

types of expectations: (1) the ideal - how something might best perform; (2) the expected - likely performance; (3) the minimum tolerable performance; and (4) the desired performance. In this framework, varying expectations (from a tolerable minimum to the ideal product or service concept) can create a misleading indicator of expectations. Another important problem is linked with the assumption that all consumers have prior expectations. This may not be true of inexperienced consumers, or those who are faced with unfamiliar products. A lack of previous experience with the product may result in uncertain expectations, and consequently less stable, real and inaccurate expectations (Yüksel–Yüksel, 2001, 2008). In the study described herein, these effects are negligible because of product penetration and reputation.

Table 2.
Research Hypotheses
Source: Authors' construction.

Number	Hypothesis
H1	***Consumers award higher liking scores to the most preferred brand in a blind test.***
H2	***Consumers 'disconfirm' taste for the most preferred brand that has higher perceived quality.***
H3	***Consumers award higher scores to the most preferred brand in full test conditions.***
H4	***Consumers do not change liking scores in the three test conditions.***

3. Materials and method

3.1. Experimental protocol

The experimental design opted for in the present research classifies respondents into three different cognitive situations. Firstly, respondents evaluated a product in a blind taste test. They awarded a 'liking' score using a Likert-scale from 1 to 5, where 1 means "I don't like it at all" and 5, "I like it very much". In this framework, sensory analysis was performed by serving small glasses of Coca-Cola and Pepsi. In the second step (labeled test), the brand names of both beverages included in the experiment were presented to participants who were asked to provide an evaluation. Labels only contained brand information.

Finally, after tasting the products again, participants repeated the evaluation and matched sensorial information with brand information (full information test). Nine sessions were organized with a maximum of ten participants in each session. The sessions were held on the premises of the European University of Tirana. The

differences in liking scores between blind, labeled and full information tests are presented as follows:

(1) Full information (F) – Expectation (E) = Confirmation/disconfirmation of expectations for the perceived product;

(2) Expectation (E) – Blind (B) = Liking score for the product;

(3) Full information (F) – Blind (B) = Effect of brand on expectations.

This type of quantitative research method is considered to be appropriate for measuring gaps and discrepancies, but psychological effects should be further analyzed using qualitative interviews (involving a study of conducting cognitive dissonance). This is a task for further research.

3.2. Statistical analysis

First, a Paired T-test was performed to examine differences in liking scores between Pepsi and Coca-Cola. Then a means T-test was applied to each difference in information (i.e. (1) E – B; (2) F – B; (3) F – E) to detect significant differences. To interpret how the liking score was affected by brand information, the incongruence indicator was calculated as E – B (Expectation-Blind). If incongruence was found to be $E - B > 0$, this indicated that the brand attribute had affected consumer preferences. Repeated measures ANOVA was used to analyze the effect of brand information on product evaluation. The effect of brand on consumer behavior (the liking score) was estimated as a within subject factor as the means that are tested derive from measurements of the same subject in blind, labeled and full information tests with the product.

3.3. Sample

The experiment was conducted during May-June 2015 using 85 participant surveys on the premises of the European University of Tirana. Only consumers of Coca-Cola and Pepsi were selected, the majority of whom consume these drinks regularly. For the purposes of the study, the participants had different socio-economic characteristics. The sample selection process was appropriate for the characteristics of the study. Individuals usually lack the time to participate in such studies, but as regular, loyal customers who like cola drinks our respondents were open to taking part in the experiment. The sample description is presented in Table 3. The research is not representative due to research sampling method and in terms of sample size.

Table 3.
Tabulation of independent variables
Source: Authors' construction based on survey results (N=85)

Variables	Description	Mean	Mode	Sd
Gender	1 males, 2 females	-	2	-
Age categories	18-24, 25-34, 35-44, 45-54, 55-64, 65+	1.8	1	0.8
Educational level	1=1-4 years; 2= 8 years; 3= 8-12 years; 4=university degree 5= post university	4	4	0.7
Marital status	1=married 2=single 3=Other (divorced)	-	1	-
Income EUR/monthly	1=10000-30000 ALL 2=30001-60000 ALL 3=60001-90000 ALL 4=90001-120000 ALL 5=120001+	4.4	6	1.2
Frequency of consumption/ week	1=1-3 2=3+ 3=0	1.8	2	0.7

4. Results and main findings

A means T-test was conducted for each differential of information: (1) (Expectation – Blind); (2) (Full – Blind); (3) (Full – Expectation). As expected, a statistically significant ($p<0.01$) difference between Expectation and Blind was detected, meaning that the information about the brand was important in the consumer evaluations. Paired comparison in blind conditions between Coca-Cola and Pepsi did not show a significant effect (difference mean = -0,153; t(value) = -0.858; p(value) 0.393), thus participants did not differentiate between the two products in terms of their sensorial evaluation. Further paired comparison with brand information indicated the significant effect of brand information on consumer preferences (difference mean = -0.694; t(value) = 4.420; p(value) 0.000). Finally, in full information conditions there were no statistically significant differences among

the liking scores for the two brands (difference mean = -0.094; t(value) = -0.591; p(value) 0.556).

A repeated measures ANOVA was conducted to evaluate the null hypotheses that there would be no change in participant liking scores in the blind, labeled and full information tests for Pepsi and Coca-Cola.

The results of the ANOVA indicated a significant information brand effect for Coca-Cola (Wilks Lambda=0.8; F(7.532); $p<0.001$) offering strong evidence for rejecting the null hypotheses of equality of liking scores in blind, labeled and full information tests (Table 4). Follow-up comparisons indicated that two differences were significant in the pair comparisons. The label test indicated higher scores for the labelled product than its blind counterpart, showing the effect of brands on product evaluation. Meanwhile, the mean score for Coca-Cola in the full information test was lower than the label test, significant at ($p<0.05$), showing the effect of the brand on sensory expectation as reflected in consumer preferences. Product liking scores in full information conditions were lower than those awarded in the brand test.

Table 4.
Liking scores in three information conditions for Coca-Cola
Source: Authors' construction based on survey results

	Mean	**Std. Deviation**	**N**
Blind Coca-Cola	3,35	1,152	85
Brand Coca-Cola	3,86	1,104	85
Full Coca-Cola	3,58	1,004	85

Repeated measures ANOVA for Pepsi show the significant effect of brand in consumer preferences (Table 5). Wilks' Lambda value F(13.879), p value<0,0001, indicates that the null hypotheses that there is no change in liking scores in the three test conditions should be rejected. Follow-up comparisons indicated that with brand information participants decreased their mean score from 3.5 to 3.1 ($p<0.01$) in the label test. Comparison between full and blind test conditions does not reveal a significant effect at $p<0.05$. This indicates that even though consumers expressed higher liking scores for Pepsi in the blind tasting, the brand name had a significant effect on consumer preferences.

Table 5.
Liking scores in three information conditions for Pepsi
Source: Authors' construction based on survey results

	Mean	Std. Deviation	N
Blind Pepsi	3,51	1,109	85
Brand Pepsi	3,16	1,045	85
Full Pepsi	3,67	1,073	85

The second part of the analysis deals with the differential (Full-Blind) of consumers' evaluations. This differential is important in our analysis because it shows if assimilation occurred. Assimilation is absent when liking scores given during full information conditions are the same as those offered during blind conditions (i.e. there is no effect for brand in the overall evaluation of the product). This difference is not statistically significant. Liking scores decrease compared to in the first step of our analysis (E – B). The explanation is that participants like Coca-Cola less than they expected to (i.e. less than average consumer expectation). The third differential (F – E) or disconfirmation shows if assimilation or contrast is partial or complete. When this differential equals zero it means that assimilation or contrast is complete. The liking scores for Coca-Cola decreased in full information conditions, showing that the product did not meet expectations.

The results do not support the hypotheses: H1 is unsupported because the favored drink does not match the favored brand. Coca-Cola was the favorite in relation to brand association, but its taste was not the most preferred. Higher perceived quality was associated with the most preferred brand, which outcome does not support H2. Consumers were less satisfied with Coca-Cola in the full information situation, so H3 may also be rejected. In the case of Pepsi, the liking scores for blind tests were higher, although the brand name is less well liked than Coca-Cola among test participants. Results in full conditions compared to blind tests show that the brand does not interfere with perceived quality, since scores in the blind situation were not statistically different to scores awarded in full information conditions. In the case of Pepsi, taste dominates in product evaluations, while the Coca-Cola brand has a higher effect on perceived product quality.

5. Conclusions

The assimilation-contrast approach was used in the research described in this paper to evaluate the role of brands in perceptions about products in the case of two soft drinks. The 'disconfirmation' of taste (E-B) reveals the informational value of brand information. Consumers scored the Coca-Cola brand higher than the Pepsi brand. In sensory testing, participants gave the same scores to both

products. Results of pair comparisons in full information conditions show that consumers did not significantly differentiate in their evaluation of the tested products. This approach can be used in further research into the brand equity evaluation process and brand management. Even though participants did not indicate a preference for one of the two brands during the blind tasting process, liking scores increased when the Coca-Cola brand was evoked. This may have happened because Coca-Cola was introduced to Albanian consumers before Pepsi, and also because the Coca-Cola brand is associated with a specific and desirable way of being through its link to social status.

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