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# Econometric modelling of the consumer's behaviour in order to develop brand management policies

Corina Rădulescu and Oana Simona (Caraman) Hudea

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## ABSTRACT

Assuming that the value of a powerful brand lies in its capacity to decrypt the consumers' preference and fidelity, we undertake, in the present study, to analyse the important criteria used when selecting a shampoo brand, to outline the profile of such products and to capture the dependence of the endogenous variable (the shampoo brand selected by consumers), on the exogenous variables (*Product characteristics, Personal experience, Brand and Price*) that the consumer had in view when deciding to purchase an optimum product. This paper, based on multiple regression equations, outlines the direction and intensity of the dependence, using data arising from an opinion poll, covering an 8-year period, carried out on an average population of 8921 individuals. In essence, the present application reveals, an appropriate method for acquiring a higher market share, to its largest extent, the orientation towards consumer and product, price being a subsidiary instrument, specific only to companies trying to maintain themselves in the market. In contrast, a leader, a challenger or a pursuing company should be highly flexible, ready to continuously adapt their brand to the ever-changing consumers' needs.

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L66; M31

## 1. Introduction

The brand of a company does not exist alone, but as a combination of three equally important images: the image created by the firm, the image transmitted or the translation via means of communication (publicity, media relations, public relations, the internet) of the desired image and the perceived or subjective image – reflecting the opinion of the organisation by various target groups (Jezéquel and Gérard, 2012). The difficulty exists in the coherence of these three images, and the main purpose of the management of the image, in particular of the brand management policy, aims in this trial to bring the three layers of the image closer in order to reduce the gap existing between reality and perception and to allow a better sale of products. The result of the three images combining represents the real image of the company (the identity).

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Given that the perceived image is a feedback (providing legitimacy) and a reference point for the created image, in this paper, we undertake to analyse the criteria deemed important by the consumer when choosing a shampoo brand and classify those criteria to be considered when formulating brand management policies. We will outline the profile of such products and we will classify the shampoo brands depending on the related preferences. Beyond a primary data analysis, we will reveal the dependence of the endogenous variable, represented by the shampoo brand selected by consumers, on the exogenous variables (*Product characteristics, Personal experience, Brand and Price*) reflecting the criteria used by the consumer when deciding to purchase an optimum product.

## 2. Literature review

The brand management policies provide support for the trade policy of a company, in addition to other sub-policies: clientele, product, price, distribution, sales and promotion (Strebinger, 2014). Given the above-mentioned, they should be permanently adapted to the profile of the target group, to product, price, distribution and promotion.

A brand management policy should consider the brand resonances and notoriety to the customers (Joly, 2008) and to supply answers to questions such as: What is the psychological life stage of the image of the brand? What are the necessary investments related to the current brand? Should we modify it or should we create a new one? What is the company image, its identity?

Companies adopt four major types of brand management policy depending on the answer to these questions (Lianu, 2010): the trade mark and the company image form a whole; the main brand is divided into sub-brands or labels; the company image aims to support the product brands which are traded (for instance, Activia) and the company image has no relevance for consumers (for example: we know Rexona and Dove, but we are not familiar with the company image – Unilever).

The old marketing concept finds its correspondent in a rational communication based on product and on its physical characteristics, while the new marketing concept determines any organisation to change its discourse, by introducing communication based on emotional arguments (Fischer-Buttinger and Vallaster, 2011). In this respect, the brand role, as communicational vector, becomes essential.

As revealed by Petek and Ruzzier (2013) past knowledge about a brand was not consistent with the new one, the former ignoring brand relationships and brand experiences as building blocks.

By resorting to advertising, past experience and other similar influencing factors, a brand can develop attachments and associations existing over and beyond the objectively perceived product (Keller and Lehmann, 2006), it being built on attributes without inherent value (Broniarczyk and Gershoff 2003). The 'brand equity' group of terms, consistently approached by Davcik, N. (2008), is very suggestive in this context, it being defined by Temporal (2002) as the descriptive facets of a brand where symbols, imagery, consumer's associations and perceptions are highly important.

Considering such an old-new brand-related mix of visions, the most complete and, therefore, appropriate analysis of the latter normally involves the study of various elements impacting on the consumer from this double perspective, like: *product characteristics, information from publicity, personal experience* and so on.

But what exactly do we understand by brand? The trade mark ‘designates any sign serving to distinguish the products of a company or of an organisation from the ones of the competition.’ (Haineş, 2010). It can be represented by a linguistic sign (the creator’s name: Chanel, Renault, etc.), initials (B.P., I.B.M., B.N.R., etc.), a creation with evoking powers (Laguna), a combination of letters and figures, a word existing in the local language or in another language (Apple, Orange, etc.), or it can take the form of a visually attractive figurative sign, associated or not with a name (Shell/shell, Lacoste/crocodile etc.).

Concomitantly, the brand can be defined as a virtual concept, existing only in the consumer’s mind, a bundle of representations – images and emotions, providing added value to the product or service (Libaert and Westphalen, 2009; Libaert, 2009).

Being at the same time a graphical and a virtual representation, we should distinguish between product brand, brand image and company image.

The term with the highest level of generality is that of company image. This – in its pure form – concerns the identity, the creation in the consumer’s consciousness of an organisational representation clear enough to distinguish from the trade mark images (Giully, 2010). The company image is made of a series of phenomena meant to structure the organisation personality: all types of communication (product, B to B, financial, influential, institutional, of acceptance, sensitive, of recruitment, of proximity, internal, international, public, sustainable development-related), the economic performances, the visual identity, the quality, the cost of the product and the consumer’s level of trust in it, the organisational culture and the social contribution of the organisation to the community to which it belongs. The company image should be analysed in terms of vision, culture, positioning, personality, relationships and presentation (de Chernatony and Harris, 2000), communication, visual identity, behaviour, corporate culture and market conditions (Melewar and Jenkins 2002), structure, design, strategy (positioning and differentiation), culture (mission, vision, values), behaviour, communications and industry identity (Melewar and Karaosmanoglu, 2006), positioning, culture and vision, personality, presentation, relationships (de Chernatony, 2010), benefits, mission, vision, values, distinguishing preferences, personality, experiential promise, emotional value, functional value and stakeholders (Konecnik Ruzzier and de Chernatony 2013), these representing the building blocks of the most commonly used specific models, as outlined by Petek and Ruzzier (2013).

The company reflects, first of all the charisma, the management philosophy, the culture, the leadership, the creativity, the courage and the farsightedness of those who created it or manage it, as well as the aspirations, attitudes, accomplishments and level of satisfaction and adhesion of its employees. It is appreciated depending on its economic performances, for the quality and cost of its products and services, on its integrity and, finally, on its social and community involvement (Morell, 2012).

The company image is the set of perceptions/representations/ideas of its customers, created around four axes: the reputation, the values, the personality and the identity of the company. It concretises the consumer’s opinion of the character and personality of the institution (Joly, 2009)

The brand image – has a literal meaning (the graphical representation of the qualities which an organisation assumes – instruments of visual identity) and a figurative meaning (the capital image of the company or a series of opinions contributing to the assessment of a company). For such reasons, the brand image is complementary to the company image. The brand image can be based on a product characteristic or on the good reputation of the

company manufacturing it, for instance: Adidas, Nivea, etc. The brand image of a product depends on the personality assigned to it by the organisation. At the same time, for the brand image to be powerful, the product beyond the brand should be original in quality, presentation and content (Joannès, 2009). Therefore, the brand image comprises the trade mark and the company image (the identity).

The trade mark refers to the graphical signs allowing the differentiation of the company from its competitors. The product image or the product brand is the image created by the product via its intrinsic qualities (Cărămidă, 2009). The trade mark and the brand image sometimes overlap. The products themselves can create an image that overlaps other types of image.

All terminological specifications rendered above make us think that brands exist, to a large extent, in the consumers' mind. Thus, Kotler and Armstrong (2008) outline that:

The market brands are more than simple names and symbols. The brands represent the consumers' perceptions and conceptions regarding a product and its performance – everything embodied by a product or service and perceived at the consumers' level. The true value of a powerful brand is given by its capacity to capture the consumers' preference and fidelity

But how could we transpose, in a pertinent manner, such perceptions and conceptions into real life, so as to allow the identification of the mechanisms necessary to any company to act properly so as to strengthen its position in the market?

Different models, like A.I.D.A. (Awareness-Interest-Desire-Action), Young and Rubicam's, B.A.V. (Brand Asset Valuator), W.P.P.'s Brand Z (Power, Premium and Potential) or Research International's Equity Engine (Customer – own Brand distance minimisation vs. Customer – competitors' Brand distance maximisation), to mention just few, were put in place, over time, by researchers dedicated to the study of consumer's complex behaviour.

However, while considering the important aspects suggested in this respect by the existing models, for the purpose of capturing the overall image of the studied issue, at an application level we decided to build a different, simple model of our own, its main advantage being related to the selection of the component variables based on the exclusive considerations of a large number of consumers belonging to various environments, with different levels of education, occupation, civil status, gender or age, this being tremendously relevant in the context of identifying behavioural patterns.

### 3. Research methodology

In order to identify the brand management policies necessary to be implemented by companies, as an essential component of their business strategy, we resorted to outlining and analysing the consumer's profile. We decided to make use of such an approach considering the connotations associated with brands by Kotler and Armstrong (2008) – 'consumers' perceptions and conceptions regarding a product and its performance – everything embodied by a product or service and perceived at the consumers' level'. Therefore, the applied research mainly captures the position which any company should adopt, as a reaction to the customers' attitude relating to the products provided by it.

The study is based on data concerning the options of consumers for miscellaneous shampoo brands and the criteria deemed important by the customers in choosing a branded product. The related data were obtained based on a grounded opinion poll, covering an 8-year period, between the years 2006 and 2009 and 2011 and 2014, carried out by B.R.A.T.

(The Romanian Audit Agency Transmedia), on an average population of 8921 individuals. It should be mentioned that certain elements were eliminated from the analysis so as to render the information provided for the entire period of reference uniform (Figure 1).

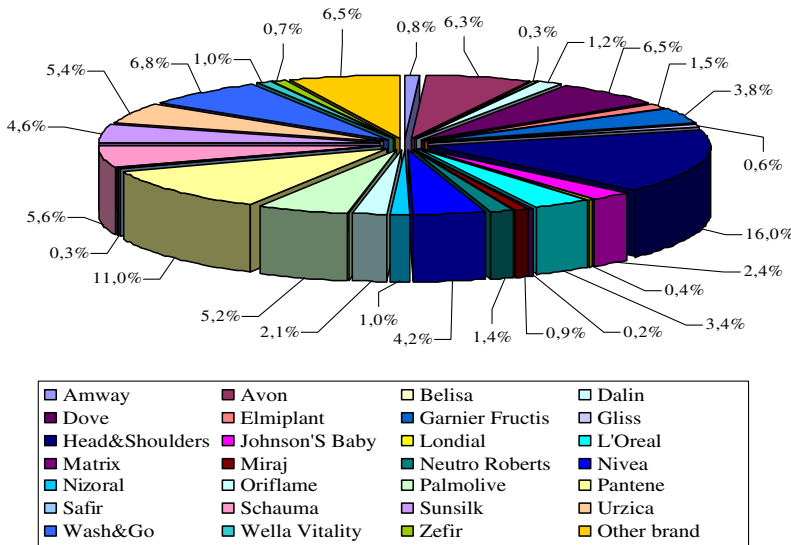
The graph below expresses, in percent, the proportions of respondents having opted for one variant or another. They were selected, for an improved representation, both from men and women, with ages ranging from 14 to 64 years, married / unmarried or other civil status, with various educational levels and occupations, coming from: Bucharest, Banat, Crisana, Dobrogea, Moldavia, Walachia, Oltenia and Transylvania.

An essential element of the opinion poll, beside the rendering of several basic issues helping with the identification of the respondents' specific characteristics, is represented by the answer to the question relating to the important criteria used when orienting towards one shampoo brand or another, therefore creating the premises for decrypting the consumer's profile.

In the present paper, we undertake, beyond a primary data analysis, to capture the dependence of the endogenous variable, represented by the shampoo brand selected by consumers, on the exogenous variables reflecting the criteria had in view by those consumers when deciding to pursue the acquisition of an optimum product.

All data relating to the variables considered within the regressions are expressed as the proportion of the total number of respondents, for each and every year of analysis, therefore facilitating the interpretation of the results obtained, even if the variables are not used in logarithm. In this case, the increase with one unit of any explanatory variable induces the modification of the explained variable, in the same direction or in the opposite one, with a number of units which can be expressed, at interpretative level, as a percentage.

Previously to the regressive analysis of variables, the non-stationary variables were subject to a stationary rendering process, via differentiation, mainly of first order, the same being subsequently called with the prefix d\_ for each computed difference.



**Figure 1.** Preferences of consumers for miscellaneous shampoo brands (%). Source: Representation obtained in Excel by the authors.

Given the annual frequency of data and the relatively low number of years covered by the opinion poll, which provided us with just 8 observations for our variables, we had to reduce the number of exogenous factors considered when implementing each regression equation. Also, the restraint number of observations imposes some reserves as to certain econometric results.

We end the methodological presentation by specifying the fact that the empirical analysis was conducted based on the Microsoft component Excel 2003 and on the econometric software Eviews 7.0.

#### 4. Results and discussions

Hereinafter we give a preliminary analysis of the data, outlining, for each captured variable, the median, the minimum and maximum values, as well as the four specific moments: mean, standard deviation, skewness and kurtosis (Table 1).

According to the information provided by Table 2, the variables referring to shampoo brands, rendered as a proportion of the total number of respondents, presents quite a low standard deviation, of between 0.001, for *Safir*, and 0.104, for *Head&Shoulders*, therefore revealing the persistence of the consumption customs of the population concerned.

As for the skewness, it proves to be characteristic to all analysed variables, none of them having a zero coefficient. Overall, the asymmetry is bilateral, the negative one (skewness < 0) being specific to the variables *Amway*, *Dove*, *Elmiplant*, *Gliss*, *Head&Shoulders*, *Johnson's Baby*, *L'Oreal*, *Nivea*, *Safir*, *Schauma* and *Wash&Go*, and its positive counterpart (skewness > 0) to the rest of brands.

The kurtosis indicates to us a distribution close to the normal one for the shampoo brand *Amway*, a platykurtic distribution (kurtosis < 3) for most of the variables and a leptokurtic distribution (kurtosis > 3) for the *Nivea*, *Urzica* and *Wella* shampoo brands, the latter having a probability of extreme values superior to other variables.

Given the values of these last two coefficients for all variables designating shampoo brands, we draw the conclusion that there is no normal distribution. However, their distribution can be approximated by a normal distribution, reflected by the Jarque-Bera test. As the probability associated with the test is superior to the significance level selected (1, 5 or 10%), our variables oscillating between 0.319, for *Wella*, and 0.861, for *Londial*, the null hypothesis, reflecting the distribution normality, is accepted.

The same analysis also applies to the criteria deemed important by consumers when choosing the preferred brand.

In this case too, the standard deviation is very low for all eight criteria, oscillating between a minimum of 0.009, for *Recommendation of sellers*, and a maximum of 0.032, for *Recommendation of acquaintances*, therefore reflecting the consumers' constancy relating to the influencing factors finally impacting on the acquisition and consumption of the related branded products, for the analysed period.

The distribution is almost symmetric and slowly positive for the variables *Personal experience* and *Price*, almost symmetrical and slowly negative for the variable *Brand*, respectively positive or negative for the remainder of variables.



**Table 1.** Descriptive statistics of the variables denoting shampoo brands.

	Amway	Avon	Belisa	Dalin	Dove	Elmiplant	Garnier_ Fructis
Mean	0.023979	0.166577	0.007595	0.033151	0.199103	0.042688	0.140528
Median	0.024296	0.165073	0.006992	0.031650	0.196127	0.042907	0.138506
Maximum	0.027712	0.208495	0.011783	0.046243	0.217233	0.049466	0.165792
Minimum	0.019283	0.137573	0.004285	0.023793	0.178076	0.035229	0.123027
Std. Dev.	0.002501	0.023027	0.002541	0.007213	0.014891	0.005536	0.014828
Skewness	-0.494006	0.523690	0.300264	0.712582	-0.011019	-0.077362	0.411321
Kurtosis	2.912084	2.513922	2.000156	2.535585	1.626021	1.500184	1.970748
Jarque-Bera	0.327966	0.444425	0.453441	0.748924	0.629435	0.757796	0.578700
Probability	0.848757	0.800745	0.797144	0.687659	0.729995	0.684616	0.748750
Obs.	8	8	8	8	8	8	8

	Gliss	Head_ Shoulders	Johnson_s_ Baby	L_Oreal	Londial	Matrix	Miraj
Mean	0.045289	0.428164	0.056893	0.140648	0.010661	0.008727	0.017662
Median	0.048931	0.441034	0.058308	0.143775	0.010158	0.008304	0.016464
Maximum	0.061457	0.533901	0.078974	0.159542	0.015896	0.013081	0.028868
Minimum	0.021679	0.309236	0.035972	0.114257	0.006089	0.005309	0.010827
Std. Dev.	0.014005	0.104708	0.015098	0.016454	0.003043	0.002725	0.005820
Skewness	-0.522270	-0.067970	-0.032026	-0.540394	0.403273	0.226473	0.801479
Kurtosis	2.030401	1.101506	1.699829	1.934611	2.507925	1.842820	2.736696
Jarque-Bera	0.677062	1.207586	0.564849	0.767719	0.297551	0.514741	0.879602
Probability	0.712817	0.546734	0.753953	0.681227	0.861762	0.773082	0.644165
Obs.	8	8	8	8	8	8	8

	Neutro_ Roberts	Nivea	Nizoral	Oriflame	Palmolive	Pantene	Safir
Mean	0.029935	0.227811	0.026497	0.062967	0.151044	0.257606	0.008837
Median	0.028340	0.230494	0.025632	0.062077	0.148298	0.244911	0.009485
Maximum	0.047561	0.280221	0.033735	0.074144	0.172215	0.367658	0.010449
Minimum	0.019621	0.139697	0.019396	0.052893	0.135769	0.172418	0.005610
Std. Dev.	0.009758	0.042197	0.005032	0.007724	0.012351	0.079839	0.001754
Skewness	0.593336	-0.991276	0.377077	0.138930	0.474376	0.176978	-0.936424
Kurtosis	2.206751	3.603445	2.061502	1.621043	2.143104	1.294890	2.423125
Jarque-Bera	0.679145	1.431553	0.483175	0.659576	0.544801	1.010895	1.280114
Probability	0.712075	0.488812	0.785380	0.719076	0.761549	0.603236	0.527262
Obs.	8	8	8	8	8	8	8

	Schauma	Sunsilk	Urzica	Wash_Go	Wella	Zefir	Other brand
Mean	0.168249	0.082978	0.132248	0.223791	0.023653	0.016486	0.234355
Median	0.168099	0.068775	0.125959	0.227766	0.023397	0.014434	0.232168
Maximum	0.188254	0.153744	0.178631	0.254962	0.033072	0.024002	0.252797
Minimum	0.146707	0.026838	0.109958	0.189811	0.019170	0.013127	0.216138
Std. Dev.	0.015850	0.054022	0.022214	0.023076	0.004365	0.003955	0.015331
Skewness	-0.039062	0.253416	1.169478	-0.103973	1.233839	0.908260	0.065763
Kurtosis	1.350540	1.323212	3.387887	1.785398	3.864623	2.437218	1.295961
Jarque-Bera	0.908940	1.022832	1.873723	0.506167	2.279003	1.205489	0.973683
Probability	0.634784	0.599646	0.391856	0.776403	0.319979	0.547307	0.614564
Obs.	8	8	8	8	8	8	8

Source: Data processed in Eviews by the authors.

The kurtosis is less accentuated, revealing a platykurtic distribution for the variables *Personal experience*, *Brand*, *Special offer*, *Price* and *Recommendation of acquaintances*, and a leptokurtic one for the variables *Product characteristics*, *Information from publicity* and *Recommendation of sellers*.



**Table 2.** Descriptive statistics of the variables denoting shampoo brand selection criteria.

	Product_ charac	Pers_exp	Info_ publicity	Brand	Special_ offer	Price	Recom_ acquaint	Recom_ sellers
Mean	0.597239	0.645742	0.253696	0.612276	0.356583	0.647076	0.280761	0.185241
Median	0.594645	0.645532	0.256917	0.615636	0.357273	0.646189	0.277606	0.186547
Maximum	0.626931	0.671967	0.262783	0.646594	0.383288	0.692603	0.330627	0.196660
Minimum	0.580135	0.622947	0.227645	0.582632	0.321314	0.602279	0.238079	0.165376
Std. Dev.	0.013271	0.019890	0.011219	0.021545	0.021165	0.031976	0.032662	0.009649
Skewness	1.369473	0.055815	-1.783545	-0.066180	-0.309724	0.030598	0.224794	-0.968544
Kurtosis	4.546813	1.300908	4.849867	2.148270	1.892508	1.683247	1.692773	3.404635
Jarque- Bera	3.298151	0.966458	5.382048	0.247655	0.536751	0.579195	0.636991	1.305348
Probability	0.192228	0.616789	0.067811	0.883532	0.764621	0.748565	0.727242	0.520652
Obs.	8	8	8	8	8	8	8	8

Source: Data processed in Eviews by the authors.

As in the case of the shampoo brand variables, the skewness and kurtosis coefficients do not indicate a normal distribution, but the Jarque-Bera test allows the approximation of the distribution of variables denoting brand selection criteria with the normal distribution, the only case when the distribution normality hypothesis is rejected being the one of *Information from publicity*, for which the test associated probability, of 0.067, is lower than 10% significance level.

The second step is represented by the testing of the unit root for the analysed variables, by means of the one lag A.D.F. (Augmented Dickey Fuller) test, without trend and intercept, the non-stationary variables being subject, where applicable, to the first or second order differentiation (Table 3).

As we can see, several variables are stationary in their initial form, namely *Dalin*, *Miraj*, *Pantene*, *Sunsilk* and *Wella*, at a significance level of 5%, *Johnson's Baby* and *Neutro-Roberts* respectively, at a significance level of 1%. The remainder of variables are rendered stationary by mainly resorting to the first order differentiation, the second one being necessary exclusively for *Gliss*, at a significance level of 5%, and for *Zefir*, at a significance level of 10%, as in Table 4 below.

As for all variables denoting shampoo brand selection criteria, the stationary rendering process implies the first order differentiation, at significance levels of 10%, 5%, respectively 1%.

Once the stationary rendering process ended, we proceeded to the construction and analysis of the regression equations, having as the main purpose the identification of the relationship established between the variables concerned, both from the perspective of the sense of influence and from the one of its intensity.

Given that, after differentiation, certain variables remained with only six observations, we had to reduce the number of exogenous factors considered to four. In this context, we called the principle of relevance for the shampoo brand selection criteria included in regressions, the first four, in the order of their importance, according to the graphical representation and to the related percents, captured in Figure 2, being represented by the variables *Price* and *Brand*, denoted as such, *Personal experience* (denoted as *pers\_exp*), and *Product characteristics* (denoted as *product\_charac*).

Concerning the shampoo brands, analysed endogenously, we resorted to their split into three categories, depending on the position in the preferences of consumers, represented by the respondents to the questionnaire.

Therefore, we obtained, according to Table 5, three categories: first a class comprising shampoo brands having succeeded in attracting more than 5% of the interviewed individuals, a medium class with shampoo brands wanted by between 1% and 5% of subjects, and a third class of shampoo brands for which less than 1% of respondents have opted.

**Table 3.** Stationary rendering process for the variables denoting shampoo brands.

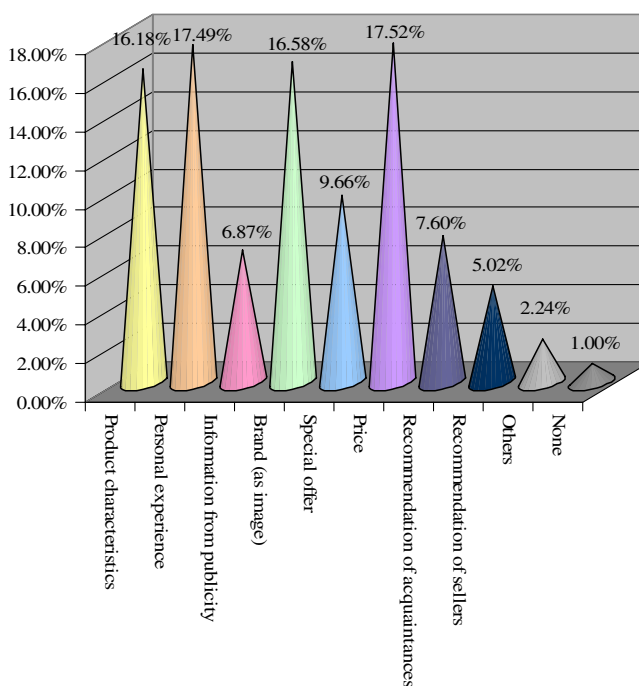
Variable	Level	1st order difference	lnd order difference
<i>Amway</i>	-0.410889 (0.4973)	-2.69450 (0.0182)**	-
<i>Avon</i>	-0.930224 (0.2799)	-3.394904 (0.0056)***	-
<i>Belisa</i>	-1.109931 (0.2169)	-2.344980 (0.0293)**	-
<i>Dalin</i>	-2.510669 (0.0221)**	-	-
<i>Dove</i>	-0.696223 (0.3793)	-3.248240 (0.0083)***	-
<i>Elmplant</i>	-0.618056 (0.4140)	-3.229003 (0.0085)***	-
<i>Garnier-Fructis</i>	-0.199892 (0.5788)	-3.256616 (0.0068)***	-
<i>Gliss</i>	1.876779 (0.9708)	-1.463760 (0.1248)	-2.596735 (0.0210)**
<i>Head&amp;Shoulders</i>	-1.100594 (0.2200)	-2.448927 (0.0244)**	-
<i>Johnson's Baby</i>	-3.703318 (0.0030)***	-	-
<i>L'Oreal</i>	0.476473 (0.7894)	-1.900738 (0.0608)*	-
<i>Londial</i>	-1.268414 (0.1706)	-2.175060 (0.0385)**	-
<i>Matrix</i>	0.330992 (0.7521)	-2.523266 (0.0234)**	-
<i>Miraj</i>	-2.133557 (0.0399)**	-	-
<i>Neutro-Roberts</i>	-2.971712 (0.0094)***	-	-
<i>Nivea</i>	1.134965 (0.9132)	-3.449699 (0.0052)***	-
<i>Nizoral</i>	-1.225638 (0.1795)	-4.437369 (0.0014)***	-
<i>Oriflame</i>	-0.580280 (0.4306)	-2.292680 (0.0341)**	-
<i>Palmolive</i>	-1.555801 (0.1075)	-1.625839 (0.0955)*	-
<i>Pantene</i>	-2.021744 (0.0487)**	-	-
<i>Safir</i>	-0.677727 (0.3817)	-3.770409 (0.0033)***	-
<i>Schauma</i>	-1.315548 (0.1583)	-1.895514 (0.0613)*	-
<i>Sunsilk</i>	-2.820524 (0.0122)**	-	-
<i>Urzica</i>	0.013743 (0.6479)	-2.066713 (0.0463)**	-
<i>Wash&amp;Go</i>	0.477597 (0.7897)	-2.088543 (0.0446)**	-
<i>Wella</i>	-2.635011 (0.0166)**	-	-
<i>Zefir</i>	0.504124 (0.7909)	-1.167638 (0.1958)	-2.028724 (0.0514)*
<i>Other brand</i>	1.274708 (0.9253)	-4.392505 (0.0015)***	-

The probabilities are written in parentheses. \*\*, \* and \*\*\* represent the 10%, 5%, respectively 1% significance level. Source: Data processed in Eviews by the authors.

**Table 4.** Stationary rendering process for the variables denoting brand selection criteria.

Variable	Level	1st order difference
<i>Product characteristics</i>	0.053431 (0.6615)	-0.247797 (0.0018)***
<i>Personal experience</i>	0.983984 (0.8923)	-1.872945 (0.0636)*
<i>Information from publicity</i>	-0.201799 (0.5718)	-4.355741 (0.0015)***
<i>Brand</i>	0.616400 (0.8234)	-2.763496 (0.0146)**
<i>Special offer</i>	1.591434 (0.9515)	-3.264227 (0.0067)***
<i>Price</i>	0.725841 (0.8463)	-2.565340 (0.0202)**
<i>Recommendation of acquaintances</i>	0.638199 (0.8282)	-3.112984 (0.0085)***
<i>Recommendation of sellers</i>	-0.203240 (0.5713)	-4.326802 (0.0016)***

The probabilities are written in parentheses. \*\*, \* and \*\*\* represent the 10%, 5%, respectively 1% significance level. Source: Data processed in Eviews by the authors.



**Figure 2.** Important criteria for consumers when selecting a brand (%). Source: Representation obtained in Excel by the authors.

**Table 5.** Classification of shampoo brands depending on the preferences of consumers.

Head&Shoulders	14.43%	L’Oreal	4.74%	Nizoral	0.89%
Pantene	8.68%	Garnier Fructis	4.73%	Amway	0.81%
Nivea	7.68%	Urzica	4.46%	Wella	0.80%
Wash&Go	7.54%	Sunsilk	2.80%	Miraj	0.60%
Dove	6.71%	Oriflame	2.12%	Zefir	0.56%
Schauma	5.67%	Johnson’s Baby	1.92%	Londial	0.36%
Avon	5.61%	Gliss	1.53%	Safir	0.30%
Palmolive	5.09%	Elmplant	1.44%	Matrix	0.29%
		Dalin	1.12%	Belisa	0.26%
		Neutro Roberts	1.01%		

Source: Data processed in Eviews by the authors.

The purpose of such a classification was to allow the random selection of shampoo brands belonging to each category, to determine their dependence on the above-mentioned criteria and to outline an evolutionary pattern, the rendering and interpretation of all possible regression equations, in this context, being impeded by the limited space specific to any research paper.

We start with displaying the three regression equations extracted, one for each category, the notations of the data series, according to their use in Eviews, being easily assimilable to the said variables:

$$D\_HEAD\_SHOULDERS = C(1) * D\_PRODUCT\_CHARAC + C(2) * D\_PERS\_EXP + C(3) * D\_BRAND + C(4) * D\_PRICE + C(5) \tag{1}$$

$$D\_GARNIER\_FRUCTIS = C(1) * D\_PRODUCT\_CHARAC + C(2) * D\_PERS\_EXP + C(3) * D\_BRAND + C(4) * D\_PRICE + C(5) \quad (2)$$

$$D\_D\_ZEFIR = C(1) * D\_PRODUCT\_CHARAC + C(2) * D\_PERS\_EXP + C(3) * D\_BRAND + C(4) * D\_PRICE + C(5) \quad (3)$$

where:

C(n) – parameter n;

According to the issues specified in the Research Methodology, we can call into question the level of accuracy of certain results, given the low number of observations. However, the examples presented hereinafter, in fact estimations of the model parameters, based on the least square method, offer clear signs of a coherent analysis, able to provide pertinent information in order to allow the development of brand management policies.

By replacing the values of the model parameters in equation (1), we obtain:

$$D\_HEAD\_SHOULDERS = 2.718262629 * D\_PRODUCT\_CHARAC + 6.510911325 * D\_PERS\_EXP + 1.540323572 * D\_BRAND + 0.6120405343 * D\_PRICE - 0.0006044101897$$

Looking at the results rendered in Table 6, generated by the econometric software Eviews 7.0, we ascertain first of all the fact that the regression equation is correctly specified, an issue reflected by the particularly high level, close to its maximum possible value, of R<sup>2</sup> (0.992) and of adjusted R<sup>2</sup> (0.977). Also, the value of the Durbin–Watson test indicates a very low autocorrelation of the model errors, with favourable impact on the relevance of the output obtained, while the F-statistic test reveals, at a significance level of 5%, that at least one of the exogenous variables considered within the regression equation is capable of explaining the behaviour of the endogenous variable.

After the estimation of parameters, based on the least square method, we observe a considerable positive influence of the exogenous variables *Product characteristics*, *Personal experience* and *Brand*, an influence, also positive, but smaller, of the exogenous variable *Price*

**Table 6.** Results of regression equation (1).

Dependent Variable: D_HEAD_SHOULDERS			
Method: Least Squares			
Sample (adjusted): 2007 2014			
Included observations: 7 after adjustments			
Variable	Coefficient	Std. Error	t-Statistic
D_PRODUCT_CHARAC	2.718263	0.431317	-6.302239
D_EXPERIENTA_PERSONALA	6.510911	0.664468	-9.798685
D_BRAND	1.540324	0.683946	2.252114
D_PRICE	0.612041	0.692576	0.883716
C	-0.000604	0.005414	-0.111631
R-squared	0.992528		
Adjusted R-squared	0.977583		
Durbin–Watson stat	2.254347		
Prob(F-statistic)	0.014889		

Source: Output obtained in Eviews by the authors.

and a low negative influence of the intercept on the independent variable representing the *Head&Shoulders* shampoo brand. Therefore, the increase of 1% of the number of individuals considering the *Product characteristics* as an essential criterion in choosing a shampoo brand determines the extension of 2.71% of those acquiring and consuming *Head&Shoulders*, the upward movement of 1% of the number of consumers appreciating the *Personal experience* as important in selecting a shampoo brand generates the amplification of 6.51% of those directing towards the *Head&Shoulders* shampoo brand, and the positive movement of 1% of the number of persons favourably influenced by *Brand* (as image) in their orientation to one shampoo brand or another leads to the ascendant adjustment of 1.54%, of those effectively using *Head&Shoulders*. As for the *Price* variable, the increase of 1% of the number of population for which this represents an important decision factor, at the level of shampoo brands consumed, has an impact on the purchase and consumption of *Head&Shoulders* of 0.61%, allowing for the demand to be analysed, in such a case, in terms of its inelasticity.

At an interpretative level, we could state that the personal experience acquired when using the *Head & Shoulders* shampoo brand is favourable, its characteristics are appreciated by consumers and the brand, by its symbolic and communicational issues, is not without resonance on the decision of individuals to use such a brand.

By extrapolation, the shampoo brands with an increased market share, or, going forward, by generalisation, the product brands being in the top of preferences of consumers, are to a high degree based on the consumers' perception as to the quality of the related products and on the satisfaction generated by such products in consumption, the entitled entities, acting as decision makers, having to take steps, by addressing opinion polls to current and potential customers and, given the same, by developing and improving the company products, so as to strengthen their brand position in the market. The brand (as image) plays a central role in the consumer's orientation towards one product or another, it being an essential component of the brand in its entirety and the first element linking the consumer to the product. Under such circumstances the brand (as image) becomes a defining aspect for the brand as a whole, a respectable producer having to preserve and cultivate it as such. Finally, as for the price, we consider that the result obtained cannot be generalised. Indeed, a product can have a high market share when a reasonable price is practised for it, as in

**Table 7.** Results of regression equation (2).

Dependent Variable: D_GARNIER_FRUCTIS			
Method: Least Squares			
Sample (adjusted): 2007 2014			
Included observations: 7 after adjustments			
Variable	Coefficient	Std. Error	t-Statistic
D_PRODUCT_CHARAC	1.306895	0.172413	7.580010
D_EXPERIENTA_PERSONALA	0.220572	0.265612	0.830428
D_BRAND	0.697099	0.273398	2.549756
D_PRICE	-1.259955	0.276848	-4.551070
C	0.002709	0.002164	1.251457
R-squared	0.971021		
Adjusted R-squared	0.913062		
Durbin-Watson stat	2.665341		
Prob(F-statistic)	0.057119		

Source: Output obtained in Eviews by the authors.

**Table 8.** Results of regression equation (3).

Dependent Variable: D_D_ZEFIR			
Method: Least Squares			
Sample (adjusted): 2008 2014			
Included observations: 6 after adjustments			
Variable	Coefficient	Std. Error	t-Statistic
D_PRODUCT_CHARAC	-0.209983	0.045373	-4.627924
D_EXPERIENTA_PERSONALA	-0.147647	0.047458	-3.111134
D_BRAND	-0.242308	0.071180	-3.404180
D_PRICE	0.377716	0.074670	5.058451
C	-0.000292	0.000556	-0.525424
R-squared	0.971578		
Adjusted R-squared	0.857891		
Durbin-Watson stat	1.535939		
Prob (F-statistic)	0.050485		

Source: Output obtained in Eviews by the authors.

our example, but we also certainly admit the case when the special quality of a product and the utility generated by it at consumption level can make up for the use of a higher price.

By replacing the model parameters in equation (2), based on Table 7 below, we get:

$$D\_GARNIER\_FRUCTIS = 1.306894833 * D\_PRODUCT\_CHARAC + 0.2205720321 * D\_PERS\_EXP \\ + 0.6970991522 * D\_BRAND - 1.259955309 * D\_PRICE + 0.002708563137$$

By replacing the model parameters in equation (3), based on Table 8 below, we get:

$$D\_D\_ZEFIR = -0.2099829483 * D\_PRODUCT\_CHARAC - 0.1476469206 \\ * D\_PERS\_EXP - 0.2423081063 * D\_BRAND \\ + 0.3777158847 * D\_PRICE - 0.0002920045061$$

These last two regression equations also seem to be correctly specified, with  $R^2$  amounting to 0.971 and adjusted  $R^2$  to 0.913, for equation (2), and to 0.971, respectively to 0.857, for equation (3). The value of the Durbin-Watson test indicates, for the same equations, a slowly higher error autocorrelation than in the case of the first regression analysed, yet without destabilising, by this, the models concerned, while the F-statistic test outlines, this time at a significance level of 10%, that at least one exogenous variable considered for each of the two cases can explain the behaviour of the related endogenous variables.

As for the influence of the exogenous variables to the endogenous one, equation (2) manifests similarly to equation (1) from the perspective of the series *Product characteristics*, *Personal experience* and *Brand*; however, with an influence intensity visibly diminished, the increase of the number of adepts of such criteria with 1% determining the extension of those willing to consume the *Garnier Fructis* shampoo brand with 1.30%, 0.22%, respectively 0.69%. Yet, unlike the first regression, *Price* adversely affects the number of consumers, with 1.25%.

In other words, for this shampoo brand too, found in our classification in the upper part of the middle category in relation to the respondents' preferences, the product quality is appreciated, the satisfaction installing on its consumption, and the brand (as image) is well perceived by the target group. However, this time, considering the lower level of parameters, we propose a more sustained policy to attract customers, both by favourable

adjustments of products and by sustained promotional techniques. This last issue is to be taken into account also because the price value suggests a slightly higher average level than the one the consumers would accept to pay for such a product. We admit, in essence, given the significance of the results obtained, that this shampoo brand can be considered as representative for the previously established brand class.

Going to equation (3), the dependence between variables radically changes, all exogenous variables, save for the price, negatively influencing the dependent variable. Thus, the upward modification with 1% of the number of respondents based, in their brand acquisition and consumption decision, on *Product characteristics*, *Personal experience* and *Brand* leads to the decrease of 0.20%, 0.14%, respectively 0.24% of the number of consumers of the *Zefir* shampoo brand. In exchange, *Price* looks like a product strength, the increase of 1% of the individuals focussing on its level generating the extension of 0.37% of such shampoo brand consumers.

In this context, we discuss a survival strategy, the use of low prices being indeed a course of action. Of course, we do not exclude, in this case either, the development of the brand as a whole, but this involves investment, the sustainability of which depends on the investment-related potential of the decision makers.

## 5. Conclusions

Undertaking to prove that a powerful brand consists in its capacity to decrypt the consumers' preference and fidelity, we focused on analysing some important criteria (*Product characteristics*, *Personal experience*, *Brand* and *Price*), considered by the target consumer when selecting a product brand, more precisely a shampoo brand, given their relevance suggested by the consistent opinion poll previously performed.

This study allowed us to identify the position which any company, be it a leader, a challenger or a pursuing company, should adopt, as a reaction to the customers' attitude relating to the products provided by it.

Thus, the shampoo brands with an increased market share are primarily based on the consumers' perception as to the quality of the related products and on the satisfaction generated by consumption of such products, the entitled entities, acting as decision makers, having to take steps, by addressing opinion polls to current and potential customers and, given the same, by developing and improving the company products, so as to strengthen their brand position in the market. Therefore, we talk about resorting to constant product and promotion policies, although it is most important for such well positioned companies to adopt policies oriented towards the understanding of the consumer's preferences, attitudes, overall, towards the creation of the consumer's profile (the third layer of image), and, to a lesser extent, towards the use of communication techniques: publicity, public relations etc. (defined below the second layer of image).

Regarding the shampoo brands positioned in the middle part of the respondents' preferences, we propose a more sustained policy to attract customers, both by favourable adjustments of products, in terms of increased quality and innovation, and by sustained promotional techniques, mainly focussed on sales promotion (consisting of providing incentives like testing samples, promotional gifts, loyalty awards, discounted offers, coupons and so on), on public relations (consisting of a set of activities meant for outlining a desirable image of the company, like publicity materials, special events involving sponsorship or



donations, press conferences and so on) or on sales forces (consisting of sending employees or delegates of the organisation on the spot to maintain a direct dialogue with potential buyers), alternative publicity (consisting of a set of activities that create a desirable image of both product and company, via mass media) being usually conditioned by the need for substantial financial means to be used by the said organisations. Such actions are recommended especially given that the price value suggests a slightly higher average level of the same than the one the consumers would accept to pay for such product, therefore imposing more aggressive product and promotion policies.

As for the less popular shampoo brands, we rather discuss a survival strategy, the use of small prices being one of the most recommended courses of action. Even if we do not exclude the development of the brand as a whole, by product and promotion policies, one should consider that this involves investments, the sustainability of which depends on the investment-related potential of decision makers, the most probable policy being, in this case, the price policy.

In essence, the present application reveals, as an optimum direction for acquiring a higher market share, to its largest extent, the orientation towards consumer and product, the price being a subsidiary instrument, specific to companies only trying to maintain themselves in the market. In contrast, a leader, a challenger or a pursuing company should be highly flexible, ready to continuously adapt its brand to the ever-changing consumers' needs.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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