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# Share of Voice/Share of Market relationships in different types of markets

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**Abstract.**

In this paper we focus on analysing relationships between the share of voice and the share of market for a wide variety of fmcg product categories, in the conceptual framework of John Philip Jones' Advertising Intensiveness Curve. Data used are single-source data. We show, that the general relationship of a relatively larger share of voice for smaller brands and a relatively smaller share of voice for larger brands holds. Furthermore, we analyse how the level of advertising in product categories affect this relationship, and how the level of competition in the product categories alters the Advertising Intensiveness Curve.

**Key words:** Fmcg products, Single-source data, Market types, Share of Voice, Share of Market



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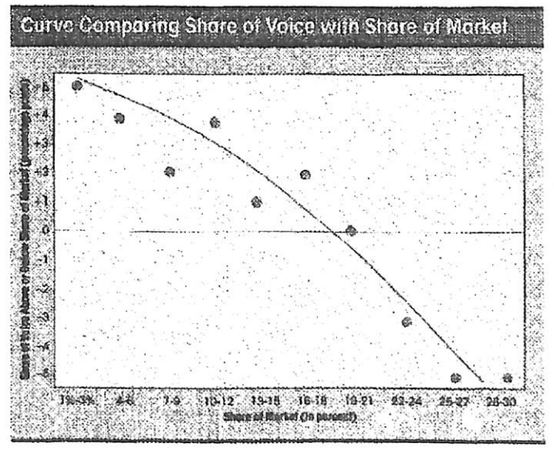
**Background.**

Examining advertising strategy to understand why some brands are successful while other brands are not requires actual data on ad spending and purchasing of brands. These data are available in the Adlab single-source database. It is the purpose of this paper to give evidence to the general theory, that market-leading brands can afford to underspend in advertising, without any significant loss of market share, while new brands and brands that have small market shares have to overspend in their effort to establish themselves in the market place.

**Figure 1. The Advertising Intensiveness Curve.**




Ill.: J.P. Jones: "Ad Spending: Maintaining Market Share, *Harvard Business Review*, January-February 1990, p. 41.

We use the Advertising Intensiveness Curve, developed by John Philip Jones (1990), to assess how brand-marketing strategies are applied with respect to advertising. Subsequently, brands that are small in market share will have a positive Share of Voice – Share of Market, as it is illustrated in figure 1, while brands that have large shares of market will have a negative

Share of Voice – Share of Market. In this paper we intend to shed light on, how different types of markets affect the Advertising Intensiveness Curve. We focus on markets with a high level of voice ctr. markets with low level of voice. We also focus on the way markets are build up – is the market dominated by one or two large brands, or is the market of a more complex type, where competition seems to be more widespread, and how does this affect the Advertising Intensiveness Curve.

**Data.**

The Adlab database is a diary based single-source panel database, originally set up by Carlton Independent Television, and collected in the UK in the period 1985-1990 (Hansen & Hansen 2001). The panel consisted of app. 1,000 households, and data was collected on a week-to-week basis. Usually it was the housewife that filled out extensive diaries on fmcg purchases and media usage. Also in the database are brand specific records on advertising in media, demographic data on the households, and validity of the reported data. In this paper we use data on the purchasing of brands as an indication of share of market, and we restrict our measure of share of voice to TV ads only, disregarding ads in radio and magazines. This is justifiable because the overwhelming part of the spending on advertising in the product categories tends to be on television advertising.

One potential disadvantage with the data that we use is that we cannot say anything about the content of the advertising campaigns of each brand involved. Qualitative data on the types and content of advertising campaigns used are simply not available to us. Therefore, it is not possible for us to assess whether or not a certain campaign is effective or not. What we can say, however, is whether or not there exist market type dependent differences in the need to use advertising in order to keep market shares.



**Method.**

*The Advertising Intensiveness Curve (AIC).*

In order to establish the connection between Share of Voice and Share of Market, first it is necessary to find valid measures for these two shares. Because we deal with fmcg product categories we chose TV advertising as a measure of the Share of Voice. This is justified by the fact that the overwhelming part of the spending on advertising in fmcg brand categories is done on advertising in TV, hence making the number of TV ads a valid indicator of the total spending on ads. If we were to investigate other types of brand categories, it would be prudent to enhance the measure of Share of Voice to other types of advertising, for instance direct mail, spending on B2B advertising, print advertising, etc.

When using single-source data, the straightforward thing to do is to use the actual number of purchases of a particular brand, divide this by the total number of purchases in the product category, and let this be the measure of the Share of Market for the brand. However, this constitutes a rather serious problem, because quite a large number of brands – on average around 60 % – in all the examined brand categories do not advertise, i.e. they have a Share of Voice equal to zero, with a positive Share of Market. By definition, these brands will always have a negative (Share of Voice - Share of Market), indeed they will always be positioned on the same straight line made out by the points (Share of Market; - Share of Market).

The fact that this is the case makes these particular kinds of brands of little or no use to us in the analyses, keeping in mind, that we want to examine the relationship between positive Shares of Voice and positive Shares of Market. Therefore, we adjust the data by effectively removing brands that have "no voice" and constellations of brands that did not have their own brand name in the purchase diary, and subsequently calculate an adjusted Share of Market, where "the market" now consists only of those brands that have positive Shares of Voice. Following this necessary adjustment it is straightforward plotting (Share of Voice-Share of

Market) as a function of Share of Market, and then apply regression analyses to establish a best fit of a function to describe the relationship between Share of Market and (Share of Voice-Share of Market).

**Analysis and results.**

First, to get a general idea of how the Advertising Intensiveness Curve works and what it says of the relationship between Share of Voice (SoV) and Share of Market (SoM), we write the formulae for the AIC, as we find it in these data:

(AIC) $$SoV - SoM = \alpha \cdot SoM + Const$$

From this follows, that

$$SoV = (1+\alpha) \cdot SoM + Const$$

When Share of Market changes, either positively or negatively, the resulting change in Share of Voice becomes:

$$\Delta SoV = (1+\alpha) \cdot \Delta SoM$$

where $\alpha$ denotes the slope of the Advertising Intensiveness Curve, as found in the linear regression analyses of the data.

Because $\alpha$ in general is assumed to be negative we can make a few notes on how the slope of the fitted Advertising Intensiveness Curve influence the need for advertising when share of market is changed. In general, the steeper the slope, i.e. the more negative the $\alpha$, the less you need to gain shares of voice when you gain shares of market. Correspondingly, the steeper the slope of the Advertising Intensiveness Curve, the less possible it is for you to save on shares of voice when you loose market shares.



*Data analyses.*

Our original data from the Adlab database covers 48 different brand categories (for a complete list of categories, see appendix I).

Of the total number of 844 brands in the 48 categories, 530 brands or brand constellations were excluded, due to the before mentioned lack of voice or unclear brand definitions. Left was 314 brands in 45 categories, representing a total number of purchases of 1,017,798, and a total of 154,784 TV ads in the period 1986-1989.

Each brands' Share of Market was calculated, relative to the other advertising brands in the same product category. Figure 2 shows the plot of these 314 brands, and the linear regression best fit of these data.

Table 1 and 2 shows the significance, and the estimates of the coefficients in the linear regression model. As can be seen, the linear regression model explained 34,7 % of the total variance in the data

**Table 1. Model Summary (314 brands in 45 categories)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
| Model | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | ,589 | ,347 | ,345 | 12,08246 | ,347 | 165,580 | 1 | 312 | ,000 | 2,334 |

a Predictors: (Constant), SoM
b Dependent Variable: SoV-SoM

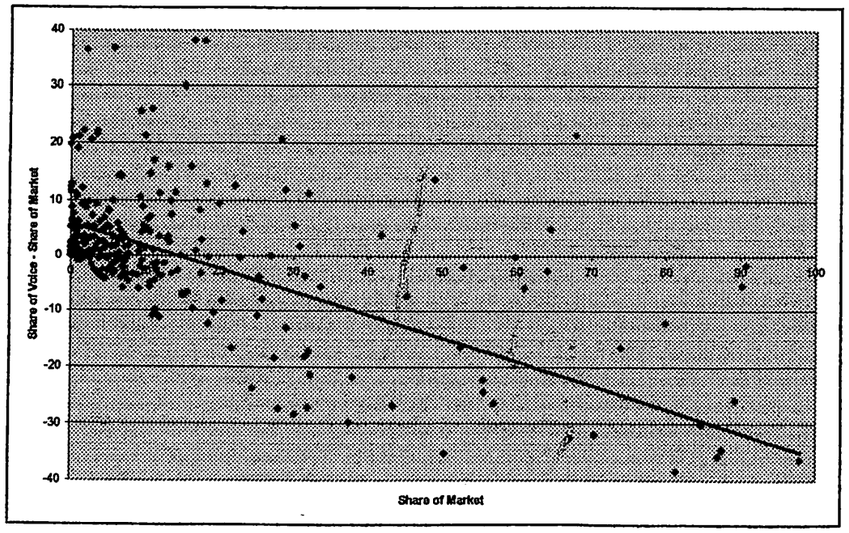
**Table 2. Coefficients**

| | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 5,991 | ,826 | | 7,256 | ,000 | 4,366 | 7,615 |
| | SoM | -,418 | ,032 | -,589 | -12,868 | ,000 | -,482 | -,354 |

a Dependent Variable: SoV-SoM

The regression analysis show, that the relationship between Share of Market and (Share of Voice-Share of Market), proposed by John Philip Jones, indeed also exist in these single-source data on fmcg products. On average, brands with smaller market shares evidently keep a share of voice above their share of market, while brands with larger shares of market in general have relatively smaller shares of voice. Furthermore it shows, that on average a brand should keep a Share of Voice equal to its Share of Market when its market share is around 14 % of the total market related to advertising brands.

**Figure 2. All brands with Share of Voice > 0. Advertising Intensiveness Curve found with linear regression analyses.**




The sensitivity of a change in share of market on share of voice can be calculated as

$$\Delta SoM = 1 \Rightarrow \Delta SoV = (1 - 0.418) \cdot 1 = 0.582$$

This indicates, that an increase of share of market with 1 percentage point should correspond to an increase in share of voice of 0.582 percentage points in order to keep up with the rest of the market.



At the same time a decrease in market share of 1 percentage point corresponds to a decrease in share of voice of – 0.582 percentage points.

*High voice and low voice product categories.*

Our hypothesis is, that the level of voice in a certain product category will influence both the slope and the constant of the Advertising Intensiveness Curve. Therefore we applied a separating rule to the data, in order to determine what can be said to be a high level of voice, respectively a low level of voice.

Among the 45 examined brand categories, the level of voice varied from category to category – the highest level was found in the "breakfast cereal" category, with a total number of TV advertisements of 24,468 in the 4-year period. At the other end of the scale was the product category "packet soup". In this category only 146 TV ads were reported in the total 4-year period. The average number of TV ads in the categories was 3,400. We separated the total brand categories into high voice categories – those above 3,400 TV ads – and low voice categories – those below 3,400 TV ads.

Then we applied standard linear regression to the two new datasets – the results are summarized in tables 3-6, below.

**Table 3. Model Summary, high level of voice**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | ,517 | ,267 | ,263 | 5,86074 | ,267 | 59,079 | 1 | 162 | ,000 | 2,013 |

a Predictors: (Constant), SoM High level of voice
b Dependent Variable: Sov-SoM High level of voice

**Table 4. Coefficients, high level of voice**

| N = 164 | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 2,585 | ,568 | | 4,551 | ,000 | 1,463 | 3,706 |
| | SoM High level of voice | -,303 | ,039 | -,517 | -7,686 | ,000 | -,381 | -,225 |

a Dependent Variable: Sov-SoM High level of voice

**Table 5. Model Summary, low level of voice**

| | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| Model | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | ,634 | ,402 | ,398 | 15,84470 | ,402 | 99,461 | 1 | 148 | ,000 | 2,503 |

a Predictors: (Constant), SoM Low level of voice
b Dependent Variable: Sov-SoM Low level of voice

**Table 6. Coefficients, low level of voice**

| N = 150 | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 10,094 | 1,643 | | 6,145 | ,000 | 6,848 | 13,340 |
| | SoM Lav voice cat | -,488 | ,049 | -,634 | -9,973 | ,000 | -,585 | -,392 |

a Dependent Variable: Sov-SoM Low level of voice

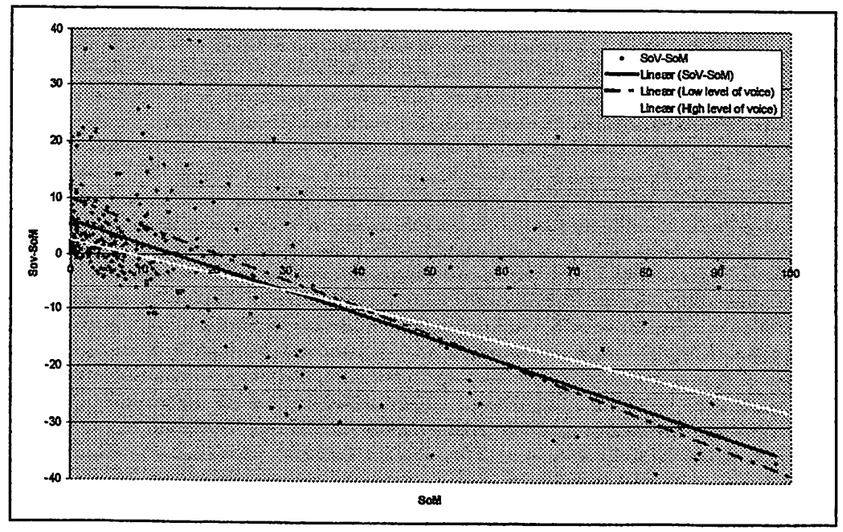
Both models seem to explain a significant amount of the variance in the data sets. 26,7 % of variance is explained in the product categories with a high level of voice, while 40,2 % of variance is explained in the product categories with a relatively low level of voice.

From the coefficients it can be seen, that there are significant differences between the Advertising Intensiveness Curves in the two different types of voice levels. Both the constants, i.e. the intersection of the AIC with the (Share of Voice-Share of Market) axis, and the slopes of the Advertising Intensiveness Curves seem to depend on, whether the market has a high or a low level of total voice.



Figure 3 illustrates how high and low voice respectively alters the position of the Advertising Intensiveness Curve.

**Figure 3. All brands with pos. Share of Voice. Advertising Intensiveness Curves for all brands, high voice, and low voice markets**




The black full line is the linear regression line representing the best fit of the total data set. The white line represents the best fit of the brands in the categories with a relatively high level of voice, while the black dotted line represents the best fit of the data from the categories with a relatively low level of voice.

As noted earlier, a steeper slope of the Advertising Intensiveness Curve indicates both advantages and disadvantages. In this case, the steepest curve arises among the product categories with a relatively low total advertising. The effect of this is, that when a brand increases its share of market in a market with low voice it does not have to increase its share of voice as much as the brand situated in a market with a relatively high voice. In this case, the brand in a low-voice market would have to increase its share of voice with app. 0.51 times the increase in market share – whereas the brand in a high-voice market would need to

increase its share of voice with app. 0.70 times the increase in market share. The reason for this could very well be the fact, that in a high voice type of market it is much more necessary to follow the norm in the market – when the brand increases in market share it must also increase its share of voice to a larger extent than in low voice markets.

This seems to imply, that brands that operate in high voice markets do not have the same opportunities as the brands that operate in less voice intensive markets of making profits from increasing in market share by reducing their advertising budgets.

On the other hand, the fact that the constant is relatively higher in the analysis of the low voice markets seems to imply, that when introducing new brands (which per definition have small market shares) into a low voice market you need to start up on a higher level of voice than in the high voice market.

*Oligopoly and competitive markets*

Turning the focus to the type of competition in markets, we set up a rule to separate the data into two different categories of markets, oligopoly type of markets and competitive type of markets. In our analysis we chose to separate the brand categories in such a way, that an almost equal amount of brands fell into the two categories. Our selection rule for the oligopoly category was, that the two leading brands combined should hold more than 45 % of the total market, including those brands with no voice. The result of applying this rule was, that 27 product categories with a total of 146 brands were classified as oligopoly markets, while the remaining 18 product categories, with a total of 168 brands, were classified as competitive.

Linear regression analyses were carried out on these two new sub-groups of the Adlab database. The result of the analyses is shown in tables 7-10.



**Table 7. Model Summary Competitive markets**

| N = 168 | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|
| Model | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | ,476 | ,226 | ,222 | 11,36494 | ,226 | 48,531 | 1 | 166 | ,000 | 2,328 |

a Predictors: (Constant), SoM competition
b Dependent Variable: SoV-SoM competition

**Table 8. Coefficients Competitive markets**

| | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 4,620 | 1,099 | | 4,203 | ,000 | 2,450 | 6,791 |
| | SoM comp | -,431 | ,062 | -,476 | -6,966 | ,000 | -,553 | -,309 |

a Dependent Variable: SoV-SoM competition

**Table 9. Model Summary Oligopoly markets**

| N = 146 | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|
| Model | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | ,668 | ,447 | ,443 | 12,70701 | ,447 | 116,179 | 1 | 144 | ,000 | 2,289 |

a Predictors: (Constant), SoM oligopoly
b Dependent Variable: Sov-SoM oligopoly

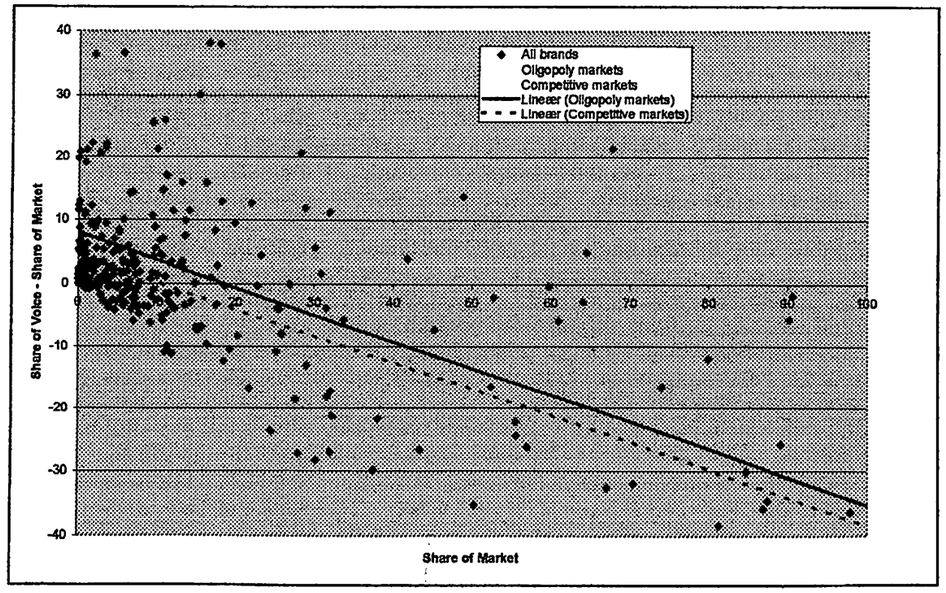
**Table 10. Coefficients Oligopoly markets**

| | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | 95% Confidence Interval for B | |
|---|---|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | | | Lower Bound | Upper Bound |
| 1 | (Constant) | 8,014 | 1,288 | | 6,222 | ,000 | 5,468 | 10,559 |
| | SoM oligopoly | -,433 | ,040 | -,668 | -10,779 | ,000 | -,513 | -,354 |

a Dependent Variable: Sov-SoM oligopoly

Even in this case both models explain significant amounts of the variance, 22,6 % and 44,7 % respectively. Oddly enough there does not seem to be any significant differences in the slopes of the two models, so the two Advertising Intensiveness Curves can be said to be parallel. The difference between the two market types appears in the *level* of the curves. The Advertising Intensiveness Curve for oligopoly markets lies above the one for competitive markets, as can be seen in Figure 4 below.

**Figure 4. All brands with pos. Share of Voice. Advertising Intensiveness Curves for oligopoly and competitive markets**




This indicates some important implications for brands that are situated in oligopoly type of markets. First of all, when new brands are introduced into an oligopoly market they need to hold a higher share of voice than new brands introduced into more competitive type of markets. Secondly, smaller brands in oligopoly markets also need to keep relatively higher shares of voice, perhaps forced to do so in order to compete with the dominating market leaders.

The effect of this is underlined by the fact, that in oligopoly markets on average a brand needs to hold a market share of 18,5 % when share of voice equals share of market, while the same measure for brands situated in competitive markets is 10,7 %.



**Conclusion.**

In this paper we have tried to analyse the relationship between Share of Voice and Share of Market in a wide variety of fmcg product categories, including food products, personal hygiene products, detergents, and others (see appendix I). First of all we have established, that the relationship proposed by John Philip Jones exist among the brands included in these data. In general, larger brands do indeed hold a smaller share of voice relative to their share of market than do smaller brands. This relationship also holds when we separate data into different types of markets. Analyses of data separated into segments of high and low TV advertising spending suggested, that brands that operate in high voice markets can not afford to underspend in advertising to the same extent as products in low voice markets, when they increase their market share. On the other hand analyses showed that smaller brands was better off in high voice markets, because there seemed to be a higher (Share of Voice – Share of Market) demand among the smaller brands in the low voice markets, hence increasing the tendency to overspend on advertising among smaller brands in low voice markets. The reason for this could very well be, that the introduction of new brands into low voice markets obviously makes the use of extensive advertising desirable.

In examining the effects of oligopoly versus competitive markets we found, that in oligopoly markets there was a general tendency to overspend more on advertising among the smaller brands in the market. One explanation for this could be, that the fact that the markets are dominated by one or two well-established brands makes it much more difficult for smaller brands to establish themselves in the market, hence forcing smaller brands to overspend to a greater extent than smaller brands that operate in more competitive markets.

Further research into relationships between Share of Voice and Share of Market in these data includes examining the effects of promotional efforts on the Advertising Intensiveness Curve.

Some of the brands in the database use promotion in the marketing, and we are interested in examining how the extensive use of this type of marketing effort will affect the shape of the Advertising Intensiveness Curve. We will also be focusing on the effect of brand loyalty, i.e. is it possible for brands that seem to hold a higher degree of loyalty among consumers to profit from this by underspending on their advertising budgets. These and other hypotheses will be the target of our research in this field in the future.

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**Appendix I.**
Product categories in the Adlab database:

| |
|---|
| *Breakfast cereals* |
| *Sauces* |
| *Salad Cream* |
| *Canned Soup* |
| *Packet Soup* |
| *Butter* |
| *Gravy Makers : Powder & Granules* |
| *Mayonnaise* |
| *Other Salad Dressings* |
| *Savoury Spreads* |
| *Ambient and Dried Meals* |
| *Cheese* |
| *Gravy Makers : Cubes* |
| *Household Cleaners* |
| *Cream/Powder Scourers* |
| *Artificial Sweetener : Granulated. Liquid. Sachet* |
| *Frozen Meals* |
| *Spaghetti Products* |
| *Other Pasta* |
| *Cereal Bars* |
| *Chocolate Covered Bisquits and Wafers* |
| *Cake Mixes* |
| *Cheese CakeMixes* |
| *Cat Food* |
| *Dog Food* |
| *Dog Bisquits* |
| *Beer* |
| *Deodorants* |
| *Toilet Rolls* |
| *Pain Relievers* |
| *Chocolate Bars* |
| *Artificial Sweetener : Tablets* |
| *Juice Drinks* |
| *Dairy Spreads* |
| *Packet Tea* |
| *Liquid and Ground Coffee* |
| *Instant Soup* |
| *Pure Fruit Juices* |
| *Instant Coffee* |
| *Lager* |
| *Wine* |
| *Automatic Washing Powder* |
| *Packet Margarine* |
| *Tub Margarine* |
| *Non-automatic Washing Powder* |
| *Toothpaste* |
| *Shampoo* |
| *Tea Bags* |