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THE RELATIVE IMPORTANCE OF BRAND MODALITIES AS INFORMATION CHUNKS IN DETERMINING CONSUMER CHOICE STRUCTURE

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Abstract

Many studies on brand name effects on consumer behavior are often studies on the *manufacturer* brand name. These researches have showed that the (manufacturer) brand is an information chunk and that it dominates other product characteristics or situational characteristics in determining consumer choice structure. Distributor and generic brands are generally excluded of these results. The objective of this study is to identify if distributor and generic brands can be information chunks which are dominant compared to other characteristics in a consumer choice perspective.

Key words: Brand, manufacturer brand, distributor brand, generic brand, preference, choice, conjoint analysis.

Introduction

The importance of the brand and particularly manufacturer brand in determining consumer evaluation, preference and choice has been demonstrated in many studies (Rao and Monroe, 1989; Hoyer and Brown, 1990; Richardson, Dick and Jain, 1994). The (manufacturer) brand appears as an information chunk which dominates other product characteristics such as price or promotion in the consumer choice process. But researches have essentially focused on manufacturer brands and did not take into account distributor brands and generics. One research question is to know if distributor brands and generics can be information chunks and if they dominate other product characteristics in determining consumer choice.

Background Literature

In this research, it is important to first identify how the consumer perceives the brand (name) among other product characteristics. A literature review about the different brand effects on consumer responses is presented. Finally, the choice of a common, repeat purchase product as a form of consumer learning is used as a conceptual frame to hypothesize that distributor brands and generics can be information chunks.

The forms of consumer perceptions of the brand

The consumer can perceive the brand in three different ways: as a product characteristic, as an information chunk and as a heuristic cue. The brand as a product feature is designed in this present research by *intrinsic cue* of the product. It is supposed to correspond to the brand name and to the symbolic features of the brand others than the ones that are directly and materially related to the product such as price, promotion or color for instance. The brand as an intrinsic cue of the product is a form of the brand as an *enunciation entity*. It is the discursive form of the brand that is described by the brand as an intrinsic cue.

The brand can be an information chunk (Jacoby, Szybillo and Busato-Scach, 1977) when it integrates a given number of associations that have a specific psychological significance for the consumer. Such information organization or chunking can explain the relative dominance of brand name over other product characteristics in determining consumer choice structure (Jacoby, Olson and Haddock, 1971).

The brand can also play in consumer choice as a heuristic cue. In this case the brand can be compared to a knowledge structure which works like a decision rule for the consumer (Maheswaran, Mackie and Chaiken, 1992).

The effects of the brand on consumer responses

Several studies have shown that consumer product evaluation and choice are a function of multiple cues. Brand name can be considered as an important informational cue influencing consumer evaluation, preference and choice. But the processes by which brand names can influence evaluations are not clearly understood (Bousch and Loken, 1991).

The results of these studies generally show that there is a positive relation between brand awareness and consumer preference and choice (Table 1).

The main results of this literature review show that brand name has a positive effect on perceived quality (Jacoby, Olson and Haddock, 1971; Dodds and Monroe, 1985), on product evaluation (Raju, 1977; Dodds and Monroe, 1985) and on purchase intent (Dodds and Monroe, 1985). It has also been demonstrated that brand awareness influences consumer choice (Hoyer and Brown, 1990) and that familiarity with the brand is a determinant of consumer preference (Monroe, 1976). Brand name seems to work as a heuristic cue in consumer decision processes (Richardson, Dick and Jain, 1994).

And concerning the relative importance of brand modalities in consumer choice; a research showed that perceived quality of manufacturer brands is superior to that of distributor brands regardless of product composition (Maheswaran, Mackie and Chaiken, 1992).

More generally, the effect of manufacturer brand name on consumer preference and choice structure and the relative preference of manufacturer brands against distributor brands have been explained. But the effect of the brand name as a whole regardless of its modalities (manufacturer brand, distributor brand and generic brand) has not been too much studied. Conclusions apply exclusively to manufacturer brands excluding distributor brands and generics which are also brands (and actually not any more "*minor brands*", "*ghost brands*" or "*middleman's brands*" etc.). What is the importance of the brand and its modalities in determining consumer preference and choice?

The consumer choice of a common, repeat purchase product as a form of learning

Choices of consumer products are generally made repeatedly or frequently over time. In these cases, consumers will rely on previously memorized product information (choice tasks and advertising) and on results of past experiences with the product such as brand satisfaction or dissatisfaction (Hoyer, 1984). The consumer choice for a common, repeat purchase product appears as a form of learning (Assael, 1995). Learning is the consumer's behavioral adjustment that occurs as a result of past experience with brands. In this context, brand name compared to other product characteristics develops to be an associative network memory model (Keller, 1991). It is a medium that holds a set of brand associations. In this research it is hypothesized that not only manufacturer brand can generate such a knowledge structure but also distributor brands. If the consumption of a distributor brand is satisfactory, reinforcement will increase the probability that the consumer will choose the same brand at the next purchase occasion. As well as a manufacturer brand, the distributor brand will serve as a support to build an information structure on the product. It will be an information chunk that dominates other product characteristics in determining consumer preference and choice.

Table 1

Review of brand effects on consumer responses

| Reference | Dependent variables | Independent variables | Products | Method | Results | Brand Manipulation |
|---|---|---|---|---|--|---|
| Jacoby, Olson & Haddock (1971) | Perceived quality | Brand name Price Composition | Beer | Analysis of variance | Brand name influences positively perceived quality | Brand present Brand absent |
| Monroe (1976) | Preference | Brand name Familiarity with the brand Price differences | Coffee Fabric softener Cologne | Analysis of variance | Familiarity with the brand is a dominant cue in determining preference | Manufacturer brand Distributor brand |
| Jacoby, Szybillo & Busato-Schach (1977) | Number of elements of information Time required for decision Subjective states of respondents | Brand name | Tooth paste | Analysis of variance | Brand name is the most frequently selected information for a choice | Brand present Brand absent |
| Raju (1977) | Product evaluation | Brand name Familiarity Price | Stereo Receiver | Analysis of variance | Brand name is positively related to evaluation | Pioneer Kenwood Onkyo |
| Fowler (1982) | Choice | Brand Price Packaging size | 12 consumer goods not specified in the study. | Analysis of variance | Manufacturer brands preferred to distributor brands regardless of package size or price reduction | Manufacturer brands Distributor brands |
| Dodds & Monroe (1985) | Perceived quality Perceived value Purchase intent | Brand name Odd versus even prices Price | Walkman Stereo cassette player | Analysis of variance | Brand name significantly enhances perceived quality and value and purchase intent | Brand present (Sony) Brand absent |
| Hoyer & Brown (1990) | Choice tactics Number of brands sampled Choice of quality brand | Brand awareness Brand quality | Peanut butter | Analysis of variance | Positive influence of brand awareness on choice | Well known brand Unknown brand |
| Maheswaran, Mackie & Chaiken (1992) | Product evaluations Cognitive responses Manipulation checks Attribute recall | Task importance Brand name valence Attribute importance Congruency between brand name valence and importance of a characteristic | CT-100 Cordless Telephone | Analysis of variance Regression analysis | Brand name works as a heuristic cue | Favorable brand name (AT&T) Unfavorable brand name (Cobra) |
| Richardson, Dick & Jain (1994) | Perceived quality Value for money Purchase willingness | Brand (packaging) Ingredients | Regular potato chips French onion chip dip Chocolate chip cookies Cheese slices Grape jelly | Analysis of variance | Perceived quality of manufacturer brands is superior to that of distributor brands regardless of ingredients | Manufacturer brands (Lays, Bion, Nabisco, Kraft, Welch's) Distributor brands |

Research Hypotheses

Based on the studies reviewed earlier, hypotheses are generated. First, the manufacturer brand appears as an information chunk that may dominate other product characteristics in determining consumption choices. The purpose of this research is to extend this issue to distributor brands and generic brands¹. Not only manufacturer brands but also distributor brands are considered. Hence, the brand name regardless of its modalities (levels) should be an information chunk that is more important than other elements in determining consumer choice structure.

H₁ : The brand, as a generic term, is an information chunk that dominates other product characteristics in determining consumer preference structure.

Three secondary hypotheses are generated from this principal hypothesis.

H₁₁ : The manufacturer brand (MB) is an information chunk that dominates other product characteristics in determining consumer preference structure.

H₁₂ : The distributor brand (DB) is an information chunk that dominates other product characteristics in determining consumer preference structure.

H₁₃ : The generic brand (GB) is an information chunk that dominates other product characteristics in determining consumer preference structure.

The second research question is related to the hierarchy of preference between the modalities of the brand taken as information chunks.

H₂ : The manufacturer brand (MB) as an information chunk is preferred by the consumer to the distributor brand (DB) as an information chunk which is preferred to a generic brand (GB) as an information chunk.

H₂₁ : The manufacturer brand (MB) as an information chunk is preferred by the consumer to the distributor brand (DB) as an information chunk.

H₂₂ : The distributor brand (DB) as an information chunk is preferred by the consumer to the generic brand (GB) as an information chunk.

H₂₃ : The manufacturer brand (MB) as an information chunk is preferred by the consumer to the generic brand (GB) as an information chunk.

Research Method

The hypotheses were tested by using the conjoint analysis procedure (Green and Srinivasan, 1978, 1990; Johnson, 1974). Conjoint analysis refers to “a family of paradigms for the algebraic representation of individual judgments of multi-attribute stimuli. They are concerned with the quantitative description of consumer preferences or value trade-offs” (Brice, 1997).

In order to demonstrate that brand modalities can be information chunks a mathematical formalization is necessary.

Mathematical formalization

The objectives of this research are to demonstrate that the brand can be an information chunk and that it is dominant in the consumer choice structure. Two definitions are given to the brand: the brand as a product concept (which is an operationalization of the brand as an information chunk) and the brand as an intrinsic cue. Two equations are used in this mathematical formalization.

¹ Generics are the french First Price Products (*Marques Premiers-Prix*).

The first one describes the preference relations between the brand modalities considered as intrinsic cues. It is obtained by conjoint analysis which is supposed to measure the utilities of brand modalities defined as intrinsic cues. If the manufacturer brand as an intrinsic cue (MB') is preferred to the distributor brand as an intrinsic cue (DB') which is preferred to the generic brand as an intrinsic cue (GB') then:

$$V(i_{MB'}) \geq V(i_{DB'}) \geq V(i_{GB'}) \tag{1}$$

with, $V(i)$: explained utility of the brand level.

The second equation describes the preference relations between the brand modalities defined as product concepts (a product concept is defined by a brand modality and given levels of product characteristics). It is obtained by a logit modelisation on product profiles defined on their brand modality and selected levels of the other conjoint analysis design factors. If the manufacturer brand as a product concept (MB) is preferred to the distributor brand as a product concept (DB) which is preferred to the generic brand as a product concept (GB) then;

$$Pr(i_{MB}) \geq Pr(i_{DB}) \geq Pr(i_{GB}) \tag{2}$$

with, $Pr(i)$ logit probabilities of brand choice.

In order to show that the brand can be an information chunk, the two equations are necessary. If the two relations are not similarly ordered then there is no identity between the brand as an intrinsic cue and the brand as an information chunk. One is a component of the other that is to say mathematically:

$$MB' \subset MB \text{ and } MB' \not\subset MB; \quad DB' \subset DB \text{ and } DB' \not\subset DB; \quad GB' \subset GB \text{ and } GB' \not\subset GB$$

The brand is an information chunk that comprises at least the brand as an intrinsic cue, product characteristics such as price and situational characteristics such as promotion. If the brand and its modalities are information chunks then they dominate other product characteristics in determining consumer choice.

Subjects

The study was conducted on a sample of 600 consumers. Each consumer was interviewed on 4 of the 12 test products. There are about 200 observations by product.

Test products

The experimental field is a sample of 12 common, repeat purchase products belonging to the following three categories: household cleaning products, hygienic/beauty products and food products. These products are the most common and the most representative of their markets.

Procedure

The various steps in conjoint analysis and the selected methods of implementing each of these steps were conducted (Table 2). Each product concept was generated by a fractional factorial design (Orthoplan, SPSS categories). The full profile method was used to define the products to be classified by respondents. The subjects were asked to rank order the product concepts from the most preferred to the least preferred.

Table 2

The conjoint analysis procedure of the research

| Conjoint analysis profile | Conjoint analysis profile of this research |
|--|--|
| Product | 12 current good products |
| Data collection | One to one interviews |
| Estimation method | Monanova |
| Response measure | Rank order |
| Stimulus set construction | |
| ♦ Method | ♦ Full profiles |
| ♦ Average number of stimuli | ♦ 12 |
| ♦ Average number of characteristics | ♦ 3 |
| ♦ Average number of levels by characteristic | ♦ 3 |

The estimation method was the Monotonic Analysis of Variance (Monanova). For each product category, the individual and aggregate conjoint analysis estimations were available. The calculations (relation between partial utilities (Appendix 1) and between probabilities of choice obtained by logit modelisation (Appendix 2)) made on the estimated part worth allowed the test and validation of the research hypotheses.

Results and Analysis

The importance of the brand as an information chunk is demonstrated by a two equation system. The first one describes the preference relations between brands as intrinsic cues and the second one describes relations between brands as product concepts. If the relation orders are different then there is no identity between the brand as an intrinsic cue and the brand as a product concept (Table 3). One is the component of the other and this is the demonstration that the brand can be an information chunk.

It was not possible to show that the brand is an information chunk for the dish detergent, the shampoo, the yoghurt and the sunflower oil. For these products, the order of preference similarity between the brands defined as intrinsic cues and as product concepts does not allow to demonstrate that the brand is an information chunk. The dish detergent, yoghurt and sunflower oil (French) markets are mature markets where distributor and generic brands have important shares. Brands are not very differentiated and carry the same elements of information. For the shampoo market, the proliferation of brands and the absence of strictly defined segments imply no differentiation between brands. The weak differentiation between brands implies that they carry the same elements of information. The information chunk feature of the brand therefore is hardly demonstrable.

For the other products such as fabric detergent, fabric softener, house detergent, soap, shower gel, tooth paste, pasta and mineral water, it is possible to conclude that the brand is an information chunk and that its modalities (manufacturer brand, distributor and generic brands) are also information chunks. As information chunks, these modalities dominate other products characteristics in determining consumer structure choice. On the fabric detergent, fabric softener, house detergent, soap, shower gel and tooth paste markets, manufacturer brands are dominant in terms of awareness and market share. There is a significant differentiation between brands which induce a differentiation in their information content feature. On the pasta and mineral water markets, the market shares of distributor brands for the first one and generic brands for the second are important. But the relative positioning of manufacturer brands, distributor and generic brands is different and these three brand modalities carry different information elements.

Table 3

Test and validation of the research hypotheses on the experimental field selected

| Products | Relations between brands as intrinsic cues | Relations between brands as product concepts | Hypothesis I | Hypothesis II |
|------------------|--|--|---|----------------------------------|
| Fabric detergent | $GB' \geq MB' \geq DB'$ | $MB \approx GB \geq DB$ | Brand modalities are information chunks | Demonstrated MB versus DB and GB |
| Fabric softener | $DB' \geq GB' \geq MB'$ | $MB \geq GB \geq DB$ | Brand modalities are information chunks | Demonstrated MB versus DB and GB |
| Dish detergent | $MB' \geq DB' \geq GB'$ | $MB \geq DB \geq GB$ | - | Demonstrated |
| House Detergent | $GB' \geq MB' \geq DB'$ | $MB \geq GB \geq DB$ | Brand modalities are information chunks | Demonstrated MB versus DB and GB |
| Soap | $GB' \geq DB' \geq MB'$ | $MB \geq DB \approx GB$ | Brand modalities are information chunks | Demonstrated |
| Shampoo | $MB' \geq GB' \geq DB'$ | $MB \geq GB \geq DB$ | - | Demonstrated MB versus DB and GB |
| Shower Gel | $MB' \geq DB' \geq GB'$ | $MB \geq GB \geq DB$ | Brand modalities are information chunks | Demonstrated MB versus DB and GB |
| Tooth paste | $DB' \approx MB' \geq GB'$ | $MB \approx DB \geq GB$ | Brand modalities are information chunks | Demonstrated |
| Yoghurts | $GB' \geq DB' \geq MB'$ | $GB \geq DB \geq MB$ | - | Not demonstrated |
| Pasta | $GB' \geq MB' \geq DB'$ | $MB \geq GB \geq DB$ | Brand modalities are information chunks | Demonstrated MB versus DB and GB |
| Sunflower oil | $DB' \geq GB' \geq MB'$ | $DB \geq GB \geq MB$ | - | Not demonstrated |
| Mineral water | $MB' \geq GB' \geq DB'$ | $GB \geq MB \geq DB$ | Brand modalities are information chunks | Not demonstrated |

It is possible to say that the brand and its modalities are information chunks. Not only manufacturer brand is an information chunk but also distributor and generic brands.

The second research question is to know if manufacturer brand as an information chunk is preferred to distributor brand as an information chunk which is preferred to generic brand as an information chunk. A probabilistic approach is needed to give an answer to this issue. This preference relation is only observable for dish detergent. But for a majority of the experimental field products, the hierarchy of preference is organized around two poles: manufacturer brands on one hand and distributor and generic brands on the other. This preference relation is that of fabric softener, dish detergent, house detergent, soap, shampoo, shower gel, tooth paste and pasta. For these products there is a clear preference for manufacturer brands versus distributor brands and generics.

It appears more suitable to say that manufacturer brand as an information chunk is preferred to both distributor and generic brands as information chunks.

Discussion and Conclusion

This research study showed that not only the manufacturer brand is an information chunk but also the distributor and generic brands. The brand regardless of its modalities appears as an information chunk which can dominate other product characteristics in determining consumer choice structure. It is then essential for industrial and commercial actors of the market to build strong brands.

It has also been demonstrated that the manufacturer brand as an information chunk is preferred by the consumer to the distributor brand as an information chunk which is preferred to the generic brand as an information chunk. It seems important for producers to keep this potential brand affect and to capitalize on it. Advertising compared to promotions is an important element of this capitalization.

The limitations of this study stand in the fact that the findings reported here remain exploratory. The results are limited to the product categories studied.

It would be interesting to extend this study to other product categories and on real brands of a given market segment.

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Appendix 1

Conjoint Analysis Estimations for Soap

| Factor | Model | Levels | Label |
|---------|-------|--------|-----------|
| PERFUME | d | 3 | Perfum |
| BRAND | d | 3 | Marque |
| PRICE | l> | 3 | Price |
| PROMO | d | 3 | Promotion |

(Models: d=discrete, l=linear, i=ideal, ai=antiideal, <=less, >=more)

All the factors are orthogonal.

SUBFILE SUMMARY

| Averaged Importance | Utility | Factor | Label |
|---------------------|--|-----------|---------------|
| 25.14 | -.2441 -.0704 .3146 | PERFUME | Perfum |
| | | --- | Flower |
| | | - | Fruit |
| | | ---- | Natural |
| 28.67 | -.0540 .0094 .0446 | BRAND | Brand |
| | | - | MB' |
| | | - | GB' |
| 28.31 | -.0634 -.2089 .2723 | PROMOTION | Promotion |
| | | - | -25% price |
| | | --- | 5 FOR 4 games |
| 17.88 | -.0094 -.0188 -.0282 B = -.0094 | PRICE | Price |
| | | | 15.40 |
| | | | 8.70 |
| | | | 5.30 |
| 5.0188 | | CONSTANT | |

Pearson's R = .992

Significance = .0000

Kendall's tau = 1.000

Significance = .0001

Kendall's tau = .333 for 3 holdouts

Significance = .3008

Appendix 2

Logit Modelisations for Soap

SUBFILE SUMMARY

Simulation results:

Card: 13 14 16
 Score: 5.1 4.7 4.6

Simulation Summary (142 subjects/ 136 subjects with non-negative scores)

| Card | Max Utility* | BTL | Logit |
|------|--------------|--------|---------------|
| 13 | 40.14% | 34.91% | 38.89% |
| 14 | 32.04 | 33.72 | 32.01 |
| 16 | 27.82 | 31.37 | 29.10 |

* Includes tied simulations

Number of valid observations (listwise) = 142.14

| Variable | Mean | Std Dev | Minimum | Maximum | Valid | |
|----------|------|---------|---------|---------|-------|-------|
| | | | | | N | Label |
| LOGIT01 | .36 | .39 | .00 | 1.00 | 142 | |
| LOGIT02 | .32 | .37 | .00 | .99 | 142 | |
| LOGIT03 | .32 | .38 | .00 | .99 | 142 | |