



**SWP 21/88 PRODUCTS AS ARRAYS OF CUES:
HOW DO CONSUMERS EVALUATE
COMPETING BRANDS**

DR LESLIE DE CHERNATONY
Lecturer in Marketing
Cranfield School of Management
Cranfield University
Cranfield
Bedford MK43 0AL
United Kingdom

Tel: +44 (0)234 751122
Fax: +44 (0)234 781806

PRODUCTS AS ARRAYS OF CUES: HOW DO CONSUMERS EVALUATE COMPETING BRANDS?

INTRODUCTION

When marketers painstakingly develop the intricate detail of the marketing mix for a new product or service, they are making assumptions about the dimensions consumers use to evaluate brands, yet how valid are these assumptions? This paper is concerned with understanding how consumers assess competing brands within an information processing paradigm. It reviews the consumer behaviour literature relating to the way consumers interpret products as arrays of cues. A series of interviews were undertaken to identify the salient information dimensions consumers use from which emerged indications of the importance of branding cues.

THE CONCEPT OF THE PRODUCT AS AN ARRAY OF CUES

A consideration of the amount of information supplied to a consumer quickly reveals just how much information the consumer is faced with when making a purchase decision, yet the consumer behaviour literature shows that consumers only use a small proportion of the available information to make a purchase decision.¹ Cox's² model, which proposes that consumers interpret products as arrays of cues (e.g. price, brand name, packaging, etc.), partly helps explain consumers' limited use of information. Within this model consumers assign information values to the available cues, using those cues highest in information value. A cue's information value is a function of its predictive value (the accuracy with which it predicts the attribute under consideration) and its confidence value (the consumer's confidence in the predictive value they have ascribed to the cue). His research showed that consumers based their decisions on only a few of the available cues and that the predictive value of a cue has a dominant effect on cue utilisation with a moderating effect from the confidence value of the cue. Others³ provide support for this model, with consumers evaluating products on the basis of surrogate cues with which they have confidence in their predictive value (e.g. the freshness of bread based on the nature of the packaging material). This perspective of a product offers a conceptual framework for understanding consumers' limited information search by indicating that if a few cues offer high predictive and high confidence values these will be selected. Learning, through product usage, would enable the consumer to internally adjust

their predictive and confidence values. The appeal of this model is its explanation of information search behaviour which still presents the purchaser as a rational decision maker. However, it does appear to assume an involved consumer making predictive and confidence value judgments for each item. In view of consumers' limited cognitive capacities, it is thought more likely that generalisations will be made about cues across products.

Building upon this model, Olson⁴ added a third dimension. He postulated that consumers' cue utilisation depends upon whether the cues emanate from the physical product (e.g. colour, smell, etc.), i.e. intrinsic cues, or whether they derive from related attributes which are not a part of the physical product (e.g. price, brand name, etc.), i.e. extrinsic cues. It was found⁵ that consumers placed greater emphasis on evaluating products using intrinsic rather than extrinsic cues. In-store, consumers are rarely able to sample intrinsic cues and it is postulated that because of memory limitations, respondents would be reliant upon extrinsic cues to supplement memory recall of intrinsic cues.

In the increasingly concentrated retailing environment that manufacturers of branded groceries operate, marketers use many facets to differentiate their offering. In particular they rely upon branding to attract consumers. Some consideration is given in the next sections to what has been published about consumers use of branding cues.

THE BRAND NAME AS AN INFORMATIONAL CUE

A review of the literature indicates that presence or absence of brand name serves consumers as a very important informational cue. Jacoby et al⁶ showed that when respondents could choose any information from a board displaying all the information normally present on the packaging for toothpastes, brand names were the most frequently acquired cues. When further analysing the results by respondents choosing/not choosing brand name information, those using brand name information sought a lower number of informational cues than those not choosing brand name cues and a higher overall level of satisfaction with choice was recorded amongst brand name information seekers. Kendall and Fenwick⁷ found by standing in 2 aisles in a grocery supermarket that 25% of shoppers selected items without any decision delay ("grabbers"), while the remainder spent some time

examining packs before choosing ("lookers"). In store, when then showing respondents pack designs for new bacon substitute, "grabbers" stated that the brand name was the most important information on the new pack, while "lookers" thought nutrition information was most important. Park and Winter⁸ showed that when respondents had to make a decision about product quality and no intrinsic cues were available, brand name was the most frequently selected extrinsic cue. When respondents had to evaluate beer samples, it was also shown⁹ that respondents placed more reliance upon brand name information, rather than price information, when evaluating quality.

Thus, from these studies, there is evidence of the importance of brand names as informational cues. As Allison and Uhl¹⁰ showed, consumers' perceptions of product characteristics are markedly affected by the presence or absence of brand names. It has been shown¹¹ that consumers infer product quality characteristics through the presence or absence of brand name information.

The brand name, or retailer name on pack, evokes certain connotations which consumers place reliance upon when evaluating competing brands within a product field. Sheth and Venkatesan¹², investigating the repeated selection of brands of hair spray, found respondents using brand image as a risk reducer. The weekly meetings of a panel of interviewees to answer questions about reasons for selecting each brand and information sources consulted, may though have heightened awareness of any marketing of hair sprays over the 5 weeks' period of the research and they may have answered in a manner to imply how rational their decision process was. As further support for the usefulness of brand image, Roselius¹³ tested 11 risk relievers used by consumers across 4 types of loss (time, hazard, ego and money). The strategy of buying a major well known brand and relying on its reputation, i.e. "major brand image", consistently emerged across all 4 kinds of loss as the second most preferred risk reducer after "brand loyalty".

Store image appears to have less reliance placed upon it than does brand image. Roselius¹³ found that respondents evaluated store image as a less useful risk reducer than major brand image. Across time loss, ego loss and money loss it emerged as the third most preferred risk reducer, but for hazard loss it fell to fifth most preferred risk reducer. Confirming these findings, Taylor¹⁴ showed that

while reliance on store reputation did act as a risk reliever, its importance was secondary to brand reputation.

Thus there appears to be support from the consumer behaviour literature for consumers using branding cues to interpret competing items. As part of a much larger research programme, we needed to measure consumers' perceptions of competing brands through the use of brand-attribute batteries. The literature review indicates the necessity of incorporating branding attributes on any battery, but to ensure that consumer relevant attributes were used on the battery, it was decided to undertake a series of interviews to identify the attributes consumers actually use to evaluate competing items (rather than subjectively including attributes marketers think to be important). Kelly grids were used to elicit the long list of consumer relevant attributes, and by using a further series of interviews, in conjunction with correlation analysis, the salient informational cues used by consumers were identified. The methodology employed is explained in more detail in the next section.

DATA COLLECTION

Six packaged grocery product fields were the focus for this research (aluminium foil, bleach, disinfectant, kitchen towels, toilet paper and washing up liquid). To ensure respondents had a sufficiently representative sample of competing items in each product field, store visits were undertaken in the areas where the recruited householders live and for each product field, the 3 more frequently seen brands in each sector were chosen. Within each product field 3 different retailers own labels were selected and at the time of fieldwork (1984/85) the 2 or 3 generic versions on sale where respondents lived were also bought for the research.

For each of the 6 product fields, householders older than 18 in the Hertfordshire/North London area were recruited. Provided they personally had done their grocery shopping in a multiple or co-operative retailer within the past 4 weeks they were asked if they would participate in an interview in their home, making it clear the interview would take at least half an hour. Householders focused upon only one product field, and for each sector approximately 15 interviews were undertaken (95 interviews in total). Reflecting buying behaviour, women were primarily interviewed (85 women). Using a pre-determined random selection process, 3 of the competing

items in a product field were placed in front of the respondent who was asked "Please tell me one way in which 2 of these are alike and different from the third". The Kelly grid procedure was repeated until participants had exhausted their repertoire of constructs.

The total number of different constructs elicited varied by product field (between 43 and 84), and besides wanting to reduce these to more manageable lengths for brand-attribute batteries, we wanted to identify the key attributes (particularly when statements such as "this is a plain pack" and "this is more informative" may be describing the same dimension). Nolan¹⁵ recommended that the number of attributes be reduced either by using only those statements mentioned by the majority of the sample or only one of the several constructs that correlate with others. Since a low number of respondents completed the repertory grids, the first suggestion was not followed. Consideration of the extent to which each attribute correlates with others is a better approach for which examination of the attribute correlation matrices and principal component analysis are ideal techniques.

For each product field separately, the different constructs were first reduced by ignoring the more trivial, descriptive statements (e.g. "this pack has computer coding printed on it"). Attribute lists of between 19 to 29 statements resulted. To find the correlations between attributes in each product field, 15 further interviews were completed for each product field. A new sample of housewives were shown the 8 or 9 competing items in a product field and were asked, using a 5 point scale, how much they agreed or disagreed with each statement describing each of the 8 or 9 items on display. Each of the attribute-brand batteries was aggregated, within each product field separately, and the correlations between attributes calculated. In this research, principal component analysis was used to identify the components which explained a high proportion of the variance, as well as highlighting the high loading attributes on these components. After having decided how many components to select (through using the scree test and considering the interpretability of components) attention was directed at those attributes with loadings greater than about 0.8 on the rotated components. Referring back to the correlation matrices, when there was a high correlation between a few attributes which logically described the same variable, only one of these was selected. In this manner between 8 to 10 attributes

(as shown in table 1) were identified which summarised the key consumer evaluative criteria.

	Bleach Paper	Toilet Liquid	WashUp Liquid	Alum Foil	Kitchen Towels	Disinf	Total Comment
Comments relating to							
<u>PRODUCT</u>							
Packaging	1	3	3	3	3	4	17
Branding	2	2	2	2	2	1	11
Product Characteristics	2	2	3	-	1	2	10
Quality	1	-	-	1	-	-	2
<u>PROMOTION</u>							
Familiar/well known	1	-	1	1	1	1	5
Has been advertised	1	1	-	1	-	-	3
<u>PLACE</u>							
Bought in bigger shops	1	1	1	1	1	1	6
<u>PRICE</u>							
Looks economy product	-	1	-	-	-	-	1
Total number of statements	9	10	10	9	8	9	55

Table 1: Summary of attribute statements

As a guide as to how suitable the reduced number of statements were in describing the information contained by the 19 to 29 statements, a mapping procedure was employed. The component scores for each of the 8 or 9 competing items were plotted on the first 2 components from an R-type principal component analysis of the complete attribute correlation matrices. These maps (one for each of the six products) were taken as a standard against which the maps calculated from the reduced list of attributes were compared. Generally the reduced attributes for each product field reflected reasonably well the relative spatial positioning of the competing items.

DISCUSSION OF RESULTS

When considering the salient evaluative informational cues in terms of the marketing mix, as shown in table 1, it becomes evident that consumers make greatest use of "product" cues, with 73% of the total number of comments across the 6 product fields describing this element of the marketing mix. After the popularity of packaging cues (e.g. "this container looks easier to hold", "this is poor quality packaging"), brand name cues (e.g. "this is a branded product", "this is a supermarket brand") were frequently considered, confirming the earlier review on the importance of branding cues. In a multi-cue situation, the 3 other components of the marketing mix were less frequently consulted than the product cues and a remarkably low information value appears to have been ascribed to price information.

Supporting Cox's² model, and the other published research on the limited use consumers make of information, respondents evaluations of the competing items were based upon a relatively low number of informational cues. The research design did not allow respondents access to the physical contents (i.e. intrinsic cues), yet consumers appear to be drawing upon memory and making inferences from the packs to use a few intrinsic cues (e.g. "this is a thick bleach", "this is a soft toilet paper") with the larger number of extrinsic cues.

CONCLUSIONS

The consumer behaviour literature has shown consumers making limited use of information to evaluate items. Cox's model of consumers considering products as arrays of cues helps explain the limited information search process when consumers assign a high information value to

a low number of cues. Branding cues have been shown by other researchers to have high informational value to consumers. From a series of consumer interviews further support has been presented of the low number of cues considered by consumers, and the reliance they place upon packaging and brand name cues when evaluating competing items.

NOTES AND REFERENCES

- 1 Olshavsky, R.W. and Granbois, D.H. (1979) Consumer decision making - fact or fiction? Journal of Consumer Research, 6, (September), pp93-100.
- 2 Cox, D.F. (1967) The sorting rule model of the consumer product evaluation process. In Risk taking and information handling in consumer behavior (Ed. by D.F. Cox), Harvard University, Boston.
- 3 Hansen, F. (1972) Consumer choice behavior. A cognitive theory, The Free Press, New York.
- 4 Olson, J. (1972) Cue utilisation in the quality perception process: a cognitive model and an empirical test. PhD thesis: Perdue University.
- 5 Szybillo, G. and Jacoby, J. (1974) Intrinsic versus extrinsic cues as determinants of perceived product quality. Journal of Applied Psychology, 59, (1), pp74-78.
- 6 Jacoby, J. Szybillo, G. and Busato-Schach, J. (1977) Information acquisition behavior in brand choice situations. Journal of Consumer Research, 3, (March), pp209-216.
- 7 Kendall, K.W. and Fenwick, I. (1979) What do you learn standing in a supermarket aisle? In Advances in Consumer Research (Ed. by W.L. Wilkie), pp153-160, Association for Consumer Research, Ann Arbor.
- 8 Park, C.W. and Winter, F.W. (1979) Product quality judgement: information processing approach Journal of the

- Market Research Society,
21, (3), pp211-217.
- 9 Jacoby, J., Olson J.C. and Haddock, R.A. (1971) Price, brand name and product composition characteristics as determinants of perceived quality. Journal of Applied Psychology, 55, (6), pp570-579.
 - 10 Allison, R.I. and Uhl, K.P. (1964) Influence of beer brand identification on taste perception. Journal of Marketing Research, 1, (3), pp36-39.
 - 11 Render, B. and O'Connor, T.S. The influence of price, store name and brand name on perception of product quality. Journal of the Academy of Marketing Science, 4, (4), pp722-730.
 - 12 Sheth, J.N. and Venkatesan, M. (1968) Risk reduction processes in repetitive consumer behaviour. Journal of Marketing Research, 5, (3), pp307-310.
 - 13 Roselins, T. (1971) Consumer rankings of risk reduction methods. Journal of Marketing, 35, (1), pp56-61.
 - 14 Taylor, R.L. (1979) An empirical investigation of consumer perceived risk differences as a function of brand and store reputation. PhD thesis: University of Arkansas.
 - 15 Nolan, J.A. (1971) Identifying the dimensions of brand image. In Proceedings of 1971 ESOMAR/WAPOR Conference, Helsinki, (Part 2), pp255-277.