



**SWP 20/88 THE INFLUENCE OF PERCEIVED RISK ON
CUSTOMERS' PERCEPTIONS OF MARKET
STRUCTURE**

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INTRODUCTION

Much has been written in the United Kingdom about the balance of power having shifted from the branded goods manufacturer to the multiple retailer in the packaged groceries market (eg Leahy, 1987). This change in the focus of marketing activity resulted in some brands manufacturers reducing brand investment to fund demands for larger discounts, while at the same time marketing support for retailers labels (own labels and generics) increased. Some (eg McGoldrick, 1984) started to question whether consumers now perceive any differences between brands and own labels. Consequently this research was concerned with assessing consumers' perceptions of the structure of specific product fields and investigated whether there are any consumer characteristics that might affect perception.

Interest focused upon measuring perception since from the Engel et al (1986) model, this is a mediating variable influencing purchase decisions. Within the assumption of an information processing paradigm, the problem forced by this research was the choice of a particular type of involvement model to predict consumers' information search and processing when categorising the competing items. It was felt that while the products investigated in the research (packaged groceries) represent items with which consumers may feel low involvement, the atomistic approach used to measure perception would encourage consumer involvement and hence a high involvement model of consumer behaviour may be more appropriate. This paper describes how specific groups of consumers should perceive the competitive structure of product fields, based on a high involvement model. The research methodology is described and the findings indicate that while consumers' perceptions differed from those expected by marketers, a low involvement model was felt to be more appropriate when measuring perceptions of packaged groceries.

BACKGROUND TO THE RESEARCH

Marketers' perceive there to be 3 competitive tiers that constitute product fields, ie brands, own labels and generics (Hawes, 1982). In the broadest sense, there are 4 types of resources that marketers use to differentiate their particular offerings (promotions, pricing, product and distribution). If one analyses the way that the application of these resources for brands and own labels has changed over time, an argument could be advanced for the increasing similarity of these 2 tiers. In terms of promotional activity, Mintel (1984) showed that between 1970 and 1982, retailers advertising increased in real terms by 105% compared with a 20% increase from brands manufacturers. Branded groceries were traditionally priced at a premium, yet Risley

(1981) reported a narrowing price differential between brands and own labels. Retailers concern with the product quality of their own labels resulted in a reduced quality difference between brands and own labels in some product fields (Thermistocli and Associates, 1984). With the expansion programme of the multiple grocery retailers ensuring a wider national presence throughout the United Kingdom and with the multiples accounting for two thirds of packaged grocery sales, own labels are as widely available as brands.

This analysis would suggest consumers being more likely to perceive brands and own labels as similar, however the presence of generic groceries in the United Kingdom from 1977 to 1986 complicates predictions about consumers' perceptions. True generics were not launched (ie plain packaged commodities), instead considerable marketing effort was invested by each retail chain, resulting in multi-coloured packaging which consumers could quickly associate with specific stores. As a result of the way generics were marketed in the United Kingdom, consumers might alternatively perceive own labels as similar to generics. By turning to the consumer behaviour literature, guidance is provided as to whether consumers perceptions of the competitive structure of product fields would or would not differ from marketers' perceptions.

CONSUMERS AS INFORMATION SEEKERS AND PROCESSORS

When faced with competing items in a product field, information would be sought both from clues surrounding the items and from memory which would be cognitively organised, interpreted and a meaning derived (Monroe, 1977). Thus when categorising competing items, information is first sought. The degree of information search is clarified in the Engel et al (1986) model, which identifies 3 major factors (amongst others) influencing search activity ie involvement, the degree of differentiation between alternatives and time pressure. This model interprets involvement as "the level of perceived personal importance and/or interest evoked by a stimulus (or stimuli) within a specific situation" (p24). One of the weaknesses of this model is that the consumer behaviour literature shows no consistency in the interpretation of involvement (eg Zaichkowsky, 1985; Greenwald and Leavitt, 1984; Mitchell, 1979). Following Krugman's work on passive learning (Krugman 1965, 1966, 1977) there has been increased interest in understanding the influence of involvement on consumer behaviour (eg Robertson, 1976, Lastovicka and Gardner, 1979; Traylor, 1981). Lastovicka (1979), defining involvement as a function of normative importance and commitment, showed that consumers' information search increased as product involvement increased. These results, though, are specific to the seven product buying situations considered and suffer from the bias introduced by the self-reported measure of shopping behaviour (eg Newman and Lockeman, 1975). Furthermore, while normative importance and

commitment together explained the highest proportion of the variance in a regression model explaining the extent of information search, these variables only accounted for 33% of the variance.

Accepting a positive relationship between information search and involvement, after internal search has occurred, external search is a relatively limited activity (Bucklin, 1969; Jacoby et al, 1977, 1978; Park and Winter 1979; Kendall and Fenwick, 1979; Schaninger and Sciglimpaglia, 1981), albeit there are variations in search activity between different groups of consumers (Newman, 1977). There are a variety of reasons for this. Information is continually being directed at consumers and memory is a prime information source. Many studies relied upon respondents themselves reporting their prior search activity and are subject to memory bias and hence under reporting (eg Newman and Lockeman, 1975). The way skilled purchasers gain sufficient relevant information from only a few sources is often overlooked and many studies are based on counts, rather than quality, of information sources.

A further reason for the limited external search activity is consumers' limited cognitive capacities. It has been shown by Jacoby et al (1974a, 1974b), that beyond a particular level of packaging information, respondents made poorer brand selection decisions when presented with increasing quantities of information. Haines (1974) describes the restricted search process in the Principle of Information Processing Parsimony, stating "consumers seek to process as little data as is necessary in order to make rational decisions" (p96). Miller (1956) showed that there is a limit of about 7 items to short term memory. To overcome the problem of limited capacity, he proposed that the mind recodes "bits" of information into larger groups, or "chunks", which contain more information. By continuing to increase the size of these chunks, consumers can process information more effectively. Evidence of this recoding process is provided by Simon (1974) and Buschke (1976).

These concepts are of particular interest in marketing, since when consumers are provided with an array of packaging information, presence of brand name has been reported as the most frequently sought cue (Jacoby et al, 1971, 1977; Kendall and Fenwick, 1979; Park and Winter, 1979). The brand name allows consumers to draw inferences about products (eg Allison and Uhl, 1964; Render and O'Connor, 1976) and this represents a chunk of information to consumers.

Thus with increasing consumer involvement, information search should increase, but the extent of external search will be restricted and should normally involve search for presence or absence

of brand names with several other attributes being considered. But the specific form of the Engel et al (1986) involvement model needs to be specified, in order to understand consumers' information seeking and processing when categorising competing items in the same product field. As was noted earlier, involvement is affected by the stimulus within a specific situation. The products investigated were frequently bought packaged groceries, the purchase of which is often a low involvement situation. Yet these buying situations can become high involvement situations (for example when doing the shopping for someone else, when buying the item for a special event, etc) and as Belk (1975) reported, the situation influences the information search process. To assess how consumers group the competing items in each packaged grocery product field, a high involvement situation was created by asking them to complete a questionnaire that required them to seek information from a photograph showing 8 or 9 competing items in a particular product field. It was consequently decided that as a high involvement situation had been created by the measuring instrument, a high involvement model of consumers actively seeking information to categorise competing items was most appropriate. Within this assumption, hypotheses were advanced as to how consumers should perceive the competitive structure of packaged grocery product fields.

CONSUMERS' PERCEPTIONS DIFFERING FROM MARKETERS

When faced with competing items, consumers group these into a few categories to reduce the complexity of interpreting different situations (Berkowitz, 1980). To prevent the substantial cognitive effort needed to process all of the packaging information on display, consumers are selective in their search process (Foxall, 1980). It is thought (Assael, 1984) that this screening process is particularly common for frequently bought items (ie packaged groceries) and thus only a proportion of the information available is processed. Due to perceptual distortion (eg Hastorf and Cantril, 1954), information which does not concur with consumers' beliefs is distorted and supportive information is more readily accepted. On some of the evaluative criteria, the degree of dissimilarity between some of the competing items may be below the "just noticeable level" (Britt, 1975) and would not be apparent to consumers. From this consideration of the perceptual process, the following hypothesis is advanced:

- H1: Consumers do not perceive the competitive structure of grocery product fields in the same manner as marketers (ie pure brands versus pure own labels versus pure generics).

VARIABLES INFLUENCING CONSUMERS' PERCEPTIONS

Two variables we identified from the consumer behaviour literature that might affect consumers' perceptions, ie perceived risk and product importance.

(i) Perceived risk

Bauer's (1960) seminal paper on perceived risk proposed that consumer behaviour be considered in terms of consumer risk taking. He suggested that purchasing involves risk in the sense that the consumer is uncertain about the consequences of a planned purchase which may have unfavourable outcomes. As Cox (1967b) observed, consumers appraise buying situations in terms of their tolerance for risk. Once their perception of risk has exceeded a tolerable level they are then likely to engage in risk reducing behaviour, ie either reducing the amount at stake (eg only buy small pack sizes) or increasing their feeling of certainty that a loss will not occur (eg seek more information). Research evidence shows that consumers more frequently seek information as a risk reducing strategy (Roselius, 1971; Derbaix, 1983).

Some researchers have found a positive relationship between level of perceiver risk and information search (eg Deshpande and Hoyer, 1983), while others have not (eg Jacoby et al, 1978). This research worked from the premise that information search is more likely under conditions of greater perceived risk. It is thought that some people will perceive a level of risk with some grocery products that will exceed their tolerance level, encouraging a search for more information. Other people though may perceive the level of risk to be acceptable and would undertake no risk reducing activity. The differences in active information search between the low and high risk perceiver may then result in a different perception of market structure between these 2 consumer groups. To test this proposition, the following hypothesis is advanced:

H2: Perception of the competitive structure of grocery product fields varies according to perceptions of perceived risk associated with buying unknown brands in these product fields.

(ii) Product Importance

Bloch and Richins (1983) postulated that consumers would undertake more information search as their perception of product importance increased. This would imply that due to the different

levels of search activity between consumers with varying views about the importance of a particular product, there would be a difference in perceived market structure. There is some tentative evidence to support Bloch and Richins (1983) view.

Lastovicka (1979) found from regression analysis that as product importance increased, respondents engaged more in extensive problem solving, albeit only 10% of the variance was explained by product importance. Jacoby et al (1978) found evidence of increased information search with increased perceptions of product importance when investigating respondents search activity in the breakfast cereal market. On the basis of these studies, the following hypothesis is proposed:

H3: Consumers' perceptions of the competitive structure of a product field will vary according to the degree of importance they ascribe to that product field.

RESEARCH DESIGN

To provide a good test for the hypotheses, 6 product fields were sought. Each had to have a minimum of 3 branded, 3 own label and at least 2 (preferably 3) generic versions on sale in the area where fieldwork was undertaken. The product fields selected were aluminium foil, bleach, disinfectant, kitchen towels, toilet paper and washing up liquid.

When people form categories, they develop rules for identifying the attributes necessary for an item to belong to a particular class of items (Zajonc, 1968). To identify consumer relevant attributes, Kelly grid tests (Fransella and Bannister, 1977) were used in conjunction with other statements derived from advertisement claims. For each product field separately, approximately 15 interviews were undertaken with householders (95 interviews in total). In excess of 80 statements resulted for each product field and a further series of interviews were undertaken to reduce these to more acceptable lengths.

Within each product field approximately 25 statements were frequently observed. These were viewed as being important evaluative attributes, but it was thought there might be some repetition between attributes. Consequently 6 brand-attribute batteries were produced and for each product field 15 householders were asked to state how much they agreed or disagreed (5 point scale) with each statement describing each item on display. By inspecting the correlations between attributes and using principal component analysis, it was found that the lists could be reduced to between eight and ten statements. Thus brand-attribute batteries of a size unlikely to

cause respondent fatigue, yet incorporating those attributes important to respondents developed. When administering these batteries to respondents, inter-item distances can be calculated in multi-attribute space and through cluster analysis, the way respondents perceive the competitive structure of product fields can be observed.

When operationalising perceived risk, a literature review showed that there is no universally accepted approach (eg Gemunden, 1985). The work of Jacoby and Kaplan (1972), subsequently validated by Kaplan et al (1974) appeared to be a better approach to measuring perceived risk, and this procedure was used. Jacoby and Kaplan (1972) found that 5 risk types (financial, performance, physical, psychological and social) explained an average of 74% of the variance in overall perceived risk, taken across 12 products. Surprisingly the "time lost" risk type identified by Roselius (1971) had not been included. Building on this approach, a question to measure perceived risk was developed which included these 5 risk types plus the time lost component. Exploratory consumer interviews showed the question to be understood, but the inclusion of psychological risk ("the risk of the brand not fitting in with the image we might have of ourself") caused respondent irritation. Of the low involvement products considered by Jacoby and Kaplan (1972) the psychological risk type was generally the least important variable and this was omitted. Having explained to respondents the 5 risk types associated with buying an unknown brand, they were asked to state the overall level of risk they would feel buying an unknown brand in the product field that their questionnaire focused upon. A 5 point scale (very high risk through to very low risk) was employed.

Several approaches have been used to measure product importance (eg Katona and Mueller 1955; Dash et al 1976; Bettman 1973). The Jacoby et al (1978) method was viewed as being one of the better approaches, since it assesses product importance relative to other products. Following this approach respondents were presented with a list of 9 grocery items that they had to imagine they had run out of, and were asked to rank the order in which they would replace the items. The higher the rank ordering of the item, the more motivationally salient it is and hence the greater its importance.

While this instrument would appear to have face validity, there was some doubt about whether it measured urgency. To test the validity, a revised version of the question was developed ("If you had to do without some of the items shown, which one would you be most likely to do without, and which one next most likely to do without, etc?"). Two groups of householders were interviewed in a pilot study with the 2 questions. A high degree of similarity in rank ordering across the two measuring instruments was noted and a coefficient of rank correlation of 0.93 was

found. From this, it was felt that the proposed measure was validly measuring product importance. Respondents' perceptions of product importance were ascribed according to whether they ranked the items their questionnaire focused upon in the first three rank positions (high importance), 4th to 6th rank (medium) or in 7th to 9th rank (low importance).

DATA COLLECTION

Questionnaires were designed and piloted for the 6 product fields. Using a systematic sampling procedure 2,196 householders in a town 30 miles north of London with a population of 20,000 (Hertford) were selected using the Electoral Register. To reflect buying behaviour, preference was given to selecting the female in the household. One of the 6 questionnaires was sent to each person along with a 15 cm x 10 cm colour photograph showing the 8 or 9 competitive offerings relevant to the specific questionnaire. A covering letter explaining the purpose of the study was enclosed as was a Business Reply Paid envelope. Each envelope was handwritten and a handwritten salutation used on each covering letter which was personally signed. A second class stamp was stuck to each envelope.

Questionnaires were received during August and September 1985. With the use of a reminder letter 1065 questionnaires were returned, a response rate of 48%.

DATA ANALYSIS

Attention focused on those 829 respondents who had correctly completed the appropriate brand-attribute battery. Several ways exist to assess how people perceptually group items, eg cluster analysis, Q-type principal component analysis, multidimensional scaling and discriminant analysis. Cluster analysis appeared most appropriate for this research because of its wide use in marketing (Punj and Stewart, 1983), unlike assignment techniques no a-priori statements are required about groupings and there is a voluminous literature on it (eg Everitt, 1986). A further advantage is that by using a hierarchical algorithm, the order in which clusters evolve can be seen. Recognising that the clustering algorithm selected defines what is meant by a cluster (Cormack, 1971) it was decided to use the single link algorithm.

Respondents' agreement-disagreement scores from the brand-attribute batteries within each product field were first standardised and each converted to a squared Euclidean distance matrix. For each market the mean standardised squared Euclidean distance matrix was calculated which was then subjected to single link cluster analysis using the CLUSTAN computer package

(Wishart, 1978). The results of the cluster analysis were displayed on a dendrogram. This is a hierarchical clustering tree which shows, for example, at the bottom of the tree there are 9 unclustered items, at the next level moving up the tree there are 7 unclustered items with 2 items forming a shared cluster, etc. By examining each level of the dendrogram the way that clusters evolved could be seen, and the hypotheses were tested by comparing the compositions of the groupings at the 3 and 2 cluster levels of the dendrograms.

CONSUMERS' PERCEPTIONS OF MARKET STRUCTURE (H1)

Inspection of Table I shows how respondents perceived the competitive structure of each product field at the 3 cluster level. People only perceived the competitive structure in the same way as marketers in the washing up liquid results, where pure branded, pure own label and pure generic clusters were recorded. Across all 6 product fields brands were always seen as being different to own labels and generics. A clear branded cluster virtually always appeared except in the kitchen towels market, but even here 2 of the clusters are different branded versions and again none of the brands merged with the own labels. Thus the survey results support H1.

<u>Product Field</u>	<u>Sample Size</u>	<u>3 Cluster Composition</u>		
Aluminium Foil	135	(3B)	(20L)	(10L+3G)
Bleach	148	(3B)	(30L+1G)	(1G)
Disinfectant	143	(3B)	(30L+1G)	(1G)
Kitchen Towels	130	(2B)	(1B)	(30L+3G)
Toilet Paper	129	(3B)	(20L+3G)	(10L)
Washing up Liquid	144	(3B)	(30L)	(3G)

B = Brand; OL = Own Label; G = Generic

Table I: Perceived market structure at the 3 tier level

Confirmation of brands being perceived at a category distinct from own labels and generics is seen when examining perception of market structure at the 2 cluster level. As can be seen from Table II, in each of the 6 product fields respondents always grouped the branded items together as one cluster which was distinct from the second cluster consisting of own labels and generics.

<u>Product Field</u>	<u>Sample Size</u>	<u>2 Cluster Composition</u>
Aluminium Foil	135	(3B) (30L+3G)
Bleach	148	(3B) (30L+2G)
Disinfectant	143	(3B) (30L+2G)
Kitchen Towels	130	(3B) (30L+3G)
Toilet Paper	129	(3B) (30L+3G)
Washing up Liquid	144	(3B) (30L+3G)

B = Brand; OL = Own Label; G = Generic

Table II: Perceived market structure at the 2 tier level

When assessing the competing items in a product field, consumer's external information search would have been compared against memory and certain information cues would have more reliance placed upon them due to their high informational value. Though consumers placing more emphasis upon seeing presence of brand name/retailer name cues, and looking for any other packaging cues which may include associations with retailers, they would have acquired information which would have been processed and interpreted to give the perceptual structures recorded.

THE INFLUENCE OF PERCEIVED RISK (H2)

As Table III shows, the 6 product fields were generally viewed as moderate to low risk purchases, an acceptable finding in terms of the relatively low cost of these familiar products. Aluminium foil represented the lowest risk and washing up liquid the highest. The variation of perceived risk by product field confirms earlier studies (eg Derbaix, 1983) which also found perceived risk to vary by product field.

<u>Washing Up Liquid</u>	<u>Bleach</u>	<u>Toilet Paper</u>	<u>Disinfectant</u>	<u>Kitchen Towels</u>	<u>Aluminium Foil</u>
2.98	2.78	2.77	2.58	2.45	2.35

Table III: Perceived risk within each product field

(5 = very high risk, 1= very low risk)

H2 is refuted since while there is a difference in perceived risk between the product fields, perception of market structure was constant at the 2 cluster level. As a further test of H2, within each product field perceptions of market structure were compared across the 5 groups of risk perceivers. At the 2 cluster level, within each product field virtually all groups of respondents perceived the competitive structure as pure brands versus pure retailer labels (own labels plus generics), regardless of their perception of risk. Thus H2 is not supported.

Several reasons can be put forward to explain these results. Firstly the product fields might have aroused a level of perceived risk that is within a tolerable level necessitating no risk reducing activity. Secondly, even if those high in perceived risk did seek more information, because of the low involvement nature of the products any further information search might be superficial. Locander and Hermann (1979) noted that for low cost, lower performance risk items, a "pick up and buy" strategy was more favoured than seeking more information. Finally the search process of the high risk perceivers might not have involved a search for other cues on the pack. Instead it may have been either a more detailed external examination of the informational cues considered in a superficial manner by the low risk perceivers, or a more extensive search of memory.

THE IMPACT OF PRODUCT IMPORTANCE (H3)

Within each product field, respondents' assessment of the order of product importance was virtually the same and table IV shows the overall ranking of product importance.

	<u>Importance Ranking</u>
Toilet Paper	1
Tea	2
Washing Up Liquid	3
Margarine	4
Sugar	5
Disinfectant	6
Bleach	7
Kitchen Towel	8
Aluminium Foil	9

Table IV: Overall ranking of product importance

While there is a clear difference in perception of product importance, H3 is refuted since perception of market structure at the 2 cluster level was identical for each product field. A further test of H3 was to assess how consumers with different perceptions of the importance of a product field perceived the competitive structure of that particular product field. Within each of the 6 product fields at both the 3 and 2 cluster level, there was a remarkable consistency of perceived market structure further refuting H3. Again one reason for this finding, which is common to that noted for H2, was that while a highly involving situation had been created by the questionnaire, none of the items were perceived as sufficiently important to warrant more detailed information search. The low involvement respondent felt with the products did not motivate a detailed information search, even though the questionnaire simulated a high involvement situation.

RELIABILITY AND VALIDITY OF RESULTS

The reliability of results was tested by randomly dividing the samples in each of the 6 product fields into 2 halves and undertaking cluster analysis in each half (Everitt, 1979; Cormack, 1971). Examination of the dendrograms at the 2 cluster level in each product field showed that in 5 of the 6 product fields, regardless of which split half was examined, the same perception was recorded. At the 3 cluster level in 4 of the 6 product fields, again regardless of which split half was examined, the same perception occurred. The similarity of each split half pair of dendrograms was also assessed using the cophenetic correlation coefficient (Sokal and Sneath,

1963). This never fell below 0.94 indicating similarity of perception. Thus there is evidence of stability of cluster types.

The validity of the single link algorithm in evaluating consumers' perceptions of was assessed by applying complete link, average link and minimum variance clustering algorithms to the data tested at hypothesis 1. If the single link method has construct validity, it should show similar results to those found from the 3 other methods. It should be realised that a limitation of this approach is that each algorithm is based on a different definition of a cluster. At the 3 cluster level, in only the kitchen towels and disinfectant samples the single link results went against the results from the 3 other algorithms. At the 2 cluster level, in each product field except aluminium foil, all of the algorithms recorded consumers perception as being brands versus retailer labels. Since in the majority of cases, at both the 3 and 2 cluster level the single link algorithm give similar results to those of the 3 other algorithms, it was concluded that single link is validly measuring perception of market structure.

CONCLUSION

By considering the perceptual process, it was argued that there may be a difference between marketers' and consumers' perceptions of the competitive tiers. This research has shown that such a difference in perception does exist, with consumers perceiving own labels as being more similar to generics than to brands. Such a result would explain why by 1987 all multiple retailers had withdrawn their generics. This perceptual similarity would encourage a greater likelihood of own label purchasers switching to generics (ie from a high profit margin item to a lower profit margin item). Furthermore with retailers using their own labels to move their image up-market, the perceived similarity between own labels and generics would have hindered these plans.

Within an information processing paradigm it was hypothesised that, by creating an involving situation around items with which consumers usually feel low involvement, a high involvement model of consumer behaviour should predict consumers' perceptions. The consistency of perceived market structure, when analysed by consumers' perceptions of risk and product importance, would indicate that the high involvement situation created by the questionnaire was not as important a factor influencing respondents' involvement when compared with the influence from the low involving nature of the 6 product fields.

Instead of consumers undertaking an active information search, considering numerous cues, as would be the case in the high involvement Engel et al (1986) model, they undertook a superficial information search in line with a low involvement model (Engel and Blackwell, 1982). Consumers brief information search with these low involvement items is believed to have centred around a low number of informational cues which they perceived to have both high predictive and high confidence values (eg "brand" names) following Cox (1967a). Post hoc, the results of this research would indicate that consumers are efficient decision maker who seeks a minimum amount of high quality information to assess competing items.

The theory in this research may only be appropriate for product fields with which consumers feel high involvement and further research is recommended using kitchen electrical appliances, where brands (eg Swan) compete against retailers' own labels (eg Boots). Furthermore, as a consequence of retailers withdrawing their generics in the United Kingdom and devoting more attention to their own labels, both retailers and brands' manufacturers would benefit from an up-dating of this work.