THE DEVELOPMENT OF

PROMOTION OPTIONS FOR

FOOD INDUSTRIES

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ABSTRACT

Food promotion largely aims to use the attitudes of targeted groups of people to reinforce their positive beliefs about a product, or to change their negative attitudes by demonstrating that their underlying beliefs about that product are not correct.

Normally, qualitative research is used to elicit attitudes for promotion purposes. This type of research is usually limited by focus group size and does not allow for the statistical testing of results. This paper argues that attitudinal research need not be purely qualitative. It presents a quantative method used to elicit and test fruit buyers' attitudes towards bananas. Results from this work are presented together with their relevance to the promotion of bananas.

INTRODUCTION

Market research on promotion aims largely at identifying potential target groups and then observing the attitudes of people in these groups towards products. Products are seen as bundles of attributes which are either desired or not desired by buyers. The recognition of these attributes by people creates a number of issues on which they take a position (i.e., their attitudes towards the product are either supportive or not supportive). Promotion largely aims to use the attitudes of vulnerable groups of people to either advise them that a product has certain sought after attributes on which they already have a positive attitude, or to change their negative attitudes by demonstrating that their underlying beliefs about a product are not correct.

The present trend is for market researchers to use discussion groups in one form or the other to elicit participants' attitudes about products.

This process is normally referred to as qualitative research from which the findings can not be quantified. Reports often describe (some in great detail) the views and attitudes of people who belong to identified target groups without attempting to determine precisely what proportion of that particular target group holds these attitudes or to test the probability that their observations are in fact correct.

This paper argues that attitudinal research need not necessarily be qualitative but that observations can be quantified and tested. To demonstrate this, reference is made to research conducted by the author to develop promotion options for the Queensland banana industry.

RESEARCH PROCEDURES

The most popular method used to elicit peoples' attitudes toward products is the focus group. This method involves a group of eight to twelve volunteers who are encouraged to discuss their beliefs about a product. Proceedings are controlled

by a moderator who has the freedom to create questions considered relevant and, if necessary, to probe responses. The interaction process in groups allows the moderator to encourage individuals to expand or refine their opinions.

These opinions can then be built onto by others in the group thus developing a concise list of the group's perceptions of a product.

This procedure may be helpful in exploratory research into the potential market for new products and possibly in identifying areas for further investigation for both new and known products. However, even for these purposes, it is considered to have serious limitations. These include:

(i) the difficulty (impossibility) of securing a random sample of people for inclusion in the group;

(ii) since focus groups optimally involve 8 to 12 people, it is doubtful if such a group, or even a number of such groups, could constitute an acceptable sample size out of a population of millions of people.

(iii) the high probability that those people who attend and participate in group interviews are different in many respects to the great number of people who would not participate;

(iv) the practice of preselecting respondents in certain given market segments rather than randomly selecting and then testing the validity of segments;

(v) unless properly trained, the groups' moderator could introduce serious biases; and

(vi) the high cost of hiring an appropriately trained/experienced moderator and selecting a meaningful random sample of respondents.

It is contended that there is no effective simple single step procedure to identify consumers' attitudes and to prioritise them according to their usefulness to promotion. Consumers need to be surveyed as to their attitudes using acceptable statistical methods and the results need to be tested to ascertain the relevance of these attitudes to known market segments. This was achieved in the banana promotion research project by using repertory grids to elicit the attitudes of a random sample of fruit buyers and testing the validity of the results in a wider telephone survey.

ELICITATION OF ATTITUDES (CONSTRUCTS)

Open-ended interviews were considered to elicit shoppers' attitudes during the first phase of the banana project. However, this option was rejected because of the likelihood of interviewer bias and doubt as to whether interviewers would be able to express key attitudes in an unstructured manner.

A process which offered potential was personal construct analysis (PCA). This process was originally developed by a psychologist George Kelly (1955) to gain an understanding of his patients' perceptions of the things which influenced their

lives. It offered a method by which interviewing procedures could be formalised but did not allow the interviewer to influence the respondent's answers in any way. Since the late 1970s, this method has been used in market research, questionnaire design, management-effective studies and quality control (Stewart and Stewart, 1981). The author has used PCA to identify tomato growers' perceptions of the relative importance of information sources used for marketing decision-making purposes and to investigate the perceived necessary prerequisite attributes of these sources (Whybrow 1987 and 1989). This method was particularly suited to the banana project because:

(i)   it facilitated the selection of a random sample of respondents;

(ii)   the interviews could be conducted relatively quickly (the interviews for the banana project took between 15 and 30 minutes each);

(iii)   since the interview time was relatively short, a large random sample could be selected for interview; and

(iv)   of the relatively low costs of conducting the survey in the major markets (i.e., Sydney, Brisbane and Melbourne).

The survey procedure involved randomly selecting shops and supermarkets where fruit was sold. People who were in the process of either buying, considering buying or had bought fruit were then randomly selected and asked to participate in the survey. Two hundred interviews were conducted in Sydney, Melbourne and Brisbane.

The style of questionnaire used in the survey (i.e. the repertory grid) was developed by Kelly to elicit the way people construe events or things about them (i.e. their constructs). Kelly's primary interest was clinical psychology and people known to his clients. To elicit constructs about the matter being investigated, people were grouped as elements in triads and the subject was asked:

"In what important way are 2 of these people like and, at the same time, essentially different from the third." (ibid., p.228).

The required constructs were elicited from their replies.

In the banana research, two sets of "elements" (i.e., types of "fruit" and types of "food") were used instead of people known to the respondent. Respondents were shown three cards with one of each of the listed fruits (food) printed on each card and were asked to tell me:

"An important way in which any one of the three types of fruit (food)[1] is different from the other two" (see Appendices A and B).

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[1]   Constructs were elicited for bananas compared with a selection of other fruit and for fruit compared with a selection of other foods. In the food grid, bananas were assumed to have common attributes with all other fruit. Responses regarding fruit in this grid were therefore interpreted as relevant to bananas which could then, in turn, be compared with the other foods.

A 1 (one) was placed in the column of those fruits (food) which were alike and a 2 (two) in the column of the fruit (food) that was different. The respondent was then asked to rate the other fruits (food) listed according to the previously stated difference (i.e., the elicited construct). This procedure continued until, at the end, the respondent was asked to rate each fruit (food) in accordance with a supplied construct, "The food I buy often".

Shaw's (1980) multivariate cluster analysis computer program, Focus, was used to analyse each of the grids of data collected. This program produced a two way cluster analysis for each respondent. Rows of constructs and the column of elements were re-ordered to give a "focused" grid in which there was least variation between adjacent constructs and adjacent elements.

These variations or distances were measured using the City Block Metric method where:

> "...the distances between elements or constructs...are functions of the number of constructs or elements respectively in the grid, together with the rating scale used. These are therefore scaled to give "percentage matching scores". (Shaw ibid. p. 33).

The score ranges from +100 for a perfect match, through 0 for complete dissimilarity, to -100 for a perfect reversed match.

By observing the constructs with least variations with the supplied construct (i.e., "the fruit I buy often") those attitudes most highly associated with the purchase of fruit (food) can be identified for each individual.

Based on Kelly's belief that "to the extent that one person employs a construction of events which is similar to that employed by another, his psychological processes are similar to those of the other person", Shaw (ibid.) developed the computer program, Sociogrids, which produces a mode grid from a group of grids. Given a set of common elements meaningful to all members of the group, this program computes the measure of similarity (matching scores) between each pair of constructs from all constructs provided by the group to produce a continuum ranging from those which were most shared (mode constructs) to those which were least common or isolated. The most highly matched constructs from this continuum make up the mode grid with each construct being obtained from one individual in the group. The cut-off point for inclusion in the mode grid depends on the purpose of the exercise at hand. Shaw (ibid. p.92) pointed out that this mode grid:

> "...is not a consensus grid which averages out the individualities to produce a pale imitation of the group, but is strongly weighted towards the commonality or intersection of construing within the group. Due to this format, the constructs tend to be highly clustered in the mode grid, and generally these clusters display a high degree of both literal and conceptual similarity in the construct labels...."

The program then uses the mode grid as a common referent for the group and compares each grid with it. The extent of shared construing with the mode grid is printed out so that the grid most like the mode (star grid) through to that least like the mode (isolate grid) can be easily identified. In the banana project representative case studies were made of the star grids in previously defined segments in each city. The constructs reported in the star grids, particularly those which matched closely with the supplied construct, were then interpreted as the key "attitudes" which needed to be tested in the wider survey.

In addition, a count of similar constructs for all respondents in each segment in each city was taken. All constructs which occurred more than five times, and which were not already identified during the examination of the star grids, were also included among those which were to be tested by the wider survey.

WIDER SURVEY

Telephone surveys in Sydney, Melbourne and Brisbane (conducted during three consecutive weekends in September 1989) were used to collect data from a total of 866 respondents to test whether the elicited constructs were related to the way buyers, in the predefined market segments, think of bananas. A number of types of questions were considered for this purpose. Preference was given to a series of rating scales whereby respondents could indicate whether they had attitudes similar to those elicited in the repertory grid survey and, if they did, what was the strength of agreement with those attitudes. Examples of the rating scale considered are:

(i) Bananas are   ---- ---- ---- ---- ----   Bananas are
     not messy to eat   +2 +1 0 -1 -2   messy to eat

  (A response "0" would indicate this particular "attitude" was considered as not important, either way, to the respondent. Any other response would indicate the strength of agreement with the "attitude"); and

(ii)   Bananas are not messy to eat.

| Strongly agree | Agree | Neither agree or disagree | Disagree | Strongly disagree |

However, since:

(a) some respondents could have found it difficult to understand the style of questioning over the telephone (as was the case during pilot surveys);

(b) a relatively large number of attitudes had to be tested; and

(c) a considerable number of other questions had to be asked in the survey,

it was decided to simply ask whether the respondents agreed with the various statements. While this did not give the optimal amount of data for analysis purposes, it still enabled tests to be carried out. The actual question was:

"I would now like you to imagine that you are in the place where you normally buy fruit. You are thinking of buying some bananas. I would like you to consider each of the following statements and tell me whether you agree with them."

Fifteen attitudes (constructs) derived from the earlier repertory grid survey (refer to Appendix C) were then stated for the respondent to consider one at a time.

The results of this survey were analysed in two ways. Firstly, the analysis identified those statements which registered greater than an arbitrary 90 percent agree response and those which had less than a 75 per cent agree response. The statements with more than 90 per cent agree response were interpreted as generally having strong support by respondents while those with less than 75 per cent agree responses were considered as issues which need to be addressed from a promotional perspective.

The second part of the analysis investigated whether some dependency existed between the previously identified market segments (i.e., consumer behaviour groups) and each statement using the Chi-square test. It was argued that if a relationship did exist, if was meaningful to infer that the messages relayed by each statement were important in varying degrees to identified market segments. If this was so, it was further reasoned that if these messages were used in promotional campaigns, they would positively influence buyers of food in relevant market segments to purchase bananas.

In the main, only those statements with levels of significance less than 5 per cent were accepted as indicating depending (i.e., there is at least a 95 per cent chance that there is a dependency relationship between the statements and market segments).

SUMMARY OF ANALYSIS

This summary relates specifically to the attitudes of respondents to bananas.

The repertory grid analysis identified fifteen constructs (attitudes) which respondents considered important when they were buying bananas. Of these, four were supported by greater than 90 percent of respondents and six were supported by less than 75 per cent of respondents. These were:

Greater than 90 percent	Percent agree
. Children find bananas easy to eat	93
. Bananas are a versatile fruit	93
. Bananas are not messy to eat	95
. Bananas are readily packed by nature to eat	97

Less than 75 per cent	Percent agree
. The price of bananas does not vary much through the year	32
. In every day use, bananas do not bruise easily	55
. You can tell the quality of bananas by looking at them	74
. Bananas store well on average	71
. Bananas are refreshing on a hot day	74
. I am not concerned about chemicals in bananas	59

Each of the greater than 90 per cent statements received approximately the same high level of positive response in each city. This clearly indicates that the whole market perceives bananas as having these favourable properties.

The first three of these statements occurred frequently in the three cities during the repertory grid survey phase of the project while the fourth, "bananas are readily packed by nature to eat," was referred to in Brisbane only. The high response to the latter statement in all cities is not surprising because all types of fruit were perceived as being natural (and therefore good for you) in the "food" repertory grids.

Because of the high positive response to these statements it may be interpreted that the use of them in promotion would remind buyers that bananas have these particular sought after attributes and therefore encourage them to purchase the product.

The statements in the less than 75 per cent bracket were interpreted as referring to four basic issues: price, quality/handling, chemicals and "refreshing".

Price was raised as an issue in the earlier repertory grid survey. However, at that time, there was little disagreement among respondents as to relative price of bananas. Everyone who referred to price said that price did not vary much throughout the year. The apparent conflict between this and the findings of the later survey (i.e., 67 per cent of respondents said that price does vary) can be explained by the high price of bananas in all cities at the time of survey.

Quality/handling was revealed as an important issue in all cities during the repertory grid phase of the project. At that time responses showed clearly that while there was no general agreement among respondents on quality/handling, the issue was still considered as important. This largely explains the response in the later survey.

Problems with chemicals were mainly discussed by Sydney respondents in the early survey. At that time, bananas were perceived as a fruit in which pesticide residues did not occur (as against, say, apples). In the later survey, 67 per cent of Sydney respondents said that they "were not concerned about chemicals in bananas" as against 56 percent in Melbourne and 54 per cent in Brisbane. Although not tested, it is considered that when this question was answered respondents either automatically compared bananas with other fruit or included bananas in the market basket of all fruit. Therefore, relatively more Sydney respondents saw bananas as chemically free than their counterparts in Melbourne and Brisbane. Also, the issues related to chemicals changed somewhat. A significant proportion of respondents who indicated a problem suggested their dislike of bananas being "gas ripened."

The statement that "bananas are not refreshing on a hot day" was originally supplied during the repertory grid survey in Brisbane. These respondents felt that bananas were too bulky to be refreshing on hot days and that the more juicy fruits were better at such times. In contrast, the main survey revealed that almost 75 percent of respondents in all cities felt that bananas were refreshing on a hot day. Indeed, of the three cities, Brisbane had the largest positive result (i.e., 76 per cent) while Melbourne recorded the smallest result (i.e., 71 per cent).

This analysis indicates that persuasive promotion may be required to convince potential buyers that the price of bananas is relatively low and does not vary relative to other fruit, bananas can be maintained at good quality, chemicals are not a problem in bananas (particularly with regard to ethylene ripening) and, if bananas are prepared correctly, they may well be refreshing on a hot day.

With regard to testing the dependency between the statements and a number of provided market segments (i.e., consumer behaviour groups) the following had levels of significance less than 5 per cent:

Statement by Consumer Behaviour Groups	Levels of Significance (per cent)
Bananas are good value for money	0.7%
Bananas are a versatile fruit	2.2%
The skin of the banana seals it against contamination	0.2%
Bananas are good for packed lunches	0.1%
Children find bananas easy to eat	0.1%
I am not concerned about chemicals in bananas	3.5%

A closer examination revealed some important differences between the market segments. In this way, messages which would be effectively targeted to particular segments were identified. For example, it was revealed that those people who were normally conservative in their eating habits would react positively to the message, "the skin of the banana seals it against contamination". On the other hand, very few people who eat a wide variety of food did not agree with this statement and would not be motivated by it to buy bananas.

SUMMARY AND CONCLUSIONS

Marketing research aimed at identifying consumers' attitudes towards products need not necessarily rely on qualitative methods. Attitudinal data can be collected via the repertory grid technique and analysed using personal construct theory. The results of this process can then be tested by using various scaling techniques in wider surveys.

In the project on the identification of important attitudes (beliefs) of fruit buyers to bananas, 15 key attitudes were elicited using the repertory grid technique. When these statements of attitudes were tested using a simple agree/disagree scale in a wider survey, four statements were identified which could be used in general informative type promotion and four areas were identified where possibly persuasive promotion may be required. By using the Chi-square test of dependency messages which could be effectively targeted to specific market segments were identified.

CONFIDENTIAL

QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

BANANA PROMOTION PROJECT (STAGE 1)
EXPLORATORY PILOT SURVEY (NOVEMBER 1988)

INTRODUCTION

Good morning/afternoon/evening. My name is .... and I work for the Queensland Government's Department of Primary Industries. I am conducting a survey into people's food consumption practices and the attitudes they have towards fruit. I would be grateful if you could spend a little of your time helping me in this regard. The information you provide will be used to help Queensland fruit growers to understand the consumption practices of consumers and what consumers expect from the fruit they buy.

Male ☐

Female ☐

ATTITUDES TOWARDS FOOD

I would like to start by discussing how you decide to buy various types of food. So that I can analyse the information you and other people give me, I would like to follow a set procedure by using some cards. There is no right or wrong answers to this procedure - I'm only interested in your personal views.

I have a number of sets of 3 cards. Each card has a food printed on it. I am going to lay each set of 3 cards in front of you and ask you to tell me AN IMPORTANT WAY IN WHICH ANY ONE OF THE THREE TYPES OF FOOD IS DIFFERENT FROM THE OTHER TWO. It is probably different in many ways but I would like you to compare them IN TERMS OF THE THINGS YOU CONSIDER WHEN YOU ARE BUYING FOOD.

I would like you to try to give a different statement of similarity for each set of cards.

I am going to write your responses to each set of cards in this table (show table).

RATING OF ATTITUDES

Notice how I have placed a 1 in the columns of the foods which you said were alike in some way and a 2 in the column of the food that was different. I would now like you to rate all the other foods listed here according to the pair description you have given me.

FOOD PROFILE GRID

WAY DIFFERENT

11

		1	2	3	4	5
FRESH FRUIT	1		( )	( )		
PROCESSED FRUIT	2			( )	( )	( )
FRESH VEGETABLES	3	( )				( )
CONFECTIONARY	4			( )	( )	
CEREAL PRODUCTS (BREAD, BREAKFAST FOOD ETC)	5			( )	( )	( )
FAST FOOD	6	( )		( )		

WAY ALIKE

THE FOOD I BUY OFTEN

CONFIDENTIAL

QUEENSLAND DEPARTMENT OF PRIMARY INDUSTRIES

BANANA PROMOTION PROJECT (STAGE 1)
EXPLORATORY PILOT SURVEY (NOVEMBER 1988)

INTRODUCTION

Good morning/afternoon/evening. My name is .... and I work for the Queensland Government's Department of Primary Industries. I am conducting a survey into people's food consumption practices and the attitudes they have towards fruit, particularly bananas. I would be grateful if you could spend a little of your time helping me. The information you provide will be used to help Queensland fruit growers to understand the consumption practices of consumers and what consumers expect from the fruit they buy.

Male ☐

Female ☐

ATTITUDES TOWARDS FRUIT

I would like to start by discussing how you decide to buy various types of fruit. So that I can analyse the information you and other people give me, I would like to follow a set procedure by using some cards. There is no right or wrong answers to this procedure - I'm only interested in your personal views.

I have a number of sets of 3 cards. Each card has a fruit printed on it. I am going to lay each set of 3 cards in front of you and ask you to tell me AN IMPORTANT WAY IN WHICH ANY ONE OF THE THREE TYPES OF FRUIT IS DIFFERENT FROM THE OTHER TWO. It is probably different in many ways but I would like you to compare them IN TERMS OF THE THINGS YOU CONSIDER WHEN YOU ARE BUYING FRUIT.

I would like you to try to change your statement of difference for each set of cards.

I am going to write your responses to each set of cards in this table (show table).

RATING OF ATTITUDES

Notice how I have placed a 2 in the column of the fruit which you said was different in some way from the other two fruits and a 1 in the columns of the other two fruits. I would now like you to rate all the other remaining fruits listed here according to the description you have given me.

FRUIT GRID

WAY DIFFERENT

	PEARS 6	ORANGES 5	APPLES 4	PEACHES 3	GRAPES 2	BANANAS 1

WAY ALIKE

1
2
3
4
5
THE FRUIT I BUY OFTEN 6

ATTITUDES DERIVED FROM THE REPERTORY GRID SURVEY

Bananas are good value for money;

The price of bananas does not vary much throughout the year;

Bananas are good for packed lunches;

Children find bananas easy to eat;

Bananas are a versatile fruit;

Bananas have a predictable taste;

In everyday use, bananas do not bruise easily;

You can tell the quality of bananas by looking at them;

Bananas store well on average;

Bananas are not messy to eat;

Bananas are readily packed by nature to eat;

The skin of the banana seals it against contamination;

Bananas are refreshing on a hot day;

I am not concerned about chemicals in bananas; and

I consider bananas as a staple, or every day, fruit.

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