

Chapter 4 - Price in the choice of fruits and vegetables: modifying factors

- R: *[can you recall the price of Broccoli?].*
S: *Um, yes, I mean, I couldn't tell you what it was just then, but if it was - if I looked at it and it was just over the top I wouldn't get it, because it's just something that we have...*
R: *What would you say is over the top?*
S: *Oh, anything more than \$1.50. You are probably going to tell me it's more than that now. I can't remember.*
R: *Yes it is. ..It's \$5 a kilo.*
S: *You're kidding. Wow! See there you go. I didn't even notice.*

4.1 Introduction

The evidence presented in Chapter 2 indicates a more complex role for price in purchasing than that ascribed in economic models, which focus on its negative role as a constraint. Price has a positive, information or signalling role for evaluating the quality of a product. Further, price has a satisfaction role which relates to the transaction (or deal) itself. However, the extent to which any one of these roles is salient in consumer purchasing behaviour will differ according to the attributes of products, consumer characteristics, and to the context of the transaction.

Several features of the fruits and vegetables category were highlighted in the previous chapter as potentially instrumental in consumers' choice. These features suggest that choice behaviour in relation to fruits and vegetables may differ significantly in some respects to behaviour observed in relation to other purchases. Quality inconsistency is prominent among these.

In this chapter the focus is on consumer price sensitivity and the factors which are likely to influence its salience in choice. Much of the discussion elaborates on the influences outlined in Chapter 2. However, particular attention is paid to those characteristics of fruits and vegetables highlighted at the conclusion of the previous chapter. Throughout the chapter various propositions are stated as to the level of price sensitivity as a consequence of these characteristics. The propositions provide a focus for research and their validity is pursued over subsequent chapters.

Of particular importance to investigating consumers' response to price is the need to determine the manner in which consumers may categorise fruits and vegetables, since this can be expected to have implications for the degree of consumer price sensitivity. In Section 4.2 this issue is explored with reference to the literature on similarity and substitution.

In Section 4.3 the influence of variety-seeking behaviour on price sensitivity is explored. Variety-seeking is particularly relevant to the fruits and vegetables category, as indicated in Chapter 3.

The characteristics of fruits and vegetables most likely to affect consumer choice behaviour are quality inconsistency and price volatility. Quality inconsistency is discussed in Section 4.4, with reference to research on manufactured groceries and the assumptions implicit in their models of choice behaviour. An additional issue relating to quality is that of attribute transparency. Where products are not readily assessable, a risk may be perceived in their purchase. The extent to which a risk is perceived can be influenced by consumers' confidence in assessing proxy attributes, and the magnitude of the potential loss. The issue of quality transparency, among other forms of risk, is taken up in Section 4.5.

Price volatility in fruits and vegetables at the retail level has two potential sources: seasonal or natural variations and price competition. Although the latter suggests increased price sensitivity, the former may confound its influence (Gabor 1969, Winer 1986). The complex interaction of the two may also have implications for the manner in which consumers evaluate prices. These issues are discussed in Section 4.6.

A final feature of fruits and vegetables identified in the previous chapter is the scope for consumers to modify the quantities they purchase. In Section 4.7 the implications of this for consumers' response to price changes is outlined.

The chapter concludes with a summary of the main propositions and their implications for consumer sensitivity to price.

4.2 Product attributes and price sensitivity

The factor most often researched in relation to pricing is consumers' responsiveness to price changes and relative price movements when a product group presents a number of

potential substitutes. If products in a category are perceived as almost perfect substitutes in terms of their physical and/or use attributes, and the price differentials between products are minimal, we would expect consumer purchases to be relatively sensitive to intra-category price changes, and price to be the dominant ongoing search criterion. However, if the products are not perceived as perfect substitutes, the consumer will incorporate into their decision (whether consciously or unconsciously) the specific attributes which distinguish between the products, including brand. Price may also remain salient, particularly where it is associated with quality, or the product represents a significant budget outlay. In other instances the preference for specific product attributes may reduce or eliminate sensitivity both to price differentials between products and price variations across products. In other words, where attributes are specific to a product or brand, we would expect these to be central in determining the nature of the heuristic(s) employed by the consumer in making their choice.

Despite their acknowledged importance in choice, noted in Chapter 2 was that attention to product attributes and their implications for consumers' price sensitivity is quite sparse in the pricing stream of marketing research (Monroe and Krishnan 1985). Where product attributes have been considered in research, the most common distinction made across products is whether they are durable or non-durable. This distinction is made for a number of reasons. Purchases of durables are generally less frequent and often the product is unfamiliar to the consumer. In such cases, search is likely to be more extensive and requires greater cognitive effort. Durable products also tend to be more expensive and to be differentiated according to product characteristics and/or quality. Consumers are more likely to be subject to a budget constraint, and to be more concerned about gaining value-for-money (transaction utility). Together, these attributes suggest the consumer has a high degree of involvement in the evaluation of the product, and that price may well be salient both in its information role and as a sacrifice.

In contrast, non-durable goods are generally low-priced, frequently purchased products. A common assumption in analysing behaviour in relation to these products is that consumer knowledge of prices should be higher than for infrequently purchased products (Kalyanaram and Little 1994). The rationale is that constant exposure to prices enhances price knowledge, and frequent purchases increase the economic significance of the product and, hence, the relevance of price (Dickson and Sawyer 1990).

In a few studies the authors have noted the variation in actual prices (Winer 1986, Mayhew and Winer 1992, Urbany and Dickson 1991), but rarely do they then proceed to analyse the effects on consumer behaviour of differences in variation across the products they have utilised. In some studies the focus is on a single product category, such as coffee or yoghurt, where price variation is of interest primarily to confirm 'deal' sensitivity among consumers. In other studies, though, where comparison is made across products, attention to differences between products in price variability and other attributes are generally ignored despite, in some instances, indication that these variables may be relevant to the results. For example, in a study by Wakefield and Inman (1993), one effect for which they tested was increased price consciousness as a consequence of frequent price promotions. Four products were used: cold cereal, margarine, toothpaste and coffee. The products were characterised as representing: frequently purchased products (margarine and cereal) and infrequent purchases (coffee and toothpaste); and as high promotion products (coffee and margarine) and low promotion products (toothpaste and cereal). Although coffee had the highest recall, the result was not significantly different from cereal and toothpaste, both low promotion products. The product against which coffee recall was significantly higher was margarine - a high promotion *and* frequently purchased product. Although no discussion was made in relation to this anomaly, it is possible to postulate that the significantly different price levels of the two products may have been a factor in producing the results. Another is the affect of consumers' preferences within the product categories¹.

The point is that, without some indication of the perceptions consumers hold of a product category or of a brand-line, there is little scope for interpreting anomalous behaviour. Further, it limits the insights which may be revealed through a more considered examination of product characteristics.

Having said this, identifying a basis for categorisation of product characteristics for the purpose of capturing substitution effects is not a simple task. Categories rarely have clear-cut boundaries, or are such that all the properties of members can be incorporated within their definition (Cohen and Basu 1987). One of the difficulties associated with determining a category is well illustrated by the example of potatoes. At one level potatoes can be considered to be a member of the category 'vegetables'; or more

¹ The use of recall, and the manner in which recall is defined in analyses, raises some questions as to its suitability as an indicator of consumer price sensitivity. These are discussed in Chapter 5.

narrowly as a 'root vegetable'. However, at another it may be included in the category 'foods which are a staple in a main meal'. In relation to choice, the first category implies a decision based on food type, and may be associated with concerns for a balanced diet, tradition or habit; 'one always has a vegetable with a meal'. Within this category can be included sweet potato, pumpkin or carrots. The second category may be considered in terms of a base-food accompaniment; something substantial and filling. In this category members may include rice, pasta or bread. Thus, the category which is employed has significant implications for the set of substitutes which will be evoked.

Despite these obstacles, it is difficult to talk of product substitution or between-product homogeneity of response without employing some form of categorisation; it is integral to association.

4.2.1 Categories and substitution

Lau et al. (1984) argue that a food product acquires an individual set of labels or meanings which is developed during consideration of the product for consumption. This 'set of labels' is derived from the individual's past experience and their perceptions of the product's attributes. Worsley (1980) similarly argues that meaning derives from the constructs which individuals hold of products (the product's unique set of properties), and it is these which are central in their choice of food. Kliene and Kernan (1991) also point to the importance of meaning, but emphasise that meaning is also contingent on the context surrounding a product and the association it has with other products. It is this latter aspect which is central to choice, and which defines the set of possible substitutes available to the consumer.

In the previous chapter factors identified as influencing consumers' perceptions of, and preference for, fruits and vegetables included the sensory characteristics of products and usage context. The latter has been explored extensively in the literature on product categorisation, particularly in its implications for determining similarity.

Ratneshwar and Shocker (1991) employ the notion of Substitution in Use (SIU) as a basis for determining sets of substitutes in consumer choice. SIU 'focuses on the instrumental consequences of products, and it implies that products should be perceived as similar whenever they are perceived as substitutable as means for the same ends or usages' (Ratneshwar and Shocker 1991: 282). Their series of tests indicated that

distinctive rather than common usages for products were best at predicting similarity judgements; which is in line with the concept of determinant attributes (Alpert 1971, Tversky 1977). Further, and consistent with earlier studies (Belk 1974, Miller and Ginter 1979), product usage context was also significant to the alternatives consumers' evoked. Specific usage contexts would evoke products typical of that context, but not necessarily of a more general category. Thus, in their example, the products evoked in the context 'a snack that substitutes for a regular breakfast' would differ significantly from 'a snack you might eat at an evening party'.

Products or brands are rarely limited to a single usage context, but the relative importance of various product attributes may be greater in one context than another (Tversky 1977, Shocker and Srinivasan 1979). Belk found substantial differences in the preferences for snacks and meat cuts according to the context in which the purchaser envisaged using the products. Miller and Ginter (1979) found that most of the attributes considered in choice of fast food outlet varied in importance according to the occasion (lunch, dinner snack), although some attributes remained fairly stable across situations; taste, cleanliness and price. Thomson and McEwan (1988) found usage context to be significant in the acceptance of specific meat types. Schultz et al. (1977) identified five food-use references that consumers employ in purchases of food products: "high-calorie treat", "speciality meal item", "common meal item", "refreshing healthy foods" and "inexpensive filling foods". Rappaport et al (1993) established almost identical categories.

A valuable aspect of SIU is that it avoids the pitfalls inherent in relying on the physical characteristics of a product. For example, in Ratneshwar and Shocker (1991), potato crisps and french fries were clustered together when the criterion was similarity of attributes. However, based on usage-context, the two separated: potato crisps clustered with nuts and crackers, and french fries with hot dogs. Similarly, breakfast cereal changed from cereal-based products on attribute similarity to breakfast substitutes when usage-context was the criterion. An implication of the influence of usage context is that attributes which are *determinant* at one shopping incident may not be at the next.

Although SIU provides the basis for an effective distinction between products, it is at a relatively high level of categorisation and does not assist with determining preferences within a usage set. We can distinguish cooking-oils and butters by whether they are

employed in cooking or as a table product, but this still leaves undetermined the influence of product variations and brand types within those sub-categories.

Lefkoff-Hagius and Mason (1993) point to evidence that consumers' judgement of similarity and their evaluation of products for purchase are not necessarily made on the same basis (Whipple 1976, Elrod 1988). A consumer may perceive two objects to be quite similar, but may not like them equally. A single, apparently insignificant attribute may be the distinguishing factor, or a habit set by family tradition or by an unpleasant one-off consumption incident. Lefkoff-Hagius and Mason proposed that preference tends to be formulated on attributes which represent a benefit or image to the consumer, although the image attribute was not supported in their findings. In contrast, similarity incorporates all attributes but concentrates on the physical characteristics of the product. A limitation in Lefkoff-Hagius and Mason's study is that they define benefits solely in instrumental terms (eg good performance, easy use). As with Ratneshwar and Shocker (1991) these represent a coarse-level preference. Further, confining benefits to an instrumental role ignores the powerful influence of sensory characteristics.

These deficiencies are, to some extent, overcome in research conducted by Rappaport et al. (1992; 1993). Consistent with the studies outlined above, Rappaport et al. conclude that individuals recall and describe food in holistic terms, rather than in terms of specific products or categories (which frequently characterise preference studies). However, they extend beyond usage context to incorporate sensory and health aspects as well.

..People conceptualize food functionally, in holistic terms, such as a cheeseburger, fries and a shake, or turkey dinner, rather than in terms of the components making up these units...when people evaluate or make choices among foods, they do so by reference to the commonsense, existential criteria of pleasure, health and convenience. (1993: 35)

An apple, then, may be considered in terms of a snack or apple-pie, and broccoli as steamed, 'a green' or souffle. The salience of each of these criteria is context-dependent. If time is a constraint then convenience will override the anticipated pleasure of a traditionally-prepared meal.

Although somewhat involved, the discussion above can be generalised into two main influences on the determination of substitutes. The first is the specificity of the usage context employed. Where this is broad, there is greater scope for substitutes. Second, if we make the reasonable assumption that consumers generally consume only those foods

which they perceive as beneficial or which they like, the scope of options is further defined on these criteria. In short, the set of substitutes is defined by the framing of usage context and consumers' preferences. This is particularly the case for fruits and vegetables.

4.2.2 Substitution and price sensitivity in fruits and vegetables

Highlighted in the previous chapter was the potential for fruits or vegetables with quite distinct sensory profiles (eg. peaches and pineapple, broccoli and cauliflower) to satisfy similar usage needs. However, within the constraints of consumers' likes and dislikes, two product groups were apparent: staples and non-staples. The indication was that products such as apples, oranges, tomatoes and potatoes are commonly perceived staples, but they need not be limited to these². Fruits and vegetables other than staples were considered to be potential substitutes for one another; although they may also be complementary.

Implied in the distinction between these categories is a possible difference in consumers' perceptions of price, and their behaviour in response to price differentials or changes. There are various reasons for expecting this to be the case. Perhaps of greatest significance is the range of potential substitutes that each category evokes. The potential range for non-staples is the full range of fruits and vegetables, although consumers are likely to have evoked a subset of these according to product sub-categories such as leaf greens or root vegetables. For staples, the range is assumed to be limited to the varieties within a product group (eg. tomato varieties or potato varieties, as implied by HRDC 1990, Lewis 1994)³. In the latter there may be intra-product price sensitivity to the extent that varieties differ in prices and consumers' preferences across the varieties are indifferent. However, the sheer latitude of options among non-staples provides considerably more scope for price sensitivity to manifest. Greater consumer price sensitivity to products other than staples was apparent in the consumer surveys, and the demand analysis, outlined in Chapter 3. Of course, the scope of substitutes among non-

² Cultural and individual differences can be significant. For people of Chinese origin, leaf greens are often a staple.

³ Frozen and canned fruits and vegetables, as well as foods such as rice and pasta, are also known to be potential substitutes. However, the model is limited to the context of fresh fruits and vegetables, and so the effects of these are not explored here. There is evidence to suggest that consumers do not generally consider these products when purchasing fresh produce. In the HRDC (1990) study less than 5 per cent of consumers considered frozen or canned product important in their purchases of fruits and vegetables.

staples (and staples) will be further influenced by the frame imposed by usage context; so that 'fruits for a dinner party' may include strawberries, blueberries and dates, but 'a strawberry cheesecake' has no substitutes if this is the firm objective of the consumer.

While these factors are the substantial influences on perceptions of substitutes, the scope of substitutes may be further modified by the influence of quality. The significance of quality to consumers was readily apparent in the discussion of the previous chapter; for example, blemishes were considered undesirable on apples, avocados, pears and rockmelons, tomatoes should be firm, and oranges should not have a green tinge (HRDC 1990). Thus, two products considered to be substitutes (similar), according to preference and usage criteria, will not be considered so when one of the products fails to meet a given quality acceptability criterion.

In summary, assuming products or varieties of acceptable quality, and assuming the consumer exhibits a degree of price sensitivity, the effect of perceived substitutes is expected to be in line with the following proposition:

- P1: Where the usage context is broad in relation to non-staples, and/or the consumer is indifferent to the varieties of a staple, the greater will be the sensitivity to price changes and price differentials.

A prerequisite for substitution and hence, price sensitivity, is that substitutes are salient or easily evoked, and that the features of each—including price—are known, or easily available, to the consumer for evaluation. However, where preferences are narrowly defined, or purchasing is highly rehearsed, there is generally little or no inter-product comparison (see Chapter 2). Product specificity not only implies a general decrease in price sensitivity, it also suggests that the consumer's price sensitivity will be largely confined to price increases in the focal product. Given this, consumers would have little awareness of price reductions in substitute products. Even when they are aware of price differentials, we would expect their preference for the focal product to be such that only a substantial price reduction in the substitute would induce them to alter their choice. It is only when the 'deal' represented by the substitute is considered to be significant, and/or the consumer becomes dissatisfied with the value of the focal product⁴, that they may adjust their choice. This is most likely to occur where a price increase in their

⁴ A review of substitutes may occur because the quality is unacceptable. However, this is not of interest where price does not enter the evaluation.

current preference moves beyond their 'acceptable price range', thus prompting a review of substitute products. Accordingly:

- P2: Where consumers hold specific preferences for a product or variety, substitution is most likely to occur when the price of the focal product/variety increases beyond the consumer's acceptable upper price-threshold, and is less likely to occur when only the price of the substitute decreases.

4.3 Variety-seeking behaviour

The previous discussion has focused on behaviour in relation to products which can be considered virtually identical in the attributes (experience) they provide. However, switching between products also occurs when consumers seek variety in consumption experiences. The phenomenon of variety-seeking has been put forward as a reason why product switching occurs beyond that implied by observed price variations (Lattin and McAlister 1985). Variation in choice of a product within a product category can be attributed to change in usage context, availability, economic constraints, or various other factors operating indirectly on choice. Of interest in this discussion is variety-seeking for its own sake; as a mechanism for relieving boredom or monotony—a factor highlighted in Chapter 3—or in order to maintain desired levels of stimulation, or as a method of acquiring information (Schutz and Pilgrim 1958, Brickman and D'Amato 1975, Hirschman 1980, Keon 1980, McAlister 1982, McAlister and Pessemier 1982, Lattin and McAlister 1985, Bawa 1990).

4.3.1 Individual differences

The tendency for individuals to seek variety is linked to the general notion that all individuals require some level of stimulation in their lives (Raju 1980, Steenkamp and Baumgartner 1992). However, the extent of this need can vary across individuals. McAlister and Pessemier (1982) note that high-level variety-seekers have been associated with higher income and education levels, relatively homogeneous environments, extroverts and risk-seekers. They also point to earlier research which suggests that individuals who have been subjected to high levels of stimulation early in life exhibit a preference for higher levels of stimulation later in life. Yet, this does not necessarily translate to uniform behaviour across product categories. In fact, consumers

may simultaneously minimise and seek out stimulation in the form of variety (Bawa 1990).

Van Trijp and Steenkamp (1992a) also emphasise that variety-seeking is not a generalised trait; rather it is domain-specific. Individuals may seek variety in one consumption area but seek it to a lesser extent, or not at all, in another. In the context of food, van Trijp and Steenkamp define variety-seeking as

..the motivational factor that aims at providing variation in stimulation through varied food product consumption, irrespective of the instrumental or functional value of the food product alternatives. (1992a:184)

The results of their research with consumers in the Netherlands provide some support for distinct segments of variety-seekers within populations (van Trijp and Steenkamp 1992a, 1992b, van Trijp 1994, Lähteenmäki and van Trijp 1995). However, dominant is the influence of product characteristics on variety-seeking, leading van Trijp and Steenkamp to conclude:

variety-seeking is most likely to be found for food products that have a certain level of sensory variation in product supply and that arouse at least some degree of involvement (1992b: 162)

Among the various products examined for variety-seeking, van Trijp (1994) found relatively high variety-seeking across apple varieties which suggests that variety-seeking can occur within a staple group as well as across non-staples. The need for variety also provides additional explanation as to why products with seemingly distinct attribute profiles are potential substitutes/complementers for one another⁵.

4.3.2 The influence of product attributes

Despite the recognised influence of physiological factors on choice, there is little in-depth exploration of the affects of this area on variety-seeking in the marketing literature. Bass et al. (1972) reported that, in preferences for soft drink, 30 per cent of the subjects chose a different flavour on a consecutive occasion. Lattin (1987) also found flavour to be an important source for variation. McAlister (1982) draws on the evidence in physiology and psychology in developing her theory of Dynamic Attribute Satiation. However, these and other studies tend to confine their analysis to the

⁵ A clear distinction in fruits and vegetables profiles is apparent in research by S Kjeldal at the University of New England. Her profiles were elicited using automatic attitude activation.

modelling aspects of variety seeking, and/or limit themselves to observing overt behaviour.

An aspect on which there is general agreement, and which fits in with the physiological evidence, is that search for variation is attribute-specific rather than product-specific (McAlister 1982, McAlister and Pessemier 1982, Lattin 1987). On some attributes consumers remain loyal (diet as opposed to non-diet colas) while on others they seek variety (colas and non-colas).

In line with this view, McAlister (1982) argues that consumers who seek variety do so because they cannot find all their needs in a single product. Lattin (1987) similarly argues that in order to explain choice variation in a product category, researchers need to identify attribute-level motivations for varied choice behaviour. Following Lancaster (1971), Lattin and McAlister (1985: 331) argue

*In many cases,..wants and needs are satisfied best not by a single product, but by a **portfolio** of products or by a consumption history involving consistent switching among products. Consumer needs related in such a way that they are satisfied best by a balanced collection of products, taken together or in succession, are referred to as a **composite need**. Having chosen a product to fill one component of the composite need, the variety-seeking consumer is likely to switch to a different product to fill a different component of that need.*

This occurs because attributes are found in different proportions in products across a product category⁶. Hence, what determines a preference for one product over another is a function of the sum of the values of the constituent attributes of the compared products.

If a consumer is seeking variety to satisfy a composite need, one cannot assume that a switch from one product to another is an indication that the two products are close substitutes...one must distinguish between products that are chosen to fill the same component of the consumer's composite need, called "substitute products", and products chosen to fill different components, called "complementary products".....

If product A is very similar to (shares many features with) product B, a variety seeker probably will find the consumption of product B less appealing if product A has recently been consumed. Product A has "substituted" for product B in providing those features that products A and B share. [However, take] product C which is very different from (i.e., made up of a different set of valued features than) product A. A variety seeker probably will find the consumption of product

⁶ The category is assumed to have been predetermined according to the decision to be made.

C more appealing if product A has recently been consumed. In this sense, product A “complements” product C. (Lattin and McAlister 1985:331)

Thus, depletion in the inventory of an attribute (flavour, nutrient, or sensation), via physiological processes or forgetting, increases the preference for that attribute. Conversely, preference for the attribute will be at its lowest with satiation.

In effect, Lattin and McAlister extend the economic concept of ‘complements’ into the temporal dimension, where individuals seek variety over consecutive consumptions of products to satisfy their *composite need*. Thus, noncola drinks are a complement to cola drinks on a subsequent consumption occasion, just as lemon is a complement to tea in the economic sense of complement (1985: 331). The behaviour outlined by Lattin and McAlister is in response to past consumption rather than in response to prices; these are ignored for the purposes of illustrating their model.

4.3.3 Price and variety-seeking

The context of Lattin and McAlister’s argument is product positioning and the importance for product managers in determining whether a product is a direct competitor (substitute) or whether it fulfils a variety role (complement). In economic terms, the implication of the behaviour outlined in their discussion is that *substitution* maintains its traditional role, occurring between products which are virtually identical and influenced by availability, or quality or price variations. Variety seeking is an additional impetus to switching products, with the aim to satisfy a need for attributes not found (or limited) in the first product⁷.

The implications of variety seeking for price sensitivity are unclear. The context of Lattin and McAlister’s discussion suggests that, if consumers aim to satisfy a composite need, they will be less sensitive to price differentials between a product last consumed

⁷ It should be noted that in attempting to equate their notion of ‘complementary’ with that of the economic concept, Lattin and McAlister confuse the situation unnecessarily. Substitution and complementarity in the economic sense cannot be separated from the price mechanism. Complementary and substitution relationships are *defined by the behaviour of consumers in response to changes in price*. Given two goods, A and B, if in response to an increase in the price of A the demand for good B increases, then the two products are *substitutes*. However, if the demand for good B also decreases then the relationship is one of *complements*. This complementary relationship is significantly different to that outlined by Lattin and McAlister. The common meaning of the term—that which completes—is adequate to convey the relationship they intend without the further restriction imposed by the economic definition.

and the available complements⁸. However, if we assume that variety-seeking is not a continuous imperative (Bawa 1990, and the results of Lattin and McAlister's study), variety-seeking may be associated with greater price sensitivity; particularly if variety needs can be satisfied by a range of products. That is, consumers may utilise discounting in order to satisfy their variety needs. This also raises another possibility: price can itself be an attribute on which consumers effectively variety-seek⁹. This may be the case where alternatives are unfamiliar or novel, or where price is the only active stimulus of a product group.

To some extent, price sensitivity will be influenced according to whether the consumer has a specific option for variety in mind (preframed intention) or approaches the purchase seeking suggestions for variety (unframed intentions). Behaviour consistent with the latter is often observed in relation to vegetable purchases (greens, for example), where consumers, rather than stating an intention to purchase a specific product, make comments such as 'I look to see what looks nice' or 'I don't really know what I want; I'll see what I feel like'. It will also be dependent on the intensity of individual variety needs.

For the purposes of examining the affect of variety seeking on purchase behaviour and price sensitivity, the association between variety-seeking and price implied by Lattin and McAlister is employed:

- P3: Where consumers hold specific preferences for a product or variety, substitution is most likely to occur when the price of the focal product/variety increases beyond the consumer's acceptable upper price-threshold; and is less likely to occur when only the price of the substitute decreases.

4.4 Attribute / quality consistency

A tacit assumption in all the studies into price-related purchasing behaviour is that product quality is consistent across consecutive purchases. Used here, quality is taken to mean the combination of attributes peculiar to a specific product or brand. The research in marketing has almost exclusively dealt with manufactured or processed product categories, which typically include grocery items, white or brown goods, or large

⁸ Recall Lattin and McAlister's point that variety-seeking is a reason why levels of product switching beyond that implied by price changes can be observed. Reduced price sensitivity is also implied in their suggestion to product managers to focus on promoting a product as an alternative to consumer's normal choice (as opposed to focusing on price competition).

⁹ V. Wright, personal communication, University of New England, April, 1995.

manufactured goods such as motor vehicles. Common across these products is a generally high level of quality consistency over time. Consumers perceive they can expect the same quality experience on consecutive purchases; that quality is something that is within the control of the producer.

Quality consistency is important in that it facilitates the development of rules-of-thumb which, in turn, reduce the cognitive effort required in making a choice. Following an initial stage of experimentation to identify preferred brands, an individual can assume that subsequent purchases will provide identical consumption experiences. Quality consistency is essential to effective product branding, the value of which is derived from the tendency for consumers to minimise cognitive effort and risk. Brands supply *a* specific set of product attributes, at *a* given quality level, and generally within *a* price range relative to similar other products. Highlighted in Chapter 3, and discussed in relation to substitution, was the variability in quality of fruits and vegetables. Where quality consistency is not guaranteed, the consumer needs to develop some decision rule(s) for ongoing evaluation. Although these may be simple heuristics, the cognitive effort required in the choice process will necessarily be increased.

We could also surmise that quality inconsistency, when coupled with price variability, will further increase the complexity of the decision and, hence, the cognitive effort necessary in making a decision. This may provide some explanation for a curious result evident in an early study into price sensitivity by Uhl and Brown (1971). For two of the products utilised in this study, bananas and celery, consumers' ability to perceive price changes in retail-food prices increased with a change from 5 to 10 per cent, but then decreased with the change from 10 to 15 per cent. For all other food products, perception of price changes increased along with the size of the change. What appeared to distinguish these from other products in the sample was that both products were considered to have high price instability and to be minor budget items, and neither product was purchased frequently. The only other products considered to be unstable in price were eggs and frying chicken, but both were major budget items, and eggs a frequent purchase. Lettuce, which was the other vegetable in the sample, exhibited moderate price stability and was also purchased frequently. Across the sample, price recall was highest when the product was a major budget item, frequently purchased and prices were stable.

Although a variety of unknown methodological issues may have contributed to this result, it is possible that accurate recall was hindered as a result of price instability coupled with quality variation; a characteristic more prevalent in fruits and vegetables than other consumables. Where price and quality are related, as in quality grading systems, the decision reduces to a simple price:perceived-quality evaluation. However, in the case of fresh produce, the price:quality relationship is often confounded by other variables. Factors other than quality are considered to influence price, and vice versa. Natural elements related to supply such as seasons, weather and pests are known to influence quality and price. The consumer may be confronted with high-quality produce at low prices at one point and, at a later purchase, with relatively higher-priced produce which is of lower quality. Added to this is the practice of frequent promotion of high volume produce, as illustrated in the previous chapter.

These inconsistencies suggest that behaviour, and the decision process employed in purchasing these products, will differ from those applied to product categories where quality is consistent. Consumers may be less sensitive to discrepancies between expected and observed prices than is found to be the case for other products (Garbor 1977, Thaler 1985, Kalwani et al. 1990, Piggott and Wright 1992). They may be more willing to increase their search costs, or to pay premium prices. Their decision rules for price and quality may interact, or they may be distinct from one another, perhaps each dominating in different contexts.

The research task is to determine the degree to which quality is salient in determining the purchase of a fruit or vegetable, and how this affects consumer perceptions of, and response to, price variations. Proposition 4a posits that the evaluation of quality and price are treated separately by the consumer. The reasons for this are elaborated below.

P4a: Products whose quality is perceived to be inconsistent will require the consumer to both determine: (a) whether the quality at a given purchasing incident is acceptable; and (b) whether the product represents value-for-money given its ticketed price.

The basis of acceptability in (a) is the degree to which the product for purchase meets the consumer's preconceptions of the quality of that product. For example, if the quality of an apple is the combination of attributes which comprise a morning snack, say, sweet, fresh, crunchy and red, an apple for purchase which is dull and floury, or which is green and sour is not consistent with the attribute set for which the consumer is searching. At

any price the product will not fulfil the consumer's requirements. Consequently, the consumer may turn to a substitute which satisfies most of the attributes, or they may extend their search to other locations, since the quality of an apple at one location will not necessarily be the same in another. The list of desired attributes may be comprehensive, but the actual process of determining whether the product satisfies these qualities will often reduce to a simple rule. Sweet, fresh and crunchy may be inferred from the colour variations in an apple, or by the way it 'snaps' when tossed and caught. In many instances there will be no rational basis for this heuristic except that it has seemed to work over past purchases.

The presence of quality inconsistency raises a further issue in relation to the evaluation process. If both price and quality need to be evaluated, and both are subject to variability which is not necessarily correlated, in what manner is value determined? Is the process involved, one requiring evaluation of relative prices and qualities or is each attribute evaluated separately according to an acceptable benchmark? To engage in the former requires that the consumer undertake a potentially complex cognitive exercise. They would need to recall previous quality/price associations for the product or to compare the focal purchase with other quality/price possibilities in the market. The implication of the latter is that value is determined as though the product was quality-consistent. Having determined that quality falls within an acceptable range¹⁰, the range effectively collapses to a point. Treating the acceptable range as a single point requires significantly less cognitive effort since the quality and value decisions are essentially separate. Partial support for this view is evident in a study by Wierenga (1984) into fresh vegetable preferences and price sensitivity. In general, consumers' decision processing was confined to assessing characteristic levels rather than characteristics per unit of price. Separate, approximate evaluations of price and quality are also consistent with the view that consumers attempt to minimise the effort of everyday purchases.

P4b: Where fruits and vegetables are quality inconsistent, consumers evaluate quality and price against separate benchmarks prior to determining the overall value of the product.

¹⁰ The acceptable range excludes the instance where a product is heavily discounted as a consequence of poor quality. This is a specific case, where we would expect consumers to associate price with quality (indeed this is the aim).

4.5 Risk and consumers' purchasing behaviour

The foregoing argument is based on the assumption that the attributes of a product can be determined at the moment of purchase. However, this is not the case for all products. Some attributes are only revealed through experience/consumption (Nelson 1970). Yet, others require evaluation on each occasion (Darby and Karni 1973). Many fruits and vegetables fall somewhere in between these categories. Attributes such as the flouriness of apples, or the sweetness of oranges or aubergine can only be assessed through consumption. As such, consumers face the risk that the product will not be satisfactory (performance risk).

Consumers may also perceive risks in relation to uncertainty over the timing of consumption, and the product's storage qualities. Perhaps of more significance is the risk which manifests when a consumer is uncertain as to how to prepare a product for consumption (Piggott and Wright 1992). Related to this is the social/psychological risk associated with the wish to satisfy household members or guests, creating emotional discomfort and/or irritation (Ross 1975).

These, and other risks discussed in this section differ in two respects to the generalised theories of risk posited by Subjective Expected Utility and Prospect Theory, and outlined in Chapter 2. In these theories risk may apply to both negative or positive outcomes. Further, a clear distinction is made between the definitions of risk and uncertainty, the latter being defined as a state where probabilities cannot be attached to possible outcomes (Knight 1948).

Stone and Grønhaug (1993), among others, argue that in consumer behaviour research the focus is on the negative consequences of possible outcomes. Since consumer behaviour generally occurs in the context of anticipating satisfaction of specific needs, the primary risk is negative; that satisfaction from the transaction will not occur. They also highlight the tendency for consumer behaviour researchers to 'blur' the notions of risk and uncertainty so that both represent, in effect, uncertainty. This blurring is justified on the basis of consumers' inability, or disinterest, in optimising outcomes.

Owing to cognitive limitations, the actor, in most cases, is only able to foresee a subset of the total number of potential consequences. The total set of consequences is unknown to the actor, implying that the actor has difficulties assigning probabilities to the negative consequences considered. The situation confronted in buying situations is thus more that of "uncertainty" than that of "risk" .. (Stone and Grønhaug 1993: 40)

Consistent with Stone and Grønhaug the risk situations that consumers are expected to encounter in relation to fruits and vegetables are losses, such as those outlined above. It is further assumed that the situation faced is likely to be one of uncertainty, rather than one to which probabilities may be attached¹¹.

In addition to the risks outlined above is a risk which is commonly referred to in the literature as 'financial risk'. Although apparently straightforward, the definition of financial risk can vary significantly, often resulting in a confusion of interpretations. For example, Jacoby and Kaplan (1972) define financial risk in terms of the monetary loss that would occur either because the product doesn't work or because it has high maintenance costs. Implicit in this definition is performance risk, which they similarly define as the likelihood that something will go wrong with the product or that it will not function satisfactorily. Stone and Grønhaug run into a similar problem with their definition of 'financial risk'. Their financial risk is couched in terms of 'a bad way to spend my money', 'the financial investment I would make would not be wise' and 'concerned that I would not be getting my money's worth'. All items beg the question, 'why'¹²; as such, the definition is not overly informative.

Peterson and Wilson (1985) posit a Type 2 risk which is presented in the context of price-quality perceptions, but which may be interpreted as a financial risk.

'A Type 2 risk is that products only differ in price and not in quality. [As such], selection of the high-priced product would incur a monetary loss equal to the price difference between the high and low-priced product' (1985: 252).

The loss ensues from the presumption of a price-quality relationship where one does not exist. Risk is salient when there is a degree of uncertainty as to a price-quality association. Dunn et al. (1986) similarly define financial risk in terms of overpayment for a product, although their definition is somewhat ambiguous.

The importance of distinguishing financial from other forms of risk is in the manner in which price is implicated in choice. The four risks outlined earlier occur apart from price, but have implications for the salience of price in choice. In Peterson and Wilson's

¹¹ There may well be instances where consumers do employ some calculation of probability. The distinction is made here to avoid the strict connotation of risk. For simplicity's sake, and in line with research dealing with uncertainty in consumer behaviour, 'risk' is adopted for the purposes of discussion.

¹² The significant correlations in their study between financial risk and time, social and performance risk may provide a clue.

definition, financial risk occurs in relation to price-quality/performance. In essence, the former are precursors to perceived value and the latter is its consequence, where uncertainty is attached to the valuation.

By implication, performance and financial risk will often occur together in a choice. For example, a consumer uncertain over the quality of a variety of oranges may turn to a higher-priced variety by invoking a price-quality heuristic. However, the attribute opacity inherent in the fruit means uncertainty is also salient in this evaluation. Consequently, the consumer is faced with a further risk: that the higher priced orange is not significantly better than the original variety. The performance risk remains but added to this is financial risk. A confusion of these separate influences may be a contributing factor in the definitions posed above by Jacoby and Kaplan, and Stone and Grønhaug.

In a broad sense financial risk can be viewed in terms of opportunity cost. As such, it need not be confined to the context of perceived price-quality. Financial risk is also applicable to situations in which the consumer is uncertain as to the value of the focal product relative to a variety of potential opportunities, perhaps at other locations.

There are, then, four risks which are considered to have implications for the role and salience of price in choice, and a further financial risk which is invoked as a consequence of uncertainty as to the value itself. How they manifest and their implications for price in choice are discussed in the next section.

4.5.1 The implication of risks for the salience of price in choice

Bettman (1973) argues that consumers encounter two types of risk in relation to evaluating products, 'inherent risk' and 'handled risk'. Inherent risk is the general risk associated with a product class and can be reduced by various means such as search or brand loyalty. Handled risk is specific to a situation, or product, and represents the residual risk following various risk-reduction strategies. Bettman's distinction is important in clarifying the actual risk which is being measured. Consumer confidence with products differs significantly according to their experience with the product. High perceptions of 'inherent risk' will usually be associated with lack of experience with a product. As information is gathered on the product class, inherent risk declines.

Alternatively, inherent risk may remain high for the class, but employment of a brand-strategy can result in relatively low handled risk.

With respect to fruits and vegetables, it is more useful to discuss the inherent or handled risk of a specific product than that of the product class (category). Fruits and vegetables are disparate in the transparency of their quality. The quality of broccoli is readily assessed, but that of potatoes or plums is not readily apparent on inspection. Broccoli may have high inherent risk if the consumer is inexperienced with its preparation and sensory attributes, but both forms of risk diminish rapidly with familiarity. Plums and potatoes may similarly possess high inherent risk to the novice consumer. However, the inherent risk remains high because of the non-transparency of their quality attributes. Thus, some form of strategy is needed to reduce risk.

In the context of grocery and durable goods, two commonly employed risk reduction strategies are the price-perceived:quality heuristics and product loyalty (Peterson and Wilson 1985, Nelson 1970). However, in the context of fruits and vegetables the former is not always feasible since price and quality are frequently uncorrelated. Product loyalty encounters similar problems in application. Loyalty to a variety which has been found satisfactory can only be a temporary solution since many varieties are seasonal. The quality of the variety often declines over the season, and the variety may eventually be unavailable. Further, the relative value of the focal product may diminish as other varieties come into season. Consequently, for many fruits and vegetables where quality is not transparent, the commonly proposed risk reduction strategies may be ineffectual.

Consumers do, however, formulate 'theories' as to the relationship between various attributes of a product (or varieties) and their quality (see Section 4.4). Thus, although on objective assessment products low in quality transparency would be considered to have both high inherent *and* handled risk, a consumer may believe they have an effective strategy to reduce risk; and it is the subjective, not the objective, perceptions which will influence their response to price.

4.5.2 The interaction of price and risk

The key aspect of interest in relation to the various forms of risk identified at the beginning of this discussion is their implication for consumers' sensitivity to price. In response to these risks consumers may take various actions; they may reduce their

purchase quantity, increase their search efforts to other stores, become involved in a price-quality trade-off (where possible) or refrain from purchasing altogether. The strategy they employ, and the extent to which price features in their response, will depend on their personal characteristics and the type of risk they encounter.

The risks associated with quality intransparency or household needs are the most complex in their implications for price sensitivity. Where a variety has been identified as acceptable a consumer may be relatively price insensitive for a period. However, often this strategy will be unavailable.

In Figure 4.1 is outlined a continuum of possible responses to performance and social/psychological risk, given consumer concerns with budgets or value. At the left are consumers who are price insensitive. Their response to a quality risk relies solely on the alternatives available and their assessment of the level of performance risk. If their need for the product is great and there are no alternatives, they will take the risk. Similarly so, with respect to household needs. Moving along the continuum, the influence of budget/price consciousness takes increasing effect. The primary response of consumers is to reduce quantity where no other options are available or where they are forced to purchase higher-priced alternatives. At the extreme of price/budget consciousness, consumers avoid these products entirely, or limit their purchases to periods when the product is relatively inexpensive.

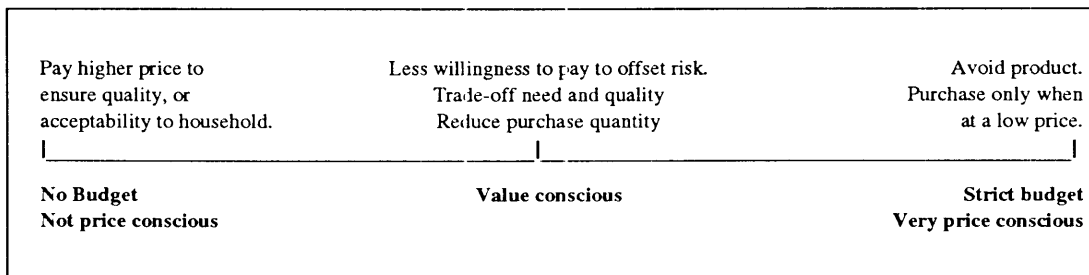


Figure 4.1 Strategies where there is a risk that the product is unacceptable

The risk associated with preparation (consumption), is also subject to the modifying effects of price and budget consciousness. However, consumers' perception of this risk will differ according to their attitude towards the product group. Those who are highly involved in the product group, because of a general interest, or through the pleasure they derive from consumption, would be expected to approach the situation with interest and with confidence in their expertise to suitably prepare the product (Venkatraman 1989).

Conversely, consumers who have very little interest in the product group may perceive the situation as representing greater risk, and requiring unnecessary effort.

Ceteris paribus, those with greater involvement in fruits and vegetables should be less price sensitive as a consequence of the perceived risk in purchasing the product. However, those with less expertise or confidence may refrain from purchasing these products unless they are discounted or on promotion.

The risk associated with the timing of consumption and a product's storage capacity essentially reduces to one of concern over monetary loss or wastage. If the product is not used then its purchase was unwise; a waste of money. The wastage may also result in social/psychological discomfort. In these situations, the level of the product's price should be particularly relevant to the decision to purchase.

Finally, there is financial risk, where consumers are unsure as to the price/value of a product relative to alternative options for achieving the same utility. If we operate on the premise that fruits and vegetables are a low-cost product group, theoretically the potential financial loss should be insufficient for the risk to be salient, or to prompt the consumer to engage in a search effort¹³. However, it is necessary to recall that many fruits and vegetables are subject to substantial price fluctuations, and can represent significant potential savings across locations and over time. Thus, where consumers are price or budget conscious, this form of risk is likely to increase their price sensitivity.

Perceptions of risk and their consequent affect on consumers' price sensitivity is subject to individual differences, and to the availability of various risk reduction strategies. For some consumers, and in specific situations, responses to risk will have little to do with price. However, where a degree of price consciousness is present, and risk reduction strategies are unavailable, the following general proposition can be made:

- P5: When the perceived risk of purchasing a product is high for one of the following reasons: quality is not transparent, unsureness of household needs, uncertainty over preparation of product or timing of use, or of the value of the offer relative to other offers, consumers will exhibit high price sensitivity in their decision.

¹³ Although sub-standard quality may be a sufficient reason to do so.

4.6 Price variability and reference prices

Through the chapter the presence of price variability in fruits and vegetables has been emphasised as a potential source of heightened price sensitivity. This price variability stems from seasonal availability of products, but is also a product of frequent promotions. An often encountered situation in the purchase of fruits and vegetables is the weekly special. Specials are prominently displayed and generally well advertised at the location and, in many cases, also advertised in the local press. The discounts available are substantial and represent significant savings, as noted in Chapter 3. Specials tend to concentrate on high-volume products such as apples, bananas, stone fruit or melons in season, and vegetables such as tomatoes, beans, broccoli and cauliflower, but are not confined to these. The question raised is how these specials, coupled with the seasonal supply variations in price, might affect the consumer's sensitivity and response to price?

In the preceding sections price variability was considered to increase price sensitivity. Frequent price adjustment acts as a stimulus to price consciousness, signalling it as a variable requiring ongoing attention (see Chapter 2). However, also discussed in Chapter 2 was the fact that consumers are less sensitive to price movements when they are confounded by other factors (for example, inflation). Further, price sensitivity is subject to thresholds within which consumers may be relatively insensitive. They grow accustomed to variations within a certain range and only react to a stimuli at the outer limits or beyond the range (that is, the Weber-Fechner law in psychophysics).

We have, then, two opposing influences. On the one hand, the substantial price variation in fruits and vegetables suggests that the consumer will have a keen sense of price differences. On the other, the wide variation in prices, together with the presence of confounding factors, suggests lower price sensitivity.

A central issue is whether frequent discounting is incorporated into consumer perceptions of what constitutes the acceptable range of prices. Kalwani et al. (1990) found that where products are subject to frequent promotion, consumers have been found to resist non-discount prices. The range is narrowed and skewed towards the lower end of market prices. The resistance may manifest in stocking-up or in delay of purchases until the expected discount returns, or by substituting a similar product. The former

tactics are less feasible in the purchase of perishable goods, but in Section 4.2 substitution was indicated as a possibility where the usage context is broad.

An alternative possibility is that discounts may simply be acted upon as they arise, but do not influence the consumer's normal price evaluations. Given the sheer magnitude of the price discounts of fruits and vegetables, this behaviour would seem probable. Among the more price conscious consumers, the frequent discounting may result in a heuristic based on specials (ie 'buy the cheapest'). If this is the case, their purchases may largely reflect the products on special at the time¹⁴. Although consumers may be sensitive to specials this does not necessarily mean they actually evaluate the discount offer (Inman et al. 1990). In general though, some evaluation of prices can be expected, assuming a degree of price sensitivity.

Outlined in Chapter 2 were the various methods available to consumers for evaluation of prices. Most relate to some form of reference price which is formulated by reference to past purchase prices and/or by comparison of prices of similar products at the point of purchase.

Product attributes and consumer characteristics appear to be the dominant factors in determining the method of price evaluation a consumer will employ. Consumers exhibiting product loyalty tend to utilise temporal references, while those who seek variety, or who are price conscious, favour contextual prices (Rajendran and Tellis 1994); the latter was assumed in the response to specials outlined in the previous discussion. Again, though, most studies have utilised grocery products which are quality-consistent. Quality variation, and the marked price fluctuations in the fruits and vegetables category, suggests that all price evaluations should be skewed towards the contextual domain. The cognitive effort in attempting to maintain a reasonable register of price movements is not only considerable but is, in many respects, a futile exercise, since past purchase price and current price are not directly comparable. However, reference to products in the contextual domain is also problematic. Comparison of prices across products is only effective if the consumer perceives the prices of similar products to be a relevant indicator of the focal product's price. The confounding influences of seasons and other events on the price of fruits and vegetables will limit this

¹⁴ This behaviour cannot be considered variety-seeking, as outlined earlier, but is indicative of consumers' perceptions of the range of products considered as substitutes, given a usage context.

relevance. As such, it would seem that evaluation of a current price will necessarily be confined to comparison with an image or benchmark; perhaps in line with Emery's (1962) 'normal' price, or the extremes of the range of prices (Moore and Lehmann 1980). Accordingly,

P6a: In the purchase of fruits and vegetables, consumers will utilise, in their evaluation of a product's current price, a price image which has been constructed over past purchasing experiences.

Also as a consequence of the complex interaction between quality and price variability, consumers' sensitivity to relatively small changes in price is expected to be low.

P6b: When purchasing fruits and vegetables which are subject to price fluctuations as a consequence of variation in quality and supply, consumers' price sensitivity will be low relative to products not subject to this variability.

4.7 Quantity flexibility and the response to price changes

A feature of many fruits and vegetables which distinguishes them from most grocery items is that the consumer is not required to purchase fixed quantities. Grocery items are generally made available only in two to four sizes. With most fruits and vegetables consumers can respond to price changes by increasing or decreasing the quantity they purchase more or less 'continuously'. Consequently, we would expect to see consumers responding to perceived, significant price changes by adjusting the quantities they purchase, and less by substitution or deferring purchase. This is particularly the case where there are specific needs or where particular preferences are held.

P7: Where a particular preference is held for a fruit or vegetable and significant price changes are perceived, or the price is uncomfortably high, consumers will more frequently respond by varying their intended purchase quantity, than they would by substituting or deferring purchases.

4.8 Summary of the issues

The primary interest of this research is the affect on consumer price perceptions, and sensitivity to price changes, of characteristics peculiar to fruits and vegetables. Foremost among these are quality and price instability as a consequence of seasonal and natural influences. The common practice of frequent and substantial discounting, and the unusual freedom of choice in determining quantities for purchase, are also significant

characteristics in the fruits and vegetables category. Finally, there is the risk associated with the inability to assess the quality of many fruits and vegetables, and the lack of strategies to cope with this risk. Together, these characteristics suggest that aspects of the decision-process that consumers employ in making a choice may differ from that observed with respect to many grocery items, although not all fruits and vegetables will exhibit each of these characteristics. Over the chapter, the implications for consumer behaviour of these influences have been synthesised into propositions. The propositions are summarised in Table 4.1, and the implications further discussed below.

In Section 4.2 the influence of a product's physical and use attributes on sensitivity to price changes and differentials was discussed, leading to the propositions in P1 and P2. The influence of these attributes is relevant to all product groups, but is particularly important in isolating the effects on the response to price of the characteristics peculiar to fruits and vegetables. Relatively low sensitivity to price changes may be a consequence of the confounding effects of quality and price instability, or it may simply represent a fixed preference for a certain combination of attributes found only in a specific product. Defining similarity for the purpose of determining the scope for substitution is difficult even where the product group represents a range of brands. Hence, the focus in marketing on segments. With the fruits and vegetables category the scope for substitution is simultaneously broader and narrower, depending on individual tolerances

and preferences. It is also complicated by the variation in quality and, volume, and the fluctuations in price. Two products considered as substitutes at one purchase incident, may not be so considered at the next. Clearly, it is impossible to make definitive statements as to the similarity between fruits and vegetables. However, the coarse categorisation employed in propositions P1 and P2 provides a basis from which to examine this aspect.

The potential influence of variety-seeking behaviour was discussed in Section 4.3. This is not just an influence unique to fruits and vegetables; it is prevalent in the purchase and consumption of many foods. As outlined in proposition P3, consumers are considered to be less price sensitive when their aim is to satisfy physiological or psychological needs for variety. As a consumer characteristic, the influence of variety-seeking needs to be identified as a distinct element in purchasing behaviour.

Table 4.1: Summary of working propositions

| | |
|-------------|--|
| P1: | Where the usage context is broad in relation to non-staples, and/or the consumer is indifferent to the varieties of a staple, the greater will be the sensitivity to price changes and price differentials. |
| P2: | Where consumers hold specific preferences for a product or variety, substitution is most likely to occur when the price of the focal product/variety increases beyond the consumer's acceptable upper price-threshold; and is less likely to occur when only the price of the substitute decreases. |
| P3: | Where a usage context is broad, and a product group or variety presents a range of sensory variation, a consumer seeking diet variation will exhibit low price sensitivity in their purchase relative to the sensitivity they would exhibit when variation is unimportant. |
| P4a: | Products whose quality is perceived to be inconsistent will require the consumer to determine both: (a) whether the quality at a given purchasing incident is acceptable; and (b) whether the product represents value-for-money given its ticketed price. |
| P4b: | Where fruits and vegetables are quality inconsistent, consumers evaluate quality and price against separate benchmarks prior to determining the overall value of the product. |
| P5: | When the perceived risk of purchasing a product is high for one of the following reasons: quality is not transparent, unsureness of household needs, uncertainty over preparation of product or timing of use, or of the value of the offer relative to other offers, consumers will exhibit high price sensitivity in their decision. |
| P6a: | In the purchase of fruits and vegetables consumers will utilise, in their evaluation of a product's current price, a price image which has been constructed over past purchasing experiences. |
| P6b: | When purchasing fruits and vegetables which are subject to price fluctuations as a consequence of variation in quality and supply, consumers' price sensitivity will be low relative to products not subject to this variability. |
| P7: | Where a particular preference is held for a fruit or vegetable and significant price changes are perceived, or the price is uncomfortably high, consumers will more frequently respond by varying their intended purchase quantity, than they would by substituting or deferring purchases. |

In Section 4.4, the difficulty consumers encounter when the quality of a fruit or vegetable is not readily assessable was discussed. Also highlighted was the absence of reliable strategies—such as brand loyalty—to reduce the risk that the product’s quality might be unacceptable. Various other forms of potential risk were also discussed. Their salience in choice and influence on price sensitivity is largely dependent on consumer characteristics. Regardless of the type of risk, proposition P5 states that consumers will be more price sensitive where they perceive significant risk in a purchase. Among the various responses to risk, consumers might seek to minimise the consequences by responding as suggested in proposition P7. This proposition, which recognises the significant scope for varying the quantity purchased in many fruits and vegetables, represents an alternative strategy to substitution, or to deferring purchases, when a price is perceived to be uncomfortably high for the consumer.

Propositions P4a, P4b, P6a, and P6b, all relate to the central issue of the influence of price and quality fluctuations on consumers’ price perceptions. The former focus on the consequences for the price evaluation process of variable quality. Consumers are assumed to limit the effort of their decision by determining whether the product’s quality is within an acceptable range, then treating this range as a point for the purposes of evaluating price. Only where quality is at the lower end of the range and the price is concomitantly low, or where there is a perceived risk in the purchase, might the consumer engage in a compensatory or trade-off process.

Propositions P6a and P6b highlight the implications of the confounding influences of supply inconsistencies on the evaluation of price. They also incorporate the additional influence of price discounting. In part as a consequence of these influences, consumers’ reference prices will comprise an image or range, as opposed to an actual price. Proposition P6a leaves open for investigation how that image or range may be determined. It is probable that its formulation will differ according to the individual characteristics of specific fruits and vegetables: whether the product is seasonal, the degree of its price and quality variation, and the context of its usage. Proposition P6b posits that consumers’ price sensitivity will be low for relatively small changes in price. The proposition is based on the capacity individuals have to discriminate change when there are large and frequent fluctuations in a variable; and particularly where the product does not warrant significant

cognitive effort. However, it is possible that the converse may be the case for some consumers. Temporal fluctuations in prices, and the wide price disparity between shops, signal opportunities for substantial savings if the consumer is willing to engage in search.

Ultimately, the decision to purchase will depend on how fixed are the set of attributes the consumer prefers, and how favourably the deal on offer is viewed. These, in turn, will be determined by consumer characteristics. With the exception of variety-seeking behaviour, consumer characteristics were only briefly touched upon in this chapter. Characteristics such as price consciousness or deal proneness, or whether the consumer is subject to budget constraints, establish the nature of consumers' response to price changes and differentials. Consumers' cognitive styles can influence the manner in which they evaluate information and arrive at a decision. These, and other characteristics, are discussed further in Chapters 5 and 6.

Chapter 5 - Methods for describing consumers' purchases of fruits and vegetables

Haven't got many vegies, hold' on...let me look... carrots, broccoli...carrots, broccoli, beans, string beans... See I haven't been to get the meat... usually I buy the meat first then I know which vegies to get... so I don't really know what I'll end up... string beans, broccoli.

(Protocol 1995)

'..we need a capability for acquiring facts about the environment in which we find ourselves, and a modest capability for drawing inferences from these facts. ... this capability is used to help generate alternatives as well as to assess their probable consequences..'

(Simon 1986)

5.1 Introduction

In the preceding chapters, discussion has centred on specific issues in the consumer choice of fruits and vegetables. The picture which emerges from Chapter 3 is that of a product group which is distinguished from other food-product groups by the variability apparent in the price and quality of many of its products. In Chapter 4 the implications of these characteristics for consumer behaviour generally, and response to price in particular, were put forward in a set of propositions. In this chapter methods for investigating these issues are developed. To facilitate this process a model of consumer decision processes in relation to fruits and vegetables is formulated. The model is a synthesis of the specific issues discussed in preceding chapters. However, it has a number of features in common with various other proposed models of consumer decision behaviour. The nature of these models, and specific examples, are discussed briefly in Section 5.2.

Section 5.3 is devoted to outlining the model and discussing its depiction of the purchasing process. Various implications for methods are evident from this discussion, and are outlined towards the end of the section.

From this point, attention turns to the methods employed to validate the propositions contained within the model. The general research design is outlined in Section 5.4. This design incorporates three phases. The first is the formulation of measures to capture consumer characteristics relevant to purchasing behaviour in fruits and vegetables.

In the second phase a post-shopping survey is used to elicit consumers' self-reports of shopping behaviour. The third phase centres on consumers' verbal reports of the shopping process.

An issue which needs addressing in relation to the various methods for measuring price sensitivity is exactly what type of sensitivity is being measured. This is particularly important to the types of conclusions which can be drawn from these measures in relation to the role of price in choice. This issue is discussed in Section 5.5 and a position adopted for the purpose of reporting results in Chapters 7 and 8. The central feature of Phase 3 is the collection of verbal reports. The validity of this method for capturing individuals' cognitive processes has been the subject of some dispute. The method also requires consideration of encoding schemes to facilitate analysis. To introduce the method and to address these and other issues raised in relation to verbal protocol analysis, in Section 5.6 the nature of the method is outlined and the rationale underlying an encoding scheme for the purchase of fruits and vegetables is discussed.

In the final section is a brief overview of the chapter. Also discussed is the general direction research will take and how this is to be presented in subsequent chapters.

5.2 Models of consumer decision making behaviour

In Chapter 2 various models of consumers' decision processes were reviewed. A primary distinction between models was the level of processing implied in choice. At one end of the spectrum are models which assume high levels of attribute evaluation, where choice is arrived at via the imposition of one or more decision rules in the evaluation process. At the other end of the spectrum are models of choice which depict the process as essentially automatic. Learned preferences and relative stability in attributes enables holistic processing using 'brands' or other features which act as global proxies for a product's attributes.

Although fruits and vegetables may be categorised as low cost, frequently purchased products their inherent price and quality variability suggests choice will often require greater cognitive effort than implied in automated processing. At the same time, though, we can expect that consumers endeavour to minimise the effort required in their purchases. As such, heuristics which have been developed with experience will be employed where possible. In Chapter 2 a variety of heuristics were outlined including

frequency counts, directions for selective attention to attributes and category-based processing.

In other instances, consumers may be required (or prefer) to undertake a degree of attribute processing, either because they are less familiar with the task or they encounter a discrepant attribute, or for reasons of variety-seeking or product learning. However, even here the evidence suggests that consumers employ simplifying tactics. For example, in a study by Payne (1976), subjects commenced with elimination-by-aspects followed by a compensatory additive strategy. In this way they seemed to be employing an initial strategy which reduced the complexity of the task, leaving only a few options to be examined more closely. Subjects also differed according to whether they used an integrated approach, where comparisons are made across dimensions, or whether they focused on one dimension at a time, eliminating those alternatives which are unsuitable before moving on to the next dimension.

The second approach is consistent with a strategy which uses 'chunking' as a simplifying process. It is easier to make comparisons on alternatives within one dimension than it is to integrate the dimensions in evaluating the alternatives; this behaviour was noted in the lemon/lime example of Chapter 1. In the context of grocery purchases, Russo and Leclerc (1994) similarly noted the presence of simplifying strategies. Their results indicated a three-stage process of choice: orientation, evaluation to choice through comparison and focus on the chosen alternative, and verification. Overall analysis of choice patterns tended to support a continuous process with a global orientation. If eliminations were easy in the orientation stage, they were made.

A further feature of choice noted in Chapter 2 was that the choice process is generally goal directed, resulting in a top-down sequence. These processes are illustrated in the two studies just outlined. However, an alternative sequence to top-down is a bottom-up process where consumers use 'concrete attributes to construct more abstract representations on which the alternatives may then be compared' (Johnson 1989: 300). The bottom-up process is studied in the context of noncomparable choices, and with respect to choice across quite different product categories (such as a television and home gym). However, product categories with significant heterogeneity may also provoke a bottom-up process (Johnson 1989). A general finding in relation to this process is that it

is most often associated with the absence of clearly defined goals or objectives (Johnson 1988, 1989; Park and Smith 1989).

In the context of fruits and vegetables purchases, it is easy to envisage a situation in which a concrete attribute acts as a cue for a choice decision, which is then followed by a bottom-up process. A special price, attractive packaging, or another sensory response to an item, can provoke its consideration for purchase. The consumer may then progress from evaluation of other concrete attributes to evaluating the product's uses and overall value. At higher levels of abstraction alternative options for satisfying needs and desires become salient and are evaluated against the focal product. At the broadest level, alternative uses for the consumer budget can result in such diverse comparisons for expenditure as between a treat of blueberries and the purchase of a new car or the payment of a telephone bill; a level of comparison which is commensurate with the economic concept of utility and the needs/wants hierarchy outlined by economists (Jevons 1924, Georgescu-Roegen 1954).

Although choice processes may, on occasion, require higher levels of cognitive processing, for the most part choice in relation to fruits and vegetables is expected to rely on heuristics. Particularly relevant are those related to price and quality perceptions. Both variables are expected to feature frequently in consumers' choice and to be subject to ongoing monitoring. Where quality is difficult to assess, consumption subsequent to purchases is likely to have a strong influence on future choices. In this respect, consumers' choice should reflect a continuous rather than a discrete process (Hoyer 1984).

As well as product-related characteristics, consumer choice is subject to the influence of various consumer characteristics. Indeed these have implications for type of attributes which are salient in choice, particularly price. Highlighted over previous chapters were the influences of physiological factors, demographics, and consumers' framing of usage contexts. Wierenga (1983) incorporated a number of these influences in a model of choice for a food product. In Wierenga's model, consumers' evaluation of a food product is influenced by personality and demographic factors which interact with product attributes and experience. Together these determine consumers' beliefs and perceptions of a product and the weighting given to different evaluative criteria. Choice is

determined by these factors and immediate budgetary or other situational factors (time, usage context).

The model of consumer decision making proposed below has many features in common with the model developed by Wierenga, although it was developed as a summary of the discussion over Chapters 2 to 4 rather than through specific reference to Wierenga. It differs in that it is specific to the purchases of fruits and vegetables, and places greater emphasis on the evaluation process. In the main, the model presents goal-directed decision processes, and top-down strategies. The exception is where price or quality act as a cue to the consumer, which may prompt a bottom-up process. Implicit in the core of the model are aspects of the 'price-based' model outlined in Chapter 2. It is assumed that consumers have preconceived perceptions of quality and price from which they evaluate the current product in order to form an overall perception of its value. However, in this model 'perceived value', and its primary elements, are made explicit.

The model is not presented as a definitive description of consumer decision making in relation to fruits and vegetables. The objective is to describe a decision making process which synthesises the issues presented in previous chapters and which will facilitate exploration of the role of price in consumers' purchase decisions.

5.3: A model of consumer choice for fruits and vegetables

The model of consumer choice for fruits and vegetables is outlined in Figure 5.1. The model commences with a decision to shop for fruits and vegetables; a decision which may be prompted by a specific need or represent an established shopping pattern to renew stocks. Alternatively the decision may be on impulse; a brilliant display of colours and textures can capture the consumers' senses and entice them into the shop. In either instance, the decision carries with it various factors which influence the approach the consumer will have to shopping, and their preferences and aversions for specific items. These factors were discussed at some length in Chapters 3 and 4. Important is that they define the context in which choices are to be made and, hence, they will have a significant bearing on the attributes which will determine the final choice. A consumer who is highly price conscious may be more likely to have made a shopping list, will tend to focus on

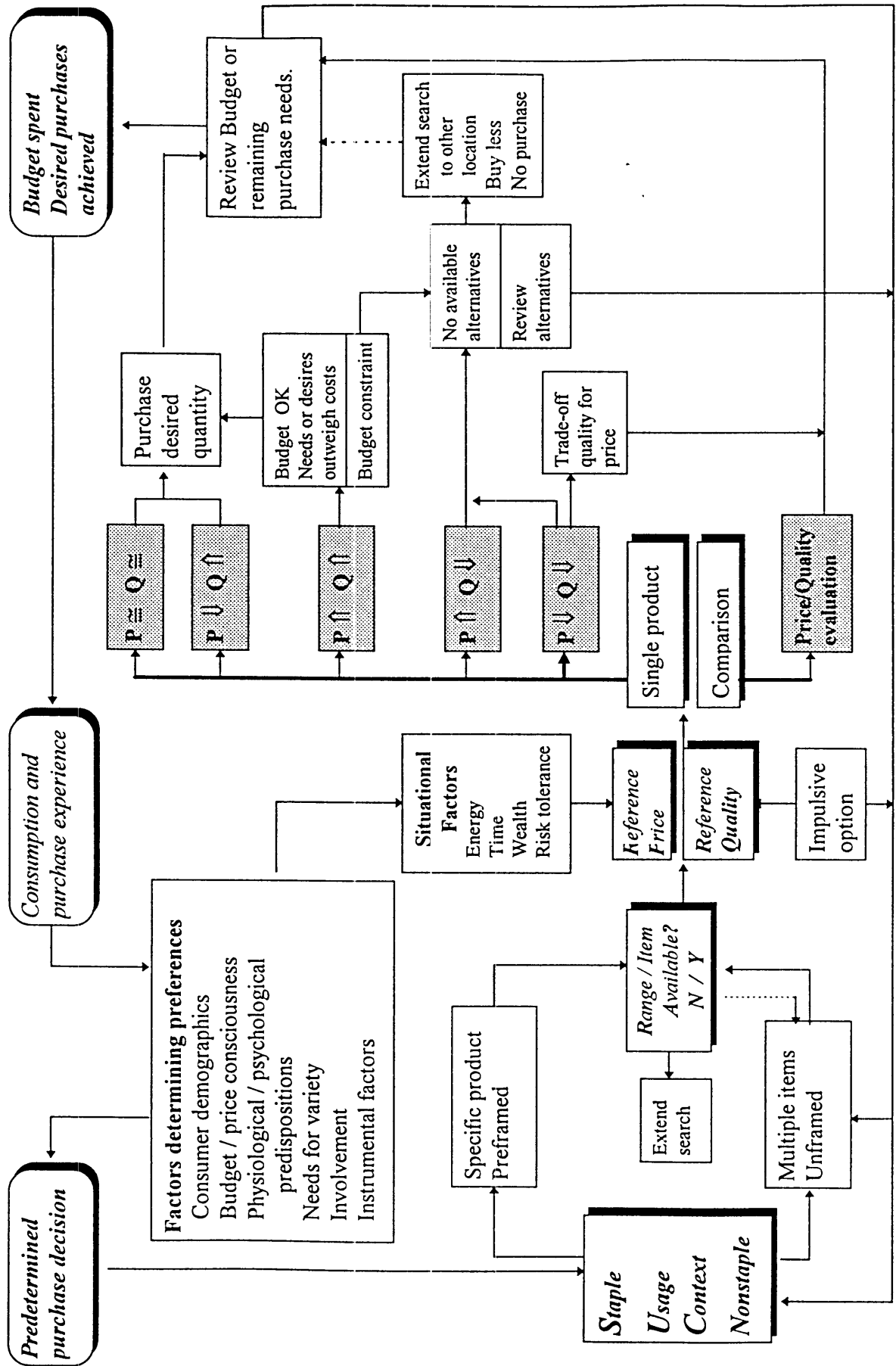


Figure 5.1: A model of the consumer decision processes for choice in fruits and vegetables.

specials, to actively check the price of items, and/or to engage in trade-offs in cost and quantity across items.

Consumers may be aware of a number of the influences on their behaviour, such as the need to keep within a strict budget, or to focus on convenience, or specific dietary needs. However, many may be unconscious influences such as; food aversions, habitual patterns of consumption, psychological and physiological needs for variety. Nor are the influences mutually exclusive. A consumer can have an high hedonic involvement with fruits and vegetables and enjoy variety, but may also be confined to a relatively meagre budget or have a compulsion for price savings.

These factors also provide a generalised constraint on the range of items the consumer will consider in their purchases, which is further modified by the usage context(s) which the purchases are intended to satisfy. As noted in Chapter 4, the context may be specific, such as strawberries for a dinner party, or more general. A weekly shopping expedition will encompass needs to satisfy meals requirements, snacks and other daily consumption. The specificity of the need can be expected to influence consumers' response to the price/quality they encounter when purchasing the item. Given a degree of price consciousness an unframed usage context is likely to be associated with greater price sensitivity because there is more scope for discretionary purchases. In the model the potential behavioural consequences of this distinction are captured by a separation of contexts into specific, preframed contexts, and multiple, unframed contexts.

It was argued in Chapter 4 that consumers appear to make a distinction between those fruits and vegetables which are perceived as staples, and those which fulfil needs for variety (complements). Staples were defined as any fruit or vegetable which is consistently purchased and which is perceived by a consumer to be a basic item in their diet. Fruits and vegetables other than staples were considered to be potential complements for one another. Consumers appeared to be more sensitive to price movements in nonstaples than to staples. Although on this basis it may be argued that staples provoke a similar behavioural pattern to that of a preframed, specific usage context, this may not be the case where a range of varieties are available and considered acceptable. As such, while a distinction between the two is maintained in the model, no assumptions are made as to their affect on price sensitivity.

5.3.1 The shopping and decision-making process

From this point, the model represents the actual shopping, and decision, processes in relation to the evaluation of a fruit or vegetable. The process is iterative, and continues until the consumer's budget is spent, or they have achieved their desired purchases.

The first situation a consumer encounters is the range of products available. If the context is specific, and the product is not available, the consumer may extend their search to another store, or consider the possibility of purchasing alternative items. For purchase contexts which are unframed the available range either represents the consumers' normal evoked set or a delimited set, where some options are unavailable. Regardless of a consumer's predispositions, or the nature of the product, the consumer will encounter both price and quality attributes. The degree to which they attend to these, and their response, will be a function of the factors determining their preferences, of budgetary considerations or value consciousness, and the usage context of the product under consideration. These, in turn, will influence the references they employ to evaluate price and quality. Where the usage context is unframed, the salient references may be contextual rather than temporal, although the attributes which constitute quality are likely to be learned (Rajendran and Tellis 1994). Consumers who are highly price conscious may well be informed on prices across locations and bring these to bear in their evaluation of products.

Included at this point in the model is the potential for impulsive purchases (or further impulses if the decision to purchase was itself an impulse). A discount price or appealing quality may attract the consumer as can, for example, encountering the first peaches or cherries of the season. These may be acted upon immediately or provoke the bottom-up process described earlier. The latter response is indicated by an arrow indicating feedback to usage context.

In the model it is assumed that all consumers will evaluate the quality of fruits and vegetables, at least superficially, but not so the price. Although consumers' particular idiosyncrasies have a primary influence on the salience of these variables, situational factors may be equally potent influences, and will dominate in some instances. Where a consumer's experience with a product is one of difficulty in assessing quality, the risk in purchasing the product will need to be incorporated into their decision-making. As such, the overall 'value' of the product may take on greater significance in the decision. Time

constraints, energy levels, whether the consumer feels the need to be frugal or to indulge themselves, and the environment of the shop may each have an effect on the salience and emphasis placed upon price and quality in their choice. These, in turn, may have to be balanced against one another or against specific needs.

The remainder of the model details the various choice situations the consumer is likely to encounter. Distinguished in the model are situations in which a single product is the focus, and one in which an immediate comparison is undertaken. The comparison process depicts the situation where a consumer perceives a range of options for the usage context they have in mind. Thus, the choice process requires some form of price/quality evaluation across perceived options to arrive at a solution. The situation applies to staples as well as to non-staples; in the former the alternatives are in the form of varieties. Two possible outcomes are assumed from the process. In the first, the option is purchased and, in the second, none of the options is considered satisfactory resulting in no purchase or a decision to extend the search to other locations.

The alternative set of choice situations which may occur involve a single product. Although these situations clearly depict preframed contexts, they are not limited to these. A consumer may commence their shopping process with the general intention of purchasing 'greens' and without a specific product in mind. However, rather than attempting to compare the range of 'greens' at once (a physical impossibility in many shops), they assess produce as they encounter them. In effect, each is treated as a discrete choice. Further, if we consider that a proportion of shoppers are purchasing for at least two to three days, and that consumers generally consume a variety of fruits and vegetables daily, many are probably seeking a range of 'greens' to satisfy their needs rather than a single 'green'.

In relation to a single product, outlined in the model are five price/quality situations which can be encountered and consumers' probable responses to them¹. 'Low' and 'high' prices are indicated by '↓' and '↑' respectively. Where quality is indicated with '↓' it can be interpreted as 'low' or reflecting uncertainty (risk). The sign '≅' indicates that the price or quality is within the consumer's acceptable range.

¹ For the purposes of illustrating possible responses, the model assumes all consumers refer to both price and quality.

Commencing from the top, $(P \cong Q \cong)$ represents a situation where both price and quality are within expectations. The consumer purchases their planned quantity and then reviews their remaining needs or budget. This situation is the most likely to reflect low-level cognitive processing. In the second situation, $(P \Downarrow Q \Uparrow)$ price is lower than expected and quality is within the acceptable range or higher than normal. If the product was not an intended purchase the low price may have provoked the purchase. As with $(P \cong Q \cong)$, the consumer purchases their desired quantity (which may be greater than normal in response to the price) and reviews their needs. For the remaining scenarios the process is less straightforward. In the third situation $(P \Uparrow Q \Uparrow)$, both price and quality are high. The higher price prompts those concerned with this attribute to review their budget constraint, or perception of value. In some cases the need or desire for the product will outweigh its cost. The example of strawberries is a case in point. Others will determine that the product is within their budget or value parameters: savings on other products may have provided extra cash. Where the product does represent a strain on the budget, or falls outside the comfort zone of some consumers' sense of value, alternative products may be investigated. If none are available, the consumer can choose to extend their search to other locations, to reduce the quantity they had intended to purchase (if possible), or to decline to purchase.

In the final scenarios quality is either bordering on the unacceptable for consumers or the product's quality is difficult to determine. However, in the fourth situation price is higher than expected $(P \Uparrow Q \Downarrow)$ and consumers look to alternative products where possible. They will only purchase the product if there are no options, and will probably do so in smaller quantities. In the final situation price is also low $(P \Downarrow Q \Downarrow)$. As a consequence, consumers have an additional option: to trade-off quality for the savings on price.

The model is completed with a feedback loop to future shopping expeditions. From their shopping and subsequent consumption experiences, consumers form impressions and sets of expectations which will inform choices on the next occasion. Particularly relevant will have been sudden drops in prices which signal that a product has come into season and should be considered as a purchase alternative. Also important will be pleasant (unpleasant) consumption experiences which will alert the consumer to seek (avoid) the product in future.

5.3.2 The model and reality

As a stylised representation of the shopping and decision-making processes of consumers, the model depicts a more ordered progression to choice than may be the case in a natural setting. Consumers do not necessarily focus on one product, or a set of products, at a time. Often they scan the produce on offer using this as a method of formulating meals, eliminating options, and detecting specials or particularly interesting offers (a more complex version of Russo and Leclerc's orientation). Further, greater emphasis is given to single product choices than to comparisons. In these, comparisons occur sequentially, as a result of seeking alternatives in response to deviations in price or quality from expectations. The emphasis given to single product choices is based on the assumption that the heterogeneity in fruits and vegetables will favour this type of choice behaviour. As such, the behaviour posited in proposition P2, where consumers are considered to respond to the attributes of the focal product, rather than to those of other products, is expected to be more prevalent.

For clarity, the model understates the myriad of feedback loops depicting the continuous influence of preferences, usage contexts and consumers' budgetary and personality idiosyncrasies. 'Quality' is a subjective perception. On encountering quality, consumers' sensory receptors can evoke pleasant or unpleasant memories, causing strong and immediate reactions. The same is true for price. The extent to which price is salient in a decision will be affected by consumers' concern over cost, and the nature of price variations characterising individual products. While acknowledging the continuous operation of these influences on the choice situations outlined, for present purposes their affect on choice is limited to the depiction of 'situational factors' which operate through the reference price and quality.

Finally, the difficulty in determining the quality of some fruits and vegetables is only addressed in a generalised manner. It is possible that this feature may warrant further categorisation of products for the purposes of determining its influence on consumers' response to different price/quality situations.

5.3.3 The model's implications for methodology

The central questions for this thesis are: (a) to what degree does price influence the purchasing decision in choice of fruits and vegetables and, (b) to the extent it does, in what manner does it influence the decision?

In Chapter 4, emphasised were the difficulties in determining a basis for similarity for the purpose of addressing the role of price in the purchase of fruits and vegetables. In line with the conclusions of that chapter, the scope for substitutes is defined in the model by usage context, and according to whether the product is a staple or non-staple in a consumer's diet. However, to confirm propositions P1 and P2, the validity of these distinctions will need to be established and further refined in the present research. Also to be established will be the risk associated with the quality, or attribute, opacity of some fruits and vegetables and their effect on price sensitivity (proposition P5).

Proposed in the model are five price/quality situations which a consumer may encounter, and possible consumer responses to these. Not explicit is the potential influence on choice of the temporal variation in price of specific fruits and vegetables. The evidence in Chapter 3 suggests this variation is considerable and potentially significant to the consumer. Requiring further investigation is the influence of different levels of price variation on consumer responses to price changes. According to proposition P6b, a consumer's price sensitivity to grapes should be greater than for pumpkin or potatoes. However, there is also the influence of usage context and the staple/non-staple distinction. The effects of these need to be separated in order to confirm propositions P6b and P7.

Although touched on in discussion of the model, the manner in which consumers arrive at a response to a price/quality situation is not made explicit in the model. Propositions P4a and P4b imply that consumers do not generally engage in an involved process of assessing price against quality. Rather, they determine whether quality is acceptable and, if so, whether price is within their expectations (or vice versa). This type of processing can apply equally to comparisons (see Payne in Section 5.2). To confirm these propositions, and to identify their implications for the model, investigation of the actual decision processes in purchasing fruits and vegetables is required.

A further aspect emphasised in Chapter 4 was the prevailing influence on the decision-process of consumer-centred influences. Each of the price/quality situations outlined

represents a subjective interpretation of the situation. Thus, one consumer may interpret a situation as '(P↑ Q↓)' and another the same situation as (P≅ Q↓). Even where consumers are uniform in their perception of a price/quality situation, their response to it will be contingent on the emphasis they place on budget/value or other aspects. Proposition P3 suggests that a consumer seeking variety will be less sensitive to price. A tendency for variety-seeking, and the other influences on consumers' perceptions, as outlined at the commencement of the model, will need to be explored.

A final issue in consumers' response to price is the reference price by which they evaluate prices. Proposition P6a posits that consumers generally employ a price image to evaluate current purchases. To determine whether this is the case requires investigation of the bases on which decisions are made to purchase different fruits and vegetables. It is possible that the nature of reference prices may vary across fruits and vegetables. Alternatively, differences may be confined to individuals, suggesting different price schema.

5.4 The research design

The model presented above represents a tentative depiction of consumer decision processes in relation to purchases of fruits and vegetables. The various aspects of the model which require confirmation or further investigation are summarised as follows:

1. The influence of consumer characteristics on sensitivity and response to price levels and variation—such as demographics, price consciousness, risk profiles and decision-style orientation.
2. The affect on sensitivity to price of the usage contexts consumers perceive for different fruits and vegetables, and the general utility of the distinction between staples and non-staples for categorisation.
3. The salience of risks associated with quality opacity, and the influence of these and other forms of risk on sensitivity to price.
4. Perceptions of price variations, and consumers' sensitivity to these variations.
5. The role price plays in the *actual* decision processes.

The number of variables encompassed in these five areas is extensive. We can also expect the influence of each, and their interaction with one another, to vary considerably according to the individual, the product and the context of purchases. However, at the centre of each issue is consumers' sensitivity to price and the role price plays in choice.

Various methods have been employed to examine the affect of price and other variables on consumer choice. Common among these are demand analysis in economics (Asafu-Adjaye and Ritter 1995); and in marketing the use of scanner data and household panels (Mayhew and Winer 1992), direct interviews of consumers post-purchase which in some instances is combined with in-store observations (Wells and Lo Sciuto 1966, Urbany and Dickson 1991), controlled experiments (Wierenga 1980; Gabor and Granger 1964, 1969), and concurrent verbal reports of the shopping process (Bettman 1970, Payne and Ragsdale 1978, Murtaugh 1984). While each has their advantages, not all are feasible for the investigation of price in the purchase of fruits and vegetables.

Demand analysis and scanner studies have the advantage of capitalising on existing data which enable large sample studies. However, in demand analysis research is generally conducted at the level of the market using aggregate data. Consequently, substantial assumptions as to consumer behaviour are required which result in the imposition of various functional forms on the data, and the use of proxy variables such as 'income' to represent budget constraints. The particular problem in employing demand-based analyses for the current research is that the emphasis here is on exploring consumers' behaviour in relation to choice. This requires data at the individual level and an emphasis on discovery rather than validation of a theoretically or empirically derived model.

Studies based on scanner data are conducted at a lower-level of aggregation and incorporate individual household information (see Chapter 2). These have resulted in useful insights into the behaviour of distinct consumer segments but, as with the economic models, the emphasis is on breadth rather than depth of analysis. Further, there is still an element of extrapolating behaviour from the model employed for investigation. However, of greater significance to the present study is that the quality variation inherent in fruits and vegetables can be expected to confound results. Consumers' recorded purchasing behaviour may be a function of a change in price or to a change in quality, or both. Noted in Chapter 3 was that the variability of the two are not closely correlated. Clearly both

economic analysis and scanner data are unsuited to the examination of consumers' price sensitivity in relation to fruits and vegetables purchasing.

An alternative to analysis of scanner data is the use of controlled experiments. These facilitate greater scope in examining consumers' behaviour under different conditions, but have attracted criticism because the conditions under which consumers respond is, by definition, artificial (Heijdra 1988). Of particular concern is that subjects are performing to the task rather than behaving as they would in their normal shopping environment. To reduce task biases a number of researchers have constructed simulations of the shopping environment (Cooper-Martin 1993, Russo and Leclerc 1994). However, the potential difficulty in attempting to replicate the context of fruits and vegetables purchases also renders this option infeasible for current purposes.

Two methods which do offer the potential for exploring the issues outlined above are post-purchase questioning and the collection of verbal reports. Post-purchase questioning provides the opportunity for collecting a wide representation of consumers' attitudes and perceptions of their purchases. This is particularly valuable for determining product characteristics such as usage context, perceived varietal breadth, and the influence of consumer characteristics on price sensitivity. The collection of concurrent verbal reports, on the other hand, does not lend itself to large samples but provides considerable scope for examining consumers' choices in detail. As such, it provides an avenue for examining in greater depth points three (3) and five (5) above.

To investigate the issues outlined, both methods are incorporated into a study of consumers' shopping behaviour in relation to fruits and vegetables. Including both methods in the study enables significant depth in the analysis of consumers' shopping, while ensuring some degree of representation across consumer types. A further issue in relation to the study is the manner in which consumer characteristics and perceived product attributes should be measured. The latter is readily incorporated into a regime of questionnaire instruments for post-purchase questioning, and is discussed further below. The measurement of consumer characteristics is more complicated.

As indicated in the model there are several dimensions along which consumers may differ, and each of these is expected to influence their choice behaviour. Although various measures have been proposed to capture individual differences on these dimensions (Lichtenstein et al. 1993, Zaichowsky 1985, van Trijp et al. 1992), closer

examination indicated that many of the items comprising the measures were not entirely appropriate to the context of fruit and vegetable purchases. Further, the combined measures represented a formidable list of items to which subjects would be required to respond. This presents a significant problem in the current research because subjects are to be asked to complete several questionnaire instruments in addition to these measures. To overcome this problem an additional study was undertaken to develop a set of measures to capture the consumer characteristics relevant to the purchase of fruits and vegetables, but which was also parsimonious.

The final research design, then, incorporates three phases. The first phase is a preliminary to the main studies and is the development of measures to capture the relevant consumer characteristics. These measurements will then be used in the second and third phases. The dimensions of interest have been discussed over previous chapters and are depicted in the choice model above. They include: price and budget consciousness, variety-seeking behaviour, a measure of involvement with the fruits and vegetables product category, and attitudes to risk. A further factor identified in various pricing studies as influencing consumers' attention to price is their inherent predisposition for engaging in cognitive effort (Inman et al. 1990). A measure for this dimension is also developed in Chapter 6.

The second phase is the post-shopping survey of a wide sample of consumers. An initial objective of this phase is to establish general consumer perceptions of the product category, and of specific fruits and vegetables. In line with the model the specific aspects of interest are: the manner in which consumers use the product, their general perceptions of quality, the frequency with which products are purchased, and consumers' perceptions of varietal heterogeneity. The main objective of phase two is to determine which of these aspects, together with the consumer measures developed in the first phase, contribute to differences in consumers' attention to price, and to the manner in which they evaluate price (if in fact they do so). To facilitate this examination, consumers' recall of price and their recollection of the reference price they use to evaluate current prices are to be elicited in conjunction with the product-based questionnaires.

The third phase is the collection of concurrent verbal protocols (reports) of consumers' fruits and vegetables shopping. The study is based on a smaller sample of consumers,

and its focus is specifically on the role of price in choice. The transcriptions of consumers' reports are encoded into discrete choices. From these the salience of price, and the manner in which it enters the decision process, can be examined. Consumers in this phase also completed the post-shopping questionnaires; this enables some cross-validation of the results from the second phase.

The three phases of the study into consumers' choice of fruits and vegetables are depicted in Figure 5.2 as an investigation which begins with the broad influences on choice, and which moves progressively into the detail of purchasing decisions and the role price plays in those choices. The following three chapters deal in sequence with the research associated with each phase. The instruments required to conduct the studies (and the encoding system for Phase 3) are outlined at the commencement of each chapter, as is the procedure which was followed to elicit the various data. The substantial discussion in the chapters relates to analysis of the data and reporting of the results.

However, before proceeding to the research proper, two areas need further elaboration. The first of these is in relation to the measurement of price sensitivity and has particular bearing on the analyses of price salience in Phases 2 and 3. This is discussed in the following section. The second is in relation to the validity and conduct of verbal protocol analysis. The theoretical underpinning for this procedure and its application in various contexts is discussed in Section 5.6.

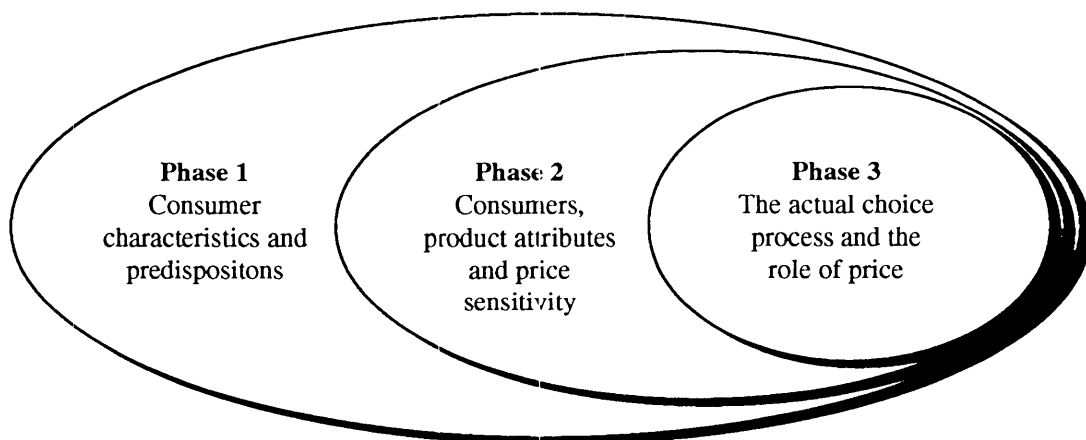


Figure 5.2 Research phases in the exploration of choice, and the role of price, in the purchase of fruits and vegetables

5.5 The measurement of price sensitivity and the role of price in choice

In the previous section various methods for determining consumers' price sensitivity were outlined. Chosen for the present research were post-purchase recall and the collection of concurrent verbal reports. An additional measure which can be incorporated with the latter is to maintain a record of the incidences of visual price referencing throughout the shopping expedition. This observation method has been employed in several studies (Wells and Lo Scuito 1966, Hoyer 1984, Russo and Leclerc 1994) and is discussed in greater detail below.

Both the recall and observation methods purport to identify the degree to which consumers attend to price and, by implication, the salience of price in choice (Dickson and Sawyer 1990, Russo and Leclerc 1994). At issue is whether this implication is, in fact, valid. The issue is important, since it has implications for the extent to which the measures can be interpreted as indicating price as a *determinant* attribute in choice. Argued here is that recall measures and research designs relying on direct observation of price referencing (either through observation in-store or through experimental settings using traces of eye-movements) determine the level of consumers' price *awareness*, but not necessarily its *role* in choice².

In eye-movement tracing, the frequency and length of eye fixations on price are calculated. Price salience is determined by the number of fixations and the nature of the fixation sequences. For example, a set of price fixations across three variations of a product group X,Y,Z, according to the following sequence, X-Y-Z-X, can be assumed to indicate price comparisons (Russo and Leclerc 1994:276). While this behaviour is relatively unambiguous, single or erratic fixations are less so depending on how price sensitivity is measured. Where price salience is measured by the number of price references, regardless of sequence, it is probable that the actual role of price in choice is overestimated (Russo and Leclerc 1994). A related problem with indirect observation in a naturalistic setting is the need to make assumptions as to the cognitive processes taking place (Payne and Ragsdale 1978). Visual examination of several products may indicate product comparisons or search for a particular item (Hoyer 1984).

² Payne (1980) noted that information search techniques which rely on subjects' use of external information present a problem in determining whether the information is actually processed.

A similar problem in distinguishing between price awareness and the role of price in choice arises in the use of the post-shopping recall method. In price recall research, it is argued that, the more sensitive the consumer is to price, the more accurate should be their recall of price (Dickson and Sawyer 1990). However, the evidence points to relatively poor recall of prices, even when elicited immediately following a purchase (Mazumdar and Monroe 1992, Urbany and Dickson 1991, Krishna et al. 1994). Although these results may be an accurate reflection of the retention of price information, there is reason to suppose that they may not be capturing the full extent of price consciousness (recall Inman et al. 1990). Highlighted in Chapter 2 was that, where subjects are involved in an habitual or low involvement task, they tend to employ minimal cognitive processing. Retention of information relating to a task is generally low, and frequently non-existent (Kahneman 1973). Hence, recall may be measuring a response to an unexpected price movement rather than actual price awareness. Prices consistent with the expectations of consumers may not be consciously registered, or may be simply registered as being within an acceptable range.

A further complication arises because individuals differ in the extent to which they process information in general. Variation in price recall may be associated with these differences rather than representing consumers' level of price consciousness. However, in order to recall a price, a consumer has to actually refer to the price³, which suggests that recall should be correlated with a degree of price awareness. A final aspect which may contribute to the underestimation of consumers' price consciousness (and sensitivity) is the tendency in price recall studies to impose a strict criterion for accurate recall. In the majority of studies, accurate recall is limited to a five per cent range around the actual price (Dickson and Sawyer 1990, Urbany and Dickson 1991, Wakefield and Inman 1993). This seems unduly restrictive in light of the substantial evidence of sensitivity thresholds and the existence of 'acceptable price ranges' (see Chapter 2). It would appear, then, that post-purchase recall has the potential to understate price awareness.

³ This is not strictly true. Where the price of a product is highly stable consumers' recall may reflect past knowledge of the price rather than the price currently posted. Where the two coincide it is impossible to determine the consumers' source of price knowledge without further questioning.

However, while post-purchase recall may underestimate price consciousness, it is likely to overestimate the extent to which price features in choice. In this respect it suffers the same problem as that outlined for observation studies. The core of the problem is the distinction between price consciousness in general, and the salience of price in choice itself. Schwartz and Norman (1989) distinguish between 'relevant' and 'important' cues in choice. They define those cues which are 'important' as those which are predictive of judgement, while cues which are 'relevant' are used regardless of the situation. Thus, consumers may consistently check price in their choice, but it may not be determinant of their choice in every instance. It is always relevant, but not necessarily important, to the outcome.

On the basis of this and the other arguments outlined above, methods employing price referencing and post-purchase recall are considered to provide an indication of the *relevance* of price in choice; termed price 'awareness' for present purposes⁴. These methods will not necessarily reflect the *importance* of price in choice, but will contain instances where price is *important*.

In accordance with these classifications, post-purchase recall and price referencing methods are used in the current research to measure price consciousness. Measurement of the salience of price in choice is confined to explicit articulations in the verbal reports. While this approach may understate the salience of price where verbal reports are incomplete, it ensures that 'salience of price in choice' is clearly defined.

5.6 The nature and conduct of verbal protocol analysis

The preceding argument places the weight of evidence of the role of price in choice on the transcripts from verbal reports. The verbal reports are also the central tool for determining the various ways in which consumers utilise price in choice. Since they are to be used in conjunction with post-shopping questionnaires, the reports will further provide the opportunity to examine the relationship between articulations of price during choice processes and subjects' reported use of price and product perceptions (Payne and Ragsdale 1978).

⁴ Price 'awareness' is used instead of price 'consciousness' to avoid confusion in subsequent chapters where 'price consciousness' is used in reference to a formal measure of this feature of consumers.

The aim of this section is to outline the features of verbal protocol analysis and the manner in which the method is to be utilised in the current research.

The collection of verbal reports has become an increasingly popular, and accepted, method for examining subjects' cognitive processes (Ericsson and Simon 1993). In the marketing literature the primary focus has been on consumers' acquisition of information and their decision processes (Biehal and Chakravarti 1982, Sujan 1985, Park and Smith 1989, Gardial et al. 1994, Cooper-Martin 1993, Russo and Leclerc 1994). Verbal reports have also been used to examine the type of information used in decisions made by financial investors (Biggs et al. 1993) and retail meat buyers (Countiss and Tilley 1995). Montgomery et al. (1994) investigated the presence of prominence effects in judgement and choice, and Bettman and Park (1980) studied the effects of prior knowledge and experience on choice of microwave ovens. Finally, in the context of actual shopping expeditions, several researchers have used verbal reports to identify information acquisition and the decision processes employed in grocery shopping (Bettman 1970, Payne and Ragsdale 1978, Murtaugh 1984).

The particular value in collecting verbal reports is in the depth of insight that they provide into subjects' underlying processes and information gathering. However, the extent to which they are an accurate reflection of subjects' cognitive processes has been a point of contention. A number of researchers have criticised verbal protocol analysis on the basis that, in verbalising their thoughts while undertaking a task, subjects are changing their cognitive processes (Russo et al. 1989, Anderson 1985, Boritz 1986). Ericsson and Simon (1984, 1993) dispute these claims, arguing that 'cognitive processes [can] be described as sequences of heeded information and cognitive structures and that verbal reports [correspond] to this heeded information' (1993: 372). Biggs et al. (1993) found support for the accuracy of verbal reports in an experiment-based study. In that study subjects used computers to gather the information they required and gave concurrent verbal reports of their actions. Biggs et al. concluded: 'verbalization did not affect amount of information acquired, acquisition pattern, or accuracy of decisions.....although concurrent verbalization slows down information acquisition, it does not appear to change it fundamentally' (1993: 198).

Although verbal reports under experimental conditions such as this one appear to be representative of subjects' cognitive processes, the manner and frequency with which

different processes occur in natural settings suggest this association may be less clear. With the exception of the studies which collected reports during actual supermarket shopping expeditions (Bettman 1970, Payne and Ragsdale 1978, Murtaugh 1984), all the preceding studies collected verbal reports under experimental conditions. Typically, subjects are asked to choose between, or assess, alternative brands or products. Methods differ in the products used and the procedure for the experiment but in all cases the condition itself is likely to provoke greater levels of verbalising than would be the case in a naturalistic setting.

Evidence of this is apparent in a study by Russo and Leclerc (1994), who collected verbal reports and eye-movements traces during a simulated shopping excursion. In their experiment subjects were encouraged to behave as they normally would while undertaking their shopping. Russo and Leclerc reported significantly lower levels of verbalising than the level of cognitive processing implied by eye-movement activity. Subjects' mean statements were 4.9 per choice task and related more to attributes of products than to underlying processes. They attributed this low verbalising to the partial automation that occurs with repetitive tasks such as grocery shopping⁵.

Russo and Leclerc did not use the verbal reports in their analysis, arguing that the emphasis in the reports on content rather than processes made it difficult to identify the underlying cognitive processes. However, this type of verbalising appears consistent with the various heuristic-based choice processes outlined in Chapter 2. Further, simple stand-alone statements may well be informative when considered in the context of an entire shopping process, rather than at the single task level, as was the case in the Russo and Leclerc study. When viewed in isolation, a simple reference, 'carrots', which is unaccompanied by other verbalising, is ambiguous. There is no context in which it can be assessed. Yet if the level of analysis is raised to the shopping process as a whole, the context of 'carrots' is more readily apparent. For example,

I think we're right for celery.

Carrots.

⁵ However, they also noted that the time subjects spent at each choice task was significantly higher than that reported in naturalistic settings, and conceded that the higher level of eye-movements may have been, in part, an attempt by subjects to orientate themselves to the experimental setting, or to 'perform' for the researchers.

Zucchini, I'll get a couple, just for some green.

Lettuce.

Cabbage looks too pale...

The sequence of statements suggests the subject is employing a simplifying choice strategy which relies on the product as a cue. 'Carrots' represents a process of elimination; in essence it is ticked against a mental list. The importance to interpretation of the context surrounding a statement has been emphasised by a number of commentators (for example, Biehal and Chakravarti 1982). Its consideration is particularly crucial to developing an effective encoding system; the final area of verbal protocol analysis which needs discussing.

There is considerable variety in the encoding schemes utilised by researchers, reflecting the diversity in research interests⁶. A preliminary step to encoding is to segment the protocols according to pauses, intonations, and syntactical markers (Ericsson and Simon 1993: 205). For some purposes this segmentation is sufficient for analysis, but most researchers in the area of consumer behaviour impose a further encoding scheme to investigate their specific research issue. One of the most comprehensive coding schemes for analysing consumer choice behaviour is that developed by Bettman and Park (1979). The scheme comprises seventy individual codes representing five categories: attribute comparisons, within brand processing, use of prior knowledge, statements of plans or needs, and general statements. The focus of the Bettman and Park coding scheme is subjects' use of choice heuristics. As such, the codes are couched in a generalised form, for example 'single, attribute, compute difference between two brands'. Although presenting a valuable guide for developing an encoding scheme, its focus is not entirely appropriate to the objectives of the current research. In the current research both the nature of choice decisions and the source of information are of interest. The study also differs in two critical respects from the contexts in which the Bettman and Park scheme was formulated. There is no branding to speak of in the fruit and vegetable category⁷ (although a product may comprise a number of varieties), and the verbal reports are collected during actual shopping expeditions rather than under experimental conditions.

⁶ See Ericsson and Simon (1993). The studies outlined over this section also use a variety of schemes.

⁷ Branding of fruit varieties is increasingly common. However, there is little research into whether consumers actually use brand information in forming a choice.

A consequence of the latter is the probable need for additional elements which reflect the shopping task itself.

In a slightly different context, Payne and Ragsdale (1978) developed an encoding scheme in relation to supermarket shopping which identified product categories and attributes, as well as types of processes. In so doing they were able to detect differences in the attributes salient in choice and in the type and level of processing across product groups⁸. Payne and Ragsdale also include task related statements which capture the procedure of grocery shopping.

As with the Bettman and Park scheme, the preceding encoding schemes provide useful guides to the types of schemes which may be developed for interpreting verbal reports. However, central to any scheme is its relevance to the particular research task. In the current research, of interest are the distinctions between relevant and important attributes in choice, and the manner in which price enters the decision process. Consequently, the level of analysis required is the complete choice process, and, within that, detail of the information used. In the Bettman and Park scheme information is identified in a generic form (for example, 'attribute') and the choices themselves are segmented into discrete tasks within the choice process. Although the level of analysis proposed for the current research is coarse, it ensures that the relative weight of product attributes and of other influences are made apparent. The key areas of interest are: the attributes of price and quality and their influence on choice, and the affect of usage needs on choice. As such the various influences of each of these will be made explicit in the encoding scheme.

The detail of the encoding system and the conduct of this phase of the research is discussed in Chapter 8 in conjunction with their subsequent analysis. Also discussed in Chapter 8 are the specific problems which may be encountered in relation to categorising choices given the context in which verbal reports are collected.

5.7 Summary

The objective of this chapter has been to present a general overview of the methods considered necessary to examine the issues raised over the preceding chapters. To

⁸ Of direct relevance to the current research is that they found high levels of processing associated with fresh fruits and vegetables and a generally high incidence of price references.

facilitate this process a model of consumer purchasing behaviour in relation to fruits and vegetables was formulated in Section 5.3. The model depicts the choice process as one in which both consumer characteristics and product attributes have a clear influence on choice. With reference to this model, and the propositions developed in Chapter 4, in Section 5.3.3 various issues were outlined which need further investigation.

In Section 5.4 the overall research design for addressing these issues was discussed. The design incorporates three phases and is multi-method in nature. The first of the phases is preliminary to investigating the salience of price in choice and has the objective of developing a set of measures to capture differences across consumers which may be relevant to their choice behaviour. This phase is presented in the following chapter (Chapter 6). The second phase comprises a post-shopping survey to determine consumers' perceptions of fruits and vegetables and the level of price consciousness prevalent in this product category. The instruments required for the survey are outlined in Chapter 7, together with the details of the conduct of the study and its subsequent analysis.

Argued in Section 5.5 was that price recall accuracy provides an indication of consumers' general price consciousness but does not provide an accurate indication of the role price plays in choice, nor does it elucidate the manner in which price enters different choice decisions. In the final phase, Phase 3, the objective is to gain a clearer picture of the role price plays in choice. To achieve this, verbal reports of consumers' actual shopping processes are collected. Although some dispute still surrounds whether verbal reports reflect complete cognitive processes, it is a valuable method for achieving insights into behaviour which cannot be captured by surveying or by simple observation (see Section 5.6). The development of an encoding scheme to facilitate analysis of the reports is presented in Chapter 8 along with the results of this phase.