The importance of packaging attributes: a conjoint analysis approach
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Abstract
Purpose – The importance of packaging design and the role of packaging as a vehicle for consumer communication and branding are necessarily growing. To achieve communication goals effectively, knowledge about consumer psychology is important so that manufacturers understand consumer response to their packages. This paper aims to investigate this issue.

Design/methodology/approach – The paper examines these issues using a conjoint study among consumers for packaged food products in Thailand, which is a very competitive packaged food products market.

Findings – The conjoint results indicate that perceptions about packaging technology (portraying convenience) play the most important role overall in consumer likelihood to buy.

Research limitations/implications – There is strong segmentation in which packaging elements consumers consider most important. Some consumers are mostly oriented toward the visual aesthetics, while a small segment focuses on product detail on the label.

Originality/value – Segmentation variables based on packaging response can provide very useful information to help marketers maximize the package’s impact.

Keywords Food products, Food packaging, Purchasing, Consumer behaviour, Market segmentation

Paper type Research paper

Introduction
Food products brands use a range of packaging attributes, combining colors, designs, shapes, symbols, and messages (Nancarrow et al., 1998). These attract and sustain attention, helping consumers identify with the images presented. The importance of packaging design and the use of packaging as a vehicle for communication and branding is growing (Rettie and Brewer, 2000), as packaging takes on a role similar to other marketing communications elements. One reason for this is simply the fact that consumers may not think very deeply about brands at all before they go into the store to buy. One recent study estimated that 73 percent of purchase decisions are made at the point of sale (Connolly and Davidson, 1996).

Consumer intention to purchase depends on the degree to which consumers expect that the product can satisfy their expectations about its use (Kupiec and Revell, 2001). But when they have not even thought about the product much before entering the store, this intention to purchase is determined by what is communicated at the point of
purchase. The package becomes a critical factor in the consumer decision-making process because it communicates to consumers at the time they are actually deciding in the store. How they perceive the subjective entity of products, as presented through communication elements in the package, influences choice and is the key to success for many food products marketing strategies.

To achieve the communication goals effectively and to optimize the potential of packaging, fast moving consumer goods (FMCG) manufacturers must understand consumer response to their packages, and integrate the perceptual processes of the consumer into design (Nancarrow et al., 1998). In the design process, marketers and package designers must take account of consumers’ past experiences, needs and wants; understand how packaging design elements get consumers to notice the package and notice messages on the package; and, broadly, evaluate packaging design and labeling for their effectiveness in the communications effort.

In doing this, it is particularly important to remember that not all consumers evaluate packaging the same way. Just as in consumer response to other elements of marketing, segmentation is an important factor (e.g., Orth et al., 2004). However, some observers believe that standard segmentation schema, often based on demographics, are inadequate. Al-Khatib et al. (2005), for example, note that often the standard ways of segmenting fail to yield very useful results in developing countries. They call for more sophisticated segmentation analysis in developing countries, focusing on psychological and situational issues.

In addition, there is quite a lot of debate about whether consumer behavior is consistent across cultures. Many industry observers, e.g. AC Nielsen, a leading international consumer research company, believe that consumers worldwide are likely to have roughly similar response to many FMCG, despite cultural differences (The Nation (Bangkok), 2002). Not all observers, however, believe that consumer behaviors will converge – rising incomes and extensive competition give consumers more ability, not less desire, to consume according to their own particular cultural preferences (e.g., de Mooij, 2000). Some believe that many basic issues are likely to be similar across cultures, while specific details such as response to particular colors or themes may be interpreted differently in different cultures (e.g., Walle, 1997).

Certainly, for FMCG, which consumers do not really think about much, basic trends (such as, for food products, desire for convenience, or health/nutrition information on packages) may be similar. But consumers are unlikely to change their culturally conditioned response to details of the product, or, for food products, the package, which represents the product during the purchase process. However, more research on this issue is needed, as there is only limited empirical research on consumer response to packaging, and very little of it is in Asian markets. Many cross-cultural researchers assert that knowledge developed in one culture should be confirmed before use in new cultural contexts (e.g., Malhotra et al., 1996).

We examine consumer response to packaging using a conjoint study among consumers for packaged food products in Bangkok, Thailand. Thailand provides a good context for examining this issue. Asian food markets in general are large and growing very rapidly, and consumers are becoming more sophisticated (Coyle et al., 2004), as is the case in Thailand. The expansion of modern retailing helps drive this growth, so that packaging plays an increasingly critical role in merchandising and communication for FMCG (The Nation (Bangkok), 2002). Internationalization is a key
ingredient; for example, Britain is now the fifth largest investor in Thailand, and major British FMCG companies and retailers have a strong presence (UK Trade and Investment, 2003). A report by IGD (2003) indicates that, after China, Thailand is one of just three other key Asian markets for international retailers.

Further, the local food processing industry is strong and internationally competitive (e.g., BOI, 2002). Agro-industry represented nearly one-third of Thailand gross domestic product (GDP) in 2001. Food and beverage processing accounts for roughly one-fifth of GDP and nearly one-fourth of manufacturing (BOT, 2003). The country ranks among the world’s five biggest suppliers of food products, with exports valued at US$9.8 billion in 2002 (NFI, 2003). Thus, Thailand is a very competitive processed food products market, with modern shopping formats and sophisticated consumers, where packaging plays a key role in helping companies remain competitive. This should provide a good context for examining consumer response to packaging of food FMCG.

Packaging and the buying decision for packaged food products

The package’s overall features can underline the uniqueness and originality of the product. Quality judgments are largely influenced by product characteristics reflected by packaging, and these play a role in the formation of brand preferences. If the package communicates high quality, consumers frequently assume that the product is of high quality. If the package symbolizes low quality, consumers transfer this “low quality” perception to the product itself (Underwood et al., 2001; Silayoi and Speece, 2004). The package becomes the symbol that communicates favorable or unfavorable implied meaning about the product. Underwood et al. (2001) suggest that consumers are more likely to spontaneously imagine aspects of how a product looks, tastes, feels, smells, or sounds while viewing product pictures on the package.

Food product expectations can be generated from cues such as packaging, labeling, product information, and stereotypes. The effect of color is the most obvious and well studied (Imram, 1999). Consumer perceptions of an acceptable color are associated with perceptions of other quality attributes, such as flavor and nutrition, and also with satisfaction levels. Positive effect can be achieved by manipulating one or more packaging variables, including packaging color, clear packs that allow viewing food color, incident light, and nomenclature and brand name appearance. In food service, the food products chosen for display and sale by caterers are selected for their color and appearance attributes (Imram, 1999).

Visual imagery on the package is another essential attribute. To be noticed at the point of sale, pictures on the package can be a strategic method of differentiation, which will enhance access to consumer consciousness. This is because pictures are extremely vivid stimuli compared to words (Underwood et al., 2001) and also are quicker and easier for consumers to process in a low involvement situation. Visual packaging information may attract consumer attention and set expectations for content. A well-produced product image is likely to evoke memorable and positive association with the product.

Packaging functions and elements

Prendergast and Pitt (1996) define the basic functions of packaging by their role in either logistics or marketing. The logistical function of packaging is mainly to protect
the product during movement through the distribution channels. This could cause added packaging expense, but serves to reduce the incidence of damage, spoilage, or loss through theft or misplaced goods. The second function of packaging is essentially a marketing role. Packaging provides an attractive method to convey messages about product attributes to consumers. Whatever the functional aspects of packaging as related to logistics considerations, packaging is one of the product attributes perceived by consumers. It cannot escape performing the marketing function, even if a company does not explicitly recognize the marketing aspects of package. There is, of course, a danger that the package communicates negatively, but a package well designed for its marketing function helps sell the product by attracting attention and positively communicating.

A review of the relevant literature indicates that there are four main packaging elements potentially affecting consumer purchase decisions. They can be separated into two categories; visual and informational elements. The visual elements consist of graphics and size/shape of packaging. Informational elements relate to product information and information about the technologies used in the package.

1. **Visual elements**

   **Graphics and color.** Different people respond to different packages in different ways, depending on their involvement (Vakratsas and Ambler, 1999). Since an evaluation of attributes is less important in low involvement decision making, a highly noticeable factor such as graphics and color becomes more important in choice of a low involvement product (Grossman and Wisenblit, 1999). On the other hand, the behavior of consumers towards high involvement products is influenced less by image issues. For low involvement, there is a strong impact on consumer decision making from the development of the market through marketing communications, including image building (Kupiec and Revell, 2001).

   The significance of graphics is explained by the images created on the package, whether these images are purposely developed by the marketer, or unintended and unanticipated. Graphics includes image layout, color combinations, typography, and product photography, and the total presentation communicates an image. For consumers, the package is the product, particularly for low involvement products where initial impressions formed during initial contact can have lasting impact. As one of the product attributes that most directly communicate such messages to the target consumers (Nancarrow et al., 1998), the design characteristics of the package need to stand out in a display of many other offerings.

   Many consumers today shop under higher levels of perceived time pressure, and tend to purchase fewer products than intended (Herrington and Capella, 1995; Silayoi and Speece, 2004). Products purchased during shopping excursions often appear to be chosen without prior planning and represent an impulse buying event (Hausman, 2000). A package that attracts consumers at the point of sale will help them make decisions quickly in-store. As the customer’s eye movement tracks across a display of packages, different new packages can be noticed against the competitors. When scanning packages in the supermarket, the differential perception and the positioning of the graphics elements on a package may make the difference between identifying and missing the item (Herrington and Capella, 1995).
Placement of visual elements matters. Psychology research indicates that brain laterality results in an asymmetry in the perception of elements in package designs (Rettie and Brewer, 2000). The recall of package elements is likely to be influenced by their lateral position on the package, as well as by other usually recognized factors, such as font style, size, and color. Recall is better for verbal stimuli when the copy is on the right-hand side of the package, and better for non-verbal stimuli when it is on the left-hand side. This may imply that, in order to maximize consumers' recall, pictorial elements, such as product photography, should be positioned on the left-hand side of the package.

Consumers also learn color associations, which leads them to prefer certain colors for certain product categories (Grossman and Wisenblit, 1999). Using color as a cue on packaging can foster a potentially strong association, especially when it is unique to a particular brand. However, people in different cultures are exposed to different color associations and develop color preferences based on their own culture. Marketers therefore must consider color as part of their strategies. Simply taking the colors of a particular logo, package, or product design from one market to another should only be done under a thorough understanding of how colors and the color combinations are perceived in each location (Madden et al., 2000).

Packaging size and shape. Size and shape also emerges as a crucial dimension. One way in which consumers appear to use these things is as a simplifying visual heuristic to make volume judgments. Generally, they perceive more elongated packages to be larger, even when they frequently purchase these packages and have experience using them. Disconfirmation of package size after consumption may not lead consumers to revise their volume judgment sufficiently in the long term, especially if the discrepancy is not very large (Raghubir and Krishna, 1999).

Different packaging sizes potentially appeal to consumers with somewhat different involvement. For example, for some low involvement food products, such as generics, low price is made possible through cost savings created by reduced packaging and promotional expenses. Since generics are usually packaged in large sizes, this directly caters to the needs of consumers from larger households, who are more likely to be specifically looking for good deals. They find the low price of the generics, in larger packaging, is an attractive offer with excellent value for money (Prendergast and Marr, 1997). In addition, this could imply that when product quality is hard to determine, the effect of packaging size is stronger. Thus, elongating the shape, within acceptable bounds, should result in consumers thinking of the package as a better value for money and result in larger sales generally. However, many other aspects of packaging could also conceivably affect perceived volume, such as aspects of package shape, colour, material, and aesthetic appeal. As yet, though, there is little research available on any of these other aspects.

2. Informational elements

Product information. One of packaging’s functions is to communicate product information, which can assist consumers in making their decisions carefully. An example of such significant information is food labeling. The trend towards healthier eating has highlighted the importance of labeling, which allows consumers the opportunity to cautiously consider alternatives and make informed food choices (Coulson, 2000). Package layout is important for information presentation. One recent
survey on food labeling found that 90 percent of respondents agreed that nutritional information panels should be laid out in the same way for all food products so that they are easy to understand quickly (Mitchell and Papavassiliou, 1999).

However, packaging information can create confusion by conveying either too much information or misleading and inaccurate information. To maximize the information carried on products, manufacturers often use very small fonts and very dense writing styles. This reduces readability and sometimes causes confusion. Mitchell and Papavassiliou (1999) suggest that one major way consumers reduce confusion from information overload is to narrow down the choice set. Considering fewer alternative brands and evaluating fewer attributes decreases the probability that the consumer will be confused by excessive choice and information overload.

This strategy could apply to more experienced consumers, because heavy users potentially look at fewer brand alternatives. In other words, experience makes consumers selectively perceptive and restricts the scope of their search (Hausman, 2000). Confusion can also affect consumer decision quality, and can undermine consumer rights to safety and information. Thus, there are trade-offs between cognitive effort and decision-making accuracy. Balance between information and choices is needed in order to decrease the difficulty of purchase decisions.

Hughes et al. (1998) indicate that involvement level reflects the extent of personal relevance of the decision to the individual in terms of basic values, goals and self-concept. If the product does not stimulate much interest, consumers do not give much attention to it. High involvement indicates more personal relevance or importance. In general, consumer acquisition of low involvement products is often done without carefully examining brand and product information. This lack of commitment suggests that information on the package would carry relatively less value in such cases. On the other hand, more highly involved consumers evaluate message information more carefully, relying on the message to form their attitudes and purchase intentions (Vakratsas and Ambler, 1999; Silayoi and Speece, 2004).

*Technology image.* The role of packaging in marketing communications is further advanced by recent developments in technology (McNeal and Ji, 2003). Technology is somewhat of a special case relative to other informational elements, because packaging technology conveys information which is often linked to the consumer’s lifestyle. In other words, technology developed for packaging comes directly from current trends of products and consumer behaviors. The technology of packaging development is constrained in that the message communicated through the technology must fully meet consumer criteria. And, importantly, it needs to be presented visually as one of the communication elements.

One example is that when people tend to think of time as a precious resource, they will not spend much as much time on food preparation (Warde, 1999). Convenience has become increasingly important for food products, and consumers who are worried about time saving will pay more attention to claims of new technology, because of technology’s association with convenience. The technology embodied in the package also communicates to Thai consumers such things as ease of dispensing the product, freshness and shelf life, and nutritional value and toxicity (Silayoi and Speece, 2004). These communication elements linked to technology all influence the purchase decision.
Cultural context and segmentation

Most of this work on consumer response to packaging has been carried out in the West, frequently in the USA. There could be some debate on whether consumers in diverse cultures would have similar responses. de Mooij (2000) notes that American scholarship frequently espouses the convergence theory, which implies that standardized marketing will work across cultures, but many other scholars are less likely to see convergence. de Mooij (2000), for example, points out several products for which one might expect convergence based on Europe’s growing economic integration, but where consumption across European countries is, in fact, quite different. That discussion shows how cultural elements might cause such differences. Suh and Kwon (2002) demonstrate that many consumers in both the USA and Korea accept the more open economies ushered in by globalization, but this results in different impact on consumer ethnocentrism. They argue that culture affects how acceptance of globalization translates into buying, implying that convergence in response to marketing elements is unlikely to occur.

Malai and Speece (2005) argue that there are probably several levels of cultural impact at work in conditioning any response to marketing elements. Walle’s (1997) view, noted above, that basic trends may be similar while specific responses might differ seems to imply that convergence may occur on some levels, but not on others. Certainly, the issue is much more complex than just the differences in cultural manifestations themselves (Lowe and Corkindale, 1998). Given such complexity, and debate about whether and how much convergence is happening, it seems useful to follow the advice of cross-cultural researchers (e.g., Malhotra et al., 1996), and examine response to packaging carefully in the Thai context before assuming everything is similar to current research.

As in most countries, the influence of these various packaging elements on brand choice among Thai consumers is fairly strong. A focus group study specifically about the visual and informational elements discussed here shows that Thai consumers use all of these elements in their brand decisions (Silayoi and Speece, 2004). A number of surveys show that roughly half of brand choice for FMCG by middle class Thai consumers is made after entering the store, with the exact percentage varying by product category. Under such conditions, packaging is likely to play a major role in choice. In one survey on snack foods, respondents reported that package ranked second behind taste, and tied with price, as an important brand choice criteria. In another survey, 84 percent answered that they would be willing to pay a “reasonably” higher price simply to get a nicer package if the food product inside was the same quality. In-depth interviews revealed that “reasonably” higher was about 10 percent for most consumers (Speece, 2004).

Packaging must adapt to several major trends that are also common throughout the world, and in Thailand. As noted above, consumer perceptions about packaging technology are used, among other things, to assess convenience. Convenience is a key driver for food choice worldwide (IGD, 2002), including in Thailand, where convenience products are among the most rapidly growing food product categories (The Nation (Bangkok), 2002). Some research shows that other trends, such as growing health orientation, are separate from the convenience trend (e.g., Shiu et al., 2004; McCullough et al., 2003). The growing use of label information by consumers is partly related to the desire for healthy food products (e.g., Coulson, 2000; Dimura and Skuras, 2005).
However, incorporating consumer response to packaging elements into packaging design decisions is likely to be made somewhat more complex because different consumers may not respond to the elements the same way. Segmentation is usually strong in markets where competition offers consumers choice so that they can match their specific preferences. For example, Orth et al. (2004), demonstrate that consumers seeking different beer brand benefits react differently to communications about the brand. Shiu et al. (2004) show that the convenience and health segments for food products are distinct and should be treated separately. While these (and most such) studies are not specifically about packaging, it is clear that segmentation will be a key issue if packaging is one of the key ways that brand image and brand information is conveyed.

Thus, in Thailand, we might expect to see segmentation in response to the packaging elements discussed here. A strong convenience segment should be evident, consistent with Thai and worldwide trends. Another segment should rely on package information. Then, some consumers may simply not pay much attention to any of this sort of information, and rely mainly on visual imagery, which is fairly common for low involvement FMCG generally (e.g., McWilliam, 1997). However, within these broad response segments, use of specific packaging details might differ from results in research in the West. In other words, broad trends should be consistent, while specific details would depend on the Thai cultural context, which is essentially Walle’s (1997) view, noted above.

Methodology
This study used conjoint analysis to examine the relative importance weights for packaging elements that enhance consumer perception. Conjoint analysis has been widely used in marketing to evaluate consumer preferences for products and services (Hair et al., 1998). It is frequently applied in examining preferences for food product attributes (e.g., Gil and Sanchez, 1997). Green and Krieger (1991) pointed out the usefulness of conjoint analysis for benefit segmentation. The necessary data to carry out conjoint analysis consist of consumer evaluations of alternative product concepts described as sets of attributes levels (Gil and Sanchez, 1997).

Establishing the attributes
Murphy et al. (2000) suggest that the conjoint attributes should include those most relevant to potential consumers and those that can be influenced or manipulated by the producer. Attribute levels must be chosen carefully to represent what would be realistic in the market, and should cover the entire range or representative levels (Gil and Sanchez, 1997). Building on the literature, several related studies among Thai consumers established that both shape and an appealing picture are important, as they visually convey quality (Silayoi et al., 2003; Silayoi and Speece, 2004). Package size and shape also helped consumers to judge product volume and value for money.

Even when consumers are somewhat more involved, and under less time pressure, the visual elements influence the likelihood of investigating further. Consumers are more likely to read the label to check that the product information is consistent with their needs if the package makes it seem that the product is worth investigating more carefully. They use explicit product information to assess healthiness, but also many
other aspects of quality. In addition, the package needed to perform well; in particular, it is important that it be easy and convenient to use.

Considerations of attributes such as color and graphics, shape, product information, and technology issues were relatively stable across different situations and consumers, and would therefore retain some importance among all consumers in most of their purchase decisions. Packaging size seemed to be strongly dependent on situation and consumer demographics, so it was controlled by holding it constant in the conjoint study. Most discussion of the conjoint methodology points out the importance of balancing the number of attributes required to realistically represent the package (or generally, the product) against the need to simplify the representation so that it does not overly complicate the respondents’ ranking task (e.g., Green and Krieger, 1991; Gil and Sanchez, 1997).

Thus, the four main packaging attributes found to influence the consumer’s packaged food brand choice were color and graphic design (combined), shape, product information, and technology image (essentially, convenience). The layout of verbal and visual elements was also included to account for the impact of different positions of these two elements on the purchase decision. Most consumers did not explicitly mention layout as a key element, but the literature is clear that the impact of layout is essentially at the subconscious level, and might not be explicitly recognized by consumers. Thus, it was included, and the study can assess whether Thai consumer behavior is consistent with others mentioned in the international literature.

The attribute levels were determined based on levels that consumers might realistically face. These must be capable of being traded-off (Van der Pol and Ryan, 1998). The study used instant curry that could be cooked by microwave into a ready-to-eat meal as the product which consumers would evaluate. In the in-depth interviews, specific levels were investigated for instant curry in a pouch. This product is relatively new in the Thai market, so extensive knowledge of brands would not contaminate results, but generally, many middle-class Thai consumers are now increasingly using instant foods because of its convenience (Silayoi and Speece, 2004). The attributes and levels which consumers considered to be realistic, and thus included in the conjoint analysis study, are summarized in Table I.

Each attribute used two levels, including one level that was considered to be quite favorable, but still likely to be found in the market, and one that was not very attractive, but still actually present in the market. Five attributes, each with two levels, gives rise to 32 possible scenarios ($2 \times 2 \times 2 \times 2 \times 2$). It would clearly be tedious for respondents to rank their preferences for so many scenarios, so the Orthoplan subroutine in SPSS was used to produce an orthogonal main-effects design, which ensures the absence of multi-collinearity between attributes. The eight combinations of attribute level which resulted and were used in the study are shown in Table II.

<table>
<thead>
<tr>
<th>Colour and graphics</th>
<th>Package shape</th>
<th>Attribute information</th>
<th>Packaging technology</th>
<th>Layout of graphics and information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorful design</td>
<td>Curvy</td>
<td>Precise</td>
<td>Presented</td>
<td>Left-right</td>
</tr>
<tr>
<td>Classic design</td>
<td>Straight</td>
<td>Vague</td>
<td>Not presented</td>
<td>Right-left</td>
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</tbody>
</table>

Table I. Attributes of package design and their levels
Presenting the stimuli

To obtain valid data, it is generally accepted that experimental tasks must closely resemble the way consumers make marketplace choices (Vriens et al., 1998). Research in cognitive psychology suggests different mental processing systems for handling verbal and pictorial inputs (Jaeger et al., 2001). Verbal descriptions may be inadequate when the design or styling of products plays an important role in consumer choice (Lovejoy and Beach, 1997). Vriens et al. (1998) showed that respondents pay less attention to design and styling than other characteristics when presented with verbal profiles. The use of pictorial formats can enhance task realism and external validity in product categories where choices depend strongly on visual inspection. Rettie and Brewer (2000) used pictorial stimuli to explore the relationship between the positioning of copy and pictures on different sides of a package and recall of those elements.

In our study, the eight sets of packaging scenarios were simulated into prototypes at a major local packaging company. Product brand and logo were not applied to avoid distracting respondents by elements not included in the study. The designs were done by the first author of this study, who is a professional package designer with graduate level training, several years of industry experience, and a continuing consulting practice in package design since entering academia. However, to ensure that the eight designs represented the levels described by consumers in pilot work, five other professional packaging designers were consulted.

Jaeger et al. (2001) showed that photographs convey verbal and visual information about apple varieties equally well compared to prototype apple packages. Since they are equally valid, and cheaper and easier to use, photographic images of the prototypes were used as the pictorial format. The images were represented on eight separate cue stimulus cards, which consisted of a 6 in. × 4 in. high-quality color photograph of a package. The prototype packages were photographed against a black background preserving the natural shadows cast by the package and giving the effect of a real product. Figure 1 shows two examples representing the different levels of the attributes, although not in color because of printing requirements.

A full ranking of the eight package attribute pictures was used to establish consumer likelihood to buy. To simulate the packages in a realistic situation where consumers would be evaluating many packages, the eight pictures were presented all at the same time. The order was rotated to avoid order bias. Respondents were asked to complete the questionnaire themselves and to rank each package on likelihood to buy. The questionnaire was pre-tested with 30 food shoppers, to check for possible

<table>
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<tr>
<th>Description</th>
<th>Color and graphic</th>
<th>Packaging shape</th>
<th>Product information</th>
<th>Packaging technology</th>
<th>Layout of graphics information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>Curvy</td>
<td>Precise</td>
<td>Not presented</td>
<td>Right-left</td>
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<tr>
<td>2</td>
<td>Colourful</td>
<td>Curvy</td>
<td>Vague</td>
<td>Not presented</td>
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<tr>
<td>3</td>
<td>Colourful</td>
<td>Curvy</td>
<td>Precise</td>
<td>Presented</td>
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<td>4</td>
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<td>Straight</td>
<td>Vague</td>
<td>Not presented</td>
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<td>Vague</td>
<td>Presented</td>
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<td>7</td>
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<td>8</td>
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<td>Straight</td>
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Table II. Card descriptions

Presenting the stimuli

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problems with statement clarity and respondent understanding of how to complete the task. This pilot indicated no problems with the survey instrument.

Sample selection and description
This research used convenience sampling at eight large companies in metropolitan Bangkok. The companies were chosen so that no two companies were too close to each, providing good coverage of the business areas in the city, with distinctive local urban environments and varying socio-economic contexts. Company choices were discussed with brand managers in several major packaged food companies to make sure that these locations would provide a sample of respondents representative of the type of customers who would use this product. According to the brand managers, the main target market for products such as the instant curry, would be younger middle-class consumers who are working. This includes a high proportion of single consumers who, although they may live with their parents as is common in Asia, may not take meals with the family because of their hectic lifestyles.

We obtained permission from the companies to approach employees during work, and screened to get the main food shopper in the household, or for themselves. Participants were advised that their participation was voluntary and that their individual responses would remain confidential. No personal information that could identify any specific individual was collected. This study collected responses of 305 consumers, roughly evenly divided among the eight locations. This is well above the minimum recommended 100-200 sample size to obtain reliable results from conjoint analysis (Quester and Smart, 1998).
Slightly over two-thirds of the respondents were women, which is consistent with the pattern in most Asian countries that women are still mainly responsible for household shopping. Screening questions indicated that participants made the purchase decisions for packaged food products. The sample was relatively young, with 93 percent in the 20 to 40 age category, and 70 percent of them were single. Approximately 40 percent of this sample has monthly household incomes over Baht 40,000, compared to about 48 percent in metropolitan Bangkok (UBCTV.COM, 2004, citing government statistics). Market research companies in Bangkok consider monthly household income of roughly Baht 20,000 to be entry level into the middle class, so overall, this sample is oriented toward the middle class.

It also fits the target market, as defined by the brand managers, fairly well. In addition, extensive discussion in a separate project with food company and packaging company managers involved in packaging design (Silayoi, 2004) also indicated that the part of the Bangkok population which would be more oriented toward the type of convenience food product presented in the study would tend to be younger adults, frequently single, middle class, so the sample characteristics seem to represent the target market for the package fairly well.

### Results

The conjoint results indicate that packaging technology (which conveys a message of convenience and ease of use in this study) plays the most important role in consumer likelihood to buy. The relative importance of this attribute is about 32 percent (Table III). The other attributes included in this study were not much different from each other in importance. Packaging shape had a slight edge (19 percent), followed by product information (17 percent), color and graphics (16 percent), and, finally, layout of graphics and information (15 percent), but these are actually minor differences which are not statistically significant.

Packaging technology is the most important attribute. The positive utility of 0.8086 for presented packaging technology indicates that clearly pointing out the technology image on the package increases the consumer’s likelihood to buy. The specific message that the technology conveys is about convenience and ease of use, so these results suggest that urban consumers give technology representing convenience more

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level</th>
<th>Utility</th>
<th>Relative importance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging technology</td>
<td>Presented</td>
<td>0.8086</td>
<td>32.53</td>
</tr>
<tr>
<td></td>
<td>Not presented</td>
<td>−0.8086</td>
<td></td>
</tr>
<tr>
<td>Packaging shape</td>
<td>Curvy</td>
<td>−0.0381</td>
<td>18.96</td>
</tr>
<tr>
<td></td>
<td>Straight</td>
<td>0.0381</td>
<td></td>
</tr>
<tr>
<td>Product information</td>
<td>Precise</td>
<td>0.3857</td>
<td>17.42</td>
</tr>
<tr>
<td></td>
<td>Vague</td>
<td>−0.3857</td>
<td></td>
</tr>
<tr>
<td>Color and graphic</td>
<td>Colourful design</td>
<td>−0.1725</td>
<td>16.36</td>
</tr>
<tr>
<td></td>
<td>Classic design</td>
<td>0.1725</td>
<td></td>
</tr>
<tr>
<td>Layout of graphics and information</td>
<td>Left-right</td>
<td>−0.2980</td>
<td>14.74</td>
</tr>
<tr>
<td></td>
<td>Right-left</td>
<td>0.2980</td>
<td></td>
</tr>
</tbody>
</table>

Table III. Results of conjoint analysis (n = 305)
consideration; i.e. the technology image clearly shown on the pack seems to be more appealing on the shelf. Working Bangkokians do perceive time constraints, do not have sufficient time to cook, and believe that convenience products help facilitate their lives (Silayoi and Speece, 2004). Apart from reflecting the ease of cooking and consumption, people may be more likely to pick the packaged food from the shelf if the technology represents their self-image well. If the product looks innovative, it would bring a contemporary image to the buyer too.

Precise product information has a positive utility score of 0.3857, while the vague presentation of information had a negative utility. This indicates that consumers value the product information on food labels, and confirms prior studies from other countries (Mitchell and Papavassiliou, 1999) and in Thailand (Silayoi et al. 2003; Silayoi and Speece, 2004) which show that consumers are increasingly reading the label and want it to be clear. The result suggests that consumers are evaluating product quality using some concrete information, not purely image. One thing this probably reflects is the impact of health conscious behaviors on food choice, as concern for proper nutrition is a key factor influencing consumption choice now in many countries (e.g., McIlveen, 1994).

Straight shape has a positive utility compared to curvy, as does classic design on the package compared to colorful. This suggests that, overall the respondents may be more attracted to a package that seems familiar and reliable, rather than exciting. Focus group work also indicated that Thai consumers strongly prefer more familiar products. Without their usual choices, another product from a well-known company would be perceived as more reliable (Silayoi and Speece, 2004). This seems consistent with the view that branding in Asia is more strongly about building trust, compared to achieving differentiation in the West (Speece and Toqueur, 2005). The increasing health consciousness already mentioned could also be a contributing factor. The design of food products packaging should be able to convey healthiness and safety, rather than excitement. Classic and calm graphics may better indicate the quality of the product inside. Also the shape should not be too fancy. Consumers seem to rely on traditional shapes that they are familiar with.

Layout of graphics and information utility scores indicate that the position of graphics on the right and product information on the left is more effective. This result is particularly interesting for packaging developers because it is not consistent with the findings in psychology research in the West. As noted in discussion above, Rettie and Brewer (2000) show that recall is better for verbal stimuli when the copy is on the right-hand side of the package, and better for non-verbal stimuli which are on the left-hand side. However, there is a substantial body of research demonstrating that thought patterns differ between Asians and Westerners (e.g., summarized in Nisbett (2003)). A fundamental factor in this divergence is the different emphasis on right brain, left brain types of processing in the two cultural areas. Our result seems to be consistent with this research about differences in thought processes, and it indicates the usefulness of adapting the details of packaging design across cultures to maximize effectiveness.

Segmenting response to packaging elements

Four of these five packaging design attributes were roughly equal in importance overall among the consumers in our sample, while the technology image associated
with convenience and ease of use stood out with stronger importance. However, as in most markets, subtle differences in lifestyle and values lead to diverging shopping orientations; which give rise to clearly discernable segments. Cluster analysis (Ward’s method) was performed using the five individual level importance weights. Examination of the resulting dendogram indicated that three clusters were distinct, separating from each other at relatively large distances in the mental space about attribute importance. Further separation was at much closer distances, and moving to that closer level would have resulted in a much larger number of clusters because several of the larger clusters split apart at approximately the same level. The three clusters had clear and meaningful interpretation, and thus were taken to represent three broad segments, characterized by differing emphasis on package attributes in evaluating packaging.

Figure 2 shows the pattern of importance across the three segments on each of the five packaging elements included in this study. Reference to Table IV will indicate that the segmentation scheme derived from the cluster analysis is not based on minor differences of opinion. MANOVA results show that the clusters do distinguish significantly on all five importance weights. The Thai market consists of three major consumer segments identified by their approaches to considering packaging in food shopping. We might name these three segments “convenience oriented”, “image seeking”, and “information seeking.”

Convenience-oriented shoppers in first segment account for almost half of the sample (47 percent). They place greater weight on the technology image of the package,

![Figure 2. Importance weights in three segments](image-url)
<table>
<thead>
<tr>
<th>Level of attribute</th>
<th>All consumers ((n = 305))</th>
<th>Convenience oriented ((n = 144; 47.2%))</th>
<th>Image seeking ((n = 119; 39.0%))</th>
<th>Information seeking ((n = 42; 13.8%))</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging technology</td>
<td>0.3253</td>
<td>0.5143</td>
<td>0.1428</td>
<td>0.1940</td>
<td>0.000</td>
</tr>
<tr>
<td>Packaging shape</td>
<td>0.1896</td>
<td>0.1376</td>
<td>0.2782</td>
<td>0.1164</td>
<td>0.000</td>
</tr>
<tr>
<td>Color and graphics</td>
<td>0.1636</td>
<td>0.1070</td>
<td>0.2403</td>
<td>0.1402</td>
<td>0.000</td>
</tr>
<tr>
<td>Layout of graphics and information</td>
<td>0.1474</td>
<td>0.0990</td>
<td>0.2299</td>
<td>0.0795</td>
<td>0.000</td>
</tr>
<tr>
<td>Product information</td>
<td>0.1742</td>
<td>0.1421</td>
<td>0.1087</td>
<td>0.4700</td>
<td>0.000</td>
</tr>
</tbody>
</table>

**Note:** Sig = ANOVA significance of difference between italics mean and other row means.
which communicates convenience and ease of use to them (see Figure 3). Among these consumers, just over half of the weight is given to packaging technology, and they strongly prefer the packaging that explicitly calls attention to the technology (Tables IV and V). The other packaging attributes all have roughly similar importance, and all score quite low relative to the technology image conveying convenience. These consumers show little preference toward any of the various implementations of the several visual elements, but somewhat more preference for detailed information.

The large size of this segment is consistent with trends in Bangkok that are driven by consumer perceptions that they do not have enough time to spend in buying and preparing food. The technology image embodied in the package communicates to these consumers not only about the package itself, but also the underlying convenience of preparing the food in it (Silayoi and Speece, 2004). This is also consistent with worldwide trends showing that young modern urban middle-class consumers face increasing time pressure (e.g., Underwood, 2003; Warde, 1999). Consumers in this segment are slightly younger than in the other large segment (Table VI). About 55 percent are in the 20-30 age category in our sample, and few are over 40. In many countries, younger consumers are somewhat more technology oriented, and more receptive to new technologies in food packaging.

Image-seeking consumers constitute the second largest segment, with about 39 percent of respondents falling in this group. This segment contains slightly fewer younger consumers than the others, and is the most heavily weighted toward the 31-40 age category, although it also has a few more consumers over 40 than the convenience oriented segment (Table VI). These consumers value the visual elements of package

![Figure 3. Attractiveness of the overall positive utility on each attribute by segment](image-url)
design. Packaging shape, color and graphics, and layout each have stronger importance than either convenience or product information, and collectively account for almost three-fourths of the weight in likelihood to buy. The segment is influenced towards purchase by the aesthetic appeal of a good-looking package, and the tendency toward more classic designs and colors noted in the overall results can be attributed mostly to the influence of this segment (Table V). They are indifferent to whether detailed information is presented or not.

Related qualitative work (Silayoi and Speece, 2004) indicates that members of this segment are concerned with package appearance primarily for quality reasons. They are willing to spend more time to prepare better quality food, and generally do not find instant foods to be highly attractive. These consumers view the package as representing the product, and high quality packaging (with high aesthetic appeal) indicates to them a high quality product inside. Underwood and Klein (2002) review some of the work indicating that package imagery can help consumers imagine how products taste, feel, or smell. This is a low involvement shopping strategy, allowing segment members a way to select one food product over another to gain high quality while remaining relatively detached from the purchase process. Quick evaluation of package appearance is a simple way for these individuals to meet their objectives.

Information-seeking consumers formed the smallest group, with included about 14 percent of the respondents. The product information accounted for nearly half of importance weight, while the packaging technology image constituted another 20 percent (Table IV). Obviously, the detailed information was strongly preferred. These consumers also preferred that the technology image explicitly call attention to convenience and ease of use, though this tendency was not as strong as among the convenience-oriented segment. Members of this segment had very slight disinclination toward the graphics and color that attracted the image seeking segment. They also

<table>
<thead>
<tr>
<th>Convenience oriented</th>
<th>Image seeking</th>
<th>Information seeking</th>
<th>Row sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
<td>1.4523</td>
<td>0.1092</td>
<td>0.5833</td>
</tr>
<tr>
<td>Explicit straight shape</td>
<td>-0.0148</td>
<td>0.0777</td>
<td>0.1071</td>
</tr>
<tr>
<td>Classic graphics</td>
<td>0.0998</td>
<td>0.3634</td>
<td>-0.1190</td>
</tr>
<tr>
<td>Right picture, left information</td>
<td>0.2057</td>
<td>0.5399</td>
<td>-0.0714</td>
</tr>
<tr>
<td>Detailed information</td>
<td>0.4036</td>
<td>0.0966</td>
<td>1.1429</td>
</tr>
</tbody>
</table>

Table V. Means of the overall positive utilities by segment

<table>
<thead>
<tr>
<th>Age</th>
<th>Convenience oriented (47%)</th>
<th>Image seeking (39%)</th>
<th>Information seeking (13%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>54.9</td>
<td>45.8</td>
<td>50.0</td>
</tr>
<tr>
<td>31-40</td>
<td>41.7</td>
<td>46.6</td>
<td>31.0</td>
</tr>
<tr>
<td>41 or over</td>
<td>3.5</td>
<td>7.6</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Table VI. Ages across the three segments

Note: Significance of $F$ in a chi-square test = 0.007, column percents do not total exactly 100 percent because of rounding.
reversed the order of the graphics – verbal information layout, showing slight tendency toward what is found in the West (Table V).

Qualitative work showed that consumers in this group were consciously seeking information about a variety of food matters (Silayoi and Speece, 2004). They may exhibit the strongest exploratory food purchase behavior among the segments. They have a great deal of knowledge about food and are creative in the manner in which they prepare and consume it, with strong interest in knowing the ingredients and preparation methods of food. Similarly, they appear to be strongly quality and health conscious, but food is much higher involvement for them than for the other, larger segments. There was a slight tendency for this segment to be either younger, in the 20-30 age category, or older, over 40. The older consumers constitute a larger part of this segment, 19 percent, than of the other segments (Table VI).

Conclusions
The results of this study give some insight into consumer preferences for food packages in Bangkok, Thailand, which is probably fairly representative of many markets in Asia where the modern urban middle class is rapidly expanding. One important limitation is that this sample was gathered in offices, so the respondents are clerical and managerial, mostly lower middle class to upper middle class. We do not know whether industrial workers, urban low income, or rural inhabitants in the agricultural sector would respond the same way, and these are important segments in many countries. Nevertheless, the rapid shift toward urban middle class is the trend in most of developing Asia, and developed Asian countries are already mostly urban middle class. Also, the sample does represent the type of consumers who would be more likely to buy convenience food products, according to industry managers. In this sense, the results from Bangkok can probably be generalized broadly in East and Southeast Asia where the cultures and product types are similar.

Results show strong segmentation in response to packaging. The three segments, convenience oriented, information seeking, and image seeking, follow patterns common worldwide. To some extent, this suggests that on a broad level, middle class urban consumer behavior in Thailand is becoming similar to other developed countries. However, this might be expected. The desire of busy people for more convenience, of modern educated consumers for product information, or even the tendency of many to rely on visual impressions and not think much about low involvement products, does not seem to have much scope for strong cultural influences.

Within each of the three segments, none of the importance weights becomes negligible for any element. In other words, these consumers view the package as a coherent whole, stressing one aspect or another, but not completely ignoring any element. There may not be a single ideal design for the whole market, but the most effective single package would probably need to have a technology image which clearly conveys convenience and ease of use; list clear product information, and have more classic, traditional graphic design, colors, and shape. In specific segments, some of the package elements are somewhat less desired, but the specific implementation of most elements as suggested by the overall results would not usually strongly detract from attractiveness of the package. Thus, it would be possible to use a single package that was fairly attractive across all three segments, provided that the package included the key elements most attractive to each specific segment.
A key issue, though, is that not all of the elements are consistent with how Western consumers respond to packaging, so packaging design would have to be adapted to Asian markets to be most effective. This seems consistent with Walle’s (1997) view that broad patterns of behavior might be similar, but not specific details. The graphics right – verbal information left layout works better, especially among the strongly image seeking segment. This is in contrast to what research in the West shows. The broad body of cross-cultural research in psychology summarized in Nisbett (2003) indicates that Asian thought patterns tend to be more strongly right brain-oriented, which could give rise to differences in how effective copy vs graphics placement is on the package. In addition, more traditional, familiar, trusted design seems to work better. Trust may be a contributing factor here. Trust is usually discussed in terms of higher involvement situations, particularly in the context of relationship marketing and/or high level services. However, recent work has begun to look at trust as a component of brand image for low involvement products (e.g., Reast, 2005). In Asia, trust may be even more important, and more effective than differentiation as part of the brand image conveyed by the package.

Whatever their specific response, the conjoint study seems to have been an effective way to examine how consumers view packaging. Producers of packaged food products can use it to help create effective packaging strategies. Results demonstrate that there is strong segmentation in consumer response to food packaging. The preferred levels of the key elements in each segment are not mutually exclusive in this study, so that segmentation would not unduly complicate the packaging strategy. However, designers must remain aware that three complementary views need to be addressed on the package; there is not a single way of perceiving the package. They also will need to adapt some specific package elements to the Asian context – culture does seem to condition how consumers view the specific design details.

The relationship between consumer choices in various market segments and design characteristics of packaging is a key issue that marketers of packaged food products must understand to develop effective marketing strategies. Attention and attractiveness at the point of purchase play a critical role in getting brand choice. Utilizing the importance of packaging design elements as market segmentation variables can provide very useful information to marketers who what to maximize the package’s impact in selling the food product. Businesses that want to develop new brands, expand their product lines, or even enhance the impact and image of current brands can use segmentation on customer response to package elements as a useful tool in developing effective product strategies.

References


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