FINDABILITY OF COMMODITIES BY CONSUMERS

Regina W.Y. Wang*, Mu-Chien Chou**

*Department of Industrial and Commercial Design, National Taiwan University of Science and Technology, Taiwan (R.O.C.)
**Department of Bio-industry Communication and Development, National Taiwan University, Taiwan (R.O.C.)

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Corresponding Author:
Mu-Chien Chou
Assistant Professor, Department of Bio-industry Communication and Development, National Taiwan University, Taiwan (R.O.C.)
No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (R.O.C)
choumc@ntu.edu.tw

ABSTRACT
How do consumers make choices or decisions when faced with diverse commodities in a hypermarket? This paper studies the findability of commodities by consumers on the basis of distinct packaging designs. This study consists of three stages: (a) gathering of test samples, (b) interview of design specialists, (c) and checking of visual packaging elements by consumers. Results show that consumers focus on the five types of visual packaging elements of bottled beverages, namely, brand name, textures, commodity name, additional product information, and health logo, when distinguishing packaging designs. The findings of this research emphasize that consumers do not confine themselves to design elements (e.g., image, color, and shape) when distinguishing packaging designs. The findings also encompass the advancement of the correlation between design elements and its classifications, thus providing information on the differences in packaging designs.

INTRODUCTION
How do consumers choose their favorite products in a hypermarket when faced with various types of commodities? The findability of commodities influences consumer decisions (Brown, 2008). Studies show that two-thirds of consumer buying decisions are influenced by packages on the shelves (Gershman, 1987; Rettie and Brewer, 2000; Schoormans and Robben, 1997). Thus, an easy-to-find packaging should be developed. Consumers generally tend to purchase products that impress them, affect them via design clues (brand name, color, etc.), or are found on the point of purchase (Pine II and Gilmore, 1999; Sara, 1990).

Packaging provides an image to a commodity and helps distinguish commodities from one another. Furthermore, packaging stimulates the desire of buyers for consumption. An effective packaging design engages consumer attention and improves experience, prolongs lingering time at the shelf, and provides sales opportunities (Cheverton, 2004; Mikunda, 2002).

This paper studies the findability of commodities by consumers through distinct packaging designs. This paper consists of two major parts: (a) the first part is the literature review of package design differentiation; (b) the second part covers a focus group interview to investigate the factors that influence consumers in distinguishing different packaging designs.

FINDABILITY AND EVALUATION
Consumer experience with commodities begins at the visual level, with an average lingering time of about 20 minutes covering 20 articles for each second spent on a search. Thus, an open-and-shut mechanism is necessary for package designs (Schreiber, 1994). Consumers actively search for marketing stimuli that can help them locate a commodity during their buying process (Ratneshwar, Warlop, Mick, and Seeger, 1997). Therefore, consumers distinguish and select a commodity with distinctive packaging design features. This approach is the optimal way of increasing the visual presence of a commodity.

“Findability” is a popular term and an important theme on the Internet (Morville, 2005). In the physical environment, findability is affected by the size, shape, color, and location of objects. In the digital field, findability depends on keyword hunts and searches. Similarly, commodities on sale will become competitive if they can easily be found. Thus, the significant duty of a package designer is to develop an effective packaging design that will make the product easily findable or easily distinguishable from other products. Therefore, packaging design elements should be utilized to increase the findability and attractiveness of commodities on the shelves.
The shelf impact of a package can be measured by three indicators: visual impact, findability, and imagery (Lundberg, 2004). Findability refers to the ability of a commodity package to be easily selected from the shelf by the consumer (Palmer, 2008; Peter, 2004). Some studies show that findability tests are worth conducting. This finding presupposes that packaging design is the most effective way to facilitate the findability of commodities (Young, 1987). Related research shows that an intensified brand or packaging design can enhance the findability of packages, scope of short attention, and possibility of deals (Asher, 2005). Findability is taken in Guideline 2004/27/EC as the standard of improving the readability of a packaging to test whether the testee can find the correct information (MEB, n.d.). Thus, findability is readability to some extent (DiFranza, Clark, and Pollay, 2002). Package designers should dedicate themselves to integrating the visible and distinguishable elements of packaging design to create a design with high findability to attract consumer attention.

VISUAL SEARCH AND OBJECT RECOGNITION

Helping consumers notice the existence of a commodity is the first step. A good package can usually attract consumer attention and stimulate the desire to buy. Packaging is a major tool and a powerful means for product promotion. If commodities of the same category have similar qualities, the packaging will become the major factor that consumers will consider when selecting commodities. Exquisite packaging can also increase the perceived value and influence of commodities, thus influencing consumers to buy the commodities even at a high price. Butkevičienė, Stravinškienė, and Rutelionė (2008) indicate that packaging can draw consumer attention, deliver commodity information, and help position commodities to distinguish commodities from one another. Thus, packaging is a key factor in arousing consumer attention.

The ease in which consumers are able to find the packaging of a commodity is a precondition in achieving a sales target. The strength of a packaging design is determined in its ability to stimulate and trigger a consumer reaction that will result in the purchase of the product. In visual communication, the designer utilizes design elements to awaken one’s vision, enable one to recognize the object within one’s line of sight, and excite the observer’s curiosity to achieve visual communication (Chen and Guan, 2007).

One has to possess a certain level of distinguishing competence to instantly understand the connotation of each piece of information in a multi-element and complex visual information environment. Humans can sort information and categorize similar things together (Chien Cheng Chang, 2005). Psychologists have introduced many object recognition modes, such as Gestalt psychology, template matching, feature analysis, and prototype recognition (Anderson, 2004). As an important and inherent instinct, man’s competence in object recognition belongs to the perceptive recurrence of one’s psychological experience. This ability involves various associations with the product in which imagery association, aroused through vision, is direct and distinctive (Chien Cheng Chang, 2000). Recognition is a process in which the image of one object is received, a visual search is conducted, an individual gets attracted by distinctive features, an individual matches the features with his/her internal existing imagery model, an individual produces the identity sign and recognizes its implied meanings (Giles, 2005). On the basis of this definition, two factors must exist to distinguish packaging design: stimuli from the difference in the outer packaging design and past knowledge and experience of this difference. The interaction between these two factors produces distinction in packaging design.

PACKAGING VISUAL ELEMENTS

Visual elements can carry and deliver information and influence consumer decisions. Visual elements consist of texts and images. Image refers to the integration of shape and color and encompasses various visible “shapes” other than words. All visual patterns, including photos, paintings, shapes, concrete, or abstract, are the images received by readers. All patterns that can be perceived directly by the visual nerve, except readable text, are images. To facilitate the purchase behavior of consumers, commodities often transmit messages that are attractive and appealing to consumers. What a commodity can present to consumers is the outer packaging. The transmission of visual elements in the packaging is just the information delivered to consumers (Silayoi & Speece, 2004). The visual elements of a commodity decide its ability to arouse consumer attention and achieve the purpose of visual dissemination.

A unique packaging or design can increase product value (NOLO, n.d.). The features of a commodity that are widely recognized by consumers, such as firm name, brand name, vessel, package, and appearance, as well as distinguishing elements, such as word, language, sound, logo, token, number, image, color, shape, action, object, and other elements, are able to express or communicate the commercial value and idea of a product (Garner, 1999). Trade dress is a legal term of art that generally refers to the characteristics of the visual appearance of a product or packaging (i.e., visual elements) (Wikipedia, n.d.). These characteristics also refer to the non-functional physical detail and design of a product or packaging, which indicates or identifies the product’s source and distinguishes it from other products. Visual elements include color schemes, textures, sizes, designs, shapes, and placements of words, graphics, and decorations on a product or its packaging. (LectricLawLibrary, n.d.).

Visual elements can be classified into two categories: product design and product packaging. Product packaging refers to the packaging created through the arrangement of all design elements including image, layout, color, color combination, and others. Product design covers the shape, surface configuration, and other design features (Handelman, 2008). In this research, visual elements refer to the visual design features of a product or on its package. In a hypermarket, a common phenomenon is the use of the visual elements of a globally famous brand to attract consumer attention (Harvey and Rothe, 1998). For this fact, given the great similarities between these visual elements, we may hypothesize that little difference is present between the globally famous brand and the fake brand. Thus, the differences of these packaging designs are barely visible.
RESEARCH METHOD

The conveying of packaging elements involves the delivery of information (Silayoi & Speece, 2004). This study consists of three stages: (a) gathering of test samples to grasp an understanding of the packaging form and trend of bottled beverage and the selection of test samples on the basis of survey results; (b) interview of design specialists to sort the visual elements in beverage packaging that are recognized by design specialists; (c) checking of packaging visual elements by consumers to identify which visual element in the packaging of bottled beverage best affect a visual search. This study explores the design differentiation strategy adopted by the bottled beverage industry in the domestic market to increase consumer attention and improve customer experience by adopting in-depth interviews over design specialists (expert opinion method). This study also investigates analytical procedures to obtain answers through data collection (utilization, sampling, and coding), condensing, inferring, and analysis (Krippendorff, 2012). The detailed description will be given in the following paragraphs.

GATHERING OF TEST SAMPLES

Samples were sourced from the hypermarket. However, not all articles were included in this study because of their diverse packaging categories. Thus, actual samples were restrictively selected. The steps employed in searching and gathering the samples are as follows:

On the basis of naturalistic observation, products with plastic bottles were found to dominate the market. Thus, test samples were conveniently confined to products with plastic bottles. Samples with identical shapes and surface designs, as well as packaging designs with similar sizes, were excluded to diversify the test samples. When products whose packaging designs were more or less identical, only one item was selected at random. Finally, 51 pieces of actual samples were obtained.

Test samples were presented in the form of picture cards during the focus group interview. Actual samples were photographed. Pictures of samples can take the place of real products on condition that their features and details are clearly displayed (Chien Cheng Chang, 2000). High costs and a wide interview space would be necessary to display 51 pieces of product packaging at a size ratio of 1:1. Therefore, scale-down color cards were employed in this study with sizes of 10 cm × 10 cm.

INTERVIEW OF DESIGN EXPERTS

This study screened the test samples through focus group interviews and determined the samples on the basis of the focus group’s common opinions. The members of the focus group were individuals that have never taken part in style design training and have over 10-year working experience. Finally, 5 design specialists were selected and invited to help the researcher summarize the packaging visual elements. The researcher also assisted the focus group during discussions. During the surveying process, the interviewer presented each picture card to the specialists at random without repeating and then kept records of each specialist’s opinions about each sample. Finally, 2 typical test samples were selected by the specialist group for further testing by consumers.

The researcher asked the group members to express their opinions on the factors that could help them recognize the differences in the given samples. Their responses were recorded in a timely manner. To determine the mental working mode of the testees, they were asked to carry out hierarchical grouping tasks on packaging design differences (Peep, Shrestha, and Oliva, 2004; Ramanarayanan, Bala, Ferwerdab, and Walter, 2008). A hierarchical grouping task is used to resolve the problem of categorizing heavy and complicated data, while clustering is a way of grouping apparently similar objects and sorting data into a new type (Chien Cheng Chang, 2008; Guo, Peuquet, and Gahegan, 2002; Sherrill, Moy, Reilly, and Bonato, 2005). The researcher and his associate studied the contents of the interview and determined the context to which they belonged to obtain common views about the focus group’s opinions on the distinguishing factors. The credibility of the judges was measured in terms of the percentage formula of consistency (Holsti, 1969) after compiling the discussion contents of the interview with the design specialists, which were coded according to their classifications. The credibility of the classification in this research was up to 0.86, which is considered acceptable as it is greater than the basic requirement (credibility coefficient ≥ 0.8). A total of 16 visual elements were obtained based on the interview, and a brief description is given as follows:

1. Commodity name: the name of the contents described with adjectives on the beverage package.
2. Brand name: the brand on the beverage package.
3. Firm name: the name of the manufacturer on the beverage package.
4. Brand logo: the brand or manufacturer logo on the beverage package.
5. Health logo: the healthy food logo on the beverage package.
6. Additional product information: the text description on the beverage package.
7. Product contents: the name of the contents without description (adjectives) in front.
8. Product taste: additional seasonings other than the contents on the beverage package.
9. Illustration: the patterns that are directly related to the contents.
10. Auxiliary pattern: the abstract pattern that is not directly related to the contents.
11. Textures: the physical feel of the package.
12. Color of bottle body: the background color that covers a great part of the bottle.
13. Shape of bottle body: the overall shape under the bottle neck.
14. Shape of bottle shoulder: the outer shape at the bottle shoulder position.
15. Shape of bottle bottom: the shape at the bottom of the bottle.
16. Design of bottle cap: the differentiating design in material and color of the bottle cap.

CHECKING OF PACKAGING VISUAL ELEMENTS BY CONSUMERS

Convenience sampling method was adopted in this study to select the testees. A total of 50 consumers aged below 20, including 14 males and 36 females, took part in the survey voluntarily. Picture cards were presented at random for different people to check. During the testing process, the consumers were requested to make subjective judgments and identify what packaging visual elements affect the visual search. The consumers...
finally selected three visual elements that they thought attract their attention most. In this way, when the testees finished viewing the second sample, the test was completed. In this study, the test was conducted only after the testees developed a full understanding of the purpose of the study. The study adopted the descriptive statistic method to conclude the most attractive packaging visual elements.

SURVEY AND ANALYSIS OF VISUAL ELEMENTS IN BOTTLED BEVERAGE PACKAGING

Based on the observation of the 51 bottled water packaging samples, the researcher intended to infer the design and application trend from 6 visual elements, namely, brand name, pattern, color, shape, information, and logo.

1. Brand name: Usually, the brand name covers a large part of the package mainly in the form of a computer font or an artistic font.
2. Pattern: Text is mainly taken as the visual subject or the concrete pattern related to the water image is taken as the illustration design.
3. Color: Focus is on lightness of color.
4. Shape: Bottle shoulder and waist are usually used to shape the container’s appearance.
5. Information: Emphasis is on firm name and natural origin.
6. Logo: Emphasis is on quality certification and brand.

RESULTS OF THE PACKAGING TEST BY CONSUMERS

Consumers’ recognition of a total of 10 visual elements in Bottled Beverage Package 01 is recorded in number of times in Table 1. The first 5 visual elements that attracted the consumers’ attention most were brand name (37 times/24.67%), commodity name (27 times/18.00%), health logo (24 times/16.00%), textures (18 times/12.00%), and color of bottle body (12 times/8.00%). Based on the statistical results on the priority of the visual elements in Package 01, brand name was the most prominent visual element that might affect visual search, followed by commodity name, health logo, textures, and color of bottle body.

Table 1 Priority of the visual elements in Package 01 for visual search

<table>
<thead>
<tr>
<th>Visual Element</th>
<th>N</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commodity name</td>
<td>27</td>
<td>18.00</td>
</tr>
<tr>
<td>Health logo</td>
<td>24</td>
<td>16.00</td>
</tr>
<tr>
<td>Brand name</td>
<td>37</td>
<td>24.67</td>
</tr>
<tr>
<td>Auxiliary pattern</td>
<td>7</td>
<td>4.67</td>
</tr>
<tr>
<td>Textures</td>
<td>12</td>
<td>8.00</td>
</tr>
<tr>
<td>Color of bottle body</td>
<td>11</td>
<td>7.33</td>
</tr>
<tr>
<td>Shape of bottle shoulder</td>
<td>5</td>
<td>3.33</td>
</tr>
<tr>
<td>Shape of bottle bottom</td>
<td>5</td>
<td>3.33</td>
</tr>
<tr>
<td>Design of bottle cap</td>
<td>4</td>
<td>2.67</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00</td>
</tr>
</tbody>
</table>

* The first 5 visual elements are marked in gray.

Consumers’ recognition of a total of 9 visual elements in Bottled Beverage Package 02 is recorded in number of times in Table 2. The first 5 visual elements that attracted the consumers’ attention most were brand name (47 times/31.33%), additional product information (27 times/18.00%), illustration (19 times/12.97%), textures (13 times/8.67%), and firm name (11 times/7.33%). Based on the statistical results on the priority of the visual elements in Package 02, brand name was the most prominent visual element that might affect visual search, followed by additional product information, illustration, textures, and firm name.

Table 2 Priority of the visual elements in Package 02 for visual search

<table>
<thead>
<tr>
<th>Visual Element</th>
<th>N</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand name</td>
<td>47</td>
<td>31.33</td>
</tr>
<tr>
<td>Firm name</td>
<td>11</td>
<td>7.33</td>
</tr>
<tr>
<td>Additional product information</td>
<td>27</td>
<td>18.00</td>
</tr>
<tr>
<td>Illustration</td>
<td>19</td>
<td>12.67</td>
</tr>
<tr>
<td>Textures</td>
<td>13</td>
<td>8.67</td>
</tr>
<tr>
<td>Color of bottle body</td>
<td>8</td>
<td>5.33</td>
</tr>
<tr>
<td>Shape of bottle body</td>
<td>10</td>
<td>6.67</td>
</tr>
<tr>
<td>Shape of bottle shoulder</td>
<td>7</td>
<td>4.67</td>
</tr>
<tr>
<td>Design of bottle cap</td>
<td>8</td>
<td>5.33</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>100.00</td>
</tr>
</tbody>
</table>

* The first 5 visual elements are marked in gray.

This study summarized in number of times the consumers’ recognition of the visual elements in the above-mentioned two types of package into Table 3, and it contained a total of 13 visual elements. The first 5 visual elements that attracted the consumers’ attention most were brand name (84 times/28.00%), textures (31 times/10.33%), commodity name (27 times/9.00%), additional product information (27 times/9.00%), and health logo (24 times/8.00%). Based on the statistical results on the priority of the visual elements in the packages, brand name was the most prominent visual element that might affect visual search, followed by textures, commodity name, additional product information, and health logo.
CONCLUSION

This research investigated how consumers sense and identify differences in packaging designs from the products on sale. The test results on the consumers’ recognition of the visual elements in the packaging of bottled beverages indicate that not all visual elements could arouse consumers’ visual search. The reason for this finding is mainly related to the naming of the banner word (brand name, commodity name). The naming of the banner word is the key in arousing consumers’ attention because consumers’ personal experience enables them to have a deep impression of the brands or commodity names they are familiar with, and these types of commodities could arouse their attention easily. This finding could be inferred from the literature. People’s visual focus is the result of a series of automatic cerebral activities, which is why people usually pay close attention to the part that is related to their personal experience (Arnheim, 1966). Furthermore, advertising may also be used to help root some brands or commodity images into consumers’ minds. For this reason, consumers are likely to be attracted by the banner word they are familiar with while selecting commodities on the shelf. The findings of the study indicate that consumers’ attention may be easily aroused if the brand name or the commodity name of the beverage is highlighted on the packaging. In other words, only those with specific shapes and famous brand names, as well as those already rooted in consumers’ minds, can be distinguished easily and clearly by the buyers; Coca-Cola is an example.

Therefore, when it comes to the connection of packaging design with product contents, the results showed that consumers would focus more on five visual elements, namely, brand name, textures, commodity name, additional product information, and health logo. The elements of packaging design included in this research are more specific, and the results are more concentrated than those of previous studies. The test samples selected in this study are confined to products in plastic bottles. However, glass bottles, metal cans, and paper containers are also important beverage containers. Aside from plastic bottles, paper containers are often used to pack juice or milk, and metal cans are also used to contain carbonated beverages. For different types of containers, the focus may be on different visual elements. In addition, with the rapid change in packaging materials and technologies, such as the recent emergence of 3D printing technology, which may be used to pack beverages in the future, packaging design is bound to change, and the visual elements that may arouse consumers’ attentions may also change as a result. Therefore, future tests on different packaging materials should be conducted to determine the effects of different materials upon visual search.

This study particularly points out that emphasizing the visual elements that could significantly affect visual search could make the products more attractive to consumers. However, reverse thinking is required if the visual elements are highly homogenous. A feeling of freshness could be created by strengthening subordinate visual elements to attract consumers’ visual priority. Young (2006) points out that peoples’ browsing habits seems similar in different cultures and regions, but the information obtained in different regions or countries may result in a different experience for consumers and is further reflected in different visual focuses. For example, Taiwan has a high literacy rate. Thus, the naming of the banner word is the key visual element that may significantly affect visual search. However, in countries with a relatively high illiteracy rate, the pattern design for the packaging might be more important than the banner word. The scope of this study is confined to the Taiwan region only. Future studies should conduct surveys in different regions and countries as well as compare the findings of such surveys.

REFERENCES


