Influence of Packaging Element on Beverage Product Marketing

Isti Purwaningsih1,2*, Surachman Surachman3, Pratikto Pratikto1, Imam Santoso2

1Department of Mechanical Engineering, Faculty of Engineering, Brawijaya University, Malang, East Java 65145, Indonesia, 
2Department of Agriculture Industrial Engineering, Faculty of Agricultural Technology, Brawijaya University, Malang, East Java 65145, Indonesia, 3Faculty of Economics and Business, Brawijaya University, 165th MT. Haryono Street, Malang, East Java 65145, Indonesia. *Email: ipurwaningsih@ub.ac.id

Received: 09 September 2019  Accepted: 17 November 2019  DOI: https://doi.org/10.32479/irmm.8831

ABSTRACT

This research aims to discover the influence of packaging elements on consumers purchase intention towards beverage products that use polyethylene terephthalate bottles. The conceptual framework of the study was developed based on various previous studies, which divide the packaging into visual and verbal variables. There are three methods to rate product packaging (image tests, usage test, and visibility tests). The results show that the model generated is only able to explain 39.2% of the variance. The visual element of packaging is the most significant influence on consumers purchase intention. There are two significant indicators that influence the visual variable (bottles with different colours and shape attractiveness), and shape distinctiveness is the indicator that best describes the visual variable.

Keywords: Beverage Products, Informational Packaging, Polyethylene Terephthalate Package Bottle, Verbal Elements, Visual Appearance, Visual Packaging

JEL Classifications: M110, M310, M370

1. INTRODUCTION

Nowadays, the market for various beverage products is growing due to the increase in consumers’ awareness of quality food products. Besides, lifestyle changes that emphasize practicality and simplicity are increasing the demand for these products. Packaging plays an important role in these kinds of products and cannot be separated from them.

The main function of food packaging is to protect products from damage and external influences, facilitate the products’ transportation, and provide information about the food’s components and the nutrients that it contains (Coles et al., 2003). Other functions of packaging are traceability, convenience, and tamper indication (Marsh and Bugusu, 2007). Along with the increase in the competition in the food industry, various additional functions have been developed and even been used as organizational marketing strategies (Coles et al., 2003).

There are some fundamental reasons for the importance of package as a component of marketing strategy. Underwood (2003), Ampuero and Vila (2006) stated that with the increase in the number of similar products and brands on the market, companies need to differentiate their products. Accordingly, a different/unique packaging design is the best way to attract consumer attention (Bloch, 1995). The other reason is that consumers have limited shopping time, so the decision to buy a particular product is often made at the time of purchase (Silayoi and Speece, 2004). Wells et al. (2007) stated that 73% of consumers rely on the packaging design to help them to purchase products, and it is becoming important for quick product recognition. Cost limitations are another reason, and marketing communication such as advertising has started to become obsolete; thus, the role of packaging is shifting from “protecting what is sold” to “selling what is protected” (Prendergast and Pitt, 1996).

Many studies of packaging’s role as a component of marketing strategy have been conducted by researchers, concerning topics
such as packaging’s role in logistics and marketing (Prendergast and Pitt, 1996); packaging as a positioning tool (Ampuero and Vila, 2006); packaging design for segmentation purposes (Silayoi and Speece, 2007); packaging as brand communication and identity (Nancarrow et al., 1998; Underwood et al., 2001; Orth and Malkewitz, 2008); and packaging’s role in product purchase decisions (Silayoi and Speece, 2004; Koutsimanis et al., 2012).

In various packaging research, attributes have been developed that describe its characteristics. Ampuero and Villa (2006) used many alternatives of color, typography, shape, and picture to determine the exact packaging design for consumer positioning purposes. Underwood et al. (2001) reviewed product packaging pictures in relation to the attention paid to the brand. Rettie and Brewer (2000) used verbal and visual elements to understand the effect of packaging design on brand laterality. Orth and Malkewitz (2006) separated packaging into holistic components (holistic package design) to create brand identity. These holistic components were used by Orth and Malkewitz (2008) to determine the consumer brand impression. Generic package design factors were used by Orth et al. (2010) to understand the consumer expectation of the product price. In studies of packaging’s influence on the decision to purchase products, attributes such as the price, shelf life, size of container, disposal method, material, integrity, and fruit stem (Koutsimanis et al., 2012), packaging elements of general FMCG products (Silayoi and Speece, 2004), figure and color (Schoorman and Robben, 1997), packaging form, product information, packaging technology, and graphic layout have been developed (Silayoi and Speece, 2007).

The research objects in those studies also differed. Schoorman and Robben (1997) used coffee packaging to understand packaging’s influence on purchase decisions. Underwood et al. (2001) used objects such as candy, bacon, and margarine packages. Rettie and Brewer (2000) used cookie and cake packaging as research objects. To understand the formation of the purpose of brand identity and consumer brand impression, Orth and Malkewitz (2006; 2008), Orth et al. (2010) used wine bottle packages as an object. Koutsimanis et al. (2012) investigated the packaging design of fresh fruit, and Silayoi and Speece (2004) investigated general FMCG and instant curry packaging (Silayoi and Speece, 2007).

These earlier studies show that research specifically discussing packaging elements’ influence on consumer purchase decisions regarding beverage products is still limited.

2. CONCEPTUAL BACKGROUND

Silayoi and Speece (2004) developed a conceptual model of packaging elements’ role in purchase decisions in bounded and time-pressured conditions (Figure 1). This model was developed from the qualitative approach of a focus group discussion. This model needs to be studied further, especially in relation to beverage products.

In this model, the packaging is composed of two main components, namely the visual and informational elements. The visual elements consist of graphic elements – the packaging shape and size – and the informational element consists of product and packaging technology information. Each component has a different role in the purchase decision process.

According to the preliminary studies of beverage products in polyethylene terephthalate (PET) bottles, packaging consists of a bottle (included a cap) and a label. Packaging attributes are developed based on these components: shape and color for the bottle component and graphic (layout, color combination, typography, picture) and product information (brand, ingredient composition, net weight, name and address of the producer/importer, expiry date, production code, follow-up of product/packaging) for the label component. Information related to

---

**Figure 1:** Conceptual model on packaging elements and purchase decision

---

Source: Silayoi and Speece, 2004
packaging technology (Silayoi and Speece, 2004; 2007) on beverage products using PET bottles is not listed. Hence, these attributes are more precisely classified as verbal and visual elements (Rettie and Brewer, 2000).

There are three methods to rate product packaging, namely image tests, usage tests, and visibility tests (Schwartz, 1971 in Rettie and Brewer, 2000). This research uses qualitative and quantitative image tests to evaluate consumer behavior and preferences as well as messages delivered to the consumers.

Studies concerning the purchase decision have been undertaken by previous researchers. Zeithaml (1988) and Holmes and Paswan (2012) used the term “intention to purchase,” while Silayoi and Speece (2004) and Koutsimanis et al. (2012) used the term “purchase decision.” According to Bloch (1995), the purchase decision and intention to purchase can be categorized as behavioral responses. There are two stages in the decision-making process related to packaging products (Murphy 1997 in Holmes and Paswan, 2012). In the earlier stage, the packaging design plays an important role in the initial decision to inspect products further. After the consumer has examined them, the further role of packaging is to encourage consumers to select the product and to lead to higher intentions to purchase. The product selection process is a decision-making process that could be described as a mental orientation characterizing consumers’ approach to making a choice (Lyonski et al., 1996 in Silayoi and Speece, 2004). This approach to the decision-making process is cognitively and affectively oriented (visual element). Based on these descriptions, a research model was designed (Figure 2) and variable attributes were developed (Table 1). This research aims to discover the influence of packaging elements on consumers’ intention to purchase beverage products that use PET bottles.

3. MATERIALS AND METHODS

Explanatory research explains the relationship or influence between two or more variables. The research object, in this case, is beverage products in PET bottles. The research subjects were students of the Technology and Management of Packaging class.

The data collection was performed in April 2015 using questionnaires, which consisted of two parts: questions about the respondents’ personal data and research topic questions (Table 1). The respondents’ personal data were specifically gender, age, purchased beverage products, and monthly purchased beverage products. Beverage products were categorized into six types: Juice, tea, carbonated drinks, energy drinks, mineral water, and coffee–milk.

The evaluation was performed by giving an X to figures that showed an assessment based on a Likert scale (1 = strongly...

---

**Table 1: Research variables**

| Variable            | Indicator                          | Descriptions                                                                 |
|---------------------|------------------------------------|------------------------------------------------------------------------------|
| Visual              | Translucent bottle                 | Translucent bottle makes it easier to see the contents inside.               |
|                     | Bottles with different colors      | Different colors make it easier to choose products.                         |
|                     | Label graphics                     | Label graphics (layout, color combination, typography and picture) of product.|
|                     | Shape distinctiveness              | Distinct bottle shape makes it easier to identify products.                 |
|                     | Shape attractiveness               | Attractive bottle shape shows the image of products quality.                |
|                     | Easiness to held                   | Ergonomic bottle shape.                                                     |
| Verbal              | Easiness to read                   | Easy to read product information on label.                                  |
|                     | Information comprehensiveness      | Comprehensive product minimal information (Indonesian Government Regulation No. 69-1999). |
| Intention to purchase| Searching for information          | Information of implemented quality assurance.                              |
|                     | Interested to try                  | Searching for further information.                                         |
|                     | Purchase consideration             | Interested to try.                                                          |
|                     |                                    | Considering to purchase the product.                                        |

---

**Figure 2: Research model**
disagree, 5 = strongly agree). The data analysis was conducted using the online generalized structured component analysis (GSCA) regression method application at www.sem-gesca.org.

4. RESULTS AND DISCUSSION

A total of 86 respondents were obtained, consisting of 38 males (44.2%) and 48 females (55.2%) aged 19-22 years. Of these respondents, 78 (90.1%) purchased mineral water with a frequency of 3-120 times/month. The second drink type was coffee–milk beverages, with a frequency of 2-50 times/month, reported by 62 respondents (72.1%). Third was tea, with a frequency of 2-10 times/month, as mentioned by 60 respondents (69.8%). Regarding carbonated drinks and juice, 35 respondents (40.7%) reported purchasing them with a frequency of 1-7 times/month and 1-10 times/month. The least-purchased beverage product was energy drinks, reported by 25 respondents (29.1%), with a frequency of 1-6 times/month.

Based on the mean value of the indicators (Table 2), all the indicator values are >3, which means that most of the respondents had the same opinion about the beverage products. The GSCA analysis results can be classified into three groups: model fit criteria (Table 3), evaluation of the measurement model, and evaluation of the structural model.

There are 3 model fit criteria, namely FIT, AFIT (adjusted FIT), and number of free parameters (NPAR), in this study. FIT showed the total variances from all the variables that can be explained by the model, with the value 0-1. FIT = 0.392, while AFIT = 0.382, which means that FIT = 0.392 < 0.5 and consequently this model is not good enough to examine and explain the phenomenon discussed. NPAR = 17, showing the total estimations of the free parameter, weights, loading, and path coefficient.

This research reviewed the influence of visual and verbal packaging elements on the intention to purchase beverage products. The intention to purchase is influenced by many factors. According to Holmes and Paswan (2012), the intention to purchase is influenced by the expected product quality, packaging ease of use, and packaging ease of handling. Zeithaml (1988) stated that the purchase intention of a product is affected by the quality and price perception. The quality perception, according to Compeau et al. (1998), is the result of consumers’ product evaluation, integrating their affective and cognitive response. Szybillo and Jacoby (1974) stated that the quality perception is affected by extrinsic cues and intrinsic cues. Intrinsic cues are physical product characteristics, such as the brand name and packaging (Rigaux-Briumont, 1982), and extrinsic cues are non-physical products that can be changed without altering the nature of the product (Szybillo and Jacoby, 1974; Richardson et al., 1994), such as the brand name, store name, and price (Teas and Agarwal, 2000).

Table 4 shows for the reliability item of the visual variable a loading factor value of 6 indicators under 0.7, and only one indicator has a value >0.7, which is still acceptable. For the verbal variable, there is an indicator reliability item <0.7, and for the intention to purchase variable, all the indicators >0.7, so these are categorized as good.

There are two significant indicators that influence the visual variable (bottles with different colors and shape attractiveness), and shape distinctiveness is the indicator that best describes the visual variable. Regarding the verbal variable, there is no indicator that affects the variable, while the quality assurance information

| Indicator                  | Estimate | SE  | CR  |
|----------------------------|----------|-----|-----|
| Translucent bottle         | -0.209   | 0.127 | 1.65 |
| Bottles with different colors | 0.394   | 0.142 | 2.77* |
| Label graphics             | 0.110    | 0.165 | 0.67 |
| Shape distinctiveness      | 0.206    | 0.186 | 1.11 |
| Shape attractiveness       | 0.729    | 0.151 | 4.81* |
| Easiness to held           | -0.006   | 0.174 | 0.04 |
| Easiness to read           | 0.709    | 0.529 | 1.34 |
| Information comprehensiveness | -0.387   | 0.459 | 0.84 |
| Quality assurance information | 0.774   | 0.607 | 1.27 |
| Searching for information  | 0.743    | 0.077 | 9.61* |
| Interested to try          | 0.830    | 0.032 | 26.27* |
| Purchase consideration     | 0.828    | 0.043 | 19.3* |

CR*: Significant value at 0.05 level. GSCA: Generalized structured component analysis, SE: Standard error

Table 5: GSCA analysis result-evaluation of structural model

| Indicator                  | Estimate | SE  | CR  |
|----------------------------|----------|-----|-----|
| Visual- >purchase intention | 0.617    | 0.084 | 7.3* |
| Verbal- >purchase intention | 0.249    | 0.240 | 1.03 |

CR*: Significant at 0.05 level. GSCA: Generalized structured component analysis, SE: Standard error
indicator is the best-described verbal variable. All the indicators of the intention to purchase variable affect the variable, and the indicator that best describes this variable interest in trying.

For the evaluation of the structural model (Table 5), the visual variable significantly affects the intention to purchase beverage products. Rusko et al. (2011) stated that visual elements are stronger and more reliable than verbal elements.

From various items in the packaging visual variable, generally there are two main attributes (colors and packaging shape) that are important in the packaging design because they determine the product’s visual appearance. The product’s visual appearance could affect consumers’ product evaluation and product choice (Creusen and Schoormans, 2005). Many studies about products’ visual appearance role have been conducted by researchers (Bloch, 1995; Garber, 1995; Garber et al., 2000). The product’s appearance also helps consumers to assess the functional, aesthetic, symbolic, and ergonomic aspects (Blijlevens et al., 2009), and Creusen and Schoormans (2005) added another two product visual appearance roles: the attention drawing and categorization functions.

Schoormans and Robben (1997) used color combination and shape to understand the influence of new packaging design on product attention, categorization, and evaluation. Colors affect consumers’ ability to recognize products, packaging’s ability to deliver messages, novelty, and packaging contracts, which also affect consumers’ probability of picking up and purchasing products (Garber et al., 2000). Packaging designs were used by Luo et al. (2012) to discover the suitability perception and product quality perception between visual and affective perceptions using the perceptual matching method. From the description, it can be concluded that visual appearance plays an important role in increasing consumers’ purchase intention towards beverage products.

Studies have been carried out by researchers using various objects, but the research on beverage products in PET bottles is still very limited. Many variables need to be studied further to understand consumers’ purchase intention regarding beverage products. Further research needs to be conducted with the addition of time pressure and product involvement as moderation variables, as suggested by Silayoi and Specce (2004). Colors and shape are the significant indicators that will determine packaging’s visual appearance, and further research needs to be performed to understand their influence on consumers’ response based on the conceptual model suggested by Bloch (1995).

5. CONCLUSION

The packaging visual element significantly affects the purchase intention of beverage products in PET bottles. The indicators that influence visual variables are bottles with different colors and shape attractiveness. Shape attractiveness is the indicator that best describes the packaging visual variable. The model generated from this research is only able to explain 39.2% of the variance; the rest is explained by other variables.

Among various items in the packaging visual variable, there are two main attributes (colors and packaging shape) that are important in packaging design, because they determine the product’s visual appearance. An effort to increase consumers’ purchase intention towards beverage products can be made by improving the packaging’s visual appearance.

REFERENCES

Ampuero, O., Vila, N. (2006), Consumer perceptions of product packaging. Journal of Consumer Marketing, 23(2), 100-112.

Blijlevens, J., Creusen, M.E.H., Schoormans, J.P.L. (2009), How consumers perceive product appearance: The identification of three product appearance attributes. International Journal of Design, 3(3), 27-35.

Bloch, P.H. (1995), Seeking the ideal form: Product design and consumer response. Journal of Marketing, 59(3), 16-29.

Coles, R., McDowell, D., Kirwan, M.J. (2003), Food Packaging Technology. Boca Raton: CRC Press.

Compeau, L.D., Grewal, D., Monroe, K.B. (1998), Role of prior affect and sensory cues on consumers’ affective and cognitive responses and overall perceptions of quality. Journal of Business Research, 42(3), 295-308.

Creusen, M.E.H., Schoormans, J.P.L. (2005), The different roles of product appearance in consumer choice. Journal of Product Innovation Management, 22(1), 63-81.

Garber, L.L. (1995), The package appearance in choice. In: Kardes, F.R., Provo, M.S., editors. NA-Advances in Consumer Research. 9th ed. New York: Association for Consumer Research. p653-660.

Garber, L.L., Burke, R.R., Jones, J.M. (2000), The Role of Package Color in Consumer Purchase Consideration and Choice (Working Paper). Massachusetts: Marketing Science Institute Cambridge.

Holmes, G.R., Paswan, A. (2012), Consumer reaction to new package design. Journal of Product and Brand Management, 21(2), 109-116.

Koutsimantis, G., Getter, K., Behe, B., Harte, J., Almenar, E. (2012), Influences of packaging attributes on consumer purchase decisions for fresh produce. Appetite, 59(2), 270-280.

Luo, S.J., Fu, Y.T., Korvenmaa, P. (2012), A preliminary study of perceptual matching for the evaluation of beverage bottle design. International Journal of Industrial Ergonomics, 42(2), 219-232.

Lysonski, S., Durvasula, S., Zotos, Y. (1996), Consumer decision-making styles: A multi-country investigation. European Journal of Marketing, 30(12), 10-21.

Marsh, K., Bugusu, B. (2007), Food packaging roles, materials, and environmental issues. Journal of Food Science, 72(3), 39-55.

Murphy, I.P. (1997), Study: Packaging Important in Trial Purchase. Marketing News, 3 February. p14.

Nancarrow, C., Wright, L.T., Brace, I. (1998), Gaining competitive advantage from packaging and labelling in marketing communications. British Food Journal, 100(2), 110-118.

Orth, U.R., Campana, D., Malkewitz, K. (2010), Formation of consumer price expectation based on package design: Attractive and quality routes. Journal of Marketing Theory and Practice, 18(1), 23-40.

Orth, U.R., Malkewitz, K. (2006), Packaging Design as Resource for the Construction of Brand Identity. Montpellier, France: Proceedings of 3rd International Wine Business Research Conference. p6-7.

Orth, U.R., Malkewitz, K. (2008), Holistic package design and consumer brand impressions. Journal of Marketing, 72(3), 64-81.

Prendergast, G., Pitt, L. (1996), Packaging, marketing, logistics and the environment: Are there trade-offs? International Journal of Physical Distribution and Logistics Management, 26(6), 60-72.

Rettie, R., Brewer, C. (2000), The verbal and visual components of package
design. Journal of Product and Brand Management, 9(1), 56-70.
Richardson, P.S., Dick, A.S., Jain, A.K. (1994), Extrinsic and intrinsic cue
effects on perceptions of store brand quality. Journal of Marketing,
58(4), 28-36.
Rigaux-Bricmont, B. (1982), Influences of the brand name and packaging
on perceived quality. In: Mitchell, A., Abor, A., editors. NA-
Advances in Consumer Research. 9th ed. Michigan: Association for
Consumer Research. p427-477.
Rusko, E., Heiniö, S., Korhonen, V., Heilmann, J., Karjalainen, T.M.,
Lahtinen, P., Pirkänäinen, M. (2011), Messenger Package Integrating
Technology, Design and Marketing for Future Package Communication.
Final Report, VTT Research Notes 2586. Available from: http://www.
vtt.fi/Documents/2011_T2586.pdf. [Last accessed on 2019 Aug 15].
Schoorman, J.P.L., Robben, H.S.J. (1997), The effect of new package
design on product attention, categorization and evaluation. Journal
of Economic Physiology, 18(2-3), 271-287.
Schwartz, D. (1971), Evaluating packaging. Journal of Advertising
Research, 11(5), 29-32.
Silayoi, P., Speece, M. (2004), Packaging and purchase decisions: An
exploratory study on the impact of involvement level and time
pressure. British Food Journal, 106(8), 607-628.
Silayoi, P., Speece, M. (2007), The importance of packaging attributes:
A conjoint analysis approach. European Journal of Marketing,
41(11/12), 1495-1517.
Szybillo, G.J., Jacoby, J. (1974), Intrinsic versus extrinsic cues as
determinants of perceived product quality. Journal of Applied
Psychology, 59(1), 74-78.
Teas, R.K., Agarwal, S. (2000), The effects of extrinsic product cues on
consumers’ perceptions of quality, sacrifice, and value. Journal of
the Academy Marketing Science, 28(2), 278-290.
Underwood, R.L. (2003), The communicative power of product packaging:
Creating brand identity via lived and mediated experience. Journal
of Marketing Theory and Practice, 11(1), 62-76.
Underwood, R.L. Klein, N.M., Burke, R.R. (2001), Packaging
communication: Attentional effects of product imagery. Journal of
Product and Brand Management, 10(7), 403-422.
Wells, L.E., Farley, H., Armstrong, G. (2007), The importance of
packaging design for own label brands. International Journal of
Retail Distribution and Management, 35(9), 677-690.
Zeithaml, V.A. (1988), Consumer perceptions of price, quality, and
value: A means-end model and synthesis of evidence. Journal of
Marketing, 52(3), 2-22.