

AN ANALYSIS OF COGNITIVE-BASED DESIGN OF YOGURT PRODUCT PACKAGING

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ABSTRACT

Product packaging is not only used as a product container, but also used as a means of marketing by companies, particularly by those involved in consumer goods. Yogurt products are predicted to experience expansion in the Indonesian market. In this study, the authors analyzed the implementation of cognitive-based design in developing yogurt product packaging to increase consumers' willingness to buy the product. This study was divided into two phases: initial research and primary research. Initial research pursued six levels of color scheme and font factors and then narrowed down the results into the two best options that would later be combined with the primary research that analysed the shape factors. Research methods used in the initial study were the Eye-Tracking method and the 'Retrospective-Think-Aloud' (RTA) method. Preliminary results showed that 'Fineline' and 'Bodoni' font type along with 'Analogue' and 'Tetradic' color schemes are judged to be the best combination and thus, these results would be combined in the main study with the shape factor. Conjoint Analysis methods were used in the main study. The main results of the research study showed a preference from Indonesian consumers for yogurt product packaging with the 'Fineline' font type with its rounded shape and an 'Analogue' color scheme.

Keywords: Conjoint analysis; Dairy product; Ergonomics; Eye-Tracker; Market research; Product packaging; 'Retrospective-Think-Aloud'

1. INTRODUCTION

The global food industry is constantly developing in tune with the demands of global consumers. Each industry continues to look for new ways to remain economical, productive and to be able to compete with competitors. This trend also occurs in Indonesia. In 2012, the market for processed food and beverage industry continued to increase as the country's population kept growing and it has reached more than 230 million citizens (2015). Consumer behavior and a large population have been targeted as significant factors by the food and beverage industry. Over the last five years, growth in processed food consumption has reached a rate of 41% (Altaffer et al., 2012; Najib et al., 2011; Park & Weliwita, 1999).

Considering the fact that there is a myriad of food and beverage industries in Indonesia, each company is vying for consumers' attention in order to keep persuading customers to buy its products, and to strive to become the market leader. Understanding the importance of product attributes that influence consumer choice in purchasing a particular food or beverage product is an important key for any market player in this competitive era (Estiri et al., 2010).

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In Indonesia, the dairy products industry has experienced rapid growth. A healthy lifestyle, which is currently emerging in developed countries, also occurs in Indonesia's upper and middle class societies, as they are becoming more demanding for improvements in health products' quality and effectiveness. Consumers worldwide are prepared to pay more for healthy products (Altaffer et al., 2012). Therefore, this paper is aimed at determining Indonesian consumer preferences for healthy yogurt products, based on three significant factors in packaging (shape, font type, and color) that affect consumers' decision-making. The rationale for this research is based on a 65.2% sales growth increase in yogurt products in 2009-2013, which underscores the rise in Indonesian consumer demand for healthy products (Market Indicator Report, 2010).

During the process of making product purchasing decisions, consumers would look for a number of similar products that are classified in the same product group (Kuvykaite et al., 2009). From those available alternatives and related product information, consumers would recognize attributes, which later on would act as the basis for choosing a particular product among all the available products. One of the significant attributes determining consumer preferences is product packaging. Many marketing experts argue that product packaging not only acts as container or a mean of protecting the product, but also promotes the product identity. Packaging plays an important role in attracting consumers' attention and delivering the product's content (Wang & Chou, 2010; Chind & Sahachaisaeree, 2012; Calver, 2004).

In manufacturing product packaging, aesthetic and cognitive aspects are to be held in consideration. In designing and marketing a product, aesthetic and cognitive factors also play a significant role for today's consumers who have managed to meet their basic needs and thus, become savvy customers in choosing which products to buy (Reimann et al., 2010). Therefore, a study of customers' preferences in packaging design is needed in order to create a competitive advantage and to generate added-value for the product to stand out among its competitors.

2. METHODOLOGY

Silayoi and Speece (2004) have defined the five essential elements of product packaging which potentially influence consumers' decision to purchase a product. The elements are grouped into two categories: visual and informational. The informational category covers the main information element contained in the packaging, as well as the technological element used to deliver the main information element. This technological element actually affects the decision-making process by stimulating consumers' cognitive organs, outside of the realm of the five senses. On the other hand, the visual category covers graphics, size, and shape of the packaging, which affects the consumers' emotions and feelings.

The graphics element is divided into several parts: images on packaging, brand font size, brand font type, and color. Visual design elements, namely the packaging's color and shapes can inspire potential perception, which would later on affect consumers' assessment of product quality and experience as non-visual sensory perception (Becker et al., 2011).

Color also has the potential to cause an emotional or behavioral response (Cyr et al., 2010). A previous analytical study of gum packs conducted with two variables, namely format and color for packaging which revealed that the desire to purchase is more closely associated with the color of the packaging rather than with the format (Rebollar et al., 2012).

Other previous research on packaging emphasized the graphic design of packaging labels for two products (water and vodka). The study on graphic design was conducted with three existing factors on the label design: shape angularity (rounded vs. angular), orientation (upward vs. downward) and alignment (right vs. left) (Westerman et al., 2013). A similar study has been conducted in Thailand, but with different factors. This one focused on customer preference

factors in observing color scheme, pattern types and typography of certain wine products (Auttarapong, 2012). It is recognized that neither of these products are particularly relevant for consumer preferences for the health food market in Indonesia.

Another type of research on packaging has also been conducted in the Netherlands. This study also used three factors just as the studies mentioned above, but with different criteria, namely packaging shape (rounded vs. angular), color saturation (low vs. high saturation) and sensitivity to design (low vs. high) (Becker et al., 2011).

Marketing a product becomes the next consideration after dealing with other factors in packaging the product. In marketing a product, customers could be divided into several groups with each having specific needs to be handled with strategies unique for each group, (Ritnamkam & Sahachaisaeree, 2012).

Therefore, this research was aimed at discovering Indonesian consumer preferences in terms of product packaging compared to consumer preferences in other parts of the world by using three factors from the previous studies: form (shape), font type and color (color scheme). The preferences were measured using three methods: Eye-Tracking, 'Retrospective- Think-Aloud' and Conjoint Analysis methods. The results of this study are expected to aid companies in developing a new product or improving existing product packaging to make their products more appealing for consumers when compared to those manufactured by their competitors, specifically in relation to healthy yogurt products.

3. RESULTS AND DISCUSSION

This study was divided into two phases: initial research (pre-test studies) and primary research (main test).

In the pre-test, a combination of the Eye-Tracking method with the 'Retrospective-Think-Aloud' (RTA) method was used. In the main test, a Conjoint Analysis research method was used to measure the preferences of potential customers towards design alternatives for yogurt packaging.

Based on several literature sources, there should not be a minimum number of respondents for Eye-Tracking and the 'Retrospective-Think-Aloud' methods, but it is suggested that a study conduct experiments with more than 10 respondents (Pieters & Warlop, 1999; Plumhoff & Schirillo, 2009; Guan et al., 2006). On the other hand, the number of respondents in the Conjoint Analysis method could vary, depending on the method used. Traditional Conjoint Analyses do not require a certain minimum or maximum number of samples to be taken. Even one respondent could provide ample data to apply the method, but a larger number in the sample would increase the reliability of research results (Huber, 1987). Huber (1987) argues that the number of samples in Conjoint Analysis should reach a minimum of 100 respondents before estimates could be considered as representative. Based on this argument, the target sample size of the conjoint study would reach 100 respondents to ensure the data to be reliable.

In this study, the number of respondents that participated in the pre-test was 30 respondents and 102 respondents in the main-test. (This number includes the same respondents who participated in the pre-test). The respondents were potential buyers of yogurt products, aged from 20–40 years old with 61% male and 39% female who belonged to the middle class from varied ethnicities. Most of the respondents lived in the Greater Jakarta area, but they had ethnic roots from other regions, such as West and Central Java or North and West Sumatra.

In the pre-test, all respondents volunteered to follow experiments in an ergonomics laboratory and in the main test, the respondents were asked for their preferences towards several yogurt product packaging alternatives through an online distributed questionnaire.

3.1. Initial Research: Pre-test Studies

The pre-test was aimed at determining two-level types from the available six-level factors of the font type. Then, the respondents would proceed to the main study. The two ‘best’ choices of font type and color factors would be combined with two-level shape factors, (DeMaio et al., 1998).

3.1.1. Eye-Tracking method

In this method, there were several stages of object preparation used, before the respondents were tested. The preparatory steps of data collection are found below:

1. Taking pictures to be shown to respondents
Two images would be shown to the respondents with six types of color schemes and six font types. Two data factors were used in this research stage, namely, color scheme (Auttarapong, 2012) and type font (Wang & Chou, 2010).
2. Finding appropriate respondents
The number of respondents used in data collection of the Eye-Tracking method is 30. The respondents were students of the Faculty of Engineering, Universitas Indonesia. According to the rules of the survey, the respondents were those who did not wear glasses in their everyday lives.
3. Adjust the distance of respondents to the screen while seated.
4. In order that the marker could be moved into the visual field of the human eye, the distance from the screen to the sitting position of respondents was set at 60 cm. This distance was derived according to previous research (Park et al., 2010).
5. Pairing devices with the respondents.
6. Running the experiment builder.
7. Setting the camera EyeLink II Headband.
8. Performing calibration and validation.
9. Recording eye movements.
10. Storing the data.
11. Relinquishing EyeLink II Headband from the respondents’ head.

The 4th until the 10th steps of data collection shall be carried out continuously until a sufficient numbers of samples have been taken.

3.1.2. Retrospective-Think-Aloud method

The ‘Retrospective-Think-Aloud’ method was conducted to clarify the results of the ‘Eye-Tracker’ method. When viewing images/objects, a person tends to stare at the interesting objects much longer than at uninteresting ones (higher duration time). Another possibility is that the objects are quite disturbing or difficult to read (Pieters & Warlop, 1999; Plumhoff & Schirillo, 2009; Guan et al., 2006). Thus, the study of the Eye-Tracker method was combined with the ‘Retrospective-Think-Aloud’ (RTA) method to ascertain whether the picture was interesting and to provide other points of view.

3.2. Main Test Research

The method used in the main test research is Conjoint Analysis.

3.2.1. Conjoint analysis

In general, there are six phases in Conjoint Analysis. They are:

a) Phase 1: Setting Goals

The main goal of this research is to determine a yogurt product packaging design which best suits Indonesian consumer preferences.

b) Phase 2: Determining Factors and Levels

Factors used in the main study are three factors, namely shape, color scheme, and font type. Each factor has two levels. The two levels in color schemes and font were selected as the best two options from the pre-test.

c) Phase 3: Determining Method of Presentation

The stimuli presentation method chosen in this case study was the full profile presentation method. In this method, the yogurt packaging design, which had been combined with the above factors, was shown to respondents.

d) Phase 4: Determining Measurement Preferences

After determining the stimuli, a method to measure consumer preferences was determined. Data were collected using a rating scale (metric). Likert scale of 1 to 9 were used with a higher value, indicating a higher preference.

e) Phase 5: Estimating Results

In this phase, conjoint models were estimated and overall suitability was assessed. This research used a rating scale and hence, the Pearson correlation was more appropriate to use, rather than other correlations available.

f) Phase 6: Interpreting Results

The interpretation method used is that this observation of the part-worth estimation for each factor. The higher part-worth of both positive and negative, the greater the impact on the overall utility will be.

4. RESULTS AND DISCUSSION

This section discusses the results, the obtained research data, the data processing, and an analysis of the results and the problems of this study. The analysis of the results of the processed data is divided into two.

Pre-test data were obtained from the Eye-Tracking method and the 'Retrospective-Think-Aloud' method, while the main study data were obtained to find the best design alternative by combining three factors measured using a conjoint questionnaire.

4.1. Pre-test Result and Analysis

The moment when the eyes stop to focus is called a fixation. During this stop, the brain starts to process visual information received from the eyes. In the Eye-Tracking studies, an assumption was made that packages which are stored longer have a higher saliency than products stored over a shorter period of time. The length of time respondents looked at the product or a design element indicates the level of involvement with the product (Tobii Technology AB, 2008). Therefore, the sum of the fixation duration was measured to obtain the two font types and color scheme that were preferred by the respondents.

Afterwards, the 'Retrospective-Think-Aloud' method was conducted in which, the respondents were required to express their thoughts about the object being viewed or to assign a task after a given task had been completed.

4.1.1. Eye-Tracking Result

Before processing the data, the data must be proven to be normal. Thus, an ANOVA test was conducted to see what the variances between font type means and color scheme means. Table 1 below summarizes the results of the Total Fixation Duration for each type of font and color scheme and Figure 1 shows the Data Viewer of the 'Retrospective-Think-Aloud' Method.

Table 1 Total Fixation Duration for Font Type and Color Scheme

Font Type	Total Fixation Duration (ms)	Color Scheme	Total Fixation Duration (ms)
Font 1	58,496	Color Scheme 1	61,285
Font 2	69,144	Color Scheme 2	57,508
Font 3	125,616	Color Scheme 3	32,848
Font 4	56,620	Color Scheme 4	63,912
Font 5	32,284	Color Scheme 5	45,076
Font 6	30,716	Color Scheme 6	26,608

The Data Viewer shows how long the respondents saw the object. Longer periods were assumed to be related as a better match to their preferences. The higher the percentage shown, the longer a respondent saw the object. The results from the Data Viewer would be used later on as inputs for the ‘Retrospective-Think-Aloud’ method to confirm that the results shown really match the respondents’ opinions about the objects.



Figure 1 Data Viewer RTA Method

4.1.2. 'Retrospective-Think-Aloud' results

Table 2 below summarizes interview results with respondents using the 'Retrospective-Think-Aloud' (RTA) method. The RTA method was used to increase the reliability of the Eye-Tracker method results and what the respondents actually felt about the color scheme and font of the yogurt product packaging.

It was assumed that people tend to stare at the object much longer (over a high duration), when the shown object better suits their preferences than when it does not. However, this reaction also happens when the object is quite disturbing or difficult to read. It can be seen from the RTA results in Table 2 that Respondents 3 and 27 chose Color Scheme 1 and 5 as the Best, but the Eye-Tracker results showed that the highest duration results are on Color Schemes 5 and 3. After being asked for their opinions, Respondents 3 and 27 said that Color Schemes 5 and 3 bothered them, so they stared at those color schemes much longer. Respondent 13 said that the blue on Color Scheme 3 held his attention, but the best and most suitable color scheme to be used for yogurt product packaging was Color Scheme 4. Respondent 17 stared at Color Scheme 1 for the longest period, because Respondent 17 had a tendency to see from the top lefthand side to the righthand side and Color Scheme 1 was located on the upper lefthand side. Yet, according to Respondent 17, the best color scheme was Color Scheme 4.

4.1.3. Pre-test analysis

As shown in Table 1, Font Type 3 had the highest duration compared with other types in the amount of 125,616 ms, followed by Font Type 2 with a duration of 69,144 ms.

RTA results in Table 2 for font types also shows that 59% of respondents chose Font Type 3 as the best one and 21% of them chose Font Type 2 as the best one and hence, it can be concluded that these two fonts are the best among the others. Therefore, based on the two methods, the two best font types are 'Fineliner' (Font Type 3) and 'Bodoni' (Font Type 2).

4.2. Main Study Results and Analysis

Pre-test results showed that the preferred packaging for yogurt products have attributes and levels which are shown in Table 3.

The Conjoint Analysis Method, which was used is the Traditional Conjoint Method because the number of available attributes was less than 10. Stimuli combination levels are $2 \times 2 \times 2 = 8$ stimuli. Additive models were used for the basic model form. Data were collected by using the method of full-profile rating scale (metric). A Likert scale of 1 to 9 was used with a higher value, indicating a higher preference. Data were collected through a questionnaire given to respondents. The questionnaire was designed for respondents to rate given stimuli.

Prior to the analysis of the level of interest and utility, a model goodness evaluation of fit of the correlation value was conducted. Based on the calculation on an individual basis, it was found that Pearson's coefficient for individuals was under the p-value (p value = 0.05). The correlation value is smaller than 0.05. Thus, models were proven to be accurate and the calculation could go on further.

Analyses were performed in the aggregates and the calculation's result of interest and utility level, which represented the average value from respondents. Respondents' decisions were to select the best packaging Yogurt product packaging was affected by the shape factor (importance level: 41%), color scheme factor (importance level: 37.7%) and font factor (importance level: 21.2%). In general, it was found that the most important factor was the shape of the packaging.









Table 2 'Retrospective-Think-Aloud' result

Respondent	Most Preferred (font)	Most Preferred (color)	Highest Duration (font)	Highest Duration (color)	Grounds
1	3	2	3	2	
2	2	3	2	3	
3	2	1	2	5	Color scheme number 3 was too bothering
4	4	4	4	4	
5	2	4	2	4	
6	3	2	3	2	
7	6	2	6	2	
8	2	3	2	3	
9	1	4	1	4	
10	3	2	3	2	
11	3	1	3	1	
12	3	2	3	2	
13	3	4	3	3	Tend to gaze to blue color in color scheme number 3
14	3	1	3	1	
15	1	4	1	4	
16	3	1	3	1	
17	3	4	3	1	Tend to move eyes from the upper left corner to the right
18	3	4	3	4	
19	3	4	3	4	
20	5	5	5	5	
21	3	5	3	5	
22	3	5	3	5	
23	2	3	2	3	
24	3	1	3	1	
25	3	5	3	5	
26	3	1	3	1	
27	3	5	3	3	Color scheme number 3 was too bothering
28	2	4	2	4	
29	4	1	4	1	
30	3	4	3	4	

Table 3 Packaging attributes and levels of yogurt product

Attributes	Level
Shape	Rounded
	Angular
Font	Fineliner
	Bodoni
Color Scheme	Analogue
	Tetradic

Table 4 Stimuli for the main study

1		Shape	Rounded	5		Shape	Angular
		Font	Fineliner			Font	Fineliner
		Color Scheme	Analogue			Color Scheme	Analogue
2		Shape	Rounded	6		Shape	Angular
		Font	Fineliner			Font	Fineliner
		Color Scheme	Tetradic			Color Scheme	Tetradic
3		Shape	Rounded	7		Shape	Angular
		Font	Bodoni			Font	Bodoni
		Color Scheme	Analogue			Color Scheme	Analogue
4		Shape	Rounded	8		Shape	Angular
		Font	Bodoni			Font	Bodoni
		Color Scheme	Tetradic			Color Scheme	Tetradic

The value of the utility at the level shows consumers' preferences towards each level. The more favored those levels are, the more positive the utility value will become. The results show that the best yogurt product packaging has a rounded type of shape, a font type of 'Fineliner' and an 'Analogue' color scheme. This combination of factors gained the highest value for every attribute because it has the highest utility value compared with other combinations.

5. CONCLUSION

The main objective of this study was to find the best packaging design for yogurt products which suits Indonesian consumer preferences the best. This research was divided into two stages: initial research (pre-test stage) and main test research. Pre-test was conducted to pursue 6 levels of color scheme and font factors into two best options. The two best options were later combined with the shape factor of the main study. Methods used in pre-test were the Eye-Tracking method and the 'Retrospective-Think-Aloud' method.

The data processing and analysis of the pre-test suggested that the 'Fineliner' and 'Bodoni' font types as well as the 'Analogue' and 'Tetradic' color schemes were the best among others. In the main study, two best fonts and color schemes from the pre-test stages were combined with two levels of shape factors and therefore, there were eight combinations available which later on were used as stimuli.

The respondents' decision to choose the best yogurt product packaging was affected by the shape factor (importance level: 41%), a color scheme factor (importance level: 37.7%) and a font factor (importance level: 21.2%). Therefore, it was found that the most important factor among all was the shape type. From the attributes values of the packaging combinations, it can be concluded that the best yogurt product packaging has attributes as a rounded shape with a 'Fineliner' font type and an 'Analogue' color scheme.

6. REFERENCES

- Altaffer, P., Smith, G-W., 2012. *Interesting Development in Indonesia*. Nutraceuticalsworld
- Auttarapong, D., 2012. Package Design Expert System based on Relation between Packaging and Perception of Customer. *Procedia Engineering*, Volume 32, pp. 307–314
- Becker, L., Van Rompay, T.J., Schifferstein, H.N., Galetzka, M., 2011. Tough Package, Strong Taste: The Influence of Packaging Design on Taste Impressions and Product Evaluations. *Food Quality and Preference*, Volume 22(1), pp.17–23
- Calver, G., 2004. *What is Packaging Design?* Rotovision
- Chind, K., Sahachaisaeree, N., 2012. Purchasers' Perception on Packaging Formal Design: A Comparative Case Study on Luxury Goods Merchandizing. *Procedia-Social and Behavioral Sciences*, Volume 42, pp. 436–442
- Cyr, D., Head, M., Larios, H., 2010. Colour Appeal in Website Design within and Across Cultures: A Multi-Method Evaluation. *International Journal of Human-Computer Studies*, Volume 68(1), pp.1–21
- DeMaio, T.J., Rothgeb, J., Hess, J., 1998. Improving Survey Quality through Pretesting. In: *Proceedings of the Section on Survey Research Methods, American Statistical Association*, Volume 3, pp. 50–58
- Estiri, M., Hasangholi, T., Yazdani, H., Nejad, H.J., Rayej, H., 2010. Food Products Consumer Behaviors: The Role of Packaging Elements. *Journal of Applied Sciences*, Volume 10, pp. 535–543
- Guan, Z., Lee, S., Cuddihy, E., Ramey, J., 2006. The Validity of the Stimulated Retrospective Think-Aloud Method as Measured by Eye Tracking. In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 1253–1262. ACM
- Huber, J., 1987. Conjoint Analysis: How We Got Here and Where We Are. In: *Proceedings of the Sawtooth Conference on Perceptual Mapping, Conjoint Analysis and Computer Interviewing*, M. Metegrano (ed.) Ketchum: ID: Sawtooth Software, pp. 2–6
- Kuvykaite, R., Dovaliene, A., Navickiene, L., 2009. Impact of Package Elements on Consumer's Purchase Decision. *Economics & Management*, Volume 14(1), pp. 441–447
- Market Indicator Report, 2010. Packaged Food Sales in Indonesia. *International Markets Bureau*. Canada
- Najib, M., Kiminami, A., Yagi, H., 2011. Competitiveness of Indonesian Small and Medium Food Processing Industry: Does the Location Matter? *International Journal of Business and Management*, Volume 6(9), pp. 57
- Park, J., Woods, E., DeLong, M., 2010. Quantification of Aesthetic Viewing using Eye-Tracking Technology: The Influence of Previous Training in Apparel Design. In: *Proceedings of the 2010 Symposium on Eye-Tracking Research & Applications*, pp. 153–155

- Park, T., Weliwita, A., 1999. Competitive Behavior in the US Food Retailing Industry. In: *Canadian Journal of Agricultural Economics/ Revue Canadienne D'agroéconomie*, Volume 47(1), pp. 45–55
- Pieters, R., Warlop, L., 1999. Visual Attention during Brand Choice: The Impact of Time Pressure and Task Motivation. *International Journal of Research in Marketing*, Volume 16(1), pp. 1–16
- Plumhoff, J.E., Schirillo, J.A., 2009. Mondrian, Eye Movements, and the Oblique Effect. *Perception*, Volume 38(5), pp. 719
- Rebollar, R., Lidón, I., Serrano, A., Martín, J., Fernández, M.J., 2012. Influence of Chewing Gum Packaging Design on Consumer Expectation and Willingness to Buy. An Analysis of Functional, Sensory and Experience Attributes. *Food Quality and Preference*, Volume 24(1), pp. 162–170
- Reimann, M., Zaichkowsky, J., Neuhaus, C., Bender, T., Weber, B., 2010. Aesthetic Package Design: A Behavioral, Neural, and Psychological Investigation. *Journal of Consumer Psychology*, Volume 20(4), pp. 431–441
- Ritnamkam, S., Sahachaisaeree, N., 2012. Package Design Determining Young Purchasers 'Buying Decision: A Cosmetic Packaging Case Study on Gender Distinction. *Procedia-Social and Behavioral Sciences*, Volume 38, pp. 373–379
- Silayoi, P., Speece, M., 2004. Packaging and Purchase Decisions: An Exploratory Study on the Impact of Involvement Level and Time Pressure. *British Food Journal*, Volume 106(8), pp. 607–628
- Tobii Technology AB, 2008. *Eye Tracking as a Tool in Package and Shelf Testing*. Available at: http://www.acuity-ets.com/downloads/package_and_shelf_testing.pdf
- Wang, R.W.Y., Chou, M.C., 2010. Differentiation in the Arched Surface of Packaging: Its Influence on the Fundability. *Displays*, Volume 32(1), pp. 24-34
- Westerman, S.J.; Sutherland, E. J.; Gardner, P. H.; Baig, N.; Critchley, C.; Hickey, C.; Zervos, Z., 2013. The Design of Consumer Packaging: Effects of Manipulations of Shape, Orientation, and Alignment of Graphical Forms on Consumers' Assessments. In: *Food Quality and Preference*, 27(1), pp. 8–17