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Design of Graphic Concept Model for Specialty Coffee Packaging Labels

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Abstract. There are still many micro-business actors who package their products with the appearance of less attractive packaging. However, it is not easy for micro-business actors to create product packaging ideas that is able to be accepted by the broad market. This study aimed to determine the attributes of packaging labels, determine the most influential graphic elements, and generate tone and manner for label specialty coffee packaging. Label attribute was analyzed with FAST and Pairwise Comparison methods. The graphic element was analyzed with the QFD method. The visual perception was analyzed with the Mind Mapping method quantified by the PCA method. It was concluded that experts expect more product information clarity and the impression of premium products on coffee packaging labels. In addition, experts also expect convenience in reading the information needed on packaging labels. Based on graphic element analysis, the priorities of the graphic element of packaging were 1) identity of the coffee product; 2) text hierarchy; 3) color labels; and 4) typical label style. The must-have tone and manner for specialty coffee packaging labels were familiar (friendly), premium, simple, and special.

Keywords: Graphic concept; Packaging labels; PCA; QFD; Specialty coffee

1. Introduction

Packaging is one of the problem's solutions to attract consumers because it deals with consumers directly (Natadjaja, 2007). An attractive visual image of packaging is bount to be noticed, easily recognized, and recalled by consumers. Reimann *et al.* (2010) stated that packaging aesthetics significantly increased consumer reaction time. Meanwhile, Clement, Kristensen, and Grønhaug (2013) state that consumers had fragmented visual attention when shopping and that their visual attention was influenced and disrupted simultaneously by shelf displays. The overall view (packaging appearance, branding, and prices) of coffee packaging is considered during the consumer purchase process (Harith, Ting, and Zakaria 2014). This means that the packaging has the role of conveying messages from producers to consumers and also as advertising media (marketing).

Every business actor has his own message for his customers. Labels on the packaging are used as a media of communication with consumers. The label is the identity of a product as well as the corporate identity because, in it, there are the contents that must be well conveyed to consumers (Hidayat, 2009). Therefore, it is very important that the packaging design creates an emotional bond to the consumers at the first time (Harith, Ting, and

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Zakaria, 2014).

Based on previous research searches, there were packaging design research that have the basis of packaging attributes (Ježovičová, Turčínková, and Drexler, 2016; Krstic, 2014; Sinaga, Evanila, and Dewi, 2012) and packaging elements (Djatna and Kurniati, 2015; Poturak, 2014; Deliya and Parmar, 2012; Qing et al., 2012; Orth and Malkewitz, 2008). However, no research has been found that integrates packaging attributes and packaging design elements in a packaging design process, so this is a contribution to this research. Integration of the two is important to be able to meet the needs of consumers and generate creative ideas in the packaging design process. The packaging attribute in question is the characteristic that characterizes a package, while what is meant by the design element is an important part or element of a package (such as color, typography, or image).

In addition, based on previous research traces also found engineering design approach (Djatna and Kurniati, 2015; Suzianti *et al.*, 2015; Parada, Mayuet, and Gámez, 2019) and graphic design approach (Hariono and Zaini, 2017; Halder, Ganguly, and Singh 2016; Hidayat and Wahmuda, 2013). The engineering design approach has more certain, rational, and objective properties, while the graphic design approach has subjective and emotional properties. However, no research was found that integrated the engineering design approach and graphic design approach, so the integration of the two approaches in the packaging design process contributed to this research.

The object of this research is specialty coffee packaging on the micro-scale industry in Indonesia. Aknesia, Daryanto, and Kirbrandoko (2015) state that specialty coffee is coffee that has been processed through various stages of strict processing, that gives it premium quality, have a distinctive taste according to its origin. The origin of the coffee area certainly offers certain quality features and specifications (Arrieta, Núñez, and Mendoza, 2020). Some types of specialty coffee in Indonesian are Mandailing and Lintong Coffee (Sumatera Utara), Gayo Mountain Coffee (Aceh), Java Arabica Coffee (Jawa Timur), Bali-Kintamani Coffee (Bali), Toraja and Kalosi Coffee (Sulawesi Selatan), Flores-Bajawa Coffee (NTT), Baliem Coffee (Papua), and Luwak Arabica Coffee (Sudjarmoko, 2013).

Good coffee packaging has a tendency to make customers opinion that the coffee product is high quality and processed through a good processing mechanism. Consumer buying interest is increasing in more modern packaging (Corso and Benassi, 2015). In addition, consumers also choose products that have packaging standards, even though the prices are higher than other products (Reimann *et al.*, 2010). Therefore, the micro-scale industry must improve its product packaging so that it attracts more customers and able to be sold to supermarkets (Pramono, Iqbal, and Wulandari, 2015).

The development of a good and attractive packaging label design is still a problem for specialty coffee micro businesses. Some problems encountered including (1) micro business actors do not understand the packaging label attributes that are most decisive, to make it easier and inexpensive to apply, (2) they do not understand the visual identity that needs to be given to the packaging label, and (3) it is not easy to create the right packaging character.

Based on the aforementioned problems, this study aims to determine the attributes of the packaging label; to determine the most influential graphic elements, and to generate the tone and manner of the packaging design, where the tone and manner are a set of values, personality, characters that are expected to trigger consumer buying decisions.

2. Methods

2.1. Research Framework

The term label in this research is part of the packaging affixed to the packaging in the form of images or writings that function as information about the product and seller, while the graphic element is an important part of graphic design that has its own meaning and message. Label attributes and graphic elements of the Specialty Coffee packaging were determined by considering the suitability between the insight of customer, business actors, and packaging design experts. Examples of label attributes are good readability, good label printing, clear product information, and so on. While examples of graphic elements are the identity of coffee products, label colors, regional cultural imagery, and so on.

The visual perception was generated by looking at the results of the analysis of design elements and a number of samples of the labels that already existed. The visual perception in question is consumer perception of packaging visually. Some packaging samples is able to be seen in Figure 1. Analysis of label attributes is needed to determine the main properties required for a package, while graphical element analysis is needed to find out the most important part needed in the package. While the analysis of visual perception is done to obtain tone and manner, which in the end is a graphic concept model. These three things should be known by business actors in designing their product packaging. This research framework is able to be seen in Figure 2.



Figure 1 Coffee packaging samples

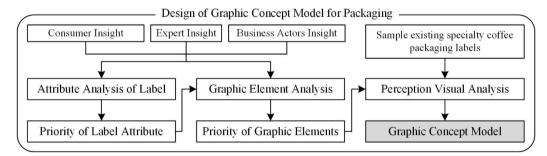


Figure 2 Research framework

2.2. Data Collection Method

Data collection methods are adjusted according to the needs of the analysis, as shown in Table 1. A set of instruments was arranged in a way to facilitate the process of data collection and analysis.

In the early stages, field observations were conducted on 21 consumers, 7 business actors, and 1 expert to get an overview of the packaging of specialty coffee that is on the market. The intended consumers are coffee connoisseurs who have good knowledge of specialty coffee, while business actors are those who play a direct role in the processing and packaging of specialty coffee, and the intended experts are packaging design experts. Data collection was done in several ways:

1) Study literature based on packaging literature related to label attributes and graphic elements.

- 2) Questionnaire I, to obtain expert judgment toward label attributes and HOQ matrix. Five experts were selected based on educational, professional, and experience. These experts are coffee (observer) consumers, business actors, academicians, researchers, and packaging design practitioners.
- 3) Brainstorming consists of 2 stages. Phase I was carried out to absorb as many as possible visual perception words from 27 participants, while Phase II was carried out to evaluate visual perception words by 5 participants whose output was a semantic differential questionnaire.
- 4) Questionnaire II, to obtain packaging assessment based on visual perception words conducted through questionnaires to 30 respondents (general consumers) by purposive sampling. The determination of respondents based on criteria that influences the purchase of coffee consisting of habits, education, income, and employment (Utami, 2009). There were 16 coffee packaging samples assessed. Data recapitulation of the average value of the results of the visual perception assessment of 16 packaging samples was processed using Minitab 16 software.

Table 1 Data used

Analysis	Data	Source	How to obtain data		
-	Packaging attribute data	 Expert Specialty coffee consumers Coffee business actors 	Field observationsLiteratureDiscussion and interview		
Label attribute analysis Graphical element analysis	 Label attribute assessment data Assessment data of HOQ matrix of packaging label 	Expert Expert	Survey (questionnaire)Survey (questionnaire)		
Visual perception analysis	 Consumer perception data Data on consumer perception ratings 	Consumer general	Brainstormingsurvey (questionnaire)		

2.3. Data Analysis Methods

1) Determination of Packaging Label Attributes

The Function Analysis System Technique (FAST) was used to describe the results of the identification of packaging label attributes. The identification was based on literature, interviews of Specialty Coffee business actors (producers), and consumers. The results of the identification obtained were communicated to the expert for validation purposes. For weighting, three experts assessed the packaging label attributes. The results of the assessment were aggregated with the average geometry, then calculated by the Pairwise comparison method.

2) Determining Graphic Elements

Quality Function Deployment (QFD) is used to translate customer requirements into product elements (Hartono, Santoso, and Prayogo, 2017). QFD approach through the HOQ (House of Quality) matrix was used to generate priority for graphic elements. Identification of graphic design elements was done by conducting interviews with 7 coffee shop business actors. The HOQ connected label attributes and graphic elements to Specialty Coffee product packaging labels. The assessment on HOQ was carried out by representatives of expert consumers, Specialty Coffee business actors, and packaging design experts. The

score is as follows: score 0 means there is no relationship, score 1 means a weak relationship, score 3 means a medium relationship, and score 9 means a strong relationship.

3) Determination of Visual Perceptions

Based on a number of priority graphic elements, as many visual perception words were generated as possible with the mind mapping method. Mind mapping is a popular technique for visualizing relationships among various concepts using meaningful radial displays (Vitulli and Giles, 2016). In this method, visual perception words were generated by writing them radially. These words could have any relationship (no restrictions). Relationships could be obtained such as cause and effect, synonyms, antonyms, identical, characteristics, and others.

The Mind Mapping process was done by brainstorming, and the end result was a semantic differential questionnaire. Respondents filled out the questionnaire by giving a value to a number of pairs of visual perception words for each packaging label. The rating scale was -3, -2, -1, 0, 1, 2, 3. The -3 value was the value that had the strongest tendency towards visual perception on the left side, while the value 3 was the value that had the strongest tendency towards visual perception on the right side. A value of 0 was a value that did not have a tendency to visual perception, both towards the word perception on the left and right segments. From the assessment of a number of respondents, then the average was calculated on each word of visual perception and each sample. This average rating was used as input in data processing using the Principal Component Analysis (PCA) method.

In this research, the application of the PCA method used Minitab 16 software. The purposes of applying the PCA method were 1) to find or reduce the dimensions of the dataset; 2) to obtain meaningful new basic variables (Paul, Suman, and Sultan, 2013). Furthermore, Karamizadeh *et al.* (2013) mentioned that PCA was a tool to reduce multidimensional data to lower dimensions but still retained most of the information.

Assessment of visual perception words was carried out by 30 respondents with data collection methods by purposive sampling based on criteria influencing the purchase of coffee, namely habits, education, income, and employment. Visual perception word assessment data was processed so that it generated the tone and manner that would be used in the packaging design process.

3. Results and Discussion

3.1. Packaging Label Attribute Analysis

The results of expert judgment calculation in the form of weight. The value of Consistency Ratio obtained was 0.05. The Consistency Ratio values below 0.1 indicated that the assessment of the attribute ratio of the experts was consistent. Based on the weighting of each attribute, the three main attributes that the experts assessed were: 1) informing the product clearly (0.257); 2) giving an impression of quality products (0.166); 3) providing good readability (0.156). The results of this analysis indicate that experts expect more product information clarity and the impression of premium products on coffee packaging labels. In addition, experts also expect convenience in reading the information needed on packaging labels.

3.2. Graphic Element Analysis

According to Rusko *et al.* (2011), graphic elements consist of typography, color, and image. Typography (information), color, and image play a key role in decision-making and ensure consumer attention (Ksenia, 2013). Furthermore, Mohebbi (2014) states that graphic elements play a key role in promoting sales. Typography, color, and image are extracted through discussions with producers (Specialty Coffee business actors) and then

validated by experts. Typography is one element that has a significant influence (Grobelny and Michalski, 2015). Typographic elements generated elements using Bahasa Indonesia, text hierarchy, coffee product identity, company name information, information on how to brew, information on how to store, product physical information, and weight information. Color elements generated label color elements. Image elements generated regional cultural image elements and typical label styles.

The weight of the label attribute was obtained from the results of the label attribute analysis. Based on the results of calculations on HOQ, priority was obtained on the packaging graphic elements: 1) coffee product identity; 2) text hierarchy; 3) color label; 4) typical label style; 5) weight information; 6) company name information; 7) product physical information; 8) Bahasa Indonesia; 9) information on how to present; 10) information on how to storage; and 11) regional cultural image. In (Figure 3) a House of Quality label for Specialty Coffee product packaging is presented.

The element "coffee product identity" fulfilled all the attributes of the label with the relationship value = 9, except for the "get low cost" attribute that had a relation value = 1. The "text hierarchy" element fulfilled all the label attributes, except the "obtaining cheap packaging costs" attribute. Furthermore, the "label color" element met all attributes, but it is the third priority.

The element of "coffee product identity" became an element with first priority because it was the most important element so that it could be distinguished from other products or brands. The second priority was the "text hierarchy" element which guides the customer to read flow. Thus, this could strengthen the message conveyed. The third priority was the "color label" element to make it easier for consumers to remember their products. The "typical label style" element was more intended to adjust to target preferences.

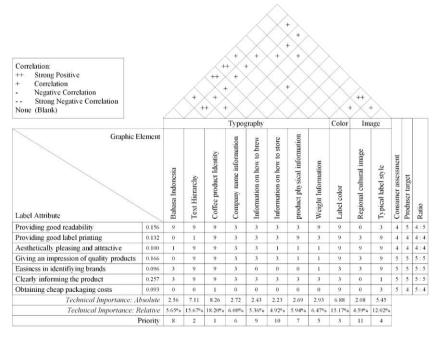


Figure 3 HOQ for packaging label

3.3. Visual Perception Analysis

Four priority graphic elements used in mind mapping methods were coffee product identity, text hierarchy, label color, and typical label style. Mind mapping is very useful in design work because it is very effective to work through the important steps of the design process, such as collecting thoughts, generating ideas, entering the creative flow, and connecting words to images (Airey, 2010). Graphic elements were developed into visual

perception words for 16 samples of Specialty Coffee packaging labels that had been selected. The selection of product samples was based on graphic designs that had characters and differentiated from each other. The label samples were Northsider, Café Bamba, Noah Barn, Gustavo, Tobi's, Black Mountain Roast, Java Tilu, Coffee Circle, Coffindo, Borneo Roasters, Kopakaki, Never Ending, Coffee Gardens, Malabar Mountain Coffee, Otten Coffee, Cafe Tellus.

Phase I brainstorming positioned "Specialty Coffee packaging labels" at its center. Then a branch was formed which began with "coffee product identity", "text hierarchy", "label color", and "typical label style". Words of visual perception were raised from these branches. One by one the visual perception was written and connected. For example, the "label color" appeared to be related to "dynamic", and "dynamic" appeared to be associated with "expensive". The results of mind mapping are shown in (Figure 4).

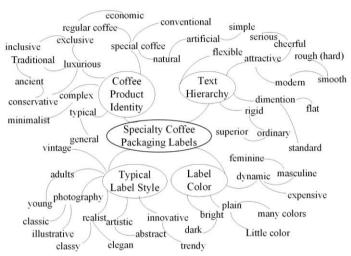


Figure 4 Mind mapping of visual perception

Phase II brainstorming, visual perception words appearing in mind mapping, was arranged to be 25 pairs of visual perception words then validated by a packaging design expert. Then, 25 pairs of words were namely 1) smooth & rough (hard); 2) economical & expensive; 3) little color & many colors; 4) young & adults; 5) feminine & masculine; 6) mild & complex; 7) ancient & modern; 8) rigid & flexible; 9) classic & trendy; 10) general & typical; 11) conservative & dynamic; 12) illustrative & photography; 13) cheerful & serious; 14) natural & artificial; 15) standard & superior; 16) dark & bright; 17) vintage & innovative; 18) simple & luxurious; 19) ordinary & attractive; 20) regular coffee & special coffee; 21) abstract & clear (realist); 22) plain & artistic; 23) dimension & flat; 24) inclusive & exclusive; 25) conventional & classy.

Interpretation of PC loading Table 2, by looking at the highest value on PC1, PC2, PC3, and PC4. This study takes a minimum limit of 0.200, assuming the correlation needed on the word visual perception is sufficient to form tone and manner. The highest value range on PC1 is in the words of visual perception: general, inclusive, and cheerful (fun). On PC2, the highest value is found in the words of perception: minimalist, expensive, bright, dynamic, modern, and superior. Meanwhile, the word perception group on PC3 is trendy, abstract, economical, and ordinary. The perception words on PC4 are young, unique, and luxurious.

3.4. Graphic Concept Model

The visual perception word group on PC1, PC2, PC3, and PC4 is represented by 4 keywords based on expert opinions on graphic design and packaging design. These four

keywords are called tone and manner which serves as an important guide in designing specialty coffee packaging labels. This tone and manner are translated into moodboards in the form of color, typography, image, layout, and others in the next process. The blend of principal components, visual perceptions, and tone and manner forms a graphic concept model, as shown in Figure 5. PC1 has the highest eigenvalue, which is 13,969 with a proportion of 27.9% which means that PC1 is the main tone and manner. PC2 has an eigenvalue of 12.025 with a proportion of 24.1% which means that PC1 becomes the second main tone and manner. Then the next sequence is PC3 by 20.3%, and PC4 by 16.1%.

Table 2 PC loading value

No	Variable	PC1	PC2	PC3	PC4	N	lo	Variable	PC1	PC2	PC3	PC4
1	smooth	0.051	-0.256	0.044	0.135	2	6	serious	0.179	-0.032	-0.124	-0.139
2	rough (hard)	0.177	-0.001	-0.141	-0.179	2	7	natural	0.031	-0.188	0.172	0.177
3	economical	0.009	-0.067	0.259	-0.164	2	8	artificial	0.051	-0.185	-0.189	-0.036
4	expensive	0.132	0.210	-0.015	0.112	2	9	standard	-0.131	-0.206	0.111	0.048
5	little color	0.137	0.095	0.115	0.162	3	0	superior	0.082	0.255	0.097	-0.047
6	many colors	-0.202	-0.090	-0.024	-0.198	3	1	dark	0.196	-0.173	0.066	-0.068
7	young	0.128	-0.130	-0.068	0.236	3	2	bright	-0.175	0.212	-0.023	-0.057
8	adults	0.162	0.046	-0.121	-0.064	3	3	vintage	0.027	-0.160	-0.231	-0.013
9	feminine	0.035	-0.186	0.089	-0.211	3	4	innovative	-0.204	0.069	-0.032	-0.209
10	masculine	0.031	0.075	0.125	-0.099	3	5	simple	-0.053	0.002	0.167	-0.289
11	minimalist	0.049	0.200	0.114	0.021	3	6	luxurious	-0.051	0.160	-0.052	0.266
12	complex	-0.249	-0.054	0.056	-0.020	3	7	ordinary	0.045	-0.068	0.299	-0.003
13	ancient	0.111	-0.108	-0.044	0.078	3	8	attractive	-0.229	-0.079	0.015	0.153
14	modern	0.009	0.217	0.111	-0.136	3	9	regular coffee	-0.114	-0.047	-0.136	-0.274
15	rigid	0.013	0.074	-0.300	0.050	4	0	special coffee	-0.166	0.012	-0.180	0.162
16	flexible	-0.189	-0.150	0.009	-0.112	4	1	abstract	-0.120	0.097	0.227	0.136
17	classic	0.033	-0.248	-0.076	0.041	4	2	clear (realist)	0.116	0.090	-0.257	0.063
18	trendy	-0.169	-0.087	0.218	0.057	4	3	plain	0.062	-0.233	-0.050	-0.031
19	general	0.206	0.138	0.069	-0.105	4	4	artistic	-0.225	-0.016	-0.132	-0.019
20	typical	-0.132	0.121	-0.073	0.242	4	5	dimension	-0.077	0.161	-0.160	-0.203
21	conservative	-0.195	0.056	-0.126	-0.177	4	6	flat	0.064	0.185	-0.214	-0.043
22	dynamic	-0.153	0.213	0.052	-0.109	4	7	inclusive	0.238	0.002	0.024	-0.139
23	illustrative	-0.201	-0.072	-0.090	0.137	4	8	exclusive	-0.089	0.175	0.146	0.161
24	photography	0.199	0.077	0.090	0.169	4	.9	conventional	-0.066	0.014	-0.261	0.135
25	cheerful	0.257	-0.023	-0.036	-0.080	5	0	classy	0.040	0.177	0.045	0.032

Description: PC1 = principal component 1; PC2 = principal component 2; PC3 = principal component 3; etc.

Visual perception words on PC1 are general, inclusive, and cheerful (fun). PC2 consists of visual perception words: minimalist, expensive, bright, dynamic, modern, and superior. While on PC3 it consists of visual perception words: trendy, abstract, economical, and ordinary. Finally, PC4 consists of visual perception words: young, typical, and luxurious. The collection of words of visual perception on each PC is represented by a word tone and manner.

The results of discussions with experts, that visual perception words on PC1, PC2, PC3, and PC4 are represented in a row are familiar (friendly), premium, simple, and special. Visual perception words: general, inclusive, and cheerful (fun) are represented by a familiar word which is the first tone and manner of concern because it has the largest proportion (27.9%). Visual perception words: minimalist, expensive, bright, dynamic, modern, and superior are represented in premium words. Visual perception words: trendy, abstract,

economical, and ordinary are represented in a simple word. Visual perception words: young, typical, and luxurious are represented in a special word.

3.5. Discussion

Some things that must be considered in designing a label (graphic) specialty coffee packaging based on the results of this study are as follows:

- 1) The identity of coffee products is a top priority, meaning that these elements must appear dominant so that consumers are able to easily see them. In addition, the identity element of coffee products is also useful so that they are able to be distinguished from coffee products or other brands. Coffee product identity usually consists of information on product name, coffee's geographical origin, planting height, varieties, coffee processing, specific plantations, coffee flavor, roasting level, roasting date, and physical product.
- 2) The text hierarchy is the element that guides consumers to the flow of reading. Text (information) must be distinguished between the main information and supporting information, then determined the order of information needed by consumers. Thus, this is able to strengthen the message delivered.
- 3) Label colors must be optimized to make it easier for consumers to read products, build aesthetic and attractive perceptions, and build an impression of product quality.
- 4) The style of coffee packaging labels must be made distinctive. This is more intended to adjust to the target preferences.

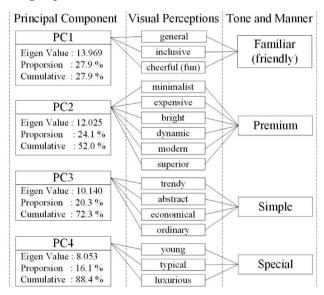


Figure 5 Graphic concept model for Specialty Coffee packaging labels

Good packaging must have the right character. This character is in the form of a series of adjectives which are usually called tone and manner. These adjectives (tone and manner) guide the packaging visualization such as color selection, typography, images, and other visual elements. Based on the results of the study obtained tone and manner of specialty coffee packaging are familiar (friendly), premium, simple, and special. The nuances that have to be more dominant are familiar and premium. This is very important in designing packaging so that it is able to create emotional attachment in the minds of consumers at first glance (Harith, Ting, and Zakaria, 2014).

The tone and manner in the results of this study is able to be used for market areas in Indonesia because this study has respondents who come from various regions in Indonesia and use packaging samples in Indonesia. However, the visualization of packaging labels in

each region is able to be different because in translating the tone and manner of the words (familiar, premium, simple, special) are influenced by the visualizer and each culture.

4. Conclusions

Attractive product packaging is bound to be noticed and easily recognized by consumers. Packaging has the role of conveying messages from producers to consumers as well as advertising media (marketing). Advertising media on Specialty Coffee packaging is generally located on the packaging label. A good packaging label started with the right label attributes, graphic elements, and tone and manner. Around the 7 label attributes for Specialty Coffee packaging, three of the most influential label attributes were identified: 1) informing the product clearly; 2) giving an impression of quality products; and 3) providing good readability. The most influential graphic elements were coffee product identity, and text hierarchy, label color, and typical label style. The identity of coffee products must appear dominant so that it is easily seen by consumers. The identity of coffee products usually consists of information on the product name, geographical origin of coffee, planting height, variety, coffee processing, specific plantation, coffee taste, roasting level, roasting date, and physical product. Text hierarchy to distinguish between main information and supporting information. Thus, it is able to strengthen the message conveyed. The color of the label must be optimized to make it easier for consumers to read the product, build an aesthetic and attractive perception, and build an impression of product quality. The style of the coffee packaging label must be unique. It is more intended to adjust to the preferences of the target. The tone and manner that must be built for Specialty Coffee packaging labels were familiar (friendly), premium, simple, and special. This research provides an overview of how to produce tone and manner for specialty coffee packaging labels that begin with label attributes, graphic elements, and visual perception. For other packaging design research, it is able to use a series of design processes and methods in this research. Further research is able to be done by designing programs/applications that is able to interpret a collection of words (text mining) into tone and manner words.

References

- Airey, D., 2010. Logo Design Love: A Guide to Creating Iconic Brand Identities. New Riders, USA
- Aknesia, V., Daryanto, A., Kirbrandoko, 2015. Business Development Strategy For Specialty Coffee. *Indonesian Journal of Business and Entrepreneurship*, Volume 1(1), pp. 12–22
- Arrieta, A.A., Núñez, Y.E., Mendoza, J.M., 2020. Mini-Electronic Tongue Used To Discriminate Between Coffee Samples Of Different Geographical Origin. *International Journal of Technology*, Volume 11(2), pp. 288–298
- Clement, J., Kristensen, T., Grønhaug, K., 2013. Understanding Consumers' In-Store Visual Perception: The Influence of Package Design Features on Visual Attention. *Journal of Retailing and Consumer Services*, Volume 20(2), pp. 234–239
- Corso, M.P., Benassi, M.D.T., 2015. Packaging Attributes of Antioxidant-Rich Instant Coffee And Their Influenc.E On The Purchase Intent. *Beverages*, Volume 1, pp. 273–291
- Deliya, M.M., Parmar, B., 2012. Role of Packaging on Consumer Buying Behavior–Patan District. *Global Journal of Management and Business Research*, Volume 12(10), pp. 48–67
- Djatna, T., Kurniati, W.D., 2015. A System Analysis and Design For Packaging Design Of Powder Shaped Fresheners Based on Kansei Engineering. *Procedia Manufacturing*, Volume 4, pp. 115–123

- Grobelny, J., Michalski, R., 2015. Computers in Human Behavior the Role Of Background Color, Inter-Letter Spacing, And Font Size On Preferences In The Digital Presentation Of A Product. *Computers in Human Behavior*, Volume 43, pp. 85–100
- Halder, S., Ganguly, D., Singh, V.P., 2016. Design Process and its Application on The Improvement (Re-Design) of The Coke Bottle. *International Journal of Advanced Packaging Technology*, Volume 4(1), pp. 185–199
- Hariono, R.F., Zaini, 2017. Pengembangan Desain Kemasan Sekunder Parfum Merk Griya Parfumes Sidoarjo (Development Of Secondary Packaging Design For Perfumes For The Griya Parfumes Sidoarjo Brand). Jurnal Pendidikan Seni Rupa. Volume 5(1), pp. 128–135
- Harith, Z.T., Ting, C.H., Zakaria, N.N.A., 2014. Coffee Packaging: Consumer Perception On Appearance, Branding, And Pricing. *International Food Research Journal*, Volume 21(3), pp. 849–853
- Hartono, M., Santoso, A., Prayogo, D.N., 2017. How Kansei Engineering, Kano And QFD Can Improve Logistics Services. *International Journal of Technology*, Volume 8(6), pp. 1070–1081
- Hidayat, M.J., 2009. Analisis Industri Budaya Pada Desain Produk Kemasan Makanan Industri Kecil Menengah (IKM) (*Cultural Industry Analysis on Food Packaging Product Design for Small And Medium Industries (SMI)*). *Jurnal Penelitian Seni Budaya*, Volume 1(2), pp. 141–151
- Hidayat, M.J., Wahmuda, F., 2013. Pengembangan Desain Kemasan Kerajinan Di Kawasan Suramadu (*Development Of Craft Packaging Designs In The Suramadu Area*). *Jurnal Pengkajian dan Penciptaan Seni*, Volume 4(1), pp. 118–129
- Ježovičová, K., Turčínková, J., Drexler, D., 2016. The Influence of Package Attributes on Consumer Perception At The Market With Healthy Food. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, Volume 64(6), pp. 1919–1926
- Karamizadeh, S., Abdullah, S.M., Manaf, A.A., Zamani, M., Hooman, A., 2013. An Overview of Principal Component Analysis. *Journal Of Signal and Information Processing*, Volume 4, pp. 173–175
- Krstic, J., 2014. Using Possibility of QFD Method For Development of the "Ready-To-Go" Package. *Acta Graphica*, Volume 25, pp. 37–46
- Ksenia, P., 2013. *Packaging Design as A Marketing Tool and Desire To Purchase*. Bachelor's Thesis, Saimaa University of Applied Science, South Karelia (Finland)
- Mohebbi, B., 2014. The art of Packaging: An Investigation into The Role of Color in Packaging, Marketing, And Branding. *International Journal of Organizational Leadership*, Volume 3, pp. 92–102
- Natadjaja, L., 2007. Analisa Elemen Grafis Desain Kemasan Indomie Goreng Pasar Lokal Dan Ekspor (*Analysis of Graphic Elements of Fried Indomie Packaging Design for Local And Export Markets*). *Nirmana*, Volume 9, pp. 20–30
- Orth, U.R., Malkewitz, K., 2008. Holistic Package Design and Consumer Brand Impressions. *Journal of Marketing*, Volume 72, pp. 64–81
- Parada, L.R., Mayuet, P.F., Gámez, 2019. Custom Design of Packaging Through Advanced Technologies: A Case Study Applied to Apples. *Materials*, Volume 12(467), pp. 1–19
- Paul, L.C., Al Suman, A., Sultan, N., 2013. Methodological Analysis of Principal Component Analysis (PCA) Method. *International Journal of Computational Engineering & Management*, Volume16(2), pp. 32–38
- Poturak, M., 2014. Influence Of Product Packaging On Purchase Decisions. *European Journal of Social and Human Sciences*, Volume 3(3), pp. 144–150

Pramono, R.G., Iqbal, M., Wulandari, S., 2015. Design Improvement Of Packaging Of Kerupuk Strawberry Kencana Mas Using Quality Function Deployment Method. *e-Proceeding of Engineering*, Volume 2(1), pp. 956–965

- Qing, H., Kai, Z., Zhang, C.F., Chen, M.R., 2012. Packaging Design Research And Analysis Based On Graphic Visual. *IPCSIT*, Volume 28, pp. 148–153
- 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
- Rusko, E., Heinio, S., Korhonen, V., Heilmann, J., Karjalainen, T.M., Lahtinen, P., Pitkanen, M., 2011. *Messenger Package Integrating Technology, Design and Marketing for Future Package Communication*. Final Report, VTT Tiedotteita Research Notes 2586
- Sinaga, F.B., Evanila, S., Dewi, K.H., 2012. Pemilihan Kemasan Sekunder Cabai Blok Dengan Metode Ahp, Tingkat Kesukaan Konsumen Dan Nilai Tambah (*Selection of Chili Block Secondary Packaging Using The AHP Method, The Level Of Consumer Preference And Added Value*). *Jurnal Agroindustri*, Volume 2(2), pp. 62–69
- Sudjarmoko, B., 2013. Prospek Pengembangan Industrialisasi Kopi Indonesia (*Prospects for The Development of Indonesian Coffee Industrialization*). *SIRINOV*, Volume 1(3), pp. 99–110
- Suzianti, A., Rengkung, S., Nurtjahyo, B., Al Rasyid, H., 2015. An Analysis Of Cognitive-Based Design Of Yogurt Product Packaging. *International Journal Technology*, Volume 4, pp. 659–669
- Utami, R.W., 2009. Segmentasi dan Analisis Perilaku Konsumen Kopi Bubuk (*Segmentation and Analysis Of Ground Coffee Consumer Behavior*). *Jurnal Sosial Ekonomi Pertanian (J-SEP)*, Volume 3(2), pp. 49–58
- Vitulli, P., Giles, R., 2016. Mind Mapping: Making Connections with Images and Color. *Delta Journal of Education*, Volume 6(2), pp. 1–10