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LABEL SIZE EVALUATION OF READY-TO-DRINK BEVERAGES BASED ON BRAND KNOWLEDGE ASSESSMENT WITH BRAND AWARENESS AS A PARAMETER

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ABSTRACT

Manuscript type: *Research Article*
Research Aims: *Evaluate label size of RTD beverages based on brand awareness assessment to bridge the gap between marketing needs and environmental requirement.*
Design/Methodology/Approach: *Interview, brand recognition experiment, brand recall questionnaire*
Research Finding: *Propose some variation in percentage of label size reduction and show that larger label sizes do not ensure it will influence consumer's ability and response time in recognizing products will be faster.*
Practitioner/Policy Implication: *Label size reduction is a fine strategic implementation to initiate synergy between brand owners and recyclers toward sustainable waste management practice.*
Research Limitation/Implication: *Label size reduction turns out to have positive implications for marketing side of the product.*

Keywords: Brand Awareness, Environmentally Friendly, Label Size, Plastic Packaging, RTD Beverages

INTRODUCTION

The Indonesian Association of Bottled Drinking Water Companies recorded national production of 24.7 billion liters in plastic bottles in 2015 (Gumelar, 2016). However, plastic bottle waste is seen as an economic opportunity, and it has become one of the waste products most demanded by recyclers, so there is no issue with recyclability in this respect. On the other hand, plastic label films that are generally attached to plastic bottles are considered unattractive by recyclers, so only two treatments can be offered: burning or dumping in landfills (Horodytska et al., 2018; Sukatendel, 2016). The burnt plastic

films generate toxic substances that contribute to the environmental impact of climate change and that are harmful to human health, particularly by increasing the risk of heart disease; aggravating respiratory ailments (asthma and emphysema); causing rashes, nausea, or headaches; and damaging the nervous system, kidney, or liver (Verma et al., 2016; WECF, 2005). The same goes for plastic films that are disposed of in landfills, as they are responsible for the spread of infectious diseases. This is because these locations become breeding grounds for pathogens and they contribute to air pollution by releasing methane, a potent greenhouse gas that causes global warming, not to mention any leakage that might lead to groundwater and marine pollution (Maheshwari et al., 2015). In sum, if these treatments continue, they will pose a threat to the lives of all living organisms on earth.

Based on the above explanation, as long as there is no proper waste management method to recycle plastic films, then removing plastic labels is the straightforward option. However, this goes against the Indonesian government's regulation act of 69-year 1999 on label and food advertising, which requires companies to transmit the information about the product to consumers through labelling (Republik Indonesia, 1999). Therefore, based on the waste management hierarchy published by the United Nations Environment Programme, after prevention fails, reduction is the next preferable choice in waste management before recycling (Hyman et al., 2015). However, the tendency of consumers to purchase products that are easily recognizable via visual elements, graphics, and size (Silayoi & Speece, 2004) has forced beverage industry marketers to rely on packaging as their 'silent salesman' in stores to generate sales at the point of purchase (Orth & Malkewitz, 2008; Rebollar et al., 2017; Rundh, 2016; Schoormans & Robben, 1997; Selame & Koukos, 2010). In addition, a well-known 5-by-5 rule states, "A product in the store should convey its value proposition within five seconds at least five feet away from its position" (Hurley et al., 2017). This is why, to ensure their 'silent salesman' fulfills its duty accordingly, marketers applied the concept of a plastic label film that covers almost the entire surface area of the bottle, because in ready-to-drink (RTD) plastic bottle packaging, the only way to inform, track, and promote a product to consumers is through labelling.

Therefore, the purpose of this research is twofold: exploring the reasons why recyclers are not interested in recycling plastic labels and evaluating the size of the plastic labels on RTD beverages based on brand awareness as it is frequently used by marketers to quantify the current position of the product on consumers' minds (AMA, 2007); hence, evaluation will not disrupt the marketing side of the products and, at the same time, it will reduce the environmental impact caused by current treatments.

LITERATURE REVIEW

Brand Awareness

Kotler (2012) stated, "Brand is a name, term, design, symbol, or any other feature that identifies one seller's good or service as distinct from those of other sellers." However, that definition has not been able to explain entirely the essence of a brand, because it only uses the producer's perspective (Maurya & Mishra, 2012). The definition of a brand based on the consumer perspective uses Brown's (1992) thought that "a brand is nothing more or less than the sum of all mental connections people have around it." Moreover, a brand is not only something that can display its functional value; it also offers psychological value by providing memory shortcuts for consumers and potential consumers to recognize and recall specific products. Although purchasing decisions are influenced by several factors, product recognition becomes the crucial step to initiate the decision-making process (Thoma & Williams, 2013). Therefore, companies tend to optimize the sizes of

label films to make the product more 'eye catching' to attract consumers and create brand awareness (Llewellyn, 2012).

Brand awareness is the prerequisite dimension of the entire brand knowledge framework in consumers' minds, reflecting their ability to recognize and recall a brand as a part of a particular product category (Aaker, 1992; Keller, 1993). Part of a particular product category needs to be emphasized, as there is a strong relationship between the product category and the brand involved. Brand awareness measurement can be done via brand recall and brand recognition (Rossiter & Percy, 1987). Brand recognition reflects a consumer's ability to identify a product when the characteristics of the product are shown or mentioned. Therefore, this is considered the minimum level of brand awareness, while brand recall reflects a consumer's ability to remember a brand when asked about a certain product category, and it is thus considered the next level of brand awareness (Holden, 1993; Laurent et al., 1995; Mariotti, 1999).

The level of importance between brand recall and brand recognition depends on whether consumers are making purchasing decisions in-store or whether these decisions have been made before entering the store. Therefore, brand recognition tends to be have a more significant influence on low-involvement products, while brand recall plays a crucial role for high-involvement products (Elliott & Percy, 2007; Radder & Huang, 2008; Shaw, 2000). Regardless of the involvement level of the product, these two awareness measures tap into the same underlying construct of comprehensive brand awareness (Romaniuk et al., 2004).

Packaging and Labelling

Generally, and especially in the fast-moving consumer goods (FMCG) industry, consumers rely on packaging to fulfill the function of a container, a barrier, and a communication tool that acts to store, protect, and present information at the same time (Agariya et al., 2012; Risch, 2009). Along with the need for packaging, consumers also desire packaging to stand out, so it can help them in making purchasing decisions, as there are too many options available and they have a limited cognitive capacity to process information in a relatively short time (Clement et al., 2013).

Two types of factors are classified according to how they affect consumer attention: bottom-up and top-down. Bottom-up factors can be controlled by companies, such as size, color, and shape, while top-down factors are typically considered customer-related factors, such as familiarity and expectation (Husić-Mehmedović et al., 2017). In line with this, Silayoi and Speece (2004) discovered four main packaging elements that could be controlled by companies and that potentially affect consumer purchase decisions, and they can be grouped into two classes: visual elements that consist of graphics and the size/shape of packaging and informational elements related to the information provided and technologies used in the package. Moreover, consumers tend to use only one or two visual features when trying to locate a brand quickly and accurately (Clement et al., 2013). It is clear that in the RTD beverage industry, currently, the most common medium capable of covering all four elements is labelling. Therefore, it is no wonder marketers strive to meet their marketing needs on packaging through labels to capture consumers' visual attention and to win the battle in the supermarket aisle. However, as mentioned earlier in the introduction, as the post-consumer phase of labels contributes to environmental impacts, this research aims to identify to what extent surface size impacts consumers' attention, because previous

related research is limited to results stating only that surface size affects consumers' attention (Chandon et al., 2008; Orquin & Loose, 2013).

As cited previously, it has been determined that the degree of recognizability of a product is not influenced by label size alone, but also by other factors, such as design, graphic quality, color, and information (Clement et al., 2013; Gidlof et al., 2017; Husić-Mehmedović et al., 2017). This also includes non-visual elements, such as how long the product has been on the market (brand familiarity), the quality of the product, brand position, price (Littel & Orth, 2013), or even sustainability perceptions (Steenis et al., 2017). Therefore, as this research focuses on label size without disregard for other factors, brand name will be used to compile and represent those factors, due to its extendibility to be associated with all the factors that influence it (Larofet, 2011).

RESEARCH METHOD

This research combines exploratory, descriptive, and causal research designs. Exploratory research was conducted in the early stage by interviewing experts and practitioners to understand the viewpoints of several stakeholders related to the issue highlighted in this study. Meanwhile, descriptive and causal research was conducted to perform a brand awareness assessment. There are two variables measured, namely, brand recall and brand recognition. Both are latent variables that require an indicator to measure their quantitative value. Therefore, the indicator used in measuring brand recall is the frequency of a certain brand, as mentioned by the respondents, and recall was measured using a questionnaire. Meanwhile, the indicators used to measure brand recognition were respondents' ability and response time in recognizing the product, as measured experimentally.

Experimental Design

The objectives of the experiment are to examine the effect of label size on respondents' ability and response time in recognizing the product. A factorial experiment is an appropriate method to examine the effect of two or more factors and their interaction with a dependent variable (Montgomery & Runger, 2011). According to the objectives of the experiment, there are two factors with predetermined levels to be examined. Four levels of the label size factor were manipulated, namely, 0% means there is no label attached to the product, 50% means a label size reduction of 50%, 75% means a label size reduction of 25%, and 100% means there is no change in label size. As for the brand name factor, it consists of three levels that determined based on each beverage category according to the RTD Beverages Industry Association (2015) and the Top Brand index introduced by Frontier Consulting Group (2016). Thus, the format of the factorial experiment used is a two-factor factorial experiment with a fixed-effects model. It implicates the existence of several assumptions needed, namely, (1) $\sum_{i=1}^{a} \tau_i = 0$, which means there is no level of label size factor other than that specified; (2) $\sum_{j=1}^{b} \beta_j = 0$, which means there is no level of brand name factor other than that specified; and (3) $\sum_{i=1}^{a} (\tau\beta)_{ij} = 0$ and $\sum_{j=1}^{b} (\tau\beta)_{ij} = 0$, which mean there is no interaction other than the inter-factor level that has been set. Here is a linear statistical model that describes the observation of data collection:

$$Y_{ijk} = \mu + \tau_i + \beta_j + (\tau\beta)_{ij} + \gamma_k + \in_{ijk} \qquad (1)$$

Three laboratories were used in conducting the experiment, namely, the Industrial Control Systems (ICS) laboratories, used by prospective respondents when waiting for their turn to be an experiment subject; the Industrial Technology Center (ITC), arranged into a confined space for experimental execution; and the Computer-aided Design and Computer-

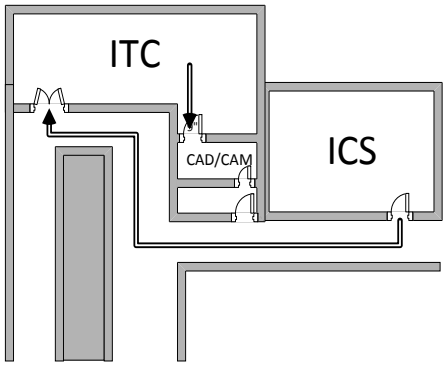

Figure 1. Respondents' flow layout within the rooms

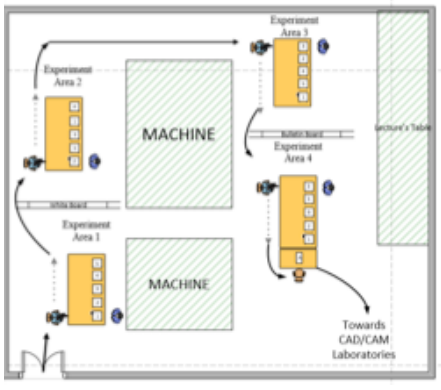

Figure 2. Respondents' movement flow

aided Manufacturing (CAD/CAM) laboratories, the room for respondents after completing the experiment to continue the environmental recycling class project. Based on the flow arrangement, the opportunities for interaction between respondents and prospective respondents are minimal. Figure 1 shows the respondents' flow layout within the rooms.

Experiments will be divided into four areas with different treatments for each area. The brands of the bottles from the first to the fourth areas of the experiment are the same. The differentiators are the bottles' position and label size. Where in the first area, all bottles will be provided without a label (0%), the second area will provide bottles with the label size reduced by 50% (50%), the third area will provide bottles with the label size reduced by 25% (75%), and the last area will provide bottles with the current label size. Meanwhile, respondents were asked to guess the brand name of the RTD beverages presented in each experiment area, starting from the first to the fourth area. Figure 2 shows the respondents' movement flow within the ITC, where the experiment was carried out.

Three statistical tests were performed using a confidence interval of 99%. At first, the Pearson chi-square test and proportion test were used to examine the effect of label size on the respondents' ability to recognize the product. Meanwhile, the two-way ANOVA test was used to examine the effect of label size, brand name, and interaction between label size and brand name on respondents' response time in recognizing the product. Two-way ANOVA will be performed to test three sets of alternative hypotheses, as follows:

H1 = Label size has a positive influence on respondent' response time in recognizing the product.

H2 = Brand name has a positive influence on respondent' response time in recognizing the product.

H3 = There is a positive interaction between label size and brand name in affecting respondents' response time in recognizing the product.

Questionnaire Design

The population of this study was Indonesian people who consume RTD beverages. Due to the large size of the Indonesian population, estimated at 264 million people in 2017 (United Nations, 2017), it is impossible to do randomization for the 11.6% of Indonesian people who consume RTD beverages, excluding mineral water (Aditama, 2015); therefore, samples were drawn using convenience sampling as a non-probabilistic sampling method (Etikan et al., 2015). The minimum number of respondents is 158, determined using Cochran's formula (Johnson et al., 2010):

Table 1. Interview Summary

Interviewee	Interview Summary
Dr. Raffi Paramawati (bio based-biodegradable packaging expert)	Labels are assumed to be protecting the products from Ultraviolet light. It might be possible but not significant because the use of PET (Polyethylene terephthalate) polymer for the bottle already capable to protect the liquids from outside particles. Anyhow, bottles should not be put in direct exposure to the sun light
Mr. F. Dasta P. Sukatendel (Member of APDUPI)	Plastic labels are not profitable to be recycled is because, for 0.5 tons of plastic bottles collected resulted only 10 kilograms of plastic labels. Meanwhile, the minimum amount of plastic that is profitable to be processed is 1 ton. So, 50 tons of plastic bottles is required to be able to meet the minimum amount of plastic to start the recycling process. It took 344 sacks to contain all the plastic labels and taking too much space in the storage.
Mrs. Christine Halim (Head of ADUPI)	At PT Langgeng Jaya Fiberindo which is a company that produce recycled products from PET bottle, plastic label still attached on the bottle is not used as raw material. Instead it is used as the fuel for the incinerator machine to generate heat used in the production process
Mr. Aidil Arafat (Plant Manager of PT Inter Aneka Lestari Kimia)	Bio-based polymer might be used to produce plastic film, but not applicable in Indonesia yet, because of some limitation that polymer has. Thus, he is currently doing internal research to enhance bio-based polymer to be applicable in the production of plastic label.
Mr. Hengky Wibawa (Executive Director of Indonesian Packaging Federation)	There are three future packaging issues: how to reduce cost; how to attract consumer; how to produce environmentally friendly packaging. For the last issue, it needs time and synergistic collaboration among all stakeholders. There are also labels that are made from multiple layers that makes it even harder to be recycled because, the layers should be separated.

$$N = \frac{(z_{a/2})^2 \cdot p \cdot q}{e^2} \quad (2)$$

where:

N = number of samples

Z = z-value for α/2, with 95% alpha: 1.96

p = probabilities of corresponding sample

q = probabilities of non-corresponding sample (1-p)

e = acceptance error

Questionnaires were distributed through printed papers and an online survey platform. It was designed in three sections. First, section one intended to collect respondent's demographic information. Section two raised questions concerning respondents' consumption frequencies and brand recall capability. The last section consisted of scales measuring plastic label contribution in fortifying brand awareness in consumers' minds. The data of the

Table 2. Respondents' Ability to Recognize Products

Beverages Category	Brand Name	Answer	Label Size			
			0%	50%	75%	100%
Ready-to-Drink Tea	Teh Pucukb	Correct	30	42	44	45
		Wrong	23	11	9	8
	Teh Gelasd	Correct	19	30	33	37
		Wrong	34	23	20	16
	Teh Botol Sosroc	Correct	53	50	52	53
		Wrong	0	3	1	0
Carbonated Drink	Spritec	Correct	52	53	53	53
		Wrong	1	0	0	0
	Coca Colac	Correct	51	53	53	53
		Wrong	2	0	0	0
	Fantac	Correct	53	0	0	0
		Wrong	0	0	0	0
Ready-to-Drink Juice	Pulpy Orangec	Correct	47	48	48	50
		Wrong	6	5	5	3
	Floridinaa	Correct	19	25	39	41
		Wrong	34	28	14	12
	Nutriboost0	Correct	7	14	13	16
		Wrong	46	39	40	37
Isotonic Drink	Pocari Sweatb	Correct	46	53	53	53
		Wrong	7	0	0	0
	Mizonec	Correct	52	53	53	53
		Wrong	1	0	0	0
	Orange Watera	Correct	34	35	39	46
		Wrong	19	18	14	7
Ready-to-Drink Coffee	Good Dayd	Correct	16	26	31	39
		Wrong	37	27	22	14
	Nescafed	Correct	2	4	29	28
		Wrong	51	49	24	25
	Kopiko 78°d	Correct	19	18	31	36
		Wrong	34	35	22	17

Brand name with different superscripts differ significantly ($p<0.01$). Each superscripts letter has its own connotation, where (a) stands for possibility label reduction of 25%, (b) stands for possibility label reduction of 50%, (c) stands for possibility label reduction of 100%, and (d) stands for impossibility of label reduction at any level.

questionnaires will be processed using descriptive statistics to arrange random and crude data, so it can show the current state or phenomenon as a consideration in decision making.

RESULT AND DISCUSSION

Interview Summary

Interviews were done to seek actual information about what really happens in the field, mainly to discover why plastic label films are seen as unattractive for recycling. Aside from the obvious question, the interview was carried out using unstructured open-ended questions to explore various perspectives from several stakeholders regarding the issue raised in this study.

Based on the interviews, as well as some literature reviews, there are two main reasons why recyclers are not interested in recycling plastic labels. (1) First, the process of recycling labels is not economically profitable compared to the cost and effort to do so. The cost is determined to be in the form of fees for eliminating multiple colors on a label. As for the effort needed to clean label films, reaching certain amount of mass, which is huge, and large storage needed to store it. (2) Second, diversity in label plastic film types and the absence of a resin identification code to identify the label film type make it even harder to collect certain labels with the same plastic type. Although PVC is one of the most popular materials used to produce labels, it has limited recyclability. Furthermore, some labels consist of two or more plastic types, known as multi-layer labels, and these cannot be recycled.

Brand Recognition Experiment

Fifty-three undergraduate students (41 males and 12 females; age range from 18 to 20 years) participated in the brand recognition experiment. Table 2 shows the result of the combination between the Pearson chi-square test and proportion test in examining the effect of label size on respondents' ability to recognize the product.

Before conducting the two-way ANOVA test, several requirements must be met. A further test will not be performed for those brands with no possibility of any label reduction scenario. For the brands whose labels have the possibility of a 25% reduction in size, data were gathered from respondents who answered correctly on both the 75% and 100% levels. Meanwhile, for the brands whose labels have the possibility of a 50% reduction, data were gathered from respondents who answered correctly on the 50%, 75%, and 100% levels. Moreover, for the brands whose labels have the possibility of a 100% reduction in size, data were collected from respondents who completely recognized the products on every level. Data should be normally distributed, as tested using the Kolmogorov–Smirnov normality test. As well, data proved to have homogeneity of variances, as tested using Levene's test. After the data were confirmed to be normally distributed and to have homogeneity of variances, two-way ANOVA could be performed.

Regarding Table 3, the two-way ANOVA results for brands with the possibility of a label size reduction of 25%, which are Orange water and Floridina, it was indicated that the label size did not affect respondents' response time in recognizing the product. Therefore, it confirms that a label size reduction of 25% from the original size is possible for both products. A similar result was achieved from the ANOVA test for brands with the possibility of a label size reduction of 50%, which are Teh Pucuk and Pocari Sweat. However, the two-way ANOVA result for brands with the possibility of a label size reduction of 100%, namely, Teh Botol Sosro, Mizone, Pulpy Orange, Sprite, Coca Cola, and Fanta, indicated that label size and brand

Table 3. Two-way ANOVA Hypotheses Testing

Possibility Scenario	Source	df	Adj Sum of Squares	Adj Mean Square	F	p-value
Reduction of 25%	Label Size	1	0.13	0.128	1.25	0.26
	Brand Name	1	0.40	0.40	3.89	0.050
	Interaction	1	0.02	0.021	0.21	0.651
	Error	138	14.08	0.1025		
	Total	141	14.62			
Reduction of 50%	Label Size	2	0.22	0.11	1.48	0.229
	Brand Name	1	0.01	0.07	0.09	0.769
	Interaction	2	0.68	0.34	4.62	0.011
	Error	237	17.44	0.074		
	Total	242	18.23			
Reduction of 100%	Label Size	3	78.70	26.23	260	<0.01
	Brand Name	5	8.13	1.63	16.1	<0.01
	Interaction	15	12.40	0.83	8.19	<0.01
	Error	1056	106.63	0.10		
	Total	1079	205.85			

Note. For each scenario, Cell P with value less than 0.01 ($p<0.01$) means alternative hypothesis is accepted

Table 4. Tukey's Honest Significant Difference Test of the Interaction between Two Factors

		Label Size			
		0%	50%	75%	100 %
		Mean (s)			
Brand Names	Teh Botol Sosro	2.13^{a}	1.65^{b}	1.36^{c}	1.18^{c}
	Mizone	1.89^{a}	1.24^{b}	1.34^{b}	1.33^{b}
	Pulpy Orange	1.89a	1.53^{b}	1.40^{b}	1.32^{b}
	Sprite	1.88^{a}	1.48^{b}	1.40^{b}	0.96^{c}
	Coca Cola	1.93^{a}	1.12^{b}	1.22^{b}	1.11^{b}
	Fanta	1.70^{a}	1.23^{b}	1.19^{b}	1.27^{b}

Note. For each independent brand names, cell means with different superscripts differ significantly ($p<0.01$).

names affect respondents' response time in recognizing the products.

Moreover, it was also indicated that there is interaction between the two factors (label size and brand name) affecting respondents' response time. Therefore, the results for each factor in affecting the response time of respondents in recognizing the product are not decisive in drawing conclusions about label size reductions. Therefore, a post-hoc Tukey's Honest Significant Differences (HSD) test was performed on the interaction between the two factors to identify sample means that differ significantly from each other.

Table 5. Demographic Characteristics of Respondents (n = 202)

Variables		n.	%
Gender			
	Male	116	57
	Female	86	43
Age (years old)			
	12 to 16	3	1.49
	17 to 25	170	84.16
	26 to 35	15	7.43
	36 to 45	13	6.44
	46 to 55	1	0.50
Domicile			
	Banten	98	48.51
	DKI Jakarta	61	30.2
	Riau	16	7.92
	Other	27	12.9
Occupation			
	Students	156	77.2
	Private Employee	22	10.8
	Other	24	12
Education Level			
	Senior High School	130	64.3
	Diploma/Bachelor	60	29.7
	Master	10	5
	Other	2	1

Consumption Frequency

Beverages Category	0 Bottle	1 to 3 bottle/s	4 to 6 bottles	7 to 9 bottles	≥ 10 bottles
Isotonic Drink	46.53%	45.05%	5.94%	2.48%	0.00%
RTD Coffee	56.93%	26.73%	12.38%	2.48%	1.49%
RTD Tea	36.63%	39.60%	16.34%	2.97%	4.46%
RTD Juice	48.02%	38.12%	11.39%	0.50%	1.98%
Carbonated Drink	51.98%	38.61%	7.43%	1.49%	0.50%
Average	**48.02%**	**37.62%**	**10.69%**	**1.98%**	**1.68%**

Table 5 shows that 84.16% respondents were aged between 17 and 25 years. Although RTD beverages can be consumed by people of all ages, consumers with an age range of 17 to 25 years showed a greater tendency to consume RTD beverages than any other age group (Alamsyah et al., 2010). Therefore, without discrediting some respondents, it can be said that the majority of people who responded to the questionnaire are part of the potential target market; hence, the result of the questionnaire became more reliable. Regarding the frequency of the consumption of RTD beverages in the past month, respondents' average rate of consumption of RTD beverages within the past month was 51.98%, higher than the respondents' average

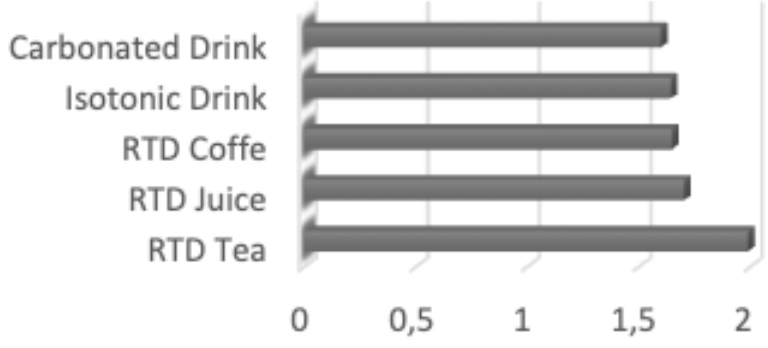

Figure 3. Comparison between average consumption rates of RTD beverages (n = 202)

Table 6. Brand Recall (n = 202)

Beverages Category		%	Cum %
RTD Tea			
	Teh Botol Sosro	44.8	44.8
	Teh Pucuk	22.4	67.2
	Nu Green Tea	12.1	79.3
	Freshtea	9.5	88.8
	Other	11.2	100
Table 6. Brand Recall (n=202) (Continued)			
RTD Juice			
	Buavita	61	61
	Pulpy Orange	35.2	96.2
	Other	3.8	100
RTD Coffee			
	Kopiko	34.9	34.9
	Nescafe	30.1	65.1
	Good Day	26.6	91.7
	Other	8.4	100
Isotonic Drink			
	Pocari Sweat	74.1	74.1
	Mizone	16.8	90.8
	UC 1000 (Orange Water)	5.3	96.2
	Other	3.8	100
Carbonated Drink			
	Coca Cola	62.2	62.2
	Sprite	16.9	16.9
	Fanta	15.3	94.4
	Other	5.6	100

non-consumption rate for the same period. Figure 3 shows a comparison between the average consumption of RTD beverages, where RTD tea is the most widely consumed by respondents, followed by RTD juice, RTD coffee, isotonic drinks, and carbonated drinks.

From Table 6 (brand recall), it is shown that the highest percentage of brand recall for the RTD tea category is Teh Botol Sosro; for the RTD juice category, it is Buavita; for the RTD coffee category, it is Kopiko; for the isotonic drink category, it is Pocari Sweat; and

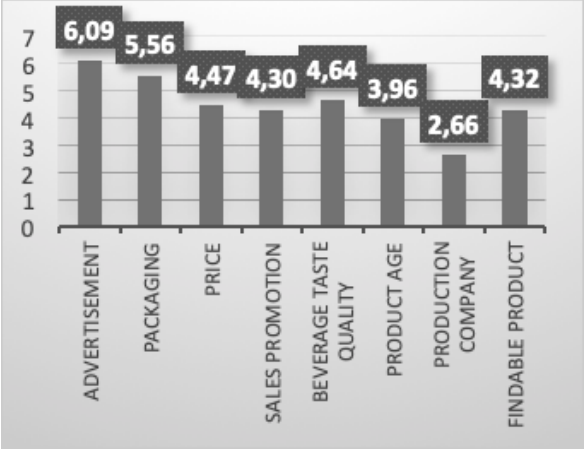

Figure 4. Factors that affect respondents in recalling and recognizing certain products (n = 202)

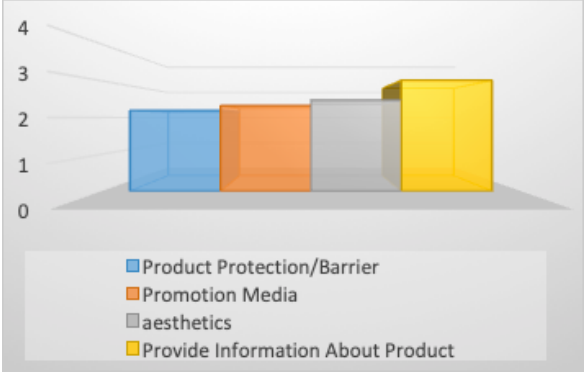

Figure 5. Label function for respondents (n = 174)

for the carbonated drink category, it is Coca Cola.

The last section of the questionnaire measured plastic label contributions to fortifying brand awareness in consumers' minds. Based on Figure 4, packaging is the second factor that affects respondents in recalling and recognizing a product; thus, the label played a role as a part of packaging. Furthermore, the contribution of labels in fortifying brand awareness corresponded with the function of labels toward respondents. However, the question relating to the function of labels can only be answered by respondents who noticed the packaging labels. Therefore, respondents were asked in advance how frequently they read the information on the packaging labels of RTD beverages. It was shown that 14% of respondents never read the information on packaging labels; hence, 28 respondents were unable to proceed to the question relating to the function of the label, thereby generating 174 responses to 'provide information about the product,' and the largest rating average is 3.01, as shown in Figure 5. Label Size Evaluation.

Purchase decisions concerning most RTD beverages were made without prior planning (Alamsyah et al., 2010). In most circumstances, buying decisions related to low-involvement purchases, typically FMCG, were made in store (Loya et al., 2015). Thus, based on the concept of brand awareness, brand recognition plays a more significant role than brand recall in influencing purchasing decisions related to RTD beverages. Therefore, the discussion will accentuate the result of the brand recognition experiment, while heeding the result of the brand recall questionnaire as complementary data. A summary of the brand recognition experiment can be seen in Table 7.

In terms of brand recognition, the ability of respondents to recognize a product is crucial, so if a label reduction scenario based on respondents' ability to recognize a product shows 0%, then regardless of the outcome of respondents' response time, it can be concluded that labels should not be reduced in size at all. The 0% scenario occurred because any label reduction could cause respondents to fail to recognize the product.

A fast response time is also a condition that must be met, because consumers may not consider all items displayed in a store

Table 7. Result Summary of Brand Recognition Experiment

Beverages Category	Brand Name	Label Reduction Scenario Based On	
		Respondent Ability (%)	Respondent Response Time (%)
RTD Tea	Teh Pucuk	50%	50%
	Teh Gelas	0%	-
	Teh Botol Sosro	100%	25%
Carbonated Drink	Sprite	100%	0%
	Coca Cola	100%	50%
	Fanta	100%	50%
RTD Juice	Pulpy Orange	100%	50%
	Floridina	25%	25%
	Nutriboost	0%	-
Isotonic Drink	Pocari Sweat	50%	50%
	Mizone	100%	50%
	Orange Water	25%	25%
RTD Coffee	Good Day	0%	-
	Nescafe	0%	-
	Kopiko 78°	0%	-

Table 8. Evaluation Result Based on Brand Awareness

Brand Names	Possibility Label Reduction Scenario			
	0%	25%	50%	100%
	Teh Gelas	Teh Botol Sosro	Teh Pucuk	-
	Sprite	Floridina	Coca Cola	-
	Nutriboost	Orange Water	Fanta	-
	Good Day	-	Pulpy Orange	-
	Nescafe	-	Mizone	-
	Kopiko 78°	-	Pocari Sweat	-

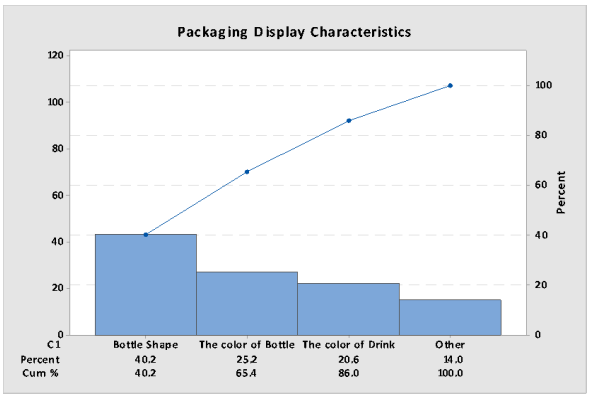

Figure 6. Display characteristics that enable recognition (n = 174)

for the reason of limited time or a limited short-term memory capacity in storing the information. On the other hand, brands that are recognized easier and faster will be more likely to be liked and eventually more likely to be purchased (Winkielman et al., 2007). Moreover, 84.2% of respondents said that they more likely to buy products that could be recognized faster. Therefore, if respondents' ability value is other than 0%, the value of respondents' response time will be considered, and the smallest value between both will be the evaluation result of the label size reduction based on brand awareness. The evaluation result based on brand awareness is shown on Table 8.

Based on Table 8, it was determined that the proposed label size for some brands was equal to the size of the current label. This could be due to the absence of memorable characteristics on a product's display besides the label. For some cases, such as RTD coffee, the reason why people failed to recognize the product might be due to new products or a new bottle design. Some display characteristics enable consumers to recognize the product, even if the label size is reduced, as seen in Figure 6.

The evaluation result (from Table 8) shows that it was not possible to have a label reduction of 100% based on brand awareness considerations. Moreover,

Brand Name	Reduction Percentage Comparison				
	PRP (%)	MRP (%)	CRP (%)	Current Label Size (cm)	Chosen Label Size (cm)
Teh Pucuk	50	64	50	11.5	5.8
Teh Gelas	0	61	0	15.5	15.5
Teh Botol Sosro	25	61.63	25	19	14.3
Sprite	0	2.5	0	4.4	4.4
Coca Cola	50	27.5	27.5	4.4	3.2
Fanta	50	0	0	4.4	4.4
Pulpy Orange	50	57,78	50	9	4.5
Floridina	25	78,62	25	14.5	10.9
Nutriboost	0	74,83	0	14.3	14.3
Pocari Sweat	50	35,82	35,8	6.7	4,3
Mizone	50	25,29	25.3	15,5	6.5
Orange Water	25	70,65	25	15.5	11.6
Good Day	0	52,68	0	11.2	11.2
Nescafe	0	63,33	0	12	12
Kopiko 78°	0	70,45	0	13.2	13.2

Note. PRP stands for Proposed Reduction Percentage; MRP stands for Maximum Reduction Percentage; CRP stands for Chosen Reduction Percentage.

eliminating the label is something that cannot be done at this time, because there are liabilities related to labels on food packaging, as stipulated by the Indonesian Government Regulation number 69 year of 1999 about Food Label and Advertisement Article 2. The elemental consideration of such a regulation is that the public reserves the right to correct information about the food they consume, and the medium of delivering such information is labels (Republik Indonesia, 1999). The minimum label size to contain all the information required to be included was determined using a simple approach of rearranging the position of the information on the label (Wijayanto, Christiani, & Kristina, 2018). It was considered that the option to remove labels entirely is unfeasible according to legislative and regulatory requirements. In addition, 86% of respondents read the information on the label, and Figure 6 shows that the primary function of the label on RTD packaging for consumers is to provide information related to the product. Thus, the proposed reduction percentage must meet the maximum reduction percentage to contain all the information that must be included on the label. Therefore, if the proposed reduction percentage is smaller than the maximum reduction percentage, then the label size would be in accordance with the evaluation result based on brand awareness and its applicability and vice versa. Moreover, the chosen label sizes still provide a minimum allowance of 43% that can be used for marketing needs.

Table 10. Proposed Label Size Compliance toward RECOUP Recommendations

Brand Name	Chosen Label Size (cm)	Bottle Size (cm)	Label Area Coverage Percentage (%)	Compliances
Teh Pucuk	5.8	21.8	26.61	✓
Teh Gelas	15.5	19.2	80.73	×
Teh Botol Sosro	14.3	23.8	60.08	×
Sprite	4.4	21	20.95	✓
Coca Cola	3.2	21	15.24	✓
Fanta	4.4	21.1	20.85	✓
Pulpy Orange	4.5	17.5	25.71	✓
Floridina	10.9	17.3	63.01	×
Nutriboost	14.3	18.1	79.01	×
Pocari Sweat	4.3	20.7	20.77	✓
Mizone	6.5	21.9	29.68	✓
Orange Water	11.6	20.5	56.59	×
Good Day	11.2	14.4	77.78	×
Nescafe	12	14.7	81.63	×
Kopiko 78°	13.2	16.2	81.48	×

Note. × means that label area coverage greater that 40%, while ✓ means that label area coverage less equal than 40%.

Label Size Reduction Implication

The outcome of the evaluation showed that label sizes could be reduced without harming marketing, while at the same time maintaining all the information required by government regulations for most brands, which was the objective of the research. Moreover, label size reduction has positive implications for recyclers and the holding company itself. Label size reductions are favorable to maximize automated sorting between plastic bottles, because the automated sorting process is the most accurate when the size of the label does not cover more than 40% of the surface area of the bottle (RECOUP, 2015).

It appears that some brands still have not met the desired label size in maximizing the automated sorting process yet. Actually, it has not been a major concern lately for recyclers, because most still sort manually based on physical bottle characteristic observations and experience. However, this method has a greater chance of inaccuracies caused by the absence of a clear physical identification (e.g., resin identification code) and human error due to lack of experience. Therefore, automated sorting has gradually become a requirement for recyclers to improve quality and efficiency, given the quality dimension importance of recycled products in affecting selling price. In

conclusion, label size reduction is one of the things that should and could be done to increase the synergy between companies and recyclers in realizing systematic waste management.

Reducing label size implicates the marketing of products positively, instead of harming the marketing side. The first implication of reducing label size is that companies can promote green marketing as an activity to market products in an environmentally friendly way. Although it is still too early to identify products that reduced their label sizes as green products, according to Ottman (1998) and Pavan (2010), one indicator that a product can be called a green product is the use of minimal packaging (Suki, 2013). Therefore, by reducing the size of the label, green product indicators have been met. Moreover, consumers are more likely to buy products that are more environmentally friendly when making purchasing decisions in the store compared to online, as they pay attention to how others regard them (Vladas et al., 2010). Normally, the majority of consumers do not buy green products because of high prices and a decline in quality. However, label size reductions among RTD beverages would not lead to price increases or a loss of product quality, due to the impact of label size reductions on decreasing production costs and because labels as secondary packaging have no significant impact on product quality.

The second implication of reducing label size is that marketers can enhance the marketing medium, either with another medium or with the development of the current medium, as a larger label size does not ensure that consumers' response time in recognizing certain products will be faster. Based on Figure 5, advertising remains the most effective medium of promotion; nonetheless, according to Alamsyah et al. (2010) and Loya et al. (2015), purchasing decisions happen in store and without prior planning. Therefore, to affect purchase decisions directly, packaging remains the first choice as a marketing medium. Thus, the option of developing the current medium is more desirable than using a medium other than packaging. Based on Figure 7 and research published by the Metal Packaging Manufacturers Association, a distinctive packaging shape is a marketing trick to boost sales of a product (Woods, 2007), because consumers will find it easier to recognize certain products, leading to more purchases. Moreover, as in Woods (2007), it appears that packaging associated with environmental friendliness also leads to increased sales. Mintel, as the world's leading market intelligence agency, predicted that global packaging trends of 2019 would be dominated by packaging with the ability to interact with consumer packaging through eye-catching visuals and the application of information technology (Mintel, 2016). The application of information technology can be achieved by accelerating the implementation of augmented reality on labels as a substitution for the label area being reduced. Furthermore, nowadays consumer preferences are also encapsulated in the term 'less means more,' meaning only effective information need be included on the label to ensure the information is delivered (Food Review Indonesia, 2016).

CONCLUSION

The results of an evaluation based on brand awareness and technical constraints show that a label size reduction of 50% can be implemented by Teh Pucuk and Pulpy Orange. Meanwhile, Pocari Sweat, Coca Cola, and Mizone can reduce their labels' sizes by 35.82%., 27.5%, and 25.29%, respectively. In addition, a label size reduction of 25% can be implemented by Teh Botol Sosro, Floridina, and Orange Water. Several products' label sizes could not be reduced, namely Teh Gelas,

Nutriboost, Good Day, Nescafe, and Kopiko 78°, because any label reduction could result in respondents failing to recognize the product. Meanwhile, the labels for Sprite and Fanta cannot be reduced because the current sizes of both labels are the minimum size able to contain all the information required to be included. Moreover, a larger label size does not ensure that consumers' ability and response time in recognizing certain products will be faster. Therefore, a reduction in the size of the label can be a more effective marketing strategy based on the implications for contributing to reductions in environmental damage and the synergy between the recycler and the company in realizing systematic waste management.

This research is limited to five categories of RTD beverages (RTD tea, carbonated drinks, RTD juice, isotonic drinks, and RTD coffee) and brands listed as a top brand in 2016 per each category that uses plastic bottles with label films attached as packaging. In accordance of this research result, it would be highly appreciated for future research to cover such topics as the re-arrangement of label designs according to the proposed label size, economic calculations related to label size reduction scenarios, and scenarios of substituting label materials. This further research could be complementary and could advance research to minimize the waste issue to an optimum level.

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