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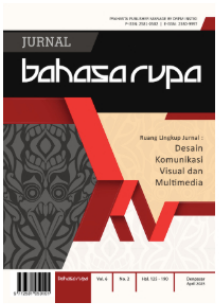

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The Influence Of Snack Portion Size Design On Teens And Young Adults Consumption

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Abstract

This research is motivated by the trend of snacks with a salty or sweet taste which have become part of people's lifestyles, especially among teenagers and young adults. Snacks portion that exceeds the serving size has an unfavorable impact on the body's calorie intake. This study aims to analyze the effect of the size of the snack packaging portion in the form of one serving (individual pack) and family portion (family pack), on the eating patterns of teens and young adults. The population in this study were active students from several universities in Bandung, Indonesia. Data collection was done by distributing questionnaires to respondents. The study was conducted using descriptive statistical calculations and inferential statistics, namely the comparison between respondents' preferences for the choice of snack packaging that is packaged according to the serving sizes and packaged in larger sizes. Teenagers and young adults choose snacks with larger packages, both from the salty and sweet snack groups. Larger packaging sizes dominate purchasing decisions. They consume more snacks if served in larger packages. Consumers prefer large packaging which is more economical because small packaging does not have a visible added value. Individual packaging is only effective when carried or when you want to eat less snack. Based on the conclusions, further research that focuses on increasing the value of single-serving packages, how to pack family-sized snacks (family packs) to increase awareness of snack portions, or how other efforts can be made to change the behavior of eating excess snack portions can be further explored.

Keywords: *individual packaging, packaging design, serving size, snack*

Abstrak

Penelitian ini dilatarbelakangi oleh tren camilan dengan rasa asin atau manis yang sudah menjadi bagian dari gaya hidup masyarakat khususnya kalangan remaja dan dewasa muda. Porsi makan camilan yang melebihi takaran saji berdampak kurang baik pada asupan kalori tubuh. Penelitian ini bertujuan untuk menganalisis pengaruh besarnya porsi kemasan camilan dalam bentuk satu kali takaran saji (individual pack) dan porsi keluarga (family pack), terhadap pola makan remaja dan dewasa muda. Populasi pada penelitian ini adalah mahasiswa aktif dari beberapa universitas di Bandung, Indonesia. Pengumpulan data dilakukan dengan membagikan kuesioner pada responden. Kajian dilakukan menggunakan perhitungan statistik deskriptif dan Wilcoxon Sign-Rank test, berupa perbandingan antara preferensi responden terhadap pilihan sajian kemasan camilan yang dikemas

sesuai satu kali takaran saji dan yang dikemas dalam takaran yang lebih besar. Remaja dan dewasa muda memilih camilan dengan kemasan yang lebih besar, baik dari kelompok camilan asin maupun manis. Ukuran kemasan yang lebih besar mendominasi keputusan pembelian. Mereka mengonsumsi lebih banyak porsi camilan jika disajikan dalam kemasan besar. Mayoritas responden menyatakan lebih menyukai kemasan berukuran besar dengan alasan ekonomis karena kemasan kecil tidak memiliki nilai tambah yang terlihat. Kemasan individual hanya efektif saat dibawa atau saat ingin makan sedikit camilan. Berdasarkan simpulan, maka penelitian lanjutan yang berfokus pada peningkatan nilai kemasan sekali saji, cara mengemas camilan berukuran keluarga agar meningkatkan kesadaran porsi memakan camilan, atau upaya lain, dapat dilakukan untuk mengubah perilaku memakan porsi camilan berlebih.
Kata Kunci: *desain kemasan, kemasan individual, makanan ringan, takaran saji*

1. INTRODUCTION

Food is a basic human need that according to Maslow, ranks first out of a series of other needs. Every individual needs a certain amount of food to maintain his life. By economists, food is used as an indicator of the level of people's welfare, therefore food takes an important part of the culture [1]. Snacks are foods consumed to postpone the feeling of being hungry, provide an adequate supply of energy for the body [2] and the consumption timing separated from main meals [3].

The function of snacks is to temporarily relieve a person's hunger and can provide a little energy supply to the body or is something that is eaten to enjoy its taste. Products that are included in the snack category are all snacks made from potatoes, tubers, cereals, flour or starch and nuts in the form of chips, crackers, *jipang*[4], in addition, fish-based processed foods in the form of crackers or chips are also included in the snack category [5].

Today, snacks have become an inseparable part of everyday life for both of people living in urban or rural areas, especially among children and adolescents. Moreover, types of snacks are very diverse in terms of form as well as the way of processing, presentation and also advertisement [6]. Snacks sold in public places have been prepared or cooked in advance at the production site, at home, or in the market that they are ready to eat. Nevertheless, considering the behavior of consuming snacks, it is expected to continue to increase, given the increasingly limited time for family members to process their food. The advantages of snacks are that they are cheap and easy to get, and the taste is good and delectable for most people [5]. Practicality factor also affecting snack consumption for people, as buying food, carrying heavy goods, making food from raw material, and preparing food were proven challenging in modern lifestyle [7].

Therefore, modern lifestyle, social, and economic conditions of the community are inseparable from how food provide to society. Some snacks are packaged in smaller sizes that are intended for one person to be consumed at one time. This is done because the number of family members is getting smaller, there is a habit of eating snacks while traveling, and concern for a healthy lifestyle. The number of snacks consumed does not always require large packaged portions. Individual packaging which is smaller in size has the advantage that the price seems more economical. In other hand, individual packaging also serves to maintain the taste of the snack. Describing the snacks also deliver this paper into the major flavor contains inside the type of snacks. Snack preference which have salty or sweet taste (unfortunately low in nutritive value) were consumed by children and adolescents — the highest among other age groups [7] as per also shown in Figure 1 [8].

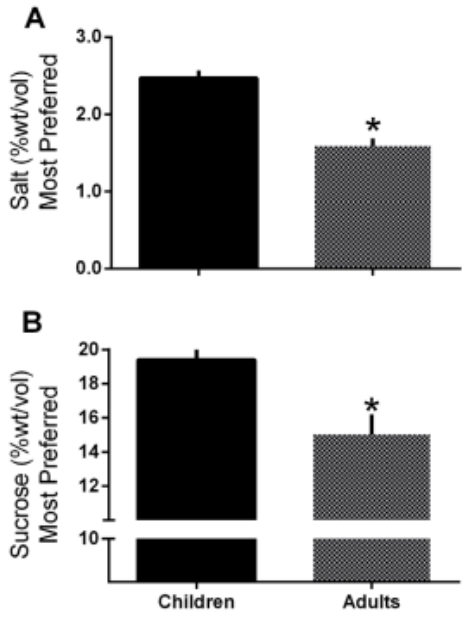

Figure 1. Comparison snack flavor children- adults [8]

Therefore, this research assumes that the habit of consuming unhealthy snacks due to its practicality and tasty to the palate will lead to overeat, thus harmful for our health, especially for teenagers. Our assumption were also proven by Fayasari et.al., which mention that increasing fat percentage in teenager were associated with sweet type of food consumption as their regular intakes [9], and eventually will associate to their stress level [10], emotional and behavioral status one this practice became habit [11].

Thus, through this study, authors were aimed to analyzed whether the individual packaging of snack products affects the number of servings of snacks, does the design of snack packages affect the number of servings of snacks (or the portion of one intake).

2. LITERATURE REVIEW

2.1 Snack Consumption

One of the reasons for the recent increase in food consumption was suggested by previous researcher [12] as they proposed that the rising prevalence of big portion sizes sold to the American population is closely tied to the rising trend of obesity. The information in Figure 2. was obtained through their analysis. The number of larger serving sizes introduced to the US market is shown by the USDA food consumption data in this graph. The introduction of greater portion sizes results in an increase in the amount of food consumed.

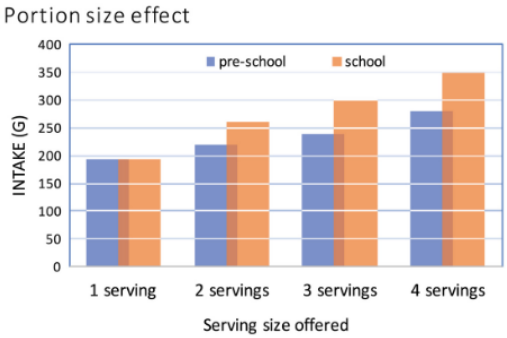

Figure 2. Children and adolescents portion size effect and overconsumption [13]

The results of this study support earlier research in adults and teenagers that giving larger servings encourages greater food consumption. These findings are also in line with research showing a clear correlation between food consumption and the size of the serving container. Therefore, these results firmly back up the claim stated by Levitsky and Youn [12], that the apparent rise in overweight and obesity in modern society may be mostly due to an increase in portion size.

Other studies revealed that compared to bigger regular-size packages, food in smaller portions would be consumed less when offered in 100 kcal sizes [14]. However, it was also discovered that the day of the week and the order in which the products were delivered also affected how much energy was used. It appears that eating the first 100 kcal snack product reduces how much is later consumed from the normal size pack, indicating that portion-controlled packaging can improve awareness of portion size that endures even when larger packs are made available.

Potentially, giving participants 100 kcal snacks for a week seemed to have the potential to increase their awareness of meal portion size and result in fewer portions even without the use of portion-controlled packaging.

It is not surprising that consumers were aware of the larger packaging offered, and that they tended to purchase these products [15]. In addition, the decision to buy food also comprise with product shape and packaging even though the size is not the main

expectation when buying the product [16]. Different packaging sizes create different opinions depending on purchasing power, different classes of people, and the size of the family. If the price is reasonable, some customers like to compare the size to the cost. [17]. It also depends on the packaging design and the alternatives available.

Another factor that affects snack consumption is the packaging's visual bias, which starts as soon as they pick up the container or plate [18]. Despite the fact that packaging design must include volume and weight information, the majority of consumers infer volume by looking at the package size or the size specified on the label. Therefore, size and shape-related visual cues might result in significant estimation mistakes [19]. First of all, while having a fair amount of accuracy when estimating small portions of food, people tend to grossly underestimate large portions of food.

People's underestimation of variations in the height, width, or length of packages or portions is not the cause of this biased perspective. Instead, they are the product of people's irrational belief that these size changes are additive as opposed to multiplicative [20]. It is because of this incorrect application of the additive heuristic to the multiplication size estimation problem that elongated packages appear larger than packages with lower height-to-width ratios and that an object that has been scaled down by 24% when it is elongated appears to have shrunk by only 2%. The significant elongation distorts size perception even when people are asked to weigh items by hand because vision is superior to other senses in this regard.

Physiology research and sensory studies frequently report a positive correlation between food palatability and consumption volume; this correlation has been shown in the absence of significant environmental influences. People frequently assume that how much they eat is largely determined by the food's flavor [21]. No matter how tasty the food is, daily contextual factors like portion size, distraction, and other people's presence may lead to increased food intake. As a result, the environment we live in may have more to do with how much we eat than the taste or quality of the food, within a fair range.

Taking into account the fundamental effects of external cues, such as: packaging and portion sizes. In average, doubling the size of the container increases intake for both adults and youngsters by 18% to 25% for food-related quantities (such as spaghetti) and by 30% to 45% for various snack-related meals. These huge portions and packaging may lead to an increase in some people's intake since they indirectly suggest higher standards of consumption, or what could be considered "normal" or "acceptable" amounts to consume. Adults at Super Bowl parties, for instance, self-served 53% more Chex mix when provided in a 4-liter serving bowl as opposed to a 2-liter bowl. The cause? The larger dish hints that taking more is "normal" in a subtle way.

Traditionally, Indonesia already has a type of snack consisting of cakes and pastries; both are divided into sweet and salty taste. The Indonesian Food and Drug Supervisory Agency divides food categories and puts this term into Food Category 15.0 - Ready-to-eat snacks. These ready-to-eat snacks include all kinds of salty, savory, sweet, spicy and other flavored snacks.

Other snacks are made from starch (cereals, tubers) with other ingredients mixed, shaped, cut, dried in the sun, directly fried, or baked. This product does not include potato, cassava, or other root chips. Some are made from tubers that are fried directly or roasted.

In addition to the savory taste, [2] describes the characteristics of modern snacks as follows: 1) safe, free from harmful chemicals, toxic materials, and pathogenic microorganisms by applicable food regulations and laws, 2) produced safely, commercially in large quantities with a continuous process, 3) seasoned in the form of salt and additional flavor enhancers, 4) stable in storage and does not require refrigeration to preserve, 5) packaged to be eaten immediately with sizes easy to eat, easy to hold, has a surface which is oily or dry following the production process of the snacks, 6) are sold to consumers fresh made. The snacks in this study are classified as modern snacks as mentioned by Marangoni et al [2] and are not classified as easily perishable snack such as pastries or traditional snacks such as *apem cakes, rissoles*, croquettes, and other fried foods.

Snacks that are packaged and processed have been changed from their original form for convenience and/or safety. Foods that are packaged are made to be more dependable, bacterium-resistant, and portable while also being less perishable. Processed foods frequently include significant amounts of sugars, preservatives, and other substances that create flavor profiles that have been specifically created [22]. Consumers can buy processed snacks in a variety of shapes and sizes. Foods that are canned, frozen, dehydrated, or processed aseptically are the most common places to find it. Although it's not always the case, processed snacks typically have a poor reputation because they're connected to unhealthlyl eating habits.

Today's market is flooded with modern snacks. The demand for personal freedom to eat whatever and whenever one wants is rising quickly in this day and age since people are mobile and have a variety of needs and activity levels. As a result, the snack food industry is also experiencing rapid growth. The phrase "snack food" will change along the process and come to mean "fun food" and "good food" [2].

There are several extra advantages in this contemporary day in addition to savory and delightful snacks. They are safe and free from hazardous substances, dangerous chemicals, and pathogenic microbes. They don't need to be refrigerated to preserve food because they have a lengthy shelf life. They are typically made to be convenient; they are normally sliced into small pieces, simple to handle with fingers and can be oily or dry according to the teens and young adults' preference.

Snacks that are freshly made are now easily accessible. To keep the crispness of the product, slow down the oxidation of natural oils, and get rid of oxidation catalysts, this is typically accomplished by utilizing packing materials that repel moisture, oxygen, and light. Utilizing nitrogen as a humid packaging atmosphere and/or an authorized antioxidant system for added oil preservation can also accomplish this. The package is date-coded for safety as an additional security measure to enable the removal of expired food from the shelf [2].

In summary, despite the fact that processed snacks are often linked to unhealthy diets, purchasing processed snacks has several benefits for customers in terms of convenience, taste, safety, and health.

2.2 Packaging Design

According to Kotler and Armstrong, packaging entails designing and producing the container or wrapper for a product [16], which denotes that designing and producing tasks are included in the packaging process. Protecting the product is the packaging's primary responsibility in order to preserve product quality.

Moreover, Nillson and Ostrom in Cahyorini and Rusfian stated that packaging design variables consist of three dimensions, namely: graphic design, design structure, and product information [23] with the following breakdown:

1. Graphic design: Brand name, color, font, and image are the four sub-dimensions that make up graphic design, which is a visual embellishment on packaging surfaces.
2. Design Structure: Shape, size, and material are the three sub-dimensions that make up the design structure, which is related to the packaging's external characteristics.
3. Product Information: One of the purposes of packaging is to convey information about the product through the design of the container. Product details can aid customers in making more thoughtful purchases. [24].

The packaging's dimensions play different roles in producing good and appealing packaging, and customers are more likely to notice packaging that is more appealing.

Packaging is a creative design that considers form, structure, material, color, image, typography, design components, and product information in order to provide and market products to consumers, Packaging can be used to identify and distinguish a product on the market as well as to wrap, protect, deliver, distribute, and store the product [25].

Giles Calver in his book says that packaging emerged in the 19th century because of new technologies enable producers and farmers to pre-packaged their products [26]. For the first

time, this technology is helping farmers produce their product and package it while it's fresh, and transport it to the market. In other words, product manufacturers can attractively package their products so that they can be sold by traders. To achieve a product that is known by the public and creates a new need, packaging with an attractive design is needed to become the initial attraction for consumers.

Packaging can be thought of as a series of messages that appeal to consumers' senses through visual cues. The sort of message conveyed depends on the combination of verbal and visual cues, with visual cues having an emotional impact while verbal cues offer information [24].

Color, shape, size, material, and graphics make up the visual aspects while name, brand, manufacturer, or country of origin, product details, usage guidelines, and special offers make up the verbal ones. Furthermore, a package should be simple to handle, stack, and store. The design team can choose how to make the real package by assessing these phases. The optimal option is both useful and appealing. Therefore, thoughtful packaging is considered a competitive advantage [27]. Stewart asserts that the power of packaging design to engage consumers on an emotional level is what drives decision-making; it is the impact on emotions that gives packaging such power [28].

2.3 Teen Consumption

Previous research shown, that the selection of nutritional habits of teenagers indicating that it was possible that teenager were doing irregular eating, insufficiently taking vegetables and fruit or foods low in fiber [29, 30], higher calories and fat, thus prefer salty and sweet meals [30], which leads to overweight and obesity.

Over the past year, the prevalence of teenage obesity has significantly increased over the globe. Children's obesity, once thought to be an issue only in high-income cultures and nations, is now spreading quickly to low-income and middle-income nations. Children under the age of five who were overweight were concentrated in Asia and Africa in 2018, with the number of African children increasing by slightly under 45% between 2000 and 2018. Childhood obesity has been a problem for a few decades, but with the pandemic's impacts and the national lockdowns seemingly making things worse, it is now an undeniable public health emergency [31]

One of the Indonesian provinces where the prevalence of adolescent obesity is higher than the national average is Yogyakarta. Yogyakarta has a 6% obesity prevalence rate, which is the highest in Indonesia. Teenagers consume snacks 3 times a day at 3 to 8 PM. The type of snack that is often consumed is salty snacks (such as chips and fried foods) with a percentage of 35% [29].

The approach produces a core group of more major snacks and a range of lesser-important foods, with the 10 most prominent items given Table 1. This is typical of the cultural domain. Traditional snacks like dumplings and cilok are regarded as being less significant than modern snacks like chips, pastries, puffed snacks, fries, and ice cream. Taste is the main factor driving snack food consumption, followed by convenience, cost, filling, and other foods alternatives, with only one respondent mentioning health as a factor [32].

Table 1: Freelisting Exercise Identifies the Most Important Snack Foods

No	Local Name	English desc	Type of snack	Freq.	Avg. rank	Smith's saliency
1	Keripik kentang	Potato chips	Modern	21	8.8	0.52
2	Gorengan	Fried snacks	Traditional	24	12.3	0.46
3	Biskuit	Cookies	Modern	27	15.1	0.44
4	kentang goreng	French fries	Modern	23	15	0.39
5	Es krism	Ice cream	Modern	19	13.4	0.33
6	Keripik singkong	Cassava chips	Modern	15	12.2	0.30
7	Chiki	Puffed snacks	Modern	16	14.6	0.30
8	Siomay	Steamed fish dumplings with vegetables and peanut sauce	Traditional	14	14.1	0.27

9	Cilok	Boiled cassava flour made into balls and topped with peanut sauce	Traditional	12	10.1	0.25
10	Makaroni	Fried macaroni fried with spicy or salty seasoning	Modern	10	10.6	0.25

Source: L. S. Blum *et al. [32]*

3. RESEARCH METHOD

3.1 Research Stages

This research was conducted in two stages of data collection. In the first stage, the selected respondents will state the types of snacks they like based on taste (salty or sweet category). The assumptions applied in the first stage to the preferences of favorite snacks, each representing a sweet and salty taste, can be generalized to a wider population. Then in the second stage, respondents with a wider scale will be offered choices of snacks that have previously been declared as snacks, the majority of which are chosen in two packages. The first package represents the packaging that is packaged according to one serving size (individual packaging), and the second package represents the larger package (family packaging). The comparison of packaging weights is shown in Table 2.

Table 2: Snacks Package Weight Comparison

Snacks Brand	Individual (gram)	Family (gram)
Sweet Snacks		
OREO	40	150
POCKY	22	44
TANGO	20	120
HELLO PANDA	25	45
BETTER	12	120
Salty Snacks		
LAYS (chitato lite)	20	60
CHITATO	20	60
CHEETOS (chiki twist)	10	80
PRINGLES	50	100
TARO	20	70

Each package commented on was one sweet category snack food and one salty snack category, each of which was given five choices. Each snack that is chosen will be adjusted to the snack preferences favored by the respondent, so that it is hoped that there will be no bias from the respondent's answer to price and taste. If the selected snack does not have both types of packaging (individual packaging and family packaging), then a fictitious design adapted to the original design will be provided for the respondent.

The research to determine whether individual packaging can support the proper portion of snacks will be based on the hypotheses that there is no difference between the portion of one snack meal and the recommended serving size of individually packaged foods, as well as the hypothesis that there is no difference between the number of servings of snacks on packaged foods that are not in accordance with one serving size.

The study will be carried out using inferential statistical calculations within the subject, namely the comparison between the preferences of each respondent for two snack packages packaged according to the serving size compared to the same snack in a larger package.

Participants who were recruited in this study were purposive participants, with an age range of 14 to 30 years, liked snacks, and then stated the type of snack food in question. Participants will be dropped if they do not like the snack or cannot mention the type of snack they like. The sample selection was carried out purposively as a representative of the tastes of the target teenagers and young adults who like snacks

3.2 Preliminary Surveys

Limited questionnaires have been distributed to 43 active students at a private university in Bandung, regarding the choice of salty and

sweet snacks which are open-ended questions. Participants consisting of 26 women and 17 men stated their willingness as respondents, however, one person was dropped from the participants because she/he did not like snacks.

Each of the top five most popular snacks, as determined by the initial data distribution, is as shown in the word cloud FIgure 3. Snack choise preference in preliminary surveys

As the result of preliminary data collection, the following figures (Figure 3 and Figure 4), showing the comparison of the portions of favorite snacks packaged in two size: individual and family packaging. All of the figures were show in the second stage of data collection.

Figure 3. Snack Choice Preferences in Preliminary Study

Figure 4. Salty Snack Choice Preferences in Preliminary Studies

Figure 5. Sweet Snack Choice Preferences in Preliminary Studies

4. RESULT AND DISCUSSION

The second stage participants consisted of 207 people who were distributed purposively to the first questionnaire target, with the expansion of snowballing to get wider data. Of the 207 questionnaire fillers who have stated their willingness, 41 data are not included in the processing because they do not include the specified inclusion criteria. So that the total data processing used data from 166 participants (female = 112 people, male = 54 people; age 14-28 years on average 20.16). It turned out that during data collection, it was found that the favorite snacks were not evenly distributed among each other, with the order of salty snacks from the most chosen being Chitato, Pringles, Lays, Taro, and Cheetos with a number of voters 51, 47, 36, 18 and 14, while the order of sweet snacks from the most chosen was Oreo, Pocky, Hello Panda, Tango and Better with a number of voters 61, 28, 31, 16, and 10, respectively. Sweet and salty snacks were large, each chosen by 101 and 129 respondents, compared to 61 and 37 small packs.

Through the assumption that the types of salty and sweet snacks chosen are representative of taste preferences for snack choices, a Wilcoxon Signed Ranks test is carried out on the selection of salty and sweet snack packaging. The significant results obtained (0.046 for salty snacks, and 0.000 for sweet snacks) show that purchasing individual-sized packages versus large packages has a substantial difference. Statistical tables are available in Tables 3 to 6.

Table 3: Wilcoxon Sign Ranks Test: Sweet (1)

		N	**Mean Rank**	**Sum of Ranks**
sweet_big - sweet_small	Negative Ranks	57a	62.31	3551.50
	Positive Ranks	94b	84.30	7924.50
	Ties	15c		
	Total	166		

a. sweet_big < sweet_small
b. sweet_big > sweet_small

Table 4: Wilcoxon Sign Ranks test: Sweet (2)

	sweet_big - sweet_small
Z	-4.065[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

Table 5: Wilcoxon Sign Ranks Test: Salty (1)

		N	Mean Rank	Sum of Ranks
salty_big - salty_small	Negative Ranks	65[a]	56.70	3685.50
	Positive Ranks	70[b]	78.49	5494.50
	Ties	31[c]		
	Total	166		

a. salty_big < salty_small b. salty_big > salty_small. c. salty_big = salty_small

Table 6: Wilcoxon Sign Ranks Test: Salty (2)

	salty_big - salty_small
Z	-1.992[b]
Asymp. Sig. (2-tailed)	.046

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

Table 7: Snacks Package Weight Comparison

	N	Minimum	Maximum	Mean	Std. Deviation
salty_small	166	.50	8.00	1.7590	1.09783
salty_big	166	.22	8.00	1.9287	1.36440
sweet_small	166	.50	8.00	1.4849	1.05662
sweet_big	166	.33	8.00	1.9158	1.40739
Valid N (listwise)	166				

Furthermore, through the statement of significant differences between the two large packaging options, it is known that the larger package size dominates the purchasing decision, namely for sweet and salty snacks as many as 101 and 129 voters for large packaging buyers compared to 65 and 37 small packaging buyers. When consuming snacks, it is known that they eat more portions when they consume them in large packages, as follows: the portion of sweet snacks eaten in large packages is 1.91 portions, and 1.49 portions when eaten in small packages. Likewise, for salty snacks, the portion eaten when taken from the large packaged portion was 1.93 portions, and 1.76 portions in the small packaging. Given that both the portions eaten at each meal have completely exceeded one serving, the condition of eating them with the support of the decision to buy them in large packs indicates that the portion of eating snacks is too much from the serving suggestion.

4.2 Discussion

Based on the data obtained from the survey results, it was found out that in general both for smaller packaging (individual packaging) or larger packaging (family size packaging), the majority of participants were eaten snacks too much from suggested serving size, and even worst for snacks packages in bigger size. This condition applied for both salty and sweet type of snack. This exceeded consumption worsens with the buying intention for larger size of packaging due to economic perspectives. In details, the existing condition were break down into:

1. Snacks with large packaging are cheaper than small packaging when measured by weight comparison, so they feel more cost-effective.
2. Large packaging is felt to be more practical in terms of the number of snacks obtained, so there is no need to buy many times.
3. Consumers prefer large packaging for salty snacks to sweet snacks, because salty snacks can be consumed more in one meal. Sweet snacks if eaten too much tends to increase the unpleasant feeling on the tongue (in Sundanese: *giung*)
4. Snacks with large packaging allow consumers to share with friends or family.
5. Satisfaction after consuming snacks was obtained from large packaging compared to small packaging.
6. Most of consumers do not pay attention to the serving sizes listed on the packaging, their consumption patterns are more impulsive

The design of packaging used in this research were manipulated as similar as it could be in visual appearance. Only the size of the packaging has changed. However, the graphic/visual appearance and the message/information conveyed were as similar as possible. Therefore, this condition became one of the reasons why consumers prefer large-size packaging which is more economical because there is no visible added value from small packaging.

Small-size packaging, especially single-serve packaging, will develop and be consumed by teenagers and young adults if the positive values of individual packaging are displayed in the visual design of packaging and snack promotion media. The plus points that can be raised include the following:

1. Individual packaging is more practical to carry or store, single use can be thrown away.
2. Individual packaging is more suitable for diet and health because serving sizes and snack calories can be more easily calculated and controlled. Consumers don't even need to bother calculating the nutritional value and limiting the number of snacks they eat, just one snack from one individual package already meets health standards.
3. Individual packaging is more ecologically friendly because the size of the discarded package is smaller than the large package.
4. Individual packaging guarantees every snack is eaten in good and fresh condition. Large packages that are stored are often opened and closed many times, resulting in spoiled or contaminated snacks. This is also one of the factors that consumers try to spend on snacks in large packages so that they are not damaged when stored, which results in excessive consumption of snacks. Individual packaging in this case also contributes to reducing food waste.

Other study shows by using visual cues or diet prime on snack packaging promotes controlled

eating and activates dietary goals that will cause consumers to eat less portion of snack in a sitting, even in the presence of large amounts of tempting snacks [33, 34]. Resealable snack packaging is also proven to be effective in preventing overeating. The resealable feature in snack packaging indirectly signify that the snacks are not meant to be finished all at once [35]. The size of the large snack packaging was large enough to fit more than one serving, but not big enough to psychologically prevent participants from consuming the whole package of snack [36].

This study is limited to the perception in a considerably limited sample size to emphasize inclusion criteria of younger adults who like to consume snacks with ten brands of snacks and treat each as the top five favorite brands representing salty and sweet flavors.

5. CONCLUSION

Based on the discussion above, it can be concluded that the design of small and large snack packaging, such as without any added value for consumers, overrides the packaging design as a determining factor for buying snacks. Price found as the most important factor that is considered by consumers when buying snacks, most consumers buy snacks with large packages because they are more economical. For further research, focus on the added value of individual-size snack design packaging, or how to pack the family pack snack's design with the emphasis on the awareness of consuming snacks as well as to change the behavior of eating one portion of snacks needs to explore.

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