

Analysis of the colors used in the new cup-ramyeon package designs and their correspondence to flavor descriptions.

새롭게 등장하는 컵라면 제품 패키지의 색채 사용 및 반영된 맛 표현에 관한 분석.

Yoon, Jungwoo_The Catholic University of Korea, Media Technology Contents

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요약

중심어

라면

라멘

패키지디자인

색채활용

라면의 맛과 유형의 종류가 늘어남에 따라 라면 패키지의 색채 활용을 통한 맛 묘사에 대한 분석이 필요하다. 이러한 연구는 전형적이지 않은 유형의 라면이 점차 늘어나고 있으므로 더욱 중요하다. 본 논문은 새롭게 등장하는 컵라면 제품 패키지의 색채 활용과 이를 통한 맛 묘사를 분석한 연구이다. 본 유형의 연구에 가장 적합하다고 판단된 총 여덟 가지의 컵라면 제품들이 샘플로 선정되었다. 모든 샘플들은 전체, 주조색(배경), 일러스트레이션, 로고 배경, 로고 색상들의 측면으로 분석되었다. 두 파트의 설문조사가 진행되었다. 파트 A는 패키지 이미지의 참고 없이 색상의 정보만 제공되었고 파트 B에서는 포토샵을 거쳐 색상의 정보만 제공된 변형된 컵라면 패키지 이미지가 사용되었다. 총 여섯 가지의 연구 결과가 확인되었다. 첫째, 미역국라면과 계란탕면과 같이 컵라면 패키지 표면적으로 식품의 주 재료 혹은 재료들과 유사한 색상이 제공되는 경우 실험 참가자들이 제품에 대한 맛을 쉽게 예측하였다. 둘째, 오투기 카레 라면 혹은 오투기 카레 제품들과 같이 특정 브랜드 혹은 제품 라인에서 오랜 기간 사용한 색상의 조합은 특정 식품의 맛을 상기시킬 수 있다. 셋째, 라면 패키지에서 엑센트 색상과 주조색(배경)이 차지하는 비례는 맛에 대한 강도를 묘사할 수 있다. 넷째, 유사한 분류의 식품 패키지 디자인에서 사용된 색상 혹은 색상 조합의 활용은 보다 근접한 맛의 표현을 제공 할 수 있다. 다섯째, 라면 패키지를 "달콤한"(맛 관점에서) 색상들의 조합으로 제작 할 경우, 육수 혹은 국물이 없는 비빔 유형의 제품이라는 신호를 줄 수 있다. 마지막으로, 한식에서 드물게 사용되거나 한식과 관련이 낮은 색상들의 사용은 제품의 맛에 대한 뚜렷한 정보를 제공하기 어렵다. 본 연구의 분석 및 설문조사의 결과는 향후 라면 패키지 디자인에 유익 할 수 있으며, 특히 색상 선정에 있어 새롭게 등장하는 라면의 맛 표현에 도움을 줄 수 있다.

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ABSTRACT

Keyword

Ramyeon

Ramen

Package Design

Color Expression

As the variety of styles and flavors of ramyeon(ramen) increase, analysis needs to be conducted of the use of color on packaging and how it portrays flavor. This is especially important as there has been an increase in the non-traditional styles of ramyeon. This study analyzes how new styles of cup ramyeon describe flavor through the use of color on packaging. Eight cup-ramyeon products were selected to serve as the samples most applicable to the concerns of this particular study. All samples were analyzed in terms of overall color, dominant color(background color), illustration, logo background, and logo. A two-part survey was conducted: Part A collected information about color without visual reference to packaging, whereas Part B used images of cup-ramyeon packaging photoshopped to display only color. Six findings have been noted as result of the investigation. First, cup-ramyeon packaging that displays colors similar to the color of the main ingredient or ingredients, like miyeok gook ramyeon and gyaeran tang myeon, allowed the survey subjects to easily predict how the product would taste. Second, certain food items and flavors could also be triggered by the particular color or colors used by a brand or product line, such as Ottugi Curry Ramyeon and other Ottugi curry products. Third, intensity of flavor can be portrayed by accent colors and the proportion of background/dominant colors to depiction colors. Fourth, utilizing colors or color combinations of food item packaging in similar categories can provide information about the flavor of a product. Fifth, creating ramyeon packaging in "sweet"(i.e., in terms of flavor) color combinations can signal that a product is bibim-style ramyeon without broth or soup. Lastly, using colors that are unfamiliar or rarely associated with Korean food does not provide any distinct notion of the product's flavor. The analysis and results of this survey will be beneficial to future designs of ramyeon packaging, especially in terms of the use of color selection and combination to describe the flavor of new styles of ramyeon.

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1. Introduction

1.1. Background and Purpose of the Study

New varieties of ramyeon(ramen) products are continually be adding to stores, whereas in the past, only a limited variety of styles were available. Though a small variety of bibim ramyeon, udon, and buckwheat soba do exist, the most dominant and typical styles are red spicy ramyeon and jjajang ramyeon. Since the beginning of the 21st century, the market trend has been to introduce new products, starting with Paldo Kko Kko Myeon and Samyang's Nagasaki Jjambong, which has a white broth instead of red or orange, a sensational change for the time. As one of the top-selling categories in convenience stores, the variety of flavors is only increasing and the variety of styles expanding. Some of the most recent ramyeon products move beyond traditional styles, based mostly on noodle soups. Varieties like miyeok gook ramyeon(seaweed ramyeon), boodae jjigae ramyeon, and gamjatang myeon are noodle soup products to which noodles(myeon) have been added. Traditionally, these soups(gook or jjigae) were served with rice. Korean ramyeon brands are stretching the boundaries and expanding the industry by adding more ingredients. After the Hallyu trend made Korean fried chicken popular, ramyeon brands introduced fried chicken ramyeon, which was a completely new combination of ingredients. Even gim(dried seaweed) ramyeon was introduced and became popular in both Asian and Western markets.

The development of ramyeon products based on the flavors of traditional Korean dishes has been and should continue to be a lucrative global strategy for instant noodle manufacturers. This study focuses on new styles of cup-ramyeon products and how packaging design, and particularly the use of color, communicates to potential consumers the flavor and qualities of the product. This strategy should further differentiate Korean ramyeon from global competitors and lead to the further spread of Korean culture and food around the globe.

1.2. Method and Range of the Study

A review of literature concerning the correlation of color to flavor was carried out first. Sample materials were selected and a color analysis of those materials was performed. A two-part survey was conducted using prepared survey materials. The product samples consisted of new styles of cup-ramyeon selected from Homeplus and Emart, the largest grocery store chains in South Korea. All samples were of a non-traditional style of ramyeon that were in general served with rice or on their own rather than with noodles. New cup-ramyeon products that are not based on traditional Korean dishes and are considered foreign were disregarded as samples. Products from Ottugi, Samyang, and Nongshim were selected as these brands have the largest market share of ramyeon brands in South Korea. Every cup-ramyeon product available from the three brands was considered. However, only eight products were suitable for this particular study. These eight samples were used for the survey, which focused on the correlation between color and flavor descriptions(flavor adjectives) on packaging.

2. Literature Review

2.1. Color and Packaging Design

Packaging design is an important part of the management of a corporation. The structure and visual representation of a package serve as a marketing strategy that brings

everything together.¹⁾ The elements of packaging design include the brand logo, color, typography, product depictions and images, symbolic marks and characters, layout, and product information.²⁾ Of these elements, color visually impacts the consumer the most because it accounts for over 60% of the whole product structure.³⁾ Differentiated colors that eschew stereotypical uses of color serve as a major stimulus to purchase and consumption.⁴⁾ The background color, logo, and product depiction together create the overall color of the package, and so, color must arouse interest and curiosity at the point of sales. Studies demonstrate that typical supermarkets carry between 15,000 and 17,000 items in store, that a customer passes by approximately 300 items in one minute, and that more than 53% of purchases are impulsive. Delivering a clear message of product's taste through colors used in packaging can support consumers to make faster and easier decisions when shopping in stores.

2.2. Development of Ramyeon

Known to have originated in China as napmyeon or lamian (拉麵), the form of ramyeon that we are familiar with today was invented in 1958 in Japan by Ando Momofuku of the Nissin Foods Group. Korean ramyeon was first produced by JeonJoong-Yoon, Founder of Samyang Foods, in September of 1963. Along with development of snack foods (boonshik), with the government's encouragement, ramyeon became a favorite of Koreans and the industry expanded rapidly.⁵⁾ Samyang and Nongshim were pioneer brands of ramyeon. In the 1980s, a number of competitors entered the market, including Hangeul Yakult, Chungbo Foods, and Bingrae. Since the late 1990s, Nongshim, Samyang, and Ottugi have been the three largest ramyeon brands in Korea.⁶⁾



〈Image 1〉 World's first instant ramen in 1958



〈Image 2〉 Representative ramyeons products in 1960's
SAMYANG Ramyeon(1963), Lotte Ramyeon(1965), Walseonma(1968)

2.3. Taste and color

Although challenging to express a detailed conception of flavor through color, it is possible to express particular imagery through the arrangement of color. According to Kim's flavor image map, general or gentle flavors can be expressed by soft, warm colors; refreshing flavors can be expressed by soft, cool colors; rich, umami, and calm flavors can be expressed by warm, hard colors; and bitter, sour, and salty flavors can be expressed by cool, hard colors⁷⁾.

1) Gavin Ambrose, Paul Harris. 「Packaging the Brand」. AVA Publishing, 2011, p.14.

2) Ha HS, Lee SM, Kim GW (2015). 「Impact on the perceived taste exotic food packaging and the risk on purchase intention: to adjust the center of the dichroic effect of food preferences」. Tourism and Leisure Research 27(40): 263-78.

3) Kim Jichul. 일반매점 및 인터넷 쇼핑몰의 포장색채 연구, 한국상품문화디자인학회. 17, 2005, p.82.

4) Kim Kiyong, Kim Kyoungmi, 「냉장면류 패키지의 색채 이미지에 관한 연구」, 한국조리학회지, 9(3), 2003, p.127.

5) <https://www.samyangfoods.com/kor/publicity/history/index.do>

6) <http://www.nongshim.com/ramyun/history2>

〈Table 1〉 Literature review of color and taste adjective

Adjectives of Taste	Related Color and Tone	Researchers
Light, clean (not oily)	White, combination of red and yellow	Kim Haksung (2001), Kim Kiyoun, Kim, Kyungmi (2003), Lee Changsu (2005), Shin Hyungjae (2008) Choi Hyungsoon, Kim Youjin, Lee Kyungwoon (2009), Kim Youngseok (2012)
Cool, refreshing	Combination of red and green	
Oily, greasy	Combination of red and orange	
Sweet, delicious	Bright tone, red, orange	
Spicy, hot	Red, combination of red and black	
Deep, rich	Mid-tone yellow	

3. Color analysis of sample representatives



〈Image 3〉 Nongshim's Miyeokgook Cup-ramyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 1〉 Color analysis of Miyeokgook Cup-ramyeon

The dominant color of Ottugi's miyeok-gook ramyeon is dark green, representing the flavor of the seaweed soup on which the product is based. Overall, the colors of bright yellow and ivory also represent miyeok gook as the soup is typically oily from the beef that is stir-fried with sesame oil. Bright red and white logos contrast with the dark green background, and gook “(국)” is emphasized in vibrant yellow. In general, the package design is quite descriptive of the visual appearance of miyeok gook rather than representative of its flavor.



〈Image 4〉 Ottugi's Ottugi Curry-myeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 2〉 Color analysis of Ottugi Curry-myeon

The dominant colors of Ottugi's curry ramyeon are yellow and navy. The bottom product depiction is predominantly dark yellow or light brown, representing the color of curry. Dark navy, contrasting with the background's bright yellow, has been used to make the white product name more prominent. Intense light blue in high chroma is placed behind the product name and logo, drawing more attention to these elements almost like a neon sign. However, the overall design of the packaging is quite similar to other Ottugi curry products that have been around for decades and are visually familiar to most consumers.

7) Kim Young-Seok. "A study on the color expression of package design of ramen." p.79.



〈Image 5〉 Ottugi's Gwangcheon Gim Ramyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 3〉 Color analysis of Gwangcheon Gim Ramyeon

The packaging of Ottugi's Gwangcheon gim ramyeon is predominantly black, which is contrasted with intense red and white for emphasis. Gim, though it is green, appears black, so the dominant color is characteristic. Descriptions of this product visible on the packaging are spicy and crispy, which are shown in black and red.



〈Image 6〉 Nongshim's Gamjatang Ramyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 4〉 Color analysis of Gamjatang Ramyeon

Gamja tang ramyeon(pork back bone stew) uses different tones of yellow and brown to portray the deep and thick bone broth of gamja tang. The red accent used in the left-hand image indicates the spiciness of the ramyeon. Hint of green is used in the illustration since Gamja-tang usually have sprinkled cut sesame leaves as key toppings.



〈Image 7〉 Samyang's
Wanggalbi-tongdak-bokkeummyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 5〉 Color analysis of
Wanggalbi-tongdak-bokkeummyeon

A limited range of color was used for the packaging of Wang galbi tongdak bokkeum myeon, predominantly red, orange, and yellow. The flavor adjectives are sweet and salty. The use of yellow as the dominant color mixed with red and orange tones represents both the sweetness and spiciness of the product. Unlike most ramyeon products, the packaging lacks any green coloration because the flavor of the product is sweet and sour fried chicken, which does not come with any green vegetable toppings. Sweet and sour fried chicken itself is an orangeish red.



〈Image 8〉 Nongshim's Yangnyeum-Chicken Ramyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 6〉 Color analysis of Yangnyeum-Chicken Ramyeon

Yangnyeum chicken ramyeon uses the rare color combination of dark orange against dark blue. In general, shades are rarely used on the packaging of ramyeon products or other food products because blue has no common association with a delicious flavor. However, the color is associated with the nighttime, the period of time during which Koreans typically like to eat yangnyeum chicken, especially as late-night delivery. Although dark blue does not represent a particular flavor, it creates a strong contrast with the image of the orangeish red ramyeon depiction at the bottom, drawing attention to the image.



〈Image 9〉 Nongshim's Gamjamyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 7〉 Color analysis of Gamjamyeon

Gamja myeon(potato noodles) uses black as its dominant color with contrasting white. Potato is a subtle and complicated flavor that is difficult to describe, especially since the flavor varies depending on the method of cooking, as it does for rice and noodles. Despite the product name, the flavor description on the packaging is of a deep and spicy shabu-shabu broth.



〈Image 10〉 Samyang's Gyaerantangmyeon

Overall Color	
Dominant Color (Background)	
Illustration	
Logo Background	
Logo	

〈Chart 8〉 Color analysis of Gyaerantangmyeon

The packaging of this gyaerantang myeon(Korean-style egg drop soup) is almost entirely bright yellow, in imitation of the color of gyaerantang. Compared to the other samples of cup ramyeon, the depictions are quite minimal.

4. Survey

4.1. Method of Survey

The top and front face of selected samples were analyzed as these are the faces most commonly displayed in all platforms where the product is purchased. The color of the background, depiction, logo, logo background, and the overall color were analyzed, since

according to Kim, these elements were the most active visual stimuli for consumers. Flavor adjectives describing each sample were collected to compare with each sample's color scheme. The adjectives collected generally describe the taste, texture, and representative ingredients of each product. As all samples were atypical varieties of ramyeon based on traditional Korean dishes, adjectives mostly reflected the qualities of the original dish. For example, Miyeok gook ramyeon is described as having a “deep, beefy flavor.” Yangnyeum chicken myeon is described as “sweet and spicy,” which is generally characteristic of yangnyeum chicken. Survey material was prepared with photoshopped images of the sample's packaging and a flavor adjective list. Logos were replaced with similar shapes of the same color, all flavor– and ingredient–related words were replaced with filler letters, and product depictions were blurred.



〈Image 11〉 Images of photoshopped samples used in survey

The survey was divided into two parts. Part A only provided the packages' color combinations with color information categorized into overall color, dominant color (background), depiction, logo background, and logo. Total of 47 subjects participated in the survey, with ages ranging from the early to late 20s; the number of sales of ramyeon is the highest for this age group.⁸⁾ Participants were asked to indicate the adjectives that they felt most closely described the product either by selecting from the provided flavor adjectives list or by providing their own descriptions. Participants were asked to focus on the dominant color while referring to all listed colors. Part B consisted of the photoshopped images of packaging. The categories from Part A were also included but were only displayed visually. The following questions were asked in the survey.

Part A(A1–A8)

1. What flavor does the sample color analysis provide? Why? (Focus on the overall and dominant colors)
2. Can you associate any Korean dish with this given color analysis? Why? (Focus on overall and dominant colors)

Part B(B1–B8)

1. Are you familiar with the product? Yes/No
2. What flavor do the sample images suggest? Why?
3. Can you associate any Korean dish with the images provided? Why?

4.2. Survey Results

The adjectives used to describe the beef miyeok gook ramyeon were “beefy” and “deep.”

8) Marketing Information Service 'LinkAztec'.

A few participants provided additional descriptions of “fresh”(11.11%) and “clean” (8.33%) in Part A and “salty” in Part B. Although no distinct taste came to mind, most participants responded that the color scheme did remind them of miyeok gook, 45.45% in Part A and 72.73% in Part B. The detailed explanation given for this association was that few good traditional Korean dishes include these colors; miyeok gook is the most common dish with shades of green.

As for Ottugi’s curry ramyeon, there was little correlation between its style(curry) or the description of the dish as a little spicy. Participants associated the color scheme with descriptions of “not delicious” and “cold” and a variety of opinions as to flavor, including “deep,” “salty,” and “clean” in Part B. Because blue is a dominant color, a few participants suggested that this reminded them of cold dishes, including nengmyeon and neng-gook. Besides these two, there were few other additional descriptions in Part A. However, 66.67% responded that the product might be a curry dish because the curry-based products of this brand had been around for so long and the design of the packaging is unique.

The survey results for Gwangcheon gim ramyeon were quite consistent between Parts A and B. Respondents mostly described the product as “spicy,” with a few describing it as “too spicy.” As to what dish the colors suggested, responses varied. However, every suggestion was also a rather spicy dish, such as booldak-bokkum, maeuntang, and yookgaejang. Thus, for the participants, the colors did match the description of the flavor on the package(“spicy”) but did not match with the “crispy” description.

Gamjatang ramyeon is described as deep, and in both parts of the survey, the participants responded with the same description. Because of its overall brown tones, in Part A most participants responded that the colors reminded them of dwenjang gook; however, in Part B 59.09% responded that it reminded them of boodae jjigae. The variety of colors in the depiction of boodae jjigae shows the typical variety of mixed ingredients, which makes it more colorful. Dwenjang gook is generally less colorful than boodae jjigae.

Wang galbi tongdak bokeum myeon did look “sweet and spicy” to most participants in both parts of the survey, though more so in Part B. In Part A, no particular dish came to the mind of participants, who gave varied responses. In contrast, in Part B almost every participant responded that the product was bibim-myeon or jjol-myeon, which are quite similar dishes. This association can be explained by the relation of the style of this ramyeon and the flavor adjectives used on the packaging: “sweet and spicy bibim ramyeon, similar to bibim-myeon and jjol-myeon.”

Yangnyeum chicken ramyeon produced some interesting survey results. In Part A, most responses described the product as “not delicious” and participants struggled to describe the sample because of the uncommon dark blue color, which it was difficult to associate with any Korean dish. In Part A, most responded that the product could be boiled fish, such as godeunguh jorim(boiled mackerel with sauce) because of the dark blue color. Although the color combination in Part A did not match with the product, in Part B respondents did describe the product as “spicy”(22.58%) and “sweet”(12.90%).

The gamja myeon ramyeon is described as “deep,” “spicy,” and “chewy.” However, the participants’ responses were varied, with the description of “sesame-savory” the most common(15.15% in Part A and 17.14% in Part B). A portion of the participants(11.43%) mentioned that the colors on the package seemed to indicate that the flavor of the product would be “deep,” as the packaging itself indicates. The responses to A2 were varied; however, 28.21% responded that the product remind them of rice dishes. In B2, 71.43%

responded that the product looked like gamja tang, with the remaining participants responding that it reminded them of dishes in which potato is the main ingredient, such as gamja gook, gamja jeon, and gamja ongshimi.

Lastly, for the gyaeran tang myeon ramyeon, most participants in both parts of the survey responded that the colors reminded them of gyaeran tang and/or gyaeran gook(93.76% in B2 and 25% in A2). The product reminded 10.10% of participants of dduk gook. the most common flavor adjectives selected were “mild”(10.61%) and “smooth”(10.61%) in Part A and “sesame-savory”(21.43%), “clean”(14.29%), and “smooth”(11.90%) in Part B.

〈Chart 9〉 Survey Results

Sample	Taste/Flavor Adjectives	Part A-1	Part A-2	Part B-1	Part B-2
Beef Miyeok-gook Ramyeon <Ottugi>	Beefy/Deep	Fresh(11.11%), Clean(8.33%)	Miyeok-gook(45.45%)	Salty(23.53%)	Miyeok-gook(72.73%)
		Bitter, Not tasty, Fishy, Salty	Sook-gook(Mugwort soup), Spinach, Pajeon(Scallion pancake)	Warm, Sesame-savory	Maesangee-gook (Seaweed Fulvescens Soup), Jeonbook-jook (Korean style abalone porridge)
Ottugi Curry Ramyeon <Ottugi>	Little Spicy	Not tasty(17.81%), Cold(9.59%)	Nengmyeon(7.5%), Neng-gook(7.5%)	Rich, Salty, Clean(11.11% each)	Curry(66.67%)
		Chewy	Fish-jorim(Braised fish), Curry, Kongbiji-jjigae (Pureed soybean stew)		Kongbiji-jjigae(Pureed soybean stew), Dwenjang
Gwangcheon Gim Ramyeon <Ottugi>	Spicy/Crispy	Spicy(44.59%), Very spicy(9.46%)	Booldak-bokkeum(16.67%)	Spicy(57.41%), Rich(12.96%), Very spicy(5.56%)	Maeun-tang(18.18%), Yookgaejang(13.64%)
			Gochujang, Gochu-garu (Korean chili power)		Spicy kalgooksu, Kimchi-jjigae, Kimchi soup, Jjambbong
Gamjatang <Nongshim>	Deep/Thick	Savory(19.74%), Warm(15.79), Soft(11.84%), Sweet(9.21%)	Dwenjang-gook(36.36%)	Savory(18.92%), Salty(13.51%),	Booda-jjigae(59.09%)
			Sweet pumpkin, Sweet potato, pumpkin porridge		N/A
		Rich flavor			
Wang-galbi Tongdak Bokkeum- myeon <Samyang>	Sweet/Salty/ Garlic (Spicy Flavor)	Spicy(21.54%), Sweet(12.31%),	N/A	Spicy(35.38%), Sweet(10.77%), Salty(9.23%), Chewy(7.69%) Very spicy(7.96%)	Bibim-myeon(64%), Jjol-myeon(32%)
		Warm	Jaeyook-bokkeum, Red spicy jjigae		Haemool-jjim (Braised spicy seafood), Nakji-kongnamool-jjim(Braised spicy ctopus-beanspouts), Bbyeuh-jjim(Braised back ribs)
Yangnyeum- Chicken <Nongshim>	Sweet and Spicy	Not tasty(22.95%), Salty(11.48%), Cold(6.56%)	Fish-jorim/Mackerel-jorim(Braised fish/mackerel)(30.43%)	Spicy(22.58%), Sweet(12.90%)	Bibim-myeon(55.33%)
		N/A	Nengmyeon, Neng-gook, Patbingsu (Adzuki-bean ice dessert)	Not tasty, Cold	Jjim-dak(Braised chicken), Dak-bokkeum-tang (Braised spicy chicken), Yangnyeum-chicken (Seasoned spicy chicken)

Sample	Taste/Flavor Adjectives	Part A-1	Part A-2	Part B-1	Part B-2
Gamja-myeon/Potato Rameon <Nongshim>	Deep/Spicy/ Chewy	Sesame-savory (15.15%), Clean(9.09%)	N/A	Savory(17.14%), Rich(11.43%)	Gamja-tang (Pork back-bone stew)(71.43%)
			Tteok-galbi(Grilled short rib patties, Grilled eels, Bbundaegi(Canned pupa), Pajeon(Scallion pancakes), Muk(Korean style jellied food)		Potato soup, potato pancakes, Gamja-ongshimi (potato dough soup)
Gyaerantangmyeon/Egg-Soup Rameon <Samyang>	Sesame-savory	Mild(10.61%), Soft(10.61%)	Egg related food(25%), Dduk-gook(Rice-cake soup) (10.10%)	Sesame-savory (21.43%), Clean(14.29%), Soft(11.90%)	Gyaerantang(Egg-Soup) (93.76%)
		Bland, clean, sweet	Curry, pickled radish, pumpkin porridge	Bland, warm	

5. Conclusion

5.1. Summary of Conclusion and Suggestion

Cup ramyeon packaging that makes use of colors to indicate its ingredients, such as Miyeok gook ramyeon and Gyaeran tang myeon, readily remind consumers of the dish on which the ramyeon is based. However, using only such colors can be risky if these colors are not commonly associated with ramyeon products and visually unfamiliar to consumers. For example, few of the survey participants commented that the Miyeok gook ramyeon's dominant color, green, looked delicious.

Although most did not describe the colors of the packaging of Ottugi's curry ramyeon as "delicious," it was recognized as a curry ramyeon because of the familiarity of consumers with the packaging of Ottugi's curry-based products. The results of the survey demonstrate that following color combinations of an existing brand or existing product trigger consumers' memories of certain dishes.

Although the dominant color on the packaging of Gwangcheon gim ramyeon was black, the majority of participants found that it looked very spicy, and for some, it looked too spicy because of the depiction's use of bright red as an accent color. This shows that the considered use of accent colors can portray intensified flavors. Overall, Gamja myeon ramyeon has similar colors, but people assumed that it was a more subtle flavor. This may be because the greater variety of color in the depiction and that there was less contrast between the dominant color and the color of the depiction as compared to Gwangcheon gim ramyeon.

The colors used in Gamja tang ramyeon actually reminded many participants of boodae jjigae. Both boodae jjigae and gamja tang are favorite Korean hotpot dishes (typically served to be shared) with a variety of ingredients. Utilizing colors and color combinations of dishes or ingredients in a similar category could provide flavor information about a product.

Most participants responded that the colors on the packaging of Wang galbi tongdak ramyeon looked "sweet and spicy" and reminded them of sweet and spicy bibim-style myeon. Color combinations that suggest sweetness could remind consumers of bibim style ramyeon without broth or soup, as there are few traditional Korean soup dishes that are sweet or, even rarer, sweet and spicy.

Using unfamiliar colors, such as the dark navy of the packaging of Yangnyeum chicken ramyeon, challenges participants because this is not associated with tastiness and it is difficult to find a Korean dish that include ingredients of any shade of blue.

Because of the continuing introduction of new styles of ramyeon products, this study will assist manufacturers in the design of packaging for their products, prompting the more considered and effective use of color as a means of communicating a product's flavor.

5.2. Limitations of the Study

First, as the study is focusing on Korean dishes and Korean ramyeon products that are not proper English nouns, names and spellings of some dishes and ingredients can be called or spelled differently.

Second, survey participants were ages ranging from early to late 20's, the results may vary depending on different age groups. The found results cannot serve as a reference for targeting groups other than ages of 20's.

Third, although participants were made sure to respond on questions only on samples that they are unfamiliar with, the products may have been subconsciously exposed as the age group of participants are most frequent shoppers of cup ramyeons. There is a need to seek for improved survey methods in future regarding this matter.

Lastly, photoshopped sample images could still have provided unintended suggestions about the products, since some illustrations, although blurred or replaced, still may look like certain symbols and shapes of objects that can create distraction from obtaining precise results.

Reference

- Gavin Ambrose, Paul Harris. 『Packaging the Brand』. AVA Publishing, 2011, p.14.
- 김기영, 김경미, 『냉장면류 패키지의 색채 이미지에 관한 연구』, 한국조리학회지, 9(3), 2003.
- 김지철. 『일반매점 및 인터넷 쇼핑몰의 포장색채 연구』, 한국상품문화디자인학회. 17, 2005, p.82.
- Choi Min Kyoung, Nah Ken 『An Analysis of Myself Generation's Buying Motives and Package Preferences for Home Meal Replacement Products -Focusing on the Case Studies of Food-tech Startups』 The Korean Society of Design Culture Vol.23(4), 2017.
- Ha HS, Lee SM, Kim GW (2015). 『Impact on the perceived taste exotic food packaging and the risk on purchase intention: to adjust the center of the dichroic effect of food preferences』. Tourism and Leisure Research 27(40): 263-78.
- HyoJin An, Se-Young Oh, 『Five Views on RAMYEON -Focusing on the Analysis of Newspaper Articles from 1963 to 2012』 The Korea Contents Association, Vol.18, No.9, 2019.
- Jeong Yeol Ryu, Heon-Su Ha, 『A Study on Relationship among Attributes of Ramen Package Design, Ramen Image and Chinese Customer's Choice or Ramen』 Culinary Science & Hospitality Research, 2016;22(4).
- Jeoung Byoung Guk, Jin Doo-Jin, 『Retort Packaging Design and Consumer Buying Preferences of the Relationship of the Elements Discussed -Focusing on Four Curry Domestic Product』 Brand Design Association Korea Vol.8(3), 2010.
- Kim, Young-seok 『A Study on the color expression of package design of Ramen』 Korea Society of Basic Art & Design, 2012.
- Kwang-Ki Kim, 『Ramen as a Tool by which the Essence of Korean Modernity can be grasped』 사회 이론 2010.
- https://en.wikipedia.org/wiki/Instant_noodle
- <http://www.nongshim.com/ramyun/history2>
- <https://www.samyangfoods.com/kor/publicity/history/index.do>
- www.emart.ssg.com
- www.homeplus.co.kr