

# A Study on the Correlation between the Thumbnail Color and the Genre

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## Abstract

The purpose of this study is to investigate the usage of colors in the image by analyzing the webtoon thumbnails used as the representative image like a logo. It is expected that there is the correlation between the genre of webtoon and the color of the thumbnail because of the properties of colors. Accordingly, it will be needed to consider it when the thumbnails of webtoons are designed and produced. To come up with an answer of this question, this study has focused on examining the correlation between the colors and the identity of webtoons by analyzing the colors used in the thumbnails of webtoons. The result of this study is as follow: firstly, The dominant colors of the thumbnails of romance comics are orange, red, and yellow. secondly, Black, grey, orange and red are classified as the dominant color used in the thumbnails of thriller webtoons. Lastly, the dominant colors in the thumbnails of fantasy webtoons are orange, purple, red, yellow and navy. Judging by the above-mentioned results, it is expected that this study has drawn up the guidelines for designing and producing the thumbnails of webtoons.

## Keyword

Webtoon, Thumbnail, Dominant Color, Secondary Color, Genre

## 요약

웹툰은 웹사이트의 ‘웹(Web)’과 ‘카툰(Cartoon)’이 합쳐져 만들어진 신조어이다. 이는 한국 만화계가 역사적, 환경적 위기를 겪으며 그것을 극복하는 과정에서 생겨난 한국 고유의 만화 장르를 일컫는 말이다. 이 연구에서는 웹툰 작품의 대표 이미지, 이를테면 로고처럼 사용되는 웹툰 썸네일을 연구 대상으로 삼아 그것에 사용된 색채를 분석하고자 한다. 썸네일에 사용된 색채는 색채가 갖는 특성 때문에 웹툰 장르에 따라 차이가 있을 수 있으며 이에 따른 상관관계가 있을 것이다. 따라서 웹툰 썸네일을 만들 때 어떠한 색채를 사용할 것인가에 대하여 유념해야 할 필요가 있다. 이러한 점에 착안하여 이 연구는 썸네일에 사용된 색채를 분석해 봄으로써 색채와 웹툰 아이덴티티의 상관관계를 밝히고 나아가 이를 근거로 웹툰 제작자들에게 썸네일 제작의 가이드라인을 제시하고자 한다.

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# 1. Introduction

## 1-1. Background and Purpose

The webtoon, blended the word of web with cartoon, is the indigenous genre of Korean cartoon, which has been created in the process of overcoming historical and environmental crises of Korea cartoon circle. This study aims at examining the color of the image by analyzing the webtoon thumbnails used as the representative image like a logo.

Every color has a personality and affects feelings in a different way, so we will discover how families of color can be used in various situations to create moods. For example, red can be used to create a range of moods, from the comforting and cozy, to the dramatic and regal mood. Orange can be combined with its complementary color, blue, to create a warm and exciting effect. When combined with pale, neutral colors, it creates a calmer, more soothing effect. Yellow works well with its neighbor, green. Its complementary color on the opposite side, violet, provides a strong eye-catching contrast, but not one that many people would find relaxing or soothing. Green is a mixture of blue and yellow, so the green color family reveals a combination of character traits. On the one hand, green imbues a space with a sense of calm and personal retreat, but the more green tends toward yellow, the more fresh and alive it becomes. Violet complements yellow to produce an almost palpable contrast that is warm, rich, and luxurious. Blue can work well with violet, but care is needed to select the rich hues. Blue and green is a classic color mismatch that is often found in nature.<sup>1)</sup>

In addition to these, many studies have examined the color symbol and attained the following results. For instance, black symbolizes death, emptiness, depression, disapproval, sophistication and power. White represents purity, cleanliness, innocence, peace, surrender,

coward, and ghost. Red emblemizes love, passion, sexiness, festivity, war, revolution, prostitution, devil, danger and fire. Pink signifies healthiness, prettiness, sweetness, feminine and baby. Orange emblemizes warmth, fruitfulness, brightness, cheerfulness and brashness. Yellow has the symbolism of cheerfulness, vitality, happiness, hope, optimism and caution. Green represents growth, fertility, freshness, youth, envy and immaturity. Blue symbolizes coldness, sadness and depression. Purple means bravery, mystery, conceit, mourning and rage. Brown represents gloom and boredom.<sup>2)</sup> For such personalities of color, our reactions to different colors are often strong and immediate, and the effects of exposure to certain colors used at works are powerful and long lasting. It is therefore important that they are chosen carefully.

Similarly, for such reasons as mentioned, it is expected that there is the correlation between the genre of webtoons and the color of the thumbnails. The colors chosen for our thumbnails affect the way we understand and maximize our work's potential so that we can enjoy it to the full.

Therefore, it will be needed to consider it when the thumbnails of webtoons are designed and produced. To come up with an answer of this question, this study has focused not only on investigating the correlation between the colors and the identity of webtoons by analyzing the colors used in the thumbnails of webtoons, but also on proposing the guideline of the design of thumbnails to the producers of webtoons.

## 1-2. Study Method and Process

This study has analyzed the website(i.e. <http://comic.naver.com/webtoon/genre.nhn?genre>) which has the most readers of webtoons in Korea. The website has categorized the

1) Chiazzari, S., *Living in Dolor*, Harper Collins Publishers, 2004, pp.10-11.

2) Bandimore(ed.), *Brand & Color: Color Usage in Branding*, Bandimore, 2014, pp.16-19.

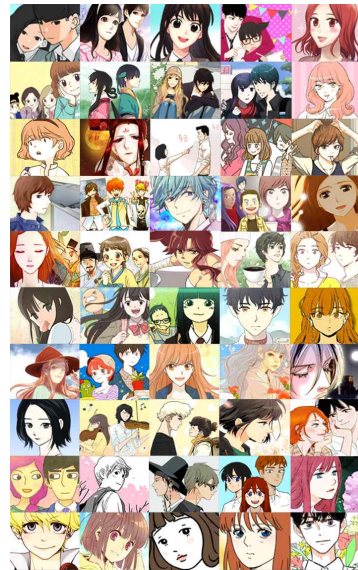
webtoons according to the genre such as episode comics, omnibus comics, story comics, anecdote comics, gag comics, fantasy comics, action comics, drama comics, romance comics, emotional comics, thriller comics, historical comics, and sports comics etc..

This study has selected only three genres(i.e. action comics, emotional comics and thriller comics) of them, which have showed the remarkable differences among them, and then, has conducted the color analysis of the thumbnails targeting a total of 150 comics which have been composed of the representative fifty comics per 1 genre among three genre comics. In other words, fifty thumbnails of each genre have put into one image file by using Munsell color system, and next, their colors have been analyzed and their distribution charts have been mapped by KSCA(Korea standard color analysis). Lastly, their average values have been drawn by using their statistics.

## 2. Analysis and Evaluation

### 2-1. Romance<sup>3)</sup>

According to the above-mentioned order, to begin with, the fifty thumbnails of romance comics have been made into one image file like Figure 1.



[Figure 1] Image File of Romance Thumbnails

Next, the image file of the fifty thumbnails has been put together by using Adobe photoshop program, and on the basis of it, the RGB color has been extracted for distinguishing the dominant color and the secondary color. Then, it has been converted into the color notation of Munsell like Table 1 by KSCA of the conversion program.

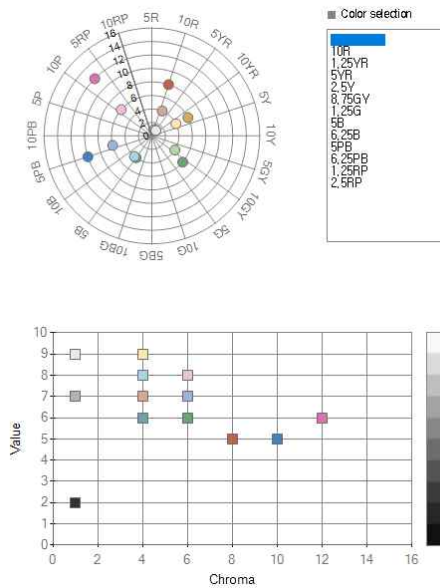
[Table 1] Color Code of Romance Thumbnails

color ratio(%)	KS	L*	a*	b*	R	G	B	C	M	Y	K	KS system color
31.76	KS 5YR 9/1	90.16	2.07	4.52	235	225	218	0	4	7	8	pink white
21.77	KS 5YR 2/1	20.19	3.92	4.08	57	47	43	0	18	25	78	brown-black
10.55	KS 10R 5/8	50.79	31.74	28.65	182	98	72	0	46	60	29	dull red orange
9.12	KS 2.5Y 9/4	90.15	0.57	28.33	243	225	171	0	10	31	2	pale yellow
7.14	KS 2.5Y 7/6	70.8	3.78	40.5	203	169	99	0	17	51	20	pale yellow-brown
6.28	KS 1.25YR 7/4	70.74	14.06	15.14	208	163	146	0	22	30	18	-
5.14	KS 10R 7/1	70.82	3.39	2.83	182	171	168	0	6	8	29	pinky grey
1.91	KS 6.25B 8/4	80.65	-12.0	-11.97	153	208	222	28	6	0	13	bluish black
1.47	KS 5B 6/4	61.17	-13.07	-11.82	107	155	188	36	8	0	34	soft blue
1.19	KS 2.5RP 6/12	60.83	47.43	-14.42	214	112	173	0	48	19	16	deep red-purplish pink
1.06	KS 8PB 5/10	51.09	1.38	-38.64	65	125	189	66	34	0	26	light blue
0.90	KS 1.25RP 8/6	80.43	21.99	-7.58	234	186	214	0	21	9	8	-
0.68	KS 6.25PB 7/6	70.9	1.98	-22.56	154	174	214	28	19	0	16	-
0.49	KS 1.25G 6/6	61.26	-27.55	18.43	106	160	114	34	0	29	37	-
0.46	KS 8.75GY 8/4	80.64	-19.42	20.09	177	209	162	15	0	22	18	-

3) A genre including a story of love, adventure, mystery etc, often set in a distant time or place, whose events are happier or grander or more exciting than those of real life. (Longman Dictionary of English Language and Culture, 2005)

Lastly, its result has been put into Munsell color system and the distribution of dominant colors and secondary colors has been analyzed

like Figure 2.



[Figure 2] Distribution of Colors of Romance Thumbnails

The analytical result has provided that the dominant colors of the thumbnails of romance comics are orange, red, and yellow. Of all the dominant colors, the colors having the two largest proportion are the colors of the orange color family, which are recorded as 31.76% and 21.77% respectively, and both of their Munsell Codes are 5YR. Red and yellow are disclosed as the dominant colors, which have the proportion of 10.55%, 9.12%, and 7.14%. And then their Munsell Code are 10R and 2.5Y, respectively. Accordingly, it can be understood that the dominant colors of romance thumbnails are orange, red and yellow. It is probably because red and orange have good visibility and attractiveness, and also, orange and yellow have the effect of warmth and tenderness. And also, blue, purple, and navy are used as the secondary color, and their proportion is represented as 3.8%, 2.17% and 1.74%, respectively.

This means that the thumbnails of romance

webtoons generally convey the theme of love which has the feeling of warmth by using the shade of warm colors.<sup>4)</sup> And also, the colors which has high brightness and low chroma tend to be used in the thumbnails of romance webtoons, which is in harmony with the main class of readers, namely, the female readers, because of its light and tender mood.<sup>5)</sup>

## 2-2. Thriller<sup>6)</sup>

The following figures and tables have been drawn by the same method used to create the result of romance webtoons.

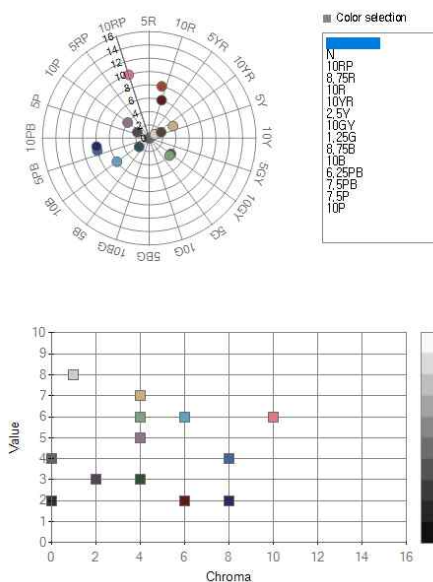


[Figure 3] Image File of Thriller Thumbnails

[Table 2] Color Code of Thriller Thumbnails

- 4) Kim, H. S., Studies on Color Analysis of Character Gender in Kids TV Animation, Journal of Digital Design, Vol.14, No.4, 2014. pp.59-68.
- 5) Yoon, H. R., The Theory of Color Psychology Marketing and Color Matching, Kukje Book, 2008. pp.10-30.
- 6) A genre including a book, play, or film that tells a very exciting story, especially of crime and violence. (Longman Dictionary of English Language and Culture, 2005)

color	ratio(%)	KS	L*	a*	b*	R	G	B	C	M	Y	K	KS system color
	30.47	KS N2	20.23	0	0	49	49	49	0	0	0	81	-
	24.36	KS 10RP 8/1	80.52	1.01	6.81	207	199	187	0	4	10	19	yellowish grey
	12.12	KS N4	40.73	0	0	96	96	96	0	0	0	62	-
	8.38	KS 8.75R 4/8	40.52	34.23	25.88	155	70	55	0	55	65	39	-
	6.6	KS 10R 2/6	20.06	26.28	16.12	87	30	26	0	66	70	66	deep reddish brown
	6.52	KS 2.5Y 7/4	70.82	2.12	27.37	195	170	124	0	13	36	24	pale yellow-brown
	3.14	KS 6.25PB 4/8	40.78	6.39	-33.13	68	96	150	55	36	0	41	-
	2.68	KS 7.5PB 2/8	20.22	15.65	-33.85	36	44	99	64	56	0	61	navy
	2.24	KS 2.5Y 3/2	30.36	1.87	12.65	82	70	52	0	15	37	68	dark greyish brown
	1.07	KS 8.75B 3/2	30.43	-4.26	-8.59	56	74	85	34	13	0	67	-
	0.68	KS 10B 6/6	61.18	-10.27	-21.65	98	155	185	47	16	0	27	soft blue
	0.57	KS 10GY 3/4	30.51	-17.98	13.29	49	79	51	38	0	35	69	deep green
	0.52	KS 7.5P 3/2	30.34	9.5	-7.06	81	67	83	2	19	0	67	dark greyish purple
	0.37	KS 1.25G 6/4	61.18	-17.7	12.88	123	156	125	21	0	20	39	-
	0.26	KS 10P 5/4	50.94	14.91	-7.37	141	113	134	0	20	5	45	dull purple
	0.04	KS 10RP 6/10	60.83	42.25	8.78	219	115	133	0	47	39	14	deep pink



[Figure 4] Distribution of Colors of Thriller Thumbnails

According to the result of the analysis, N2 has covered 30.47% which is the largest proportion of the dominant colors, and N4 is the third with the percentage of 12.12. Orange has been identified as the dominant color, and its Munsell Code is 10YR.

The colors of the red family has been known as the dominant which has the proportion of 8.38% and 6.16%, and their Munsell Code are 8.75R and 10R, respectively.

Consequently, black, grey, orange and red are classified as the dominant color in the thumbnails of thriller webtoons. This means that the associated image of black such as death, darkness, silence, grief and fear etc. is closely connected with the thriller webtoons.<sup>7)</sup> Red which has the image relating with intensity, danger, revolution, power and heaviness etc. has been used as the dominant color, and yellow, navy and blue has been categorized as the secondary color,<sup>8)</sup> and their proportion are 6.52%, 5.82%, and 1.75%, respectively.

And also, the colors of low brightness and low chroma have been used in the thumbnails of thriller webtoons, which is probably because these colors are in accord with the properties of thriller webtoons.

### 2-3. Fantasy<sup>9)</sup>

The following figures and tables have been generated by the same method used in the above-mention genres.

- 7) Yoon, H. R., The Theory of Color Psychology Marketing and Color Matching, Kukje Book, 2008. pp.157-158.
- 8) Ibid., pp.148-149.
- 9) A genre including stories about imaginary worlds which often involve magic. The characters are often searching for an object which will cause good to win over evil, and they usually fight with swords rather than modern weapons. (Longman Dictionary of English Language and Culture, 2005)

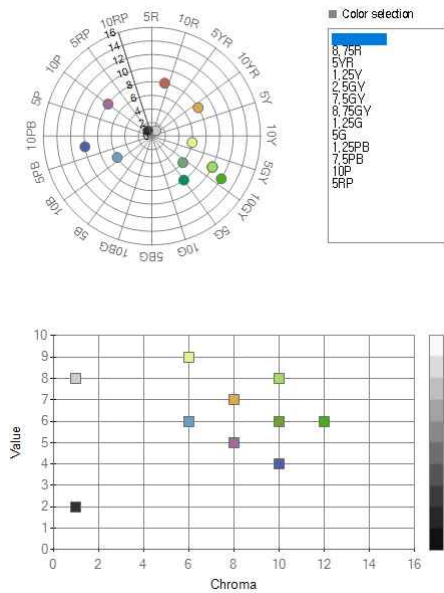




[Figure 5] Image File of Fantasy Thumbnails

[Table 3] Color Code of Fantasy Thumbnails

color	ratio%	KS	L*	a*	b*	R	G	B	C	M	Y	K	KS system color
	39.8	KS 5YR 8/1	80.5	2.32	4.45	208	198	192	0	5	8	18	pinky grey
	34.83	KS 5RP 2/1	20.2	6.11	-1.47	57	46	51	0	19	11	78	reddish black
	9.79	KS 8.75R 5/6	50.79	32.99	26.22	183	97	78	0	47	57	28	-
	5.84	KS 1.25Y 7/8	70.77	8.3	51.81	214	165	76	0	23	64	16	-
	4.85	KS 7.5PB 4/10	40.74	14.49	-40.14	75	92	182	54	43	0	36	light navy
	2.51	KS 1.25PB 6/6	61.15	-7.69	-22.23	104	153	106	44	18	0	27	-
	1.99	KS 10P 5/8	50.86	31.17	-15.59	161	102	148	0	37	8	37	light purple
	0.31	KS 1.25G 6/6	61.26	-27.55	18.43	106	160	114	34	0	29	37	-
	0.03	KS 7.5GY 8/10	80.77	-39.8	53.67	156	218	94	28	0	57	15	light yellow-green
	0.03	KS 7.5GY 6/10	61.29	-38.77	52.34	102	164	45	38	0	73	36	yellow-green
	0.01	KS 8.75GY 6/12	61.36	-51.38	56.12	73	168	33	57	0	80	34	-
	0	KS 9G 5/8	51.29	-42.86	13.22	0	140	98	100	0	30	45	light green
	0	KS 2.5GY 9/6	90.25	-15.58	44.06	227	233	141	3	0	38	9	pale yellow-green
	0	KS 7.5GY 8/10	80.77	-39.8	53.67	156	218	94	28	0	57	15	light yellow-green
	0	KS 7.5GY 6/10	80.77	-39.8	53.67	156	218	94	28	0	57	15	light yellow-green



[Figure 6] Distribution of Colors of Fantasy Thumbnails

The result of its analysis has shown that the dominant colors in the thumbnails of fantasy webtoons are orange, purple, red, yellow and navy. Orange has been recorded as 39.8% which is the largest proportion in the dominant colors, and its Munsell Code is 5YR. Purple as another dominant color has covered 34.84%, the second largest proportion, and its Munsell Code has been represented as 5RP.

Red and yellow have covered 9.79% and 5.84%, respectively as dominant colors, whose Munsell Codes are 8.75R and 1.25Y, respectively. Navy has the proportion of 4.85%, and its Munsell Code has been recorded as 7.5 PB. It is probably because orange, which brings to mind joy, excitement and sociality, is in harmony with the fantasy webtoons which have described the adventures of their heroes. Purple, which gives the mysterious image, is regarded as a color which is suitable for describing the surreal world of fantasy webtoons. Red in the thumbnails of fantasy, like that of thriller webtoons, is in relation to the image of intensity, danger, and power, and yellow has been used to bring up

the image of activeness, delight, and challenge and development. Lastly, navy has been used as the dominant color in order to remind of the image of grandeur, mystery, paradise etc..

The colors used in the thumbnails of fantasy webtoons as the secondary color are those of the shade of green and yellow-green, which are different from the cases of the above-mention genres. It is probably because green has been used in the fantasy webtoons because of the image of hope with which the characters overcome the hardship and adversity.

And also, the colors having high brightness and middle chroma have been used in the most of the thumbnails of fantasy webtoons, which give the image of forward movement.<sup>10)</sup> This is in accord with the fantasy webtoons which have mixed cheerful adventures with stately epics.

### 3. Conclusion

Color has the power to raise our feeling and to bring many changes in our life. We can arrange colors and realize our intention in works through its universal symbolism. As a result, the colors around us have the profound effects on the way we produce our works.

For such reasons, color has been an important means of marketing. This is the so-called color marketing, which is a marketing strategy using colors as a useful means. The meaning of this term is not only a technique for the sales promotion but also an overall enterprise activity including the color design and marketing techniques by the survey of color marketing. And also, color marketing has a wide scope of application. So, the campaign for promoting the enterprise image with a corporate identity color as well as the differentiation policy of product images has been included in color marketing,

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10) Moon, H. J., A Study on Correlation of Story and Color in 3D Animation, Journal of Digital Design, Vol.11, No.4, 2011. pp.245-254.

too. With these things in mind, the effect of color in the color marketing is as follows: Firstly, the effect of giving prominence to an product by attracting its consumer's eyes. Secondly, the effect of delivering the meaning and image of an product. Thirdly, the effect of renewing an product with the low cost. Fourthly, the effect of leading the trend.<sup>11)</sup>

To judge by the results of the above-mentioned analysis, it is needless to say that the thumbnails of webtoons need to be designed and produced by making full use of colors' properties to show the identities of webtoons.

It is because the colors of thumbnails play an important role not only in representing their visual distinction, but also in delivering their emotional images and identities. Judging by the aforementioned results, it is expected that this study has drawn up the guidelines for designing and producing the thumbnails of webtoons, and more studies linked to it need to be continued.

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