

## The difference between color and reactions among Young generation and Senior

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**Abstract.** This study evaluated the young generation (hereafter referring to Y generation) and the senior generation's preferences on color images as the perception ability and the emotional response. This study can be considered as a meaningful one in that researching the color characteristics of senior generation(hereafter referring to S generation) enabled to think over the variety of digital devices' designs and services and also the user's UX. First, in the color-perception experiment, it was found that the S generation was better at distinguishing the brightness difference than the color difference, but the Y generation perceived the differences of most colors well. Second, from the survey on preferring color images, it was found that the women in S generation tended to prefer for the combinations of hard, vivid colors rather than those of dull colors, but the men in S generation tended to prefer for the arrangement of quiet color tones as well as the combinations of hard, vivid colors.

**Keywords:** Aging Society, Y Generation, S Generation, Color Cognition, Color Combination.

### 1 Introduction

This study was conducted for promoting the necessity of different designs by different generation by researching and comparing the different generations' color perception abilities and color image preference, because the color occupies the largest share in the all visual stimulus. In the future there should achieve the UX-based products, use environments and web services by using appropriate colors to the user's visibility and utilizing the adjective image scales appropriate for the user's emotional characteristics. As the designs of most digital products are currently being developed focusing the Y generation, so the investigator of this study felt the necessity for a research targeting the S generation, so this study researched, analyzed and compared the both generation's color-relevant characteristics.

This study produced the samples for its color experiment according to the following methods, and conducted an experiment in the tablet PC environment.

## 2 Composition of Objects for Color-Perception Experiment

The experiment color samples for analyzing the color perception abilities were produced by respectively combing total 10 high-chroma, solid colors based on the Korean I.R.I's 'Hue & Tone 120 System' according to each color's distance on the color wheel. With these 10 solid colors, the investigator made total 55 samples of color arrangements by the arrangements of similar color tones those of contrasting color tones, and those of opposing color tones. For the respondents' convenience, the investigator let some color experts conducted the validity test on the color combination samples, and of 55 arrangement samples, the investigator selected the final 21 arrangement samples excluding the colors samples having relatively small differences in brightness and color tone.

## 3 Survey

The first target for this study was selected as the general old people in their ages ranging from 55 years old to over 75 years old living in Seoul and Gyeonggi areas. As the research methods for selecting the participants, the investigator conducted a demographic survey and the screen color experiment on the I-pad's screen..

### 3.1 Survey Methodology

Figure 1 shows the color arrangement samples for experimenting the respondents' color-perception abilities. The investigator let the respondents evaluate their color perception in the responses of 'don't see it very well', 'don't see it', 'moderately see it', 'see it well', and 'see it very well' depending on the respondent's perception easiness on the colors seen on the table PC's screen in using the '5-stage Likert Scale'. The respondent's visibility was evaluated as the 'good visibility' and the 'bad visibility' on the basis of medium value (M=3), the medium stage of 5-stage scale evaluation.

I.R.I Hue & Tone 120 System

HUE TONE	R	YR	Y	GY	G	BG	B	PB	P	RP
V										
S										
B										
P										
VP										
Lgr										
L										
Gr										
DI										
Dp										
Dk										

Fig. 1. Color Arrangement Samples For Color-Perception Experiment

Figure 2 shows the 5 vivid, representative adjectives, which were selected through the research the spatial image adjectives suggested by the IRI Color Design Institution.

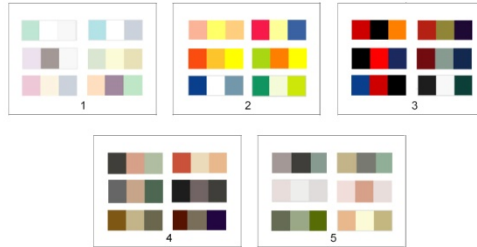


Fig. 2. Adjective Images Scale & Color Images

Table 1. Color-Image Adjectives & SD Methodology

Variables	Adjective & Semantic Differential
1	Clear-dark
2	Light-quiet
3	Dynamic - calm
4	Decent-active
5	Soft-clear

### 3.2 Survey Result

As seen in the Table 2 showing the analyzed results, the S generation responded that they saw the arrangements showing much difference of color tunes well. Especially, among the arrangements of complementary colors, the S generation respondents well distinguished the arrangements of colors showing much brightness difference like the arrangement of yellow and blue, and their visibility was lower in the little brightness difference like the arrangement of red and green.

Table 2. Results of Color-Perception Experiment, (average value: M)

	R	YR	Y	GY	PB	P	RP	
Similarcolor(S)								Full
M	300	225	184	200	234	196	143	
Contrasting(C)								
M	368	309	400	349	294	351	409	
Opposite(O)								
M	400	409	400	409	400	344	243	

S generation's preferred color image findings, the S generation's preferring color images. Among the people of S generation, the women tended to prefer for the combinations of hard, vivid colors, but the men tended to prefer the arrangements of quiet colors as well as the combinations of hard, vivid colors. Y generation's preferred color image findings, Among the people of Y generation, the women tended to prefer for the combinations of fresh, clean arrangements of colors, rather than the combinations of vivid colors, but the men preferred for the combinations of dull colors and those of quiet colors.

#### **4 Discussion and Conclusions**

This study surveyed and compared the S generation and the Y generation's preferring color images as the perception ability and the emotional response. In the aging age, the research understanding the senior generation's color perception ability and their emotional symbols can be considered as a necessary research from the perspective of the variety of users. Besides, it is thought that understanding the young generation's color perception ability and color preference will be useful for the companies providing products and services. The investigator thinks that as the Y generation is very unique, various and tends to prefer sensitive products, so wider range of color designs should be applied to the products for the young generation on the basis of the results of this study.

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