

A Study on the Clothing Image Perception of Elderly Women According to Sex-Role Attitude and Gender

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Abstract

The purpose of this study was to examine the differences in the clothing image perception of elderly women according to the clothing types, the clothing colors, the perceiver's sex-role attitude, and gender. Result of factor analysis revealed that the dimensions of clothing image perception was classified into four categories: evaluation, youth, warmth, and activity. Perceiver's sex-role attitude and gender gave a significant influence on the perception of evaluation factor. Youth factor had an interaction effect on the clothing types, clothing colors, and sex-role attitudes. The persons with a conservative sex-role attitude perceived the clothing image of warm color suits as younger than the one of cold colors. The clothing image of a warm colored Hanbok (Korean traditional dress) was perceived milder than a cold one, but there were no difference in suits. Bright color suits make the wearer look younger, and cold color suits make the wearer look active. The clothing color had greater influences on the warmth and the evaluation factor than clothing types. Persons who have a conservative sex-role attitude perceived the differences according to clothing types and colors in a traditional way. It could be certified that perceiver's sex-role attitude was one of the variables influencing his/her perception in social interaction.

Key words : clothing image perception, elderly women, sex-role attitude, Hanbok, suit, clothing color

I. Introduction

There are interactions among perceivers, perceived objects, and social situation in

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the perception of other persons' impression.¹⁾ The appearance, facial expression and behavior of the object person will then influence these interactions as non-verbal factors.²⁾ As an important component of appearance, visual perception of clothing style contributes to the evaluation and image of clothing. Clothing image is an overall feeling originating from design and wearing, and it determines the visuality, memory and impression. The image is differently perceived depending on the design which includes styles, colors, and materials of clothing.

Previous studies suggest that western style wearers were more positively perceived than Korean style wearers,³⁾ and Hanbok of traditional colors were perceived more elegant than western style.⁴⁾ Kim's study⁵⁾ indicates that Korean styles were favored than western ones among elderly women. A significant difference was noted in the preference and work performance according to clothing style in a study by Chun and Hwang.⁶⁾ High school students wearing formal styles were more intelligent and better in academic performance than those with expensive or non-formal clothing.⁷⁾ Nam and Kahng⁸⁾ found the perception differences in formal and casual clothing depending on situations.

The color of clothing has been considered as an important clothing image variable. Lee and Park⁹⁾ suggested that color harmony greatly influenced the impression of a Korean style wearer, and Lee and Kim¹⁰⁾ also observed a similar phenomenon. Red color gave the image of conspicuity,^{11),12)} and persons wearing red suits were perceived younger and more competent than those wearing heavy colors.¹³⁾ Persons in indigo suits are perceived smart, modest,¹⁴⁾ potent and masculine,¹⁵⁾ while pink colors were soft and feminine.¹⁶⁾ Blue suit wearers may seem most intelligent and active, and those in indigo skirts may do more competent than pink skirt wearers.¹⁷⁾ Colors in low brightness than high one gave more positive impression of the wearers.¹⁸⁾ Between the clothing style and color combination, men were influenced more by the style than color, and the vice versa in women.¹⁹⁾

Clothing has been traditionally used as a way of expressing gender in most societies. Thus clothing has been developed with distinct gender characteristics to comply and reflect the obligation and expectation for each gender. This distinctiveness has now become less clear due to the weakening of the sex-role characteristics.

Females with liberal attitude toward the sex-role tended to be positive to unisex clothing,^{20),21)} whereas no clear tendency was found in males.^{22),23)} Lee's study²⁴⁾ indicated that female college students, than male students, were more influenced by the sex-role. In a study on sex-role identity by Lee and Im,²⁵⁾ it was found that androgyneous groups positively accepted both feminine and masculine clothing, and that they perceived the masculine clothing was more smart and responsible. Kim and Chung²⁶⁾ showed in the study of male office workers that the masculine and the androgyneous groups were more interested in fashion, personality image, and character

expression, than the feminine or the undifferentiated groups. Androgyneous individuals favored white color, the undifferentiated individuals black color, feminine green, masculine grey color, respectively.²⁷⁾ Highly masculine individuals favored high chroma while highly feminine ones preferred the color combination of the same hues.²⁸⁾ High school girls favored blue, violet, and grey color clothing.²⁹⁾

All these previous information indicate that the sex-role attitude or sex-role identity were related to the clothing behavior and color preference. The relationship was expressed somewhat differently between the two genders. Therefore the sex-role attitude of an individual was influenced by the perceiver's gender and thus affect the perception of clothing images. Current study examined the differences in perception of the clothing image toward the elderly women according to the types and colors of clothing. This study also examined the difference of a perceiver's characteristics in relation to the sex-role attitude and gender.

The purpose of this study was to (1) classify the contents of clothing image perception toward elderly women; (2) examine the differences of clothing image perception for different clothing types, colors, perceiver's sex-role attitude, and gender; (3) clarify the role of educational level for clothing image perception.

II. Research Method

A quasi-experimental method using questionnaires was employed for the analysis of between subjects differences. A $2 \times 2 \times 2 \times 2$ factorial design comprising clothing types \times clothing colors \times perceiver's sex-role attitudes \times gender of perceivers was basically used. Hanbok (Korean traditional costume) and western style suit were selected as clothing types, cold and warm color selected as colors of clothing in this study.

1. Instrument

The stimuli presented to the perceivers were computer simulation printouts of eight women wearing different clothing. The model in the stimulus was a woman of 65 years old who had a typical face and body shape. She was standing upright with a waved short hair style. After taking photographs of this woman, the stimuli had been produced by changing the image into required clothing colors using the CAD system. The stimuli images were of 10×26 cm in size printed in A4-size regular paper. The types of clothing were suit and Hanbok, in warm colors and cold colors for both types. The Hanbok had an A-line silhouette, and the suit was composed of a tailored collar jacket and a H-line skirt. A white blouse of round neck line was worn under the jacket.

The warm colors selected for this study were light pink (2.5RP8/4.5) and purplish red (10RP3/10), while the cold ones were light jade green (7.5BG9/2) and indigo (7.5PB2.5/6). For evaluation, response scores were combined for each color category, i.e., light pink and purplish red for the warm, and light jade green and indigo for the cold.

There were four colors in suits, light pink, purplish red, light jade green and indigo, both the upper and lower in the same color. The color combinations in Hanbok was: both the upper and lower of light pink; a light pink jacket and a purplish red skirt; both the upper and lower light jade green; a light jade green jacket and a indigo skirt.

To evaluate image perception, the items of semantic differential scale were selected from previous researches,^{30),31),32),33)} and the question items were 25 with 7-point bipolar adjectives. A 5-point Likert-type scale composed of 12 items was used to measure the sex-role attitude. The items were selected from the research of Choi and Kahng.³⁴⁾ One item was excluded because it was inappropriate judged from its low reliability coefficient. The Cronbach's α reliability coefficient of the remaining 11 items was .78. The sex-role attitude was classified into conservative and liberal groups based on their median values.

Demographic variables included the gender, age, and educational levels of the perceivers.

2. Subjects and Data Analysis

The perceivers, subjects of this study, were men and women in their 40's and 50's, because these middle aged groups than any age have more chance to interact intimately with elderly women in everyday life. Subjects were 277 men(134) and women(143) living in Seoul and its surrounding suburbs.

The data were analyzed by computer processing with SPSS program. Analysis methods used were factor analysis, Cronbach's alpha reliability coefficient, t-test, one-way ANOVA, four-way ANOVA, and Duncan's multiple range test.

III. Results and Discussion

1. Factor Analysis of Image Perception

To investigate the image perceiving dimension toward elderly women wearing Hanbok and suit, factor analysis was executed on the items of image evaluation. From this evaluation, four factors were selected and divided into the dimensions of

evaluation, youth, warmth, and activity.

Eigenvalue of factor 5 was more significantly reduced than that of factor 4 and the reduction rate of 6 was gentle. Because the value declined more slowly thereafter, orthogonal rotation was performed on the four factors using Varimax method. The factor analysis result is shown in <Table 1>.

Factor 1 was designated as 'evaluation' and it contained 11 different items such as pleasant-unpleasant, elegant-not elegant, refined-rustic, etc. The eigenvalues were above .46 in all these 11 items belonging to factor 1. In factor 2 named 'youth', five items were included. The loaded eigenvalues belonging to this factor were all more than .55. Five items such as soft-hard or warm-cold were included in factor 3 categorized as 'warmth'. Eigenvalues above .51 were found. In factor 4, 'activity' the eigenvalues were all higher than .48 for the 4 items belonging to this factor.

2. The Difference of Image Perception according to the Clothing Types, Colors, Perceiver's Sex-role Attitudes, and Gender

To analyze the difference in image perception according to the clothing types, colors, perceiver's sex-role attitudes, and gender, four-way ANOVA was executed.

Analytical results of <Table 2> shows that clothing types did not influence significantly the factors of evaluation and warmth, but influenced those of youth and activity. This means that suits were perceived higher in youth and activity factors than Hanbok. The clothing colors significantly influenced the factors of evaluation, youth, and warmth, while without influence on activity. That implies the cold color was evaluated positively and was perceived as younger than warm one, but the warm color was perceived milder than the cold color. Clothing colors showed a significant influence on the factors of evaluation and warmth than the clothing types. The results of this study are not in a agreement with those of Kim and Kahng³⁵⁾ where the authors found that styles than colors affect more on these factors.

The sex-role attitudes significantly influenced only the evaluation factor. The conservative group perceived the clothing image of stimuli more warm-heartedly than the liberal one. It may be interpreted that conservative persons in sex-role attitude are likely to evaluate formal clothing in design more positively than liberal ones are.

As the perceiver's gender significantly influenced the evaluation factor, women evaluated the perception object more warm-heartedly than men did. Our result could be interpreted that middle aged women might have perceived the perception object, an elderly woman image, more warm-heartedly, and evaluated more positively than middle aged men did. This interpretation supports the theory of similarity³⁶⁾ in personal relations because the stimuli model was an elderly woman.

<Table 1> The result of factor analysis of clothing image perception

Factor 1. evaluation	factor loading	Factor 2. youth	factor loading
pleasant - unpleasant	.77	gorgeous - plain	.72
smart - not smart	.71	mature - not mature(R)	-.70
elegant - not elegant	.71	conservative - progressive(R)	-.62
noble - shallow	.67	classic - contemporary(R)	-.58
refined - rustic	.67	youthful - oldish	.55
favorable - unfavorable	.64		
natural - awkward	.56		
potent - not potent	.50		
respectable - disrespectful	.49		
feminine - masculine	.47		
dignified - undignified	.46		
% of variance explained = 21.9% cumulative% = 21.9% eigenvalue = 5.48 α = .83		% of variance explained = 14.5% cumulative% = 36.4% eigenvalue = 3.61 α = .73	
Factor 3. warmth	factor loading	Factor 4. activity	factor loading
soft - hard	.73	active - passive	.76
warm - cold	.71	energetic - not energetic	.75
strong - weak	-.62	sociable - unsociable	.49
comfortable - uncomfortable	.57	bold - cautious	.48
light - heavy	.50		
% of variance explained = 11.5% cumulative% = 47.9% eigenvalue = 2.88 α = .68		% of variance explained = 5.4% cumulative% = 53.3% eigenvalue = 1.34 α = .71	

<Table 2> Difference of image perception according to clothing types, colors, perceiver's sex-role attitude, and gender

method	source of variation	evaluation F	youth F	warmth F	activity F
main effects	clothing types(a)	1.87	25.17**	.10	38.08**
	clothing color(b)	4.10*	13.02**	20.55**	.14
	sex-role (c)	3.92*	2.05	1.73	.15
	gender(d)	4.17*	1.29	.06	.73
2-way interactions	a × b	.53	.49	4.61*	.36
	a × c	.53	.08	.05	4.14*
	a × d	.01	.32	.92	.44
	b × c	.01	1.18	.37	.03
	b × d	.22	.17	2.10	.01
	c × d	.40	.16	.00	2.10
3-way interactions	a × b × c	.02	4.27*	.20	.03
	a × b × d	.09	.00	1.24	.10
	a × c × d	.00	.02	.39	.58
	b × c × d	.97	.28	.14	.04
4-way interaction	a × b × c × d	1.04	.18	.10	.97

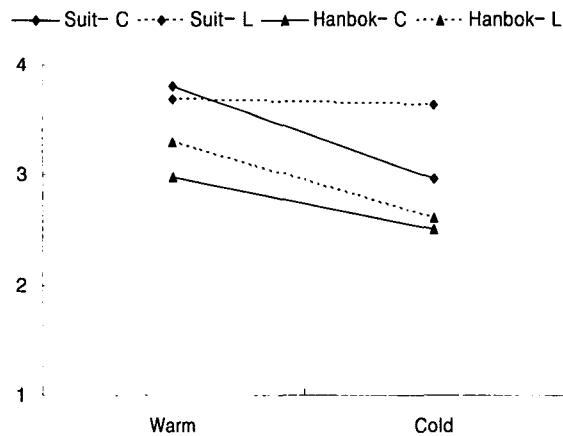
method	variable	category	N	evaluation		youth		warmth		activity	
				M	eta	M	eta	M	eta	M	eta
M C A	clothing types	suit	134	.07	.08	.35	.28	-.04	.03	.41	.35
		Hanbok	143	-.07	.08	-.32	.28	.03	.03	-.39	.35
	clothing color	warm	145	-.10	.11	.22	.19	.28	.27	.01	.01
		cold	132	.11	.11	-.24	.19	-.31	.27	-.01	.01
	sex-role	conservative	124	.08	.08	-.15	.11	.11	.09	-.07	.06
		liberal	153	-.07	.08	.12	.11	-.09	.09	.06	.06
gender	male	134	-.09	.10	-.09	.08	.04	.03	-.06	.05	
	female	143	.09	.10	.09	.08	-.04	.03	.05	.05	

*p< .05, **p< .01

The youth factor had an significant interaction effect on the clothing types, clothing colors, and sex-role attitudes. The calculated mean values and interaction relationship are presented in <Table 3> and <Fig. 1>.

<Table 3> Mean of youth factor according to clothing types, colors, and sex-role attitude

colors	sex-role attitude	clothing types	
		suit	Hanbok
warm	conservative	3.81(26)	2.98(41)
	liberal	3.68(42)	3.29(36)
cold	conservative	2.97(29)	2.51(28)
	liberal	3.63(37)	2.61(38)



C: Conservative L: Liberal

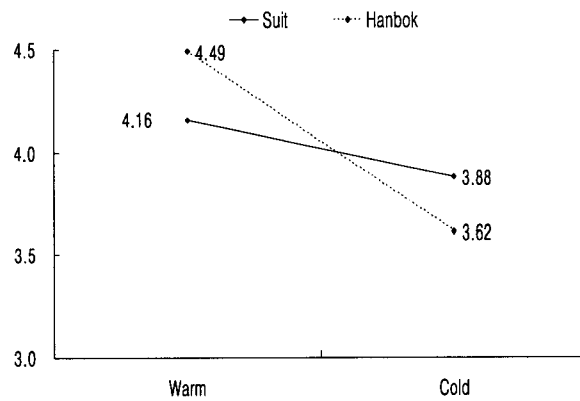
<Fig. 1> Interaction form by clothing types, colors, and sex-role attitude in youth factor

When the subjects evaluated the youth factor in suit attire, they differently

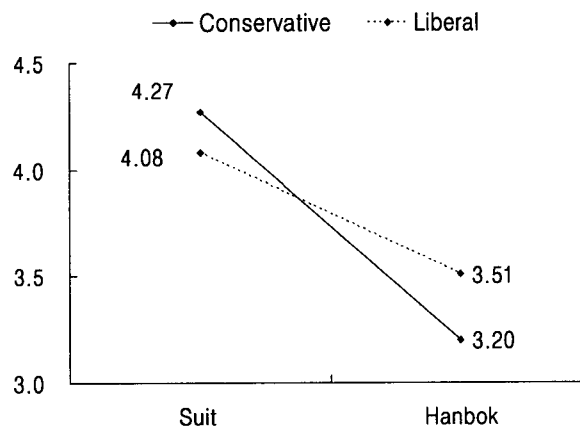
perceived depending on their sex-role attitudes. Liberal persons barely perceived the difference in youth for suit colors, but conservatives clearly perceived it. This indicates that the conservatives perceived the model in warm color suits as younger than the one in cold colors. This might be because the conservatives perceived the clothing colors from a fixed traditional view.

In the evaluation of warmth factor, there was a significant interaction effect on the clothing types and colors. It was found that color had a great influence in Hanbok compared with suits (Fig. 2). That is, the appearance from a warm colored Hanbok was perceived milder than a cold colored.

Activity factor had an interaction effect with the clothing types and the perceiver's sex-role attitudes (Fig. 3). Conservative persons evaluated the Hanbok as lower activity than did the liberal ones. However, conservatives favored suit over Hanbok in activity.



<Fig. 2> Interaction form by clothing types and colors in warmth factor



<Fig. 3> Interaction form by clothing types and sex-role attitude in activity factor

This means that the persons with a conservative sex-role attitude may perceive the difference in clothing types and colors in a traditional way for both suit and Hanbok.

Consequently, it was confirmed that the sex-role attitude is a personal trait of a perceiver which influences the way of perception toward elderly women's clothing. Furthermore perceiver's attitude gained through social interactions and traditional concepts is an additional influencing factor.

3. The Difference of Clothing Image Perception according to Educational Level

The difference of clothing image perception according to educational level was analyzed by t-test. The result is shown in <Table 4>.

<Table 4> Difference of clothing image perception according to educational background

clothing	education	evaluation		youth		warmth		activity	
		male	female	male	female	male	female	male	female
suit	H	5.09	5.02	3.46	3.66	3.71	4.20	4.59	4.26
	C	4.57	4.91	3.47	3.45	4.17	3.70	3.89	3.94
	t	2.35*	.50	-.02	.66	-1.90	1.90	2.49*	1.13
Hanbok	H	4.82	4.97	2.41	3.04	4.27	3.98	3.03	3.62
	C	4.55	4.60	2.93	2.92	4.12	4.03	3.33	3.23
	t	1.16	1.68	-1.84	.45	.56	-1.16	-1.30	1.59
warm	H	4.77	4.90	3.08	3.60	4.34	4.60	3.59	3.89
	C	4.59	4.59	3.43	3.37	4.19	4.05	3.79	3.69
	t	.86	1.52	-1.22	.85	.69	2.26*	-.75	.81
cold	H	5.17	5.08	2.79	3.10	3.58	3.62	4.09	3.98
	C	4.54	4.95	2.93	2.86	4.09	3.67	3.40	3.35
	t	2.71**	.57	-.46	.80	-1.88	-.17	2.25*	2.12*

*p< .05, **p< .01. H: High school and below, C: College

There was a significant difference in men among different education levels for evaluation and activity factors, but no difference was found in women by education. Men who graduated from high schools evaluated the suit attire of the model woman more favorable, and perceived it as very active.

No difference was observed in perception for Hanbok according to educational level, in either sex. There was no educational difference in men for any factor toward a warm color Hanbok. However, a significant educational difference was found in warmth factor in women. It seems that woman high school graduates perceived the warm color as milder than did college graduates.

There was a significant difference in evaluation factor toward the cold color

clothing depending on educational levels in the case of men: High school graduates perceived the cold color more favorably than did the college graduates. Both men and women of different education levels showed significant differences in activity factor toward the cold color clothing: High school graduates in both sexes perceived the cold color as higher than did college graduates.

In general, it was found that those who graduated from high schools evaluated the perception object more positively in the factors of evaluation, warmth and activity. This can be interpreted that the group whose academic career is high tend to evaluate the same appearance less positively because their expectation level is higher.

4. The Difference of Image Perception According to Stimuli

To investigate the difference of image perception according to stimuli, eight different stimuli were analyzed by one-way ANOVA and Duncan's multiple range test. The result is shown in <Table 5>.

<Table 5> Difference of image perception according to stimuli

	stimuli	H4	H3	H1	S4	H2	S2	S3	S1
youth		2.38	2.77	2.87	3.15	3.39	3.54	3.56	3.90
F=7.17**									
	stimuli	H4	S4	S2	H2	H3	S3	S1	H1
warmth		3.21	3.33	3.75	4.06	4.09	4.50	4.54	4.91
F=14.46**									
	stimuli	H1	H3	H4	H2	S1	S3	S4	S2
activity		3.12	3.24	3.35	3.71	3.79	4.09	4.25	4.52
F=7.95**									

S1: light pink suit, S2: purplish red suit, S3: light jade green suit, S4: indigo suit,
 H1: light pink Hanbok, H2: Hanbok of light pink jacket and purplish red skirt,
 H3: light jade green Hanbok, H4: Hanbok of light jade green jacket and indigo skirt

There was not a significant difference in evaluation factor, but there was a

significant difference in the factors of youth, warmth, and activity.

In Table 5, youth factor was graded into five levels. The light pink suit was perceived as the youngest and the light jade green one as the next. Thus a color of pastel tone may make an elderly women look younger. The Hanbok in light jade green jacket and indigo skirt ranked the lowest in the youth factor.

When warmth factor was divided into six grades, the light pink Hanbok was perceived as the mildest, and the light pink suit the next. The jade green Korean jacket and the indigo Korean skirt was the lowest in the warmth factor, and the next the indigo suit. This study means that the mildest feeling was perceived with pink colors, both in Hanbok and suits. This finding may be explained by a color theory³⁷⁾ that pink color generates a mild and feminine feeling.

Activity factor divided into five levels. The purplish red and indigo suits were evaluated highly in activity, whereas the pink and jade green Hanbok were evaluated unfavorably.

These results suggest that bright color suits can make the wearer look younger, and bright warm color Hanbok will make the wearer look warm. Low values in cold color suits were evaluated favorably in activity. This is in agreement with the results of previous research³⁸⁾ where the authors found that blue suits were perceived competent and active.

IV. Conclusions

This study was conducted to examine the differences in the clothing image perception of elderly women according to the clothing types, the clothing colors, the perceiver's sex-role attitude, and gender. Subjects were 277 men and women in their forties and fifties living in Seoul and its suburb areas.

The findings from this study were as follows:

First, to investigate the image perception dimension of elderly women wearing Hanbok and suit, factor analysis was executed on the items of image evaluation. Result was categorized into four factors: evaluation, youth, warmth, and activity.

Second, clothing types didn't have a significant influence on the perception of evaluation and warmth, but gave a significant influence on those of youth and activity. Suit was evaluated higher than Hanbok in the perception of youth and activity. Clothing color had a significant influence on the perception of evaluation, youth, and warmth, but did not influence on activity. The cold color was evaluated positively and perceived as younger than the warm color, but the warm color was perceived milder than the cold color.

Third, perceiver's sex-role attitude and gender gave a significant influence on the perception of evaluation factor. The conservative group perceived the clothing image of stimuli more warm-heartedly than the liberal one. Women perceived the clothing image of an elderly woman more warm-heartedly than did men, and both men and women of low educational level evaluated it more positively.

Fourth, youth factor had an interaction effect on the clothing types, clothing colors, and sex-role attitudes. The persons with a conservative sex-role attitude perceived the clothing image of warm color suits as younger than the one of cold colors.

Fifth, warmth factor had an interaction effect on the clothing types and clothing colors. The clothing image of a warm colored Hanbok was perceived milder than a cold one, but there were no difference in suit. Activity factor had an interaction effect on the clothing types and sex-role attitudes. Conservative persons evaluated the Hanbok as lower activity than did the liberal ones.

Sixth, there were significant differences in clothing image perception depending on the perceiver's educational level.

Seventh, the perception of youth, warmth, and activity showed significant differences according to stimuli. The persons wearing light pink suits were perceived as the youngest, and light jade green one the next youngest. It was proved that bright color suits make the wearer look younger. Cold color suits make the wearer look active. The Hanbok of light jade green jacket and indigo skirt was the lowest in the youth factor.

Considered collectively, the clothing color had greater influences on the evaluation factor and warmth factor than clothing types. Persons who have a conservative sex-role attitude perceived the differences according to clothing types and colors in a traditional way. Consequently, it could be certified that sex-role attitude or the perceiver's attitude was one of the variables influencing his/her perception in social interaction.

The limitation of this research is that there might be difference in the evaluation between photo stimulus and clothing of real people, and that discretion must be given to generalizing the research result attained from one model. For the future research, it is necessary to compare the influence of model's face or body type and that of model's clothing using two or more models. Moreover, it is necessary to study the difference resulted from individual characteristics such as sex-role identity and personality of perceivers.

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