

**RESEARCH ARTICLE**

# Recognition and development of customized cosmetics for military trainees in 20s and 30s in Republic of Korea

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**Abstract**

**Background:** For the health of the skin, social standards have been changed to increase the public's interest in achieving perfect skin. With the diversification of consumer needs, the reorganized core market for demand pursues the attributes of customization that bring the individual ego and product image to match through aggressive consumer needs.

**Objectives:** Therefore, in this study, we conducted a questionnaire to 450 men in their 20s and 30s, Chuncheon City, Gangwon-do, Republic of Korea, focused on the fact that customized cosmetics drive individuals and optimization.

**Methods:** Statistical processing of materials collected by the data analysis method is analyzed using the SPSS (Statistical Package for Social Science) WIN25.0 statistical package program through the process of data coding and data cleaning.

**Results:** As a result, "I think I need customized cosmetics for me." 3.91 ( $SD = 1.19$ ), and it seems that the number of custom cosmetics used will increase in the future. "3.99 ( $SD = 1.06$ ) It was the highest in terms of points. Also, I would like to use PX's men's custom cosmetics when they are released." The average was 4.34 ( $SD = 0.91$ ), which was the highest. Comprehensive research results of  $P < 0.001$  and above suggested the possibility of developing customized cosmetics for men.

**Conclusion:** Therefore, this requires continuous research on personalized bespoke cosmetics according to work and usage characteristics, and PX custom products for future soldiers should be developed. In the future, the researcher plans to continue to study the recognition and development potential of customized cosmetics for female military personnel in South Korea in subsequent research.

**KEYWORDS**

customized cosmetics, military personnel, potential for development, skin problems

## 1 | INTRODUCTION

Lee et al states that for skin health, social standards have changed to increase the public's interest in achieving perfect skin.<sup>1</sup> Kim et al In a

case study by type of custom-made cosmetics, the central market of demand reorganized due to the diversification of consumer needs, the personal ego, and the product image by actively responding to consumer needs. Pursuing the attributes of customization that bring

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about matching and paying attention to typical customized products and cosmetics drive personalization and optimization based on consumer experience. The types of custom-made cosmetics centered on strategic experience modules and the purpose of the study was to provide more efficient strategic mechanisms and practical suggestions by examining alternative cases.<sup>2</sup> Kim et al states that customized cosmetics made in the field by consumers and sellers have some safety issues and require a proactive approach to safety management.<sup>3</sup> However, Lee et al states, the demand for skin care products is increasing, and dermatologists must provide appropriate information for skin health to prevent side effects of skin care products.<sup>1</sup>

Ratsyborynska-Poliakova et al has investigated the characteristics of actual behavior to guarantee this.<sup>4</sup> Fors Brandebo et al states that constructive and destructive leadership has an impact on soldiers' job satisfaction.<sup>5</sup> McKeon et al also emphasized important opportunities for the development of military medicine through future research for traumatic brain injury and sleep disorders in combat-exposed soldiers.<sup>6</sup> Van Baarle et al indicated that safety is threatened in the case study of safety dynamics for military ethics education in the process of training. In the process of military ethics training, serious incidents and safety epidemics are investigated. It shows that safety paradoxes associated with tensions between other perspectives and the opening of value may occur.<sup>7</sup> Also, for a study of perceptions and responses to conservative treatment for back pain in soldiers during initial immigration training, Schoonover et al state that due to the constraints of military training (2019), it is difficult to find treatment and apply treatment strategies.<sup>8</sup> Military Summary Standards ensure that soldiers can maintain a good appearance to meet their professional needs (Weiss et al). However, according to these criteria, various skin disorders of the head and neck can be screened or exacerbated. It highlights some of the more common obstacles resulting from military grooming standards, including discussions on underlying etiology and management considerations.<sup>9</sup> Thus, McKibben et al, Military Mental Health Survey Shen et al, Adler et al suggested the use of U.S. military mental health services for a study of new directions in occupational mental health. In high-risk occupations, the impact of stress on mental health can be mitigated by organizational factors such as leadership, and general leadership skills can improve employee performance and mental health. British military studies of tropical skin diseases have focused on the most serious tropical skin diseases that have occurred in British soldiers in the last few years.<sup>10-13</sup> In the study of these specialized characteristics and the reliability and purchasing behavior of Lee et al made-to-order cosmetics, while showing interest in the cosmetics market, we grasped the characteristics by age and suitability for that age group. The establishment of various marketing strategies acts as an important factor and is expected to become a new area in line with trends.<sup>14</sup>

In the present study, we investigated the characteristics of each occupation regarding the recognition and development potential of customized cosmetics for trainees in their 20s and 30s in the Republic of Korea, and various types according to their age group and user characteristics. A store that accurately grasps the needs of men in their 20s and 30s for customized cosmetics and sells food and daily necessities to soldiers and authorized personnel. A military service agency that

generally sells goods at tax-free prices and provides men's cosmetics activation plans and marketing strategy formulation materials for a special market called PX, which is generally in the form of a supermarket.

## 2 | MATERIALS AND METHODS

This study was conducted offline for 2 weeks from November 1 to November 15, 2020, targeting military trainees in their 20s and 30s in Chuncheon City, Gang-won-do, Republic of Korea, for a total of 500 people. Finally, the responses of 450 people were collected, excluding 50 dishonest respondents. Statistical processing of materials collected by the data analysis method was analyzed using the SPSS (Statistical Package for Social Science) WIN25.0 statistical package program through the process of data coding and data cleaning.

First, we recognized customized products and conducted Descriptive Statistics and Reliability Analysis to see the development potential of PX male customized products, and the average and standard deviation of each question. Second, we performed an independent sample *t*-test and a one-way analysis of variance (one-way ANOVA) to recognize customized cosmetics and examine the differences in the potential of PX to develop male custom cosmetics. Third, Pearson's Correlation Analysis was performed to recognize customized cosmetics and to investigate the correlation between PX's male customized cosmetics development potential. Fourth, a simple multiple regression analysis was performed to recognize customized cosmetics and to investigate the relationship between the effects of PX on the development potential of military trainees' customized cosmetics. In this study, we verified under the significance levels  $P < .05$ ,  $P < .01$ , and  $P < .001$ . Intervening studies involving animals or humans, and other studies that require ethical approval, must list the authority that provided approval and the corresponding ethical approval code.

## 3 | RESULTS

### 3.1 | Recognition of customized cosmetics

The results of descriptive statistics and reliability analysis of the customized cosmetics recognition scale are shown in Table 1. The average of "The number of custom cosmetics used is expected to increase in the future" is the highest at 3.99 ( $SD = 1.06$ ), and the average of "I have used custom cosmetics" is 1.41 ( $SD = 0.90$ ). It became the lowest. Cronbach's calculated for reliability verification appeared at 0.760 with a reference value of 6 or more, and the degree of internal agreement between each question item was very high.

### 3.2 | Possibility of developing military trainees customized cosmetics for PX

Table 2 shows the results of descriptive statistics and reliability analysis of PX's feasibility scale for developing men's customized

cosmetics. The average of “I would like to use men's custom cosmetics for PX when they are released” is the highest at 4.34 ( $SD = 0.91$ ), and men's customized cosmetics for PX and customized cosmetics for general men need to be differentiated. The average of “Military trainee-tailored cosmetics for PX and regular-male customized cosmetics need to be differentiated” was the lowest at 3.39 ( $SD = 1.35$ ). Cronbach's calculated for reliability verification appeared at 0.829 with a reference value of 6 or more, and the degree of internal agreement between each question item was very high.

### 3.3 | Preference according to change cosmetic usage

The preferences according to the change in use of cosmetics are shown in Table 3 as below. Looking at the types of cosmetics required by the military, skin lotion combined all-in-one product was the most common with 216 people (48.2%), cleansing products 82 people (18.2%), skin/lotion individual 77 people (17.1%), sunscreen 74 people (16.4%) were in order, and skin lotion combination was the most common with 229 people (50.9%), and skin/lotion individual was

**TABLE 1** Recognition of customized cosmetics

Diagnosis	M	SD	Min	Max	Cronbach's $\alpha$
I've heard of customized cosmetics	1.94	1.30	1.0	5.0	.760
I've now recognized the difference between existing and customized cosmetics	1.89	1.23	1.0	5.0	
I've used customized cosmetics	1.41	0.90	1.0	5.0	
I want to try customized cosmetics	3.90	1.24	1.0	5.0	
I think I need customized cosmetics for myself	3.91	1.19	1.0	5.0	
I think the use of customized cosmetics is expected to increase in the future	3.99	1.06	1.0	5.0	
Total	2.84	0.78	1.0	5.0	

**TABLE 2** Possibility of development of military trainees customized cosmetics for PX

Diagnosis	M	SD	Min	Max	Cronbach's $\alpha$
I would like to try using men's customized cosmetics for PX once they are released	4.34	0.91	1.0	5.0	.829
I think men's customized cosmetics for PX need to be released	4.08	1.04	1.0	5.0	
Military trainee-tailored cosmetics for PX and regular-male customized cosmetics need to be differentiated	3.39	1.35	1.0	5.0	
Military trainee-tailored cosmetics for PX help activate PX	4.03	1.04	1.0	5.0	
Total	3.96	0.89	1.0	5.0	

**TABLE 3** Preference according to change cosmetic usage

Diagnosis		N	(N = 450) %
Favorite type of men's customized cosmetics for PX	Individual skin/lotion	92	20.4
	Color cosmetics	10	2.2
	Combined with skin lotion	229	50.9
	Sunscreen	50	11.1
	Cleansing product	69	15.3
The most preferred price of men's customized cosmetics for PXs	Less than 10 000 won	154	34.2
	Between 20 000 won and 30 000 won	242	53.8
	Between 30 000 won and 40 000 won	34	7.6
	Over 40 000 won	20	4.4

92 people (20.4%), and cleansing products 69 people (15.3%), sunscreen 50 people (11.1%), color cosmetics 10 people (2.2%), and the most preferred men's customized cosmetic price for PX was 242 people (53.8%) with between 20 000 won and 30 000 won. The most frequent, was followed by 154 (34.2%) with less than 10 000 won, 34 people (7.6%) with between 30 000 and 40 000 won, and 20 people with more than 40 000 won (4.4%).

### 3.4 | Differences in perception of custom-made cosmetics according to the characteristics of the survey subjects

Table 4 shows the results of an independent sample *t*-test and a member placement ANOVA to investigate the difference in perception of custom-made cosmetics according to the characteristics of the survey subjects. For ages 24 to 27, the average was 2.90 (*SD* = 0.87), which

was higher than 2.84 (*SD* = 0.78) for 20 to 23, but there was no significant difference before enlistment. The average income of 3.5 million won or more was the highest at 3.07 (*SD* = 1.09), and the average income of less than 1 million won was the lowest at 2.80 (*SD* = 0.71), and there was no significant difference. When the pre-enlistment occupation was sales/service, the average was highest at 2.88 (*SD* = 0.86), and the clerical/manager was the lowest at 2.71 (*SD* = 0.91), with no significant difference. For 4-year college graduates, the highest score was 2.94 (*SD* = 1.01), and for high school graduates, the lowest score was 2.76 (*SD* = 0.84), with no significant difference. If the place of residence is Gyeongsang Province, the average is 2.98 points (*SD* = 0.78), which is the highest, and if it is Chungcheong Province, the average is 2.60 (*SD* = 0.81) points, which is the lowest. For some reason, unmarried people had a significant difference of 2.85 (*SD* = 0.78) points compared to married 2.00 (*SD* = 1.15) points (*t* = 2.166, *P* < .05). The average of smokers is 2.96 points (*SD* = 0.83), which is higher than the non-smoking 2.75 points (*SD* = 0.73), showing a significant difference

**TABLE 4** Differences in perception of custom-made cosmetics according to the characteristics of the survey subjects

Diagnosis		N	Mean	SD	t/F	P	Scheffe
Age	20–23 years old	423	2.84	0.78	−0.372	.710	-
	24–27 years old	27	2.90	0.87			
Average income before enlistment	Less than 1 million won	283	2.80	0.71	1.005	.541	-
	More than 1 million won to less than 2 million won	93	2.86	0.85			
	More than 2 million won to less than 3.5 million won	51	2.92	0.86			
	Over 3.5 million won	23	3.07	1.09			
Occupation before enlistment	Professional/technical jobs	40	2.83	0.85	0.146	.965	-
	Office/management positions	14	2.71	0.91			
	Self-employment	10	2.78	1.10			
	Sales/service jobs	65	2.88	0.86			
	Student	321	2.84	0.75			
Academic background	High school graduation	139	2.76	0.84	0.935	.424	-
	To attend or graduate from a junior college	99	2.83	0.75			
	While attending a four-year university	200	2.90	0.74			
	A four-year college graduate	12	2.94	1.01			
Residence	Seoul	97	2.88	0.68	1.292	.259	-
	Gyeonggi-do	161	2.84	0.87			
	Gangwon-do	42	2.70	0.64			
	Chungcheong-do	38	2.60	0.81			
	Jeolla-do	32	2.89	0.76			
	Gyeongsang-do	73	2.98	0.78			
	Etc	7	2.86	0.51			
Marital status	Single	446	2.85	0.78	2.166	.031*	-
	Married	4	2.00	1.15			
Smoking status	Yes	199	2.96	0.83	2.938	.003**	-
	No	251	2.75	0.73			
Drinking status	Yes	352	2.89	0.79	2.454	.015*	-
	No	98	2.67	0.75			

\**P* < .05. \*\**P* < .01.

( $t = 2.938$ ,  $P < .01$ ). The 2.89 ( $SD = 0.79$ ) points were higher than 2.67 ( $SD = 0.75$ ) points without drinking, and there was a significant difference ( $t = 2.454$ ,  $P < .05$ ).

### 3.5 | Differences in the possibility of developing PX male customized products according to the characteristics of the survey subjects

The results of an independent sample  $t$ -test and a member placement ANOVA to investigate the difference in the development potential of PX male customized products according to the characteristics of the survey subjects are shown in Table 5. For ages 24 to 27, the average was 4.06 ( $SD = 0.83$ ), which was higher than the 20 to 23 year's 3.95 ( $SD = 0.90$ ), however, there was no significant difference and the pre-enlistment average. For incomes of 2 million won or more and less than 3.5 million yen, the highest point was 4.00 ( $SD = 0.81$ ), and the

lowest for less than 1 million won was 3.95 ( $SD = 0.90$ ), which was not a significant difference. If the occupation before enlistment was self-employed, the average was 4.15 ( $SD = 1.00$ ), which was the highest, and if it was clerical/managerial, it was 3.64 ( $SD = 0.72$ ), which was the lowest. It was the highest at 4.06 ( $SD = 0.88$ ) when attending a 4-year college, and the lowest at 3.75 ( $SD = 1.01$ ) when graduating from a 4-year college, with no significant difference. There was no significant difference, with an average of 4.57 ( $SD = 0.53$ ) points highest when there was another place of residence and 3.88 ( $SD = 0.78$ ) points lowest when in Gangwon-do, and if married. For some reason, unmarried people had 3.96 points ( $SD = 0.89$ ), which was higher than married 3.75 points ( $SD = 0.96$ ), but there was no significant difference. The average of smokers is 4.08 ( $SD = 0.82$ ), which is higher than the non-smoking 3.87 ( $SD = 0.94$ ) points, showing a significant difference ( $t = 2.486$ ,  $P < .05$ ). The 4.01 ( $SD = 0.84$ ) points were higher than 3.77 ( $SD = 1.05$ ) points without drinking, and there was a significant difference ( $t = 2.081$ ,  $P < .05$ ).

**TABLE 5** Differences in the possibility of developing PX male customized products according to the characteristics of the survey subjects

Diagnosis		N	Mean	SD	t/F	P	Scheffe
Age	20–23 years old	423	3.95	0.90	−0.574	.566	-
	24–27 years old	27	4.06	0.83			
Average income before enlistment	Less than 1 million won	283	3.95	0.90	0.061	.980	-
	More than 1 million won to less than 2 million won	93	3.98	0.92			
	More than 2 million won to less than 3.5 million won	51	4.00	0.81			
	Over 3.5 million won	23	3.96	0.90			
Occupation before enlistment	Professional/technical jobs	40	4.04	0.79	0.662	.619	-
	Office/management positions	14	3.64	0.72			
	Self-employment	10	4.15	1.00			
	Sales/service jobs	65	3.93	0.94			
	Student	321	3.96	0.90			
Academic background	High school graduation	139	3.86	0.85	1.627	.182	-
	To attend or graduate from a junior college	99	3.93	0.94			
	While attending a 4-year university	200	4.06	0.88			
	A 4-year college graduate	12	3.75	1.01			
Residence	Seoul	97	4.05	0.79	0.908	.489	-
	Gyeonggi-do	161	3.92	0.99			
	Gangwon-do	42	3.88	0.78			
	Chungcheong-do	38	3.92	0.94			
	Jeolla-do	32	4.01	0.77			
	Gyeongsang-do	73	3.91	0.91			
	Etc.	7	4.57	0.53			
Marital status	Single	446	3.96	0.89	0.473	.636	-
	Married	4	3.75	0.96			
Smoking status	Yes	199	4.08	0.82	2.486	.013*	-
	No	251	3.87	0.94			
Drinking status	Yes	352	4.01	0.84	2.081	.039*	-
	No	98	3.77	1.05			

\* $P < .05$ .

**TABLE 6** Correlation between related variants

Diagnosis	1	2	3	4	5	6
1. Skin perception and attention	1					
2. Private skin care behavior and actual condition	0.530**	1				
3. Private cosmetics purchasing action	0.448**	0.612**	1			
4. Army skin care behavior	0.460**	0.366**	0.309**	1		
5. Customized cosmetics recognition	0.468**	0.418**	0.357**	0.390**	1	
6. Possibility of development of men's customized cosmetics for PX	0.391**	0.258**	0.233**	0.508**	0.555**	1

\*\* $P < .01$ .

**TABLE 7** Impact of skin awareness and interest on the perception of customized cosmetics

Dependent variable	Independent variable	Unstandardized coefficient		Standardized coefficient	t	R	F
		B	SE				
Customized cosmetics recognition	Constant	1.570	0.118		13.291***	0.219	125.417***
	Skin perception and attention	0.432	0.039	0.468	11.199***		

\*\*\* $P < .001$ .

### 3.6 | Correlation between the related variants

We recognized skin awareness and interest, private skin care behavior and usage, private cosmetics purchasing behavior, military skin care behavior, customized cosmetics, and Pearson's correlation to investigate the correlation of PX's male customized cosmetics development potential. The results of the implementation are shown in Table 6 as below. Private skin care behavior and usage ( $r = .530$ ,  $P < .01$ ), private cosmetics purchasing behavior ( $r = .448$ ,  $P < .01$ ), military skin care behavior ( $r = .460$ ,  $P < .01$ ), customized cosmetic recognition ( $r = .468$ ,  $P < .01$ ), PX male customized product development potential ( $r = .391$ ,  $P < .01$ ), skin awareness and interest and attention were increased for static (+). It was found that there is a correlation between the related variants.

### 3.7 | Impact of skin awareness and interest on the perception of customized cosmetics

Table 7 shows the results of a simple regression analysis to investigate the effects of skin awareness and interest on the perception of customized cosmetics. The explanatory power of the model was about 21.9% ( $R = .219$ ), indicating that the model was suitable ( $F = 125.417$ ,  $P < .001$ ). Skin awareness and interest ( $B = 0.432$ ,  $P < .001$ ) were found to have a significant static (+) effect on bespoke cosmetics recognition. Therefore, the recognition of customized cosmetics is interpreted as positive as the awareness and interest of the person's skin increases.

### 3.8 | Impact of skin awareness and interest on the potential development of PX men's customizes cosmetics

The results of a simple regression analysis to investigate the effect of skin awareness and interest on the development potential of PX men's custom cosmetics are shown in Table 8. The explanatory power of the model was about 15.3% ( $R = .153$ ), indicating that the model was suitable ( $F = 81.095$ ,  $P < .001$ ). Skin awareness and interest ( $B = 0.411$ ,  $P < .001$ ) were found to have a static (+) effect that noted the potential for male customized cosmetics development in PX. Therefore, it is interpreted as a positive about the possibility of developing PX men's customized cosmetics as the person's skin awareness and interest increases.

## 4 | DISCUSSIONS

Exposure to stressful and potentially traumatic experiences poses a risk to military personnel which may increase susceptibility to reduced well-being for some. Qualitative research reviews to explore well-being conceptualization and the acceptability of interventions that can be perceived as therapeutics, and studies of understanding in military, public health, and mental health settings are being conducted.<sup>15</sup> Military service can be a traumatic experience and can cause mental health problems for a small number of individuals such as post-traumatic stress disorder (PTSD) with long-term negative consequences. As a result, PTSD has received considerable research

**TABLE 8** Impact of skin awareness and interest on the potential development of PX men's customized cosmetics

Dependent variable	Independent variable	Unstandardized coefficient		Standardized coefficient	t	R	F
		B	SE				
Possibility of development of men's customized cosmetics for PX	Constant	2.749	0.140		19.644***	0.153	81.095***
	Skin perception and attention	0.411	0.046	0.391	9.005***		

\*\*\* $P < .001$ .

interest. However, post-traumatic growth (PTG) is a new construct, and relatively little is known about its expression and development. Appreciating life, reassessing a sense of purpose, improving an individual's human qualities, bonding and connecting with others, integrating into society, and a legacy will be supported in the future. Self-esteem and a sense of worth to society must be managed.<sup>16</sup> The top five skin conditions commonly seen in the folk dermatology setting are eczema/dermatitis, acne, benign skin tumors, viral infections, and pigmentation disorders. In comparison, the five most common skin conditions in the military sector are generally fungal infections, eczema/dermatitis, insect bite reactions, bacterial infections, and acne. Along with these issues, skin problems of soldier account for up to 25% of the medical consultations of soldiers stationed in the tropics. They also have relatively high on-site admissions, medical transportation, and adoption rates in UK Role 4 healthcare facilities. Non-infectious tropical skin diseases include sunburn, hot spots, arthropod satiety, toxin, contact dermatitis, and plant photodermatitis. Skin infections that commonly occur from soldiers while placed in the tropics are more frequent and serious and difficult to treat. It focuses on the most serious tropical skin diseases that have recently emerged from British soldiers. The availability of military dermatology "reach-back" services (including telemedicine facilities) could improve clinical management of these conditions due to placement and reduce medical evacuation.<sup>13</sup> Previous published studies of skin conditions in the military are mainly being conducted in war campaigns and clinical studies during military training. In the military base in the tropics, fungal skin infections, nonspecific dermatitis, and insect bite reactions were the most common causes of dermatological consultations. The CD incidence rate was 0.4 per 100 conscripts per year.<sup>17</sup> The skin larva migrans (CLM) is one of the many skin diseases that occur in British soldiers when placed in tropical and subtropical areas. Soldiers can give a unique presentation of CLM for their own military activities.<sup>18</sup> A cross-sectional study was conducted to investigate the factors related to the prevalence of common skin diseases among Korean military personnel on Factors Related to the Prevalence of Common Skin Diseases in Korean Military Personnel. Four dermatologists visited the adjacent military and inspected the soldiers. A structured questionnaire containing questions about known skin disorders, demographic information, and cognitive stress index questions was created for each participant and soldiers diagnosed with skin disorders. We responded to an additional questionnaire (Skindex-29) assessing the effects of individual skin diseases on daily life. Of the 1321 military personnel,

798 (60.4%) suffer from multiple skin disorders, with the three most common skin problems being acne (35.6%), ringworm (15.2%), and atopic dermatitis (35.6%). Diseases closely related to military service are acne, ringworm, viral warts, and corn. The stress-related diseases were atopic dermatitis, seborrheic dermatitis, and acne, and the most painful dermatitis was atopic dermatitis, ringworm, and seborrheic dermatitis. These results indicate that the prevalence of skin diseases in Korean military personnel is very high, and that some skin diseases may have a great impact on daily life.<sup>19-21</sup> Cutaneous leishmaniasis (CL) is transmitted by infected with tropical and subtropical parasitic diseases. CL lesions are generally self-healing but can be damaged or potentially neutralized and can be secondarily infected in field conditions. Two British and German military personnel stationed in Iraq showed Leishmania tropical infection, and primary prevention of CL was discussed along with epidemiology of the disease and treatment in the deployed state.<sup>22</sup> In addition, the UK Role4 Military Infectious Diseases & Tropical Medicine Service from 2005 to 2020 confirmed CLM cases. In a study of Baumann skin types in the Korean male population, the main skin type of Korean male respondents was OSNW type. The distribution of skin types according to age and region was clearly seen, and it was necessary to customize skin care according to the fine-tuned skin type considering various environmental factors.<sup>23,24</sup> In addition, the perception and development potential of customized cosmetics mobile shopping in the intact COVID19 era: A study focusing on the perception and development potential of customized cosmetics in mobile shopping at that time, focusing on women in their 40s and 60s in Seoul, COVID-19 during the unrevised period results. In the unknown era after COVID-19, the possibility of developing customized cosmetics through mobile shopping is expected to be limitless, and various marketing strategies are expected.<sup>25</sup>

Accordingly, in this study, we investigated the recognition and development potential of customized cosmetics for Korean Army trainees in their 20s and 30s. In Tables 1 and 2, "I have used custom cosmetics" was the lowest at 1.41 in recognition of customized cosmetics. However, "I think I need customized cosmetics for personal use." At 3.91, it seems that the number of customized cosmetics used will be increasing in the future. In addition, I would like to use PX's men's custom cosmetics when they are released. The average was 4.34, which was the highest. This shows the potential for the development of custom products. As such, in a study of occupational dermatitis of soldiers and conscripts in Singapore, we retrospectively

looked at all soldiers and conscripts diagnosed with occupational dermatosis at the Singapore National Skin Center between 1989 and 1999. Conscripts and regulars accounted for 7.3% of all occupational dermatoses. All were male and the average age was 23 years. Irritant contact dermatitis was 4.4:1 more common than allergic contact dermatitis. The most common occupations associated with occupational dermatosis are those involving vehicle repair and maintenance (48%) and food handling (19%). The most common irritants were oil/grease (66%), wet work (23%), and solvents (18%).<sup>26</sup> Soldiers are more prone to eczema due to their special circumstances and occupations, as heat, sweat, and wearing military uniforms aggravate the condition. Grass allergy or hypersensitivity, contact dermatitis, or colorless rash from applying military camouflage cream to the face, contact dermatitis to insect repellent, military uniform allergy, and hypersensitivity are among the most common dermatological problems in the military sector, which doctors recognize, and must be investigated and managed.<sup>27</sup> A study on the prevalence of civilian and military dermatosis at a Turkish military hospital in the Central Black Sea region suggested that preventive measures should be taken to improve the health of the troops and reduce the prevalence of common disorders such as ringworm, alopecia areata, and calluses.<sup>28</sup> A study of custom cosmetics types and strategic experience modules showed that individual consumer experiences were generally more effective than shared experiences, but this was a personalized service. The result can be a reflection of the differentiation of customization. This phenomenon, which has emerged mainly for DIY kit types and device types that provide a process of direct participation, means that participation in a specific customization process can bring about a relatively high personal experience effect. In addition, in the pre-customization of onsite mixing, the effect of the relationship experience with each behavioral experience was high, but this is due to the discrimination of new forms such as the improvisation manufacturing method and the subscription type supply method. Customized cosmetics are based on consumer participation, which gives the degree of effectiveness of the consumer experience an absolute influence. That is, in order to discriminate and maximize the effect of customized cosmetics, it is a total of individual experiences and shared experiences proposed in experiential marketing, and strategic dissolution can be required. Therefore, not only the product value of technology and performance, but also the overall sense of accomplishment should be provided to consumers through cooperation with the emotional play experience that can be experienced only with customized cosmetics.<sup>2</sup> Personalized cosmetics and beauty devices consumer awareness/preference survey model research also analyzes the current status of beauty self-care IoT device-related prior research, patents, and prototypes, and personalized cosmetics satisfaction survey model, beauty AI IoT survey of evaluation for device fabrication, survey, and analysis of the effect of understanding and recognition level of cosmetic ingredients on personalized cosmetics purchasing motivation, and so on to the group that prefers personalized cosmetics and the group that prefers ready-made products. It could be divided, and the two populations were distributed in approximately similar proportions, each with similar satisfaction with preferred cosmetics.<sup>29</sup> Purchasing customized

cosmetics also has an impact on cosmetics consumption motivation in research through purchasing motives, which are very important factors influencing the purchase of customized cosmetics. Contributions to revitalizing the cosmetics market for “customized marketing” have been made by clarifying and verifying that the motivation for purchasing cosmetics can explain the relationship between the desire to consume cosmetics and the intention to purchase custom cosmetics. In the future, for more detailed marketing research for customized cosmetics, we proposed an analytical study of the influence relationship of each sub-factor of parameters and effect verified cosmetic purchase motives.<sup>30</sup>

This requires continuous research on personalized bespoke cosmetics according to work and usage characteristics, and PX custom products for future soldiers should be developed. However, the limitation of this study is that we did not conduct a questionnaire to female soldiers in the Republic of Korea, who are a little closer to cosmetics. In addition, the population parameter of male soldiers is also weak. As a result, the researcher plans to continue to study the recognition and development potential of customized cosmetics for female military personnel in the Republic of Korea in subsequent research.

## 5 | CONCLUSIONS

Therefore, this requires continuous research on personalized bespoke cosmetics according to work and usage characteristics, and PX custom products for future soldiers should be developed. In the future, the researcher plans to continue to study the recognition and development potential of customized cosmetics for female military personnel in South Korea in subsequent research.

### CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

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All authors have read and approved the final version of the manuscript.

Jinkyung Lee had full access to all of the data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis.

### TRANSPARENCY STATEMENT

The lead author affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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