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Vol. 8 No. 2

- Influence of Goji Berry EM Fermentation and Saccharification Products as Cosmetic Raw Materials on Hair Protection
 / Haeun Kim, Miyoung Choi
- 2. Analysis of Consumer Purchase Satisfaction According to Network Marketing Selection Attributes of Inner Beauty Products

/ Chaehyeong Kim, Chanhyung Lee

- 3. The Impact of Career Orientation of Beauty Salon Workers on Transfer Motivation -Focused on the Moderating Effect of Organizational Support-
 - / Seoungmin Park, Youngsoon Kim
- 4. A Study on the Effects of Socio-Cultural Pressure and Health Beliefs on Scalp and Hair Care Awareness and Behavior

/ Jieun Park, Mijuong Choi, Eunjoo Choi

5. A Study of the Effect of Beauty Consumer Sentiment after Covid-19 on Hair Salon Revisit Intention / Eunjoo Choi

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Influence of Goji Berry EM Fermentation and Saccharification Products as Cosmetic Raw Materials on Hair Protection

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Abstract

Purpose: Recently, as the number of cases of side effects due to exposure to chemicals has increased, consumers' anxiety about chemicals has deepened, and interest in cosmetics using natural extracts that do not use chemical ingredients has increased. No-chemicals are being created and scientific research using natural extracts is expanding. Accordingly, Goji berry, which is a natural product handed down from the private sector and is rich in various functional ingredients such as carotinoids, choline, and zeatin, and is said to be excellent for antioxidation effects, was fermented and the active ingredients and effectiveness (in vitro) were investigated.

Method: Goji berry, which has been found to contain large amounts of functional ingredients such as betaine and rutin, is extracted through double fermentation using EM (Effective Microorganisms) and malt to obtain total polyphenol content, flavonoid content, total sugar content, DPPH radical scavenging ability, and SOD. Effectiveness (in vitro) was examined through activity, catalase activity, hydrogen peroxide, and peroxidase verified.

Results: As a result of the measurement, the sugar content increased when the EM (Effective Microorganisms) fermented product was enzymatically fermented after extracting Goji berry fruit with purified water. The difference depending on the enzyme fermentation temperature was also higher when the enzyme fermented at 60°C compared to immediately after fermentation. The sugar content increased by about two-fold. The total polyphenol and total flavonoid content decreased when the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract was enzymatically fermented at 60°C.

Conclusion: The extract double-fermented from Goji berry fruit through EM (Effective Microorganisms) fermentation and malt enzyme fermentation has excellent antioxidant ability, suggesting the possibility of using Goji berry fruit and EM (Effective Microorganisms) fermentation as a natural antioxidant. I confirmed that it exists. In particular, it has antioxidant and antibacterial functions, and its feasibility as a natural raw material used in hair products was found.

Keywords: Goji Berry, Effect Enzyme Fermentation, Hair, Antioxidant, Natural Extract

1. Introduction

1.1 Background and purpose of research

In recent years, as news of deaths from humidifier disinfectants, side effects of chemicals in sanitary pads, and harmful substances detected in radon beds and baby textiles have spread across the country, consumers' fear and aversion to chemicals has intensified[1][2]. Accordingly, consumers became more interested in the ingredients of products rather than the price of the product, and began to pay attention to products or natural cosmetics that did not use chemical ingredients that cause allergies and skin rashes[3][4]. Among them, if you check the ingredients of shampoos, rinses, and conditioners that are commonly used in our daily lives, you can see that they contain large amounts of chemical preservatives, chemical conditioning agents, and

mineral oil. In addition, it contains silicone-containing ingredients such as dimethicon, cyclomethicone, and cyclopentasiloxane, and is composed of ingredients that imitate natural ingredients products[5]. In addition, silicone ingredients are used in hair shampoo, hair manicure, hair essence, etc., and the hair may be damaged in the process of silicone being coated on the hair surface and falling off[5][6]. If the hair and hair are not thoroughly rinsed after shampooing, the hair may be damaged. In this case, chemicals remain in the hair and hair, interfering with the scalp's respiration, and subsequent chemical procedures cause damage to the cortical cells inside the hair shaft and hair root[6][7].

Therefore, it is a natural product that has been handed down since ancient times, and is rich in carotinoids, choline, melissic acid, phyllin, unsaturated fatty acids, and zeatin, which provide anti-aging, antibacterial, anti-inflammatory immunity enhancement, liver function improvement, anti-wrinkle effect, and anti-aging properties. We would like to suggest the feasibility of Goji berry, which is said to be excellent for diabetes and oxidation effects due to its rich antiox-idant properties, as a natural raw material used in hair products[8].

1.2. Theoretical background

1.2.1. Hair

Hair is composed of keratin protein, and can be roughly divided into two categories: hair root and hair shaft. The part inside the scalp is called the hair root, and the part that is visible to the naked eye and protrudes outside the scalp is called the hair shaft. Causes of hair damage include physical, natural, physiological, and chemical factors. Because hair is made of strong hard keratin protein, once damage occurs, it may be difficult to regenerate, so it is important to prevent and manage damage in advance[9][10]. Among the causes of damage, the first is that the hair is damaged due to friction and heat from physical actions such as shampooing, blow drying, cutting, and combing. It can be seen that hair is severely damaged by blow drying and using physical drying using hot heat in an electric iron[11][12]. Second, there are infrared and ultraviolet rays through sunlight, which are natural effects. In particular, it can be seen that the strong heat of ultraviolet rays causes denaturation of hair proteins, causing damage to the hair. Air pollution caused by exhaust gases from automobiles and combustion gases from factories can also be considered a factor in hair damage [13][14]. Thirdly, looking at the physiological function, in order to grow healthy hair, rest to stabilize the hair and intake of various nutrients based on correct eating habits are necessary. However, hair growth is slowed due to irregular eating habits and lifestyle habits such as lack of sleep or stress. If it is not done correctly, hair loss may occur^[14]. Fourth, chemical action often results in hair damage when periodic treatments are performed on the hair using chemical products such as bleaching and perm, and the use of dyes and alkaline agents with a strong hydrogen peroxide concentration lowers the bonding strength of the hair. Therefore, frequent dyeing and bleaching can cause severe hair damage[13][14]. In the case of perm, if the processing time of reducing agent and oxidizing agent is left for a long time, the hair may be damaged [14] [15]. In the case of extremely damaged hair, the hair may become porous and empty inside. In severely damaged hair, the inside of the hair may become hollow and porous. In addition, the part of the cuticle layer exposed to the surface was broken or torn and some parts were lifted [7][16].

1.2.2. Goji berry

Goji berry contains a large amount of functional ingredients such as betaine and rutin, and is known to have anti-cancer effects, boost immunity, improve liver function, and reduce blood cholesterol[17]. It is present in the body. It is known to have the function of discharging toxic substances to the outside and eliminating free radicals, which are harmful oxygen[17][18]. Betaine acts as a donor of the methyl group for the production of methionine from homocysteine

during the betaine homocysteine methyltransferase reaction process in the liver, the final metabolic oxide of choline[19]. It is attracting attention as a functional ingredient that prevents arteriosclerosis, high blood pressure, and protects liver function and vision [20]. In addition, it accelerates the detoxification of homocosyteine, a toxic protein that causes arteriosclerosis, and suppresses its intravascular concentration, which is produced during blood protein metabolism in patients suffering from vascular-related diseases[20]. Betaine in plants acts as an amphoteric substance, so it is contained in large amounts in halophytes to gain tolerance to high concentrations of salt stress, and even some bacteria with osmotic resistance properties use betaine as an osmolyte. It is known that it can adapt to a high osmotic pressure environment[20][21].

1.2.3. EM (Effective Microorganisms) fermentation

EM (Effective Microorganisms) is an abbreviation for useful microorganisms and refers to a group of useful microorganisms developed by Professor Higa of the Department of Agriculture at the University of Ryukyus, Japan in 1982. Experiments using EM (Effective Microorganisms) are used not only in agricultural products but also in various fields such as environmental issues, health and treatment, and resource and energy fields. Additionally, in addition to Asian countries, 143 countries use EM (Effective Microorganisms). EM (Effective Microorganisms) is called EM (Effective Microorganisms) because synthetic bacteria, lactic acid bacteria, and yeast coexist. EM (Effective Microorganisms) is called EM (Effective Microorganisms) because synthetic bacteria, lactic acid bacteria, and yeast coexist[22]. Synthetic bacteria are excellent at decomposing organic matter and removing odors, and various experiments are being conducted to remove odors such as organic wastewater and food waste [23][24]. Lactic acid bacteria use sugars received from synthetic bacteria and yeast as a substrate to decompose organic substances more quickly, producing various organic acids such as lacticacid and aceticacid [22]. In addition, it has strong bacteriostatic power, suppresses the growth of harmful microorganisms and violent decomposition of organic matter, and has antioxidant power[24]. In the case of yeast, in addition to producing antibiotics, it produces physiologically active substances such as enzymes, which help activate plant cells and differentiate roots. When useful microorganisms in EM (Effective Microorganisms) are put into an environment where decay is in progress or decay is in progress, a fermentation environment is created by producing antioxidant enzymes, antioxidants, amino acids, vitamins, sugars, organic acids, minerals, various enzymes and hormones. Therefore, it is suggested that it suppresses harmful microbial species active in oxidized conditions, enhances the growth of beneficial microorganisms, and simultaneously eliminates the toxicity of harmful substances[17][18][22].

1.2.4. Saccharification (malt)

Saccharification liquid is manufactured by drying germinated malt, extracting the saccharification (malt) powder with water, and adding powdered raw materials to the malt extract to maintain the temperature. When maltamylase causes saccharification, the powder is saccharified, producing sweetness and flavor such as maltose and glucose[25]. In one type of barley, β amylase is activated through germination, and β -amylase activity is activated through saccharification (It is an important factor that directly affects the saccharifying power of malt)[26]. The quality of saccharification (malt) is known to be a very important factor in the activity of enzymes in the saccharification process. Increasing the activity of enzymes requires improving the quality of saccharification (malt)[27], and the changes in glucose, maltose and maltotriose according to saccharification time are essential. The amount produced increases as the saccharification time increases. In addition, a research paper was published showing that the amount of maltos produced was higher than that of glucose or maltotriose[25]. Saccharification (malt) is the main ingredient in taffy and has strong saccharification power. It is involved in the saccharification of starch saccharified at a certain temperature and is an important factor in enzyme activity[28]. The powder is manufactured by adding malt to the powder extracted from these raw materials and then saccharified. Depending on the degree of boiling by applying heat, it can be made into non-boiled sikhye (a type of liquid starch syrup) or hard taffy[29].

2. Research Method

2.1. Fermentation experiment method

The fermentation experiment method of Goji berry is as follows <Figure 1>.

Figure 1. Fermentation experiment method.



Prior to the fermentation experiment, dried Goji berries were extracted using two methods. First extraction method: 250 g of dried Goji berry were immersed in 2L of distilled water, and extracted at room temperature for 24 hours. For the second extraction method, 250 g of dried Goji berries and 2L of distilled water were placed in a pressurized machine and subjected to sealed pressurized convection fermentation for 6 hours. Two types of solutions were mixed with 100 ml of EM (Effective Microorganisms) stock solution, inoculated, and cultured in an incubator at 25°C for about 2 weeks. After EM (Effective Microorganisms) fermentation was completed, a secondary enzyme fermentation experiment was conducted with the filtrate that had been filtered and sterilized (Filtering EM (Effective Microorganisms)). 2 L of Goji berry EM (Effective

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Microorganisms) fermentation filtrate was mixed with 300 ml of malt liquid and then enzymatic fermentation was performed under two conditions: 25 °C (2 weeks, static) and 60 °C (6 hours, sealed convection). After the enzyme fermentation was Completed, it was filtered through sterile gauze, stored in the refrigerator, and used in experiments.

2.2. Validity (in vitro) analysis method

2.2.1. Determination of total polyphenol content

Total polyphenol content was measured by applying the Folin-Denis method, which is widely used as a polyphenol analysis method. Dissolve $50\,\mu\ell$ of each sample in $650\,\mu\ell$ of distilled water, add $50\,\mu\ell$ of Folin-Denis reagent (Sigma-Aldrich, USA), mix well, leave at room temperature for 3 minutes, and add $10\,\mu\ell$ of 10% Na2CO3 (Sigma-Aldrich, USA, 500g). was added slowly. This mixture was left in the dark at 37° C for 1 hour, and then the absorbance was measured at 750 nm using a microplate reader (Biolog Micostation, USA). At this time, the total polyphenol compound content was calculated from a standard curve prepared using tannic acid (Sigma, Cat No. 403040-50G).

2.2.2. Total flavonoid content determination

To measure the total flavonoid content, a modified Folin-Denis method was used. $100\,\mu\ell$ of each sample was taken, $800\,\mu\ell$ of ethanol and $60\,\mu\ell$ of 5% NaNO2 were mixed homogeneously and reacted at room temperature for 5 minutes. $60\,\mu\ell$ of 10% AlCl3 was added and reacted at room temperature for another 5 minutes. After that, 400 $\,\mu\ell$ of 1 M NaOH solution was added and reacted at room temperature for 1 minute. 500 $\,\mu\ell$ of distilled water was added to homogenize. 200 $\,\mu\ell$ was taken and distributed into a 96 well plate, and the absorbance was measured at 405 nm with a microplate reader (Biolog Micostation, USA). A standard curve was prepared using naringin (Sigma, Cat No. Q4951-10G) as a standard substance.

2.2.3. Total sugar content

After adding 1 ml of 5% phenole to 1 ml of sample, 5 ml of H2SO4 was added, mixed well, and reacted at room temperature in the dark for 20 minutes. Afterwards, the absorbance was measured at 470 nm. A standard curve was drawn using 0.01% maltose as a control and then quantified.

2.2.4. Antioxidant experiment

2.2.4.1. DPPH radical scavenging ability

DPPH (1.1-diphenyl-2-picrylhydrazyl) radical scavenging activity was measured using the DPPH Antioxidant Assay Kit. After the sample was left to stand with the addition of Assay Buffer and DPPH Working Solution, the absorbance was measured. After adding 20 $\mu\ell$ of sample and 80 $\mu\ell$ of assay buffer to the well plate, 100 $\mu\ell$ of DPPH working solution was added, left in the dark at room temperature for 30 minutes, and the absorbance was measured at 517 nm with a microplate reader (Biolog Micostation, USA). DPPH radical scavenging ability was analyzed by comparing it with the IC50 of Trolox standard.

2.2.4.2. SOD activity

SOD (Superoxide Dismutase) activity was measured using the EZ-SOD Assay Kit (DoGenBio, cat. No. DG-SOD400, Korea). After adding 20 $\mu\ell$ of sample and 200 $\mu\ell$ of working solution to the well plate, 20 $\mu\ell$ of enzyme working solution was added, left in the dark at 37°C for 20 minutes, and the absorbance was measured at 450 nm with a microplate reader (Biolog Micostation, USA). The greater the activity of the SOD enzyme, the lower the absorbance. At this time, when the color of the sample is dark, a blank is set according to the concentration of each sample and corrected.

2.2.4.3. Catalase activity

Catalase activity was tested by adding $25 \mu \ell$ of sample to a well plate, adding $25 \mu \ell$ of $40 \mu m$ H2O2, mixing well, and reacting for 30 minutes in the dark at room temperature. Afterwards, $50 \mu \ell$ of working solution was added and reacted in the dark at 37 °C for 30 minutes, and the absorbance was measured at 500 nm using a microplate reader. After preparing and reacting catalase standards at different concentrations as standard products, a standard curve was drawn to determine the activity concentration of the sample.

2.2.4.4. Hydrogen peroxide

Hydrogen peroxide analysis was performed using the EZ-Hydrogen Peroxide / Peroxidase Assay Kit (DoGenBio, Cat, No. DG-PER500, Korea). Put $50\,\mu\ell$ of sample into a well plate, add $50\,\mu\ell$ of working solution, mix well, react for 30 minutes in the dark at room temperature, and then measure absorbance at 500nm using a microplate reader. As a standard product, H₂O₂ was diluted by concentration and tested, then a standard curve was drawn and compared with the sample.

2.2.4.5. Peroxidase activity

Peroxidase activity analysis was performed using the EZ-Hydrogen Peroxide / Peroxidase Assay Kit (DoGenBio, Cat, No. DG-PER500, Korea). Put $50\,\mu\ell$ of sample in a well plate, add $50\,\mu\ell$ of working solution, mix well, react for 30 minutes in the dark at room temperature, and then measure absorbance at 560nm using a microplate reader. As a standard, HRP (Horseradish peroxidase) was diluted by concentration and tested, then a standard curve was drawn and compared with the sample.

3. Results

3.1. Figure abbreviation

- A : Water immersive extraction
- B : Water immersive extraction EM fermentation product
- C : Purified water extract EM fermentation product 25° C enzyme fermentation
- D : Water immersive extraction EM (Effective Microorganisms) fermentation product 60° C enzyme fermentation
- E : Sealed pressurized hot water extract
- F : Sealed pressurized hot water extract EM (Effective Microorganisms) fermentation product
- G : Sealed pressurized hot water extract EM (Effective Microorganisms) fermentation product 25° C enzyme fermentation
- H : Sealing pressurized hot water extract EM(Effective Microorganisms) fermentation product $60^{\circ}C$ enzyme fermentation

3.2. Total polyphenol content measurement results

As a result of measuring the total polyphenol content, non-fermented purified water and extracts using the sealed pressurized convection method were confirmed to have relatively low polyphenol content, and differences were also seen depending on the enzyme fermentation temperature. In water immersive extraction, the polyphenol content increased by 30% during EM (Effective Microorganisms) fermentation, and in sealed pressurized convection method, it increased by about 26%. Water immersive extraction showed a higher polyphenol content when enzymatically fermented at 60° C compared to when fermented at 25° C. In the case of the

Sealed Pressurized Convection Method extract, enzyme fermentation at 25° C showed a higher polyphenol content than enzyme fermentation at 60° C. However, when the EM (Effective Microorganisms) fermentation product of water immersive extraction was enzymatically fermented, the polyphenol content was significantly reduced. In particular, the EM (Effective Microorganisms) fermentation product of the sealed pressurized convection method (Sealed Pressurized Convection Method) was subjected to enzyme fermentation. When enzyme fermented at 60° C, polyphenol was reduced by 21%. As shown in the following <Figure 2>.





3.3. Total flavonoid content measurement results

It was confirmed that the flavonoid content was highest when the extracted purified water was subjected to EM (Effective Microorganisms) fermentation, and the sealed pressurized hot water extract was EM (Effective Microorganisms) fermented and then enzymatically fermented at 25°C. As a result of measuring the total flavonoid content, unfermented purified water and sealed pressurized hot water extract were found to have relatively low flavonoid content, and differences also appeared depending on enzyme fermentation temperature. During the EM (Effective Microorganisms) fermentation process, the flavonoid content of the purified water extract increased by about 51%, and that of the sealed pressurized hot water extract increased by about 11%. The purified water extract showed higher flavonoid content when enzymatically fermented at 60° C than when fermented enzymatically at 25° C. In the case of sealed pressurized hot water extract, enzyme fermentation at 25° C showed higher flavonoid content than enzyme fermentation at 60° C. However, when the EM (Effective Microorganisms) fermentation was subjected to enzyme fermentation, the flavonoid content was significantly reduced. As shown in the following <Figure 3>.



Figure 3. Total flavonoid content.

3.4. Total sugar content analysis results

It was confirmed that the sugar content was highest when goji berries were extracted with purified water and then subjected to EM (Effective Microorganisms) fermentation. Next, it was confirmed that the sugar content was highest when the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract was enzymatically fermented at 60°C. Measured. When goji berries were fermented with EM (Effective Microorganisms), the sugar content decreased regardless of the extraction method. When the EM (Effective Microorganisms) fermented product of the extract was enzymatically fermented, the sugar content increased, and there was a significant difference depending on the enzyme fermentation temperature. When the immersion-extracted EM (Effective Microorganisms) fermented product was enzymatically fermented at 25°C, the sugar content increased by 23% compared to after EM (Effective Microorganisms) fermentation, and when the enzyme fermented at 60°C, the sugar content increased by about 23%. Twice as much immediately after fermentation. . When the sealed stand pressurized hot water extract EM (Effective Microorganisms) fermentation was enzymatically fermented at 25°C, the sugar content increased by 70% compared to after EM (Effective Microorganisms) fermentation, and when enzymatically fermented at 60°C, the sweetness increased. It increases by about twice as much as immediately after fermentation. As shown in the following <Figure 4>.



Figure 4. Total sugar content analysis results.

3.4.1. DPPH radical scavenging ability

The highest DPPH radical scavenging ability was confirmed when goji berries were extracted with sealed pressurized hot water and then fermented with EM (Effective Microorganisms). Next, the EM (Effective Microorganisms) fermentation broth of the sealed pressurized hot water extract was fermented at 60°C. When fermented with enzymes, it was measured as high as. In measuring the DPPH radical scavenging ability, immersion extraction was confirmed to have a relatively lower DPPH radical scavenging ability than the pressurized hot water extract, and differences were also found depending on the enzyme fermentation temperature. The DPPH radical scavenging ability of immersion extraction increased by about 25% during EM (Effective Microorganisms) fermentation, and that of sealed stand pressurized hot water extract increased by about 11%. Immersion extraction showed higher DPPH radical scavenging ability when enzymatically fermented at 25°C than when fermented at 60°C. The sealed pressurized hot water extract showed higher DPPH radical scavenging activity when enzymatically fermented at 60°C than when fermented at 25°C. However, when the EM (Effective Microorganisms) fermentation product of immersion extraction was enzymatically fermented, the DPPH radical scavenging ability was significantly reduced. In particular, the EM (Effective Microorganisms) fermentation

product of the soaked extract was enzymatically fermented at 25°C. At this time, the DPPH radical scavenging ability decreased to 27%. As shown in the following <Figure 5>.



Figure 5. DPPH radical scavenging activity.

3.4.2. SOD activity analysis results

It was confirmed that the SOD activity was highest when goji berries were extracted with purified or sealed pressurized hot water and then fermented with EM(Effective Microorganisms). Next, the Effective Microorganisms (EM) fermentation broth obtained by submersion extraction was enzymatically fermented at 60°C. Once fermented, it was measured to be high. In measuring SOD activity, immersion extraction and sealed pressurized hot water extract showed similar patterns, and differences also appeared depending on enzyme fermentation temperature. The SOD activity of both the soaked extract and the sealed pressurized hot water extract increased by about 100% during EM (Effective Microorganisms) fermentation, but the SOD activity decreased significantly during enzyme fermentation at 25°C. Submerged extraction showed higher SOD activity when enzymatically fermented at 60 ℃ than when fermented at 25 ℃. Sealed pressurized hydrothermal extracts showed higher SOD activity when enzymatically fermented at 60°C than when fermented at 25°C. However, when the EM (Effective Microorganisms) fermentation product obtained by sealed pressurized hot water extraction was enzymatically fermented at 25°C, the decrease in SOD activity was greater than when the EM (Effective Microorganisms) fermentation product obtained by immersion extraction was enzymatically fermented at 60°C. Appeared. As shown in the following <Figure 6>.



Figure 6. SOD activity.

3.4.3. Catalase activity assay results

Catalase activity was found to be highest when the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract of Goji berry was enzymatically fermented at 25°C and then the sealed pressurized hot water extract was fermented with the EM (Effective Microorganisms). It was measured high. In the measurement of catalase activity, the soaked extract was found to exhibit relatively lower activity than the sealed pressurized water extract, and no significant difference was observed depending on the enzyme fermentation temperature. The catalase activity of the steeped extract increased 13-fold during effective microorganism (EM) fermentation, while the catalase activity of the sealed stand pressurized water extract increased approximately 1.8-fold. The soaked extract showed higher catalase activity when fermented at 25°C than when fermented at 60°C. For sealed pressurized hydrothermal extracts, catalase activity was significantly reduced when enzymatically fermented at 60°C compared to fermentation at 25°C. Catalase activity increased when the EM (Effective Microorganisms) fermentation product of immersion extraction was enzymatically fermented. However, when the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract was enzymatically fermented at 60°C, the catalase activity result decreased to 33%. As shown in the following < Figure 7>.



Figure 7. Catalase activity.

3.4.4. Hydrogen peroxide activity assay results

The highest H₂O₂ was confirmed when EM (Effective Microorganisms) fermented products obtained by sealing, pressurizing, and hot water extraction from goji berries were enzymatically fermented at 25°C. The highest H₂O₂ was confirmed when the EM (Effective Microorganisms) fermentation product obtained by sealed and pressurized hot water extraction of goji berries was subjected to enzymatic fermentation at 25°C, followed by the EM (Effective Microorganisms) fermentation product of immersion extraction. In the H_2O_2 measurement, relatively more H_2O_2 was confirmed in the sealed pressurized hot water extract than in the soaked extract, and there was a difference depending on the enzyme fermentation temperature. In immersion extraction, H₂O₂ increased 2.6 times during the EM (Effective Microorganisms) fermentation process, and in sealed pressurized hot water extract, there was little increase. Immersion extraction showed higher H₂O₂ when enzymatically fermented at 25°C than when fermented at 60°C. In the case of sealed pressurized hot water extract, enzyme fermentation at 25°C showed higher H₂O₂ than enzyme fermentation at 60°C. However, when the EM (Effective Microorganisms) fermentation product of the immersion extraction was enzymatically fermented at 60°C, H H₂O₂ decreased to 54%, and the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract was enzymatically fermented at 60°C. At 60°C, C, H₂O₂ decreased to 54%. In addition, when the EM (Effective Microorganisms) fermentation product of the sealed pressurized hot water extract was enzymatically fermented at 60° C, H_2O_2 decreased by 70%. As shown in the following <Figure 8>.

Figure 8. Hydrogen peroxide.



3.4.5. Peroxidase activity analysis results

Peroxidase activity was found to be highest when extracting goji berries in sealed, pressurized hot water, with the highest levels found in water-soaked extracts. In the measurement of peroxidase activity, immersion extraction was found to have relatively low activity compared to sealed pressurized hot water extract, and there was a significant difference depending on the enzyme fermentation temperature. The catalase activity of the soaked extract decreased by 82% during the EM (Effective Microorganisms) fermentation process, and the sealed pressurized hot water extract decreased by 84%. The EM (Effective Microorganisms) fermentation product of immersion extraction showed higher peroxidase activity when enzymatically fermented at 25°C than when fermented at 60°C. In the case of EM (Effective Microorganisms) fermentation products of sealed pressurized hot water extracts, enzyme fermentation at 25°C showed higher peroxidase activity than when enzyme fermentation products from immersion extraction decreased when enzymatic fermentation was performed at 60°C. In addition, in the case of EM (Effective Microorganisms) fermentation decreased when enzymatic fermentation was performed at 60°C. In addition, in the case of EM (Effective Microorganisms) fermentation products of sealed pressurized hot water extracts, enzyme formed at 60°C. However, the peroxidase activity of EM (Effective Microorganisms) fermentation products from immersion extraction decreased when enzymatic fermentation was performed at 60°C. In addition, in the case of EM (Effective Microorganisms) fermentation of sealed pressurized hot water extract, peroxidase activity decreased by 37% when enzymatically fermented at 60°C. As shown in the following <Figure 9>.

Figure 9. Peroxidase activity.



4. Conclusion

Recently, interest in the environment has become prominent, and eco-friendly methods for manufacturing cosmetic raw materials have been widely studied. Recently, much research has been conducted to include fermentation techniques used in food in the cosmetics manufacturing process[30]. In addition, Dong-Geun Han et al. confirmed the usefulness of fermented goji berry lactic acid as a functional cosmetic raw material[31].

In this experiment, Goji berry as the main ingredient was saccharified and fermented at high temperature using effective microorganisms (EM (Effective Microorganisms)) existing in nature and malt, and then free sugar analysis, polyphenol content analysis, flavonoid content analysis, and antioxidant substance analysis were performed. Activity measurements (DPPH radical scavenging capacity) were performed. SOD-like activity assay, catalase activity assay, peroxidase activity assay, etc.) were performed. The experimental results confirmed the following conclusions.

First, the potential of Goji berry EM fermented as a natural antioxidant was confirmed by confirming that the total polyphenol content of the EM (Effective Microorganisms) fermented product increased by 70-80% compared to the unfermented Goji berry fruit extract. The possibility of utilizing EM (Effective Microorganisms) fermented of Goji berries has been confirmed.

Second, the sugar content of Goji berry extract was highest when it was extracted by immersing Goji berry in purified water and then fermented with malt enzyme at 60°C and there was a significant difference depending on the enzyme fermentation temperature.

Third, the enzyme fermentation product of Goji berry extract EM (Effective Microorganisms) fermentation broth showed excellent antioxidant properties at 60°C.

Research Results: Through the results of this experiment, it was confirmed that Goji berry fermented extract has antioxidant functions and its validity as a natural raw material used in hair products.

The limitation of this study is that hair cosmetics using Goji berry fermented extract should be manufactured in the future, and future research should be conducted focusing on the protective effect of damaged hair.

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6. Appendix

6.1. Authors contribution

	Initial name	Contribution
		-Set of concepts 🔽
Lead HK Author HK		-Design 🔽
	ЦК	-Getting results 🔽
	TIK	-Analysis 🔽
		-Make a significant contribution to collection $\ igside \Box$
		-Final approval of the paper 🗹
		-Corresponding 🔽
		-Play a decisive role in modification $\ \overline{\checkmark}$
Corresponding	MC	-Significant contributions to concepts, designs,
Author*	Wie	practices, analysis and interpretation of data $\ oxtimes$
		-Participants in Drafting and Revising Papers 🛛
		-Someone who can explain all aspects of the paper $\ igsqcup$

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Analysis of Consumer Purchase Satisfaction According to Network Marketing Selection Attributes of Inner Beauty Products

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Abstract

Purpose: Korean society is increasingly interested in expressing a beautifully maintained appearance rather than simply pursuing beauty. In addition, the development and sales of beauty products related to this are increasing as people are demanding to think about their inner health as well as their outer appearance. Therefore, this study focused on inner beauty products sold through network marketing and objectively examined how consumers evaluate their purchase satisfaction according to their choice attributes.

Method: Participants in the study were participants who had purchased inner beauty products through network marketing, and 212 response sheets were used for the final analysis. Multiple regression analysis was conducted to verify the influence of network marketing selection attributes of inner beauty products on consumer purchase satisfaction, and the significance level according to statistical test was determined at p<.05.

Results: Multiple regression analysis was conducted to examine the multidimensional influence of the factors of the choice attributes of the study participants on the sub-factors of the purchase satisfaction variables. The results of the study showed that the choice attributes that have a significant impact on consumer purchase satisfaction are internal choice attributes and ecological choice attributes, except for external choice attributes.

Conclusion: Consumption choice attributes of modern people show various consumption behaviors depending on individual characteristics and perceived value. In this study, we examined how consumer purchase satisfaction is manifested according to the choice attributes of consumers participating in network marketing. Based on these results, it is expected that network marketing operators can use it as an objective data on the selection attributes and purchase satisfaction evaluation of inner beauty products so that they can have an independent attitude as business owners.

Keywords: Inner Beauty Products, Network Marketing, Consumer, Purchase Satisfaction, Selection Attributes

1. Introduction

As Korean society continues to grow economically and advance in science and medicine, the focus on health is shifting from outward physical health to a more holistic concept of wellness that includes social, educational, occupational, and emotional health. Koreans' pursuit of a happy life is also changing the way they manage their physical appearance, not only to pursue beauty, but also to manage their illnesses and inner beauty[1][2][3].

Changes in value standards in Korean consumption range from product selection to purchase activities and repurchases. The so-called consumption value is a concept that serves as a criterion or goal of the decision-making process until the consumer selects and purchases a product, and it is a concept that affects consumption behavior and judgment in purchasing and using products necessary for daily life[4][5]. Among the changes in consumption value, network marketing refers to a method in which consumers become salespeople bypassing the intermediate

distribution process of wholesalers and retailers from manufacturers and advertising in mass media. Women in Korean society are actively entering the workforce more than ever as incomes rise and the quality of life improves. This social change has led to a shift in the demand for health and beauty, rather than simply pursuing beauty as before. Accordingly, the development and sales of related beauty products are also increasing[6][7][8].

Network marketing goes by many names, including referral marketing, personal marketing, direct marketing, pyramid marketing, and is often used interchangeably with the term multilevel marketing as a way to sell services and products [9][10][11][12][13]. In other words, the uniqueness of network marketing means a form of marketing in which newly formed consumers appear in the process of sharing or selling products with people around them, and they repurchase or create other sellers in a continuous process, so that the scope of product sales grows infinitely [14][15].

Inner beauty products are products that combine health promotion and skin care by consuming healthy foods, also known as 'eating cosmetics'[1]. Inner beauty products are not just temporary cosmetics that are applied to the skin for inner and beauty purposes, but are ingestible cosmetics that manage the skin through lifestyle and eating habits. In this study, we investigated the consumer choice attributes and purchase satisfaction of inner beauty products only when the sales and distribution process is conducted through network marketing. Network marketing is a direct-to-consumer sales method, and it is evaluated as a social contribution that promotes participation and creates jobs by providing a reward program for consumers and independent business owners who participate in the direct sales route[16][17]. Therefore, this study focused on inner beauty products sold through network marketing and objectively examined how consumers evaluate purchase satisfaction according to their choice attributes.

2. Research Methods

2.1. Selection of study participants

This study was conducted by recruiting 250 participants who had purchased inner beauty products as network marketing products. The sample of study participants was selected by non-probability sampling using judgmental sampling, and 212 valid responses were used for the final analysis after excluding questionnaires with insincere responses. The participant information is shown in <Table 1>.

Division	Cases	Number of people	Percentage	
Conden	Male	25	11.2	
Gender	Cases N Male Female 20s 30s 40s 50s 60s High school diploma or less College degree or less Master's degree	199	88.8	
	20s	6	2.7	
	30s	31	13.8	
Age	40s	107	47.8	
	50s	65	29.0	
	60s	15	6.7	
	High school diploma or less	23	10.3	
Education	College degree or less	138	61.6	
	Master's degree	56	25.0	
	Doctoral graduate	7	3.1	

 Table 1. General characteristics of participants.

	Self-employed	72	32.1
Quantita	Sales/Service worker	34	15.2
	Office worker	34	15.2
Occupation	Professional	20	8.9
	Student	4	1.8
	Homemaker	60	26.8
	More than once	48	21.4
Number of inner beauty	2-3 times or less	66	29.5
product purchases in 1 year	4-5 times or less	40	17.9
	More than 6 times	70	31.3
	Less than 50,000 KRW	60	26.8
	Less than 100,000 KRW	60	26.8
Average amount spent on inner beauty products	Less than 200,000 KRW	59	26.3
	Less than 300,000KRW	29	12.9
	More than 300,000 KRW	16	7.1
	Less than 1 to 3 years	138	61.6
Length of time purchasing	Less than 3 to 5 years	34	15.2
products through network marketing	Less than 5 to 10 years	36	16.1
	More than 10 sides	16	7.1
Sum		212	100.0

2.2. Measurement instruments

2.2.1. Validity and reliability analysis of selection attribute measurement tools

The questionnaire used to measure the network marketing selection attributes of inner beauty products was adapted and modified from the questionnaire used in previous studies to fit this study[4][18]. The selection attribute variable consisted of 15 items and three factors: external selection attributes of the product, internal selection attributes of the product, and selection attributes of the product ecosystem. According to the results of the exploratory factor analysis, the KMO measure, which examines how well the correlation coefficient between items is explained by other items, is 0.834, and the Bartlett's χ^2 test, which indicates the appropriateness of the factor analysis model, is 1048.800 (p<.000), indicating that the model is appropriate. Cronbach's a coefficient was used to analyze the reliability of the components of the selection attributes, .831 for internal selection attributes, and .814 for ecological selection attributes. The results of the exploratory factor analysis and reliability analysis of the measurement tool for the selection attribute variables of network marketing of inner beauty products are shown in <Table 2> below.

Factors	1	2	3
Extrinsic selection attributes 4	.750	006	.062
Extrinsic selection attributes 1	.699	.055	.006
Extrinsic selection attributes 2	.657	.234	.200

 Table 2. Exploratory factor analysis and reliability analysis of selection attributes.

Extrinsic selection attributes 5	.621	.327	.161
Extrinsic selection attributes 3	.591	.143	.153
Extrinsic selection attributes 6	.535	.005	.132
Internal selection attributes 3	.061	.823	.124
Internal selection attributes 2	.053	.796	069
Internal selection attributes 4	.041	.749	047
Internal selection attributes 1	.111	.730	.244
Internal selection attributes 5	.156	.691	009
Ecological selection attributes 3	.082	.047	.841
Ecological selection attributes 4	.085	053	.811
Ecological selection attributes1	.070	.314	.772
Ecological selection attributes 2	068	.110	.710
Eigenvalues	3.182	2.657	2.573
Variance%	21.211	17.713	17.151
Accumulation%	21.211	38.924	56.074
Reliability	.731	.831	.814

Note: KMO = .834 Bartlett's χ^2 = 1048.800, (p<.000).

2.2.2. Validity and reliability analysis of consumer purchase satisfaction measurement tools

The questionnaire used to measure the satisfaction of network marketing consumer purchases of inner beauty products was adapted and modified from the questionnaire used in previous studies to fit this study[19][20]. The consumer purchase satisfaction variable consisted of four factors and 14 items: product satisfaction, payment satisfaction, service satisfaction, and delivery satisfaction. According to the results of the exploratory factor analysis, the KMO measure is 0.884, and the Bartlett's χ^2 test, which indicates the appropriateness of the factor analysis model, is 991.325 (p<.000), indicating that the model is appropriate. Cronbach's a coefficient was used to analyze the reliability of the components of consumer purchase satisfaction. The results of the analysis were .765 for product satisfaction, .881 for payment satisfaction, .732 for service satisfaction, and .712 for delivery satisfaction, indicating good reliability of the components. The results of the exploratory factor analysis and reliability analysis of the measurement tool for consumer purchase satisfaction variables in network marketing of inner beauty products are shown in <Table 3> below.

Factors	1	2	3	4
Product satisfaction 3	.838	205	217	032
Product satisfaction 4	.764	.192	166	.100
Product satisfaction 1	.754	.243	.102	.108
Product satisfaction2	.700	.079	.228	.329
Payment satisfaction 2	.261	.833	066	.317
Payment satisfaction 3	.174	.776	354	116
Payment satisfaction 1	.216	.689	.065	.335
Service satisfaction 1	.118	.254	.673	.445

Table 3. Exploratory factor analysis and reliability analysis of consumer purchase satisfaction.

Service satisfaction 2	134	.389	.627	.119
Service satisfaction 4	076	591	.561	032
Service satisfaction 3	052	513	.481	199
Delivery satisfaction 1	023	003	.029	.764
Delivery satisfaction 3	.146	059	051	.682
Delivery satisfaction 2	.148	.052	139	.462
Eigenvalues	2.456	2.105	2.034	1.868
Variance%	17.543	15.035	14.531	13.345
Accumulation%	17.543	32.578	47.109	60.454
Reliability	.765	.881	.732	.712

Note: KMO = .884 Bartlett's χ^2 =991.325, (p<.000).

2.3. Data analysis

To investigate the relationship between network marketing choice attributes and consumer purchase satisfaction of participants using inner beauty products, this study first used exploratory factor analysis and principal component and varimax rotation to confirm the validity of the scales used to investigate network marketing choice attributes and consumer purchase satisfaction of inner beauty products. For reliability, Cronbach's a coefficient was calculated to check the internal consistency between items. Second, multiple regression analysis was conducted to verify the influence of participants' network marketing selection attributes of inner beauty products on consumer purchase satisfaction, and the significance level according to statistical test was determined at p<.05.

3. Research Results

3.1. Correlation analysis of measurement variables

The results of the correlation analysis of network marketing selection attribute variables and purchase satisfaction variables of the study participants are shown in the following <Table 4>. The subfactors of the selection attribute variable were found to be positively correlated with both external selection attributes, internal selection attributes, and ecological selection attributes. In addition, the correlation between the selection attribute variable and the purchase satisfaction variable shows an overall positive correlation between each factor, and the overall correlation between the factors of the measurement variable is consistent with the direction of the study.

Division		1	2	3	1	2	3	4
Selection attributes	Extrinsic selection attributes	1						
	Internal selection attributes	.439**	1					
	Ecological selection attributes	.251*	.328**	1				
Purchase satisfaction	Product satisfaction	.122*	.252**	.503**	1			

 Table 4. Correlation between selection attribute and purchase satisfaction.

Payment satisfaction	.116*	.133*	.154*	.167*	1		
Service satisfaction	.256*	.310**	.329**	.519**	.286**	1	
Delivery satisfaction	.156*	.246**	.229**	.382**	.417**	.490**	1

Note: **p<.01, *p<.05.

3.2. Analyze the impact of selection attribute variables on product satisfaction factors

Multiple regression analysis was conducted to investigate the influence of the factors of the selection attribute variables of the study participants on the product satisfaction factors among the factors of the purchase satisfaction variables. The purchase satisfaction variables are composed of three independent variables, and the regression model with product satisfaction factors as the dependent variable is shown in <Table 5>. According to the results of the regression analysis, F=26.50, which indicates the statistical significance of the multiple regression model, and the probability of significance p=.000 (p<0.05), confirms that there is statistical significance. R^2 , which indicates the explanatory power of the independent variables on product satisfaction, is .555, indicating that the model explanatory power is 55.5%. To test the autocorrelation of the error terms in the regression model, the Durbin-Watson value was calculated, and the value was 1.929, indicating that the error terms are not autocorrelated. According to the statistical significance of each independent variable of the choice attribute variable, the internal choice attribute factor (β =.384, p=.001) and the ecological attribute factor (β =.465, p=.000) are significant for the product satisfaction dependent variable.

Dependent variable	Independent variable	В	SE	β	t-value	Probability of significance
Product satisfaction	Constant	1.686	.307		5.484	.000
	Extrinsic selection attributes	.060	.054	.066	1.108	.269
	Internal selection attributes	.286	.064	.384	4.345	.001
	Ecological selection attributes	.391	.052	.465	7.583	.000

 Table 5. Multiple regression results of choice attribute variables on product satisfaction.

Note: F=26.506, Significance=.000, R²=.555, Durbin-Watson=1.929, p<0.05.

3.3. Analyze the influence of selection attribute variables and payment satisfaction factors

The results of the multiple regression analysis to examine the influence of the factors of the selection attributes of the study participants on the factors of purchase satisfaction among the factors of payment satisfaction are shown in <Table 6>. According to the results of the regression analysis, F=22.429, which indicates the statistical significance of the multiple regression model, and the probability of significance p=.000 (p<0.05), confirmed that there is statistical significance. R², which indicates the explanatory power of the independent variables on payment satisfaction, is .523, indicating that the model explains 52.3%. To test the autocorrelation of the error terms in the regression model, the Durbin-Watson value was calculated, and the value was 1.912, indicating that the error terms are not autocorrelated. According to the statistical significance of each independent variable of the choice attribute variable, the internal choice attribute factor (β =.271, p=.018) and the ecological attribute factor (β =.336, p=.006) are significant for the payment satisfaction dependent variable.

Dependent variable	Independent variable	В	SE	β	t-value	Probability of significance
Payment satisfaction	Constant	3.388	.417		8.126	.000
	Extrinsic selection attributes	119	.074	111	-1.619	.107
	Internal selection attributes	.207	.087	.271	2.389	.018
	Ecological selection attributes	.236	.070	.336	3.517	.006

 Table 6. Multiple regression results of choice attribute variables for payment satisfaction.

Note: F=22.429, Significance=.000, R²=.523, Durbin-Watson=1.912, p<0.05.

3.4. Analyze the influence of selection attribute variables and service satisfaction factors

The results of the multiple regression analysis to examine the influence of the factors of the selection attributes of the research participants on the service satisfaction factor among the factors of the purchase satisfaction factor are shown in <Table 7>. According to the results of the regression analysis, F=21.878, which indicates the statistical significance of the multiple regression model, and the probability of significance p=.000 (p<0.05), confirmed that there is statistical significance. R², which indicates the explanatory power of independent variables on service satisfaction, is .648, indicating that the model explains 64.8%. To test the autocorrelation of the error terms in the regression model, the Durbin-Watson value was calculated, and the value was 2.023, indicating that the error terms are not autocorrelated. According to the statistical significance of each independent variable of the selection attribute variable, the internal selection attribute factor (β =.242, p=.000) and the ecosystem attribute factor (β =.261, p=.000) are significant for the service satisfaction dependent variable.

Dependent variable	Independent variable	В	SE	β	t-value	Probability of significance
Payment satisfaction	Constant	1.826	.336		5.441	.000
	Extrinsic selection attributes	069	.059	075	-1.168	.244
	Internal selection attributes	.254	.070	.242	3.628	.000
	Ecological selection attributes	.223	.056	.261	3.969	.000

 Table 7. Multiple regression results of selection attributes on service satisfaction.

Note: F=21.878, Significance=.000, R²=.648, Durbin-Watson=2.023, p<0.05.

3.5. Analyzing the influence of selection attribute variables and delivery satisfaction factors

The results of the multiple regression analysis are shown in <Table 8> to examine the influence of the factors of the research participants' choice attributes on the factors of purchase satisfaction among the factors of delivery satisfaction. According to the results of the regression analysis, F=27.782, which indicates the statistical significance of the multiple regression model, was confirmed with a significant probability of p=.000 (p<0.05), confirming that there is statistical significance. R², which indicates the explanatory power of independent variables on service satisfaction, is .612, indicating that the explanatory power of the model is 61.2%. To test the autocorrelation of the error terms in the regression model, the Durbin-Watson value was calculated, and the value was 2.085, indicating that the error terms are not autocorrelated. According to the statistical significance of each independent variable of the selection attribute variable, the internal selection attribute factor (β =.214, p=.002) and the ecological attribute factor (β =.175, p=.011) are significant for the dependent variable of delivery satisfaction.

Dependent variable	Independent variable	В	SE	β	t-value	Probability of significance
	Constant	3.085	.328		9.417	.000
Payment satisfaction	Extrinsic selection attributes	093	.058	106	-1.606	.110
	Internal selection attributes	.211	.068	.214	3.087	.002
	Ecological selection attributes	.124	.055	.175	2.576	.011

Table 8. Multiple regression results of selection attributes on delivery satisfaction.

Note: F=27.782, Significance=.000, R²=.612, Durbin-Watson=2.085, p<0.05.

3.6. Analyzing the overall influence of selection attribute variables and purchase satisfaction variables

The results The results of the multiple regression analysis to examine the influence of the factors of the selection attributes of the research participants on the total factors of the purchase satisfaction variables are shown in <Table 9>. According to the results of the regression analysis, F=22.648, which indicates the statistical significance of the multiple regression model, was confirmed with a significant probability of p=.000 (p<0.05), confirming that there is statistical significance. R², which indicates the explanatory power of independent variables on purchase satisfaction, is .673, indicating that the explanatory power of the model is 67.3%. To test the autocorrelation of the error terms in the regression model, the Durbin-Watson value was calculated, and the value was 2.007, indicating that the error terms are not autocorrelated. According to the statistical significance of each independent variable of the choice attribute variable, the internal choice attribute factor (β =.241, p=.000) and the ecological attribute factor (β =.311, p=.000) were significant for the purchase satisfaction variable.

Dependent variable	Independent variable	В	SE	β	t-value	Probability of significance
	Constant	2.390	.244		9.808	.000
Purchase satisfaction	Extrinsic selection attributes	048	.403	070	-1.116	.265
	Internal selection attributes	.187	.051	.241	3.677	.000
	Ecological selection attributes	.198	.041	.311	4.847	.000

 Table 9. Multiple regression results of selection attributes on purchase satisfaction.

Note:F=22.684, Significance=.000, R²=.673, Durbin-Watson=2.007, p<0.05.

4. Conclusion and Recommendations

Inner beauty products are cosmetic nutraceuticals that are taken to promote both health and beauty. They are mainly defined as supplements that prevent skin aging and enhance beauty effects, but there are also functional products related to skin regeneration, moisture management, and immunity. Inner beauty products are widely distributed and sold from offline stores such as drug stores to online stores including home shopping and SNS. Therefore, the sale of

inner beauty products through network marketing is considered to be a social contribution that creates jobs because it is a direct sales method and provides a reward program for consumers who participate in the sales channel [17][18].

The multidimensional influence relationship analysis of the factors of the choice attribute variable in this study on the factors of the purchase satisfaction variable reveals a unique finding that the choice attributes that have a significant influence on consumer purchase satisfaction are internal choice attributes and ecological choice attributes, except for external choice attributes. Previous studies that investigated the impact of customer satisfaction and the moderating effect of trust on the choice attributes of eco-friendly products also reported that healthfulness, environmental friendliness, and reliability positively affect customer satisfaction and are moderated by trust[21]. This reflects the attributes of eco-friendly products, and it can be inferred that this study also reflects the attributes of inner beauty products in network marketing.

In the recent literature, there have been some studies on network marketing's corporate capabilities, managerial leadership, attributes of independent business owners, and acceptance intentions, but there have been no studies on purchase satisfaction intentions based on consumer choice attributes limited to inner beauty products [14][22][23][24]. Therefore, the conclusion that intrinsic and ecosystem choice attributes are positively related to consumers' satisfaction with network marketing purchases has important implications.

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6. Appendix

6.1. Author's contribution

	Initial name	Contribution
		-Set of concepts 🔽
		-Design 🗹
Lead	CK	-Getting results 🔽
Author	CK	-Analysis 🔽
		-Make a significant contribution to collection $ igside S$
		-Final approval of the paper 🛛
		-Corresponding 🗹
		-Play a decisive role in modification $\ igsqcare{}$
Corresponding	CL	-Significant contributions to concepts, designs,
Author*	CL	practices, analysis and interpretation of data $\ oxdot$
		-Participants in Drafting and Revising Papers 🛛
		-Someone who can explain all aspects of the paper $ abla$

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The Impact of Career Orientation of Beauty Salon Workers on Transfer Motivation -Focused on the Moderating Effect of Organizational Support-

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Abstract

Purpose: In this study the impact of beauty shop workers' Career Orientation on Transfer Motivation was analyzed with organization support as a moderating effect.

Method: This study looked at previous studies on each variable based on domestic and foreign research papers and books, and analyzed a total of 310 valid questionnaires using beauty shop workers as the population. Statistical processing was performed using the statistical analysis package SPSS v.23. Frequency analysis was conducted to determine the demographic characteristics of the study subjects, and Cronbach's evaluation of internal consistency was conducted to determine the reliability of the questions on Career Orientation, Transfer Motivation, and organizational support. Reliability analysis was conducted using the Alpha coefficient. The comprehensive influence relationship forming the causal relationship between the variables presented in the research model was conducted through multiple regression analysis and controlled regression analysis.

Results: The above analysis results are summarized as follows.

First, the impact of Career Orientation on Transfer Motivation is that among the Career Orientation factors, Organizational Orientation (Organizational Orientation) and Professional Orientation (Professional Orientation) are It was found to have a positive (+) direction on Transfer Motivation. In other words, as Organizational Orientation and Professional Orientation among Career Orientation factors increase, Transfer Motivation also increases.

Second, among Career Orientation factors, it was verified that Professional Orientation has the greatest influence on Transfer Motivation.

Third, organizational support was found to moderate the effect of Career Orientation on Transfer Motivation. Among the Career Orientation factors, organizational support was adjusted to have a lower impact on Transfer Motivation the higher the Organizational Orientation, and the higher the Professional Orientation, the higher the Transfer Motivation. It was verified that the effect on (transition motivation) was adjusted to increase.

Conclusion: This study provides basic data to improve the capabilities of employees through the organization's continuous support for organizational members and to facilitate human resource management so that they can directly contribute to organizational performance. As a result, the turnover rate of beauty shop workers can be reduced and individual capabilities can be strengthened. I hope that it can be put to good use.

Keywords: Beauty Shop Worker, Career Orientation, Transfer Motivation, Organization Support, Effect

1. Introduction

Rapid changes in the market environment have brought about many changes in companies' employment patterns. Beauty companies, like other companies, do not guarantee lifetime employment. There is a growing need for individuals to find their own direction, develop practical

capabilities for job performance, and constantly develop and manage their careers. Career Orientation, which is the tendency of people who want to manage their careers in this way, is broadly divided into 'Professional Orientation', which wants to continue to develop expertise in one's work, and 'Organizational Orientation', which seeks promotion as an organizational member rather than professionalism. Directionality can be divided into[1]. In this way, an organization can harmonize conflicting relationships by supporting Professional Orientation people and Organizational Orientation people, and strengthen organizational competitiveness by providing flexible career management along with individual self-development.

In this regard, beauty companies must support organizational members to have the capacity to manage their own careers. The organization establishes and operates a career development plan to achieve individual career goals. We must invest in career development and provide career development counseling, learning support, and various related information to individuals.

When they perceive that the organization is implementing a specific policy for their career, they are more likely to take an active attitude toward their job, become satisfied, and become more immersed in the organization[2].

Therefore, this study examines the influence of beauty shop workers' Career Orientation, Organizational Orientation and Professional Orientation, on Transfer Motivation, and regulates organizational support. We would like to verify the effect. The specific research questions are as follows.

1. Do beauty shop workers' Career Orientation, Organizational Orientation and Professional Orientation, affect Transfer Motivation?

2. Is there a moderating effect of organization support between Organizational Orientation, Professional Orientation, and Transfer Motivation of beauty shop workers?

2. Research Method

2.1. The subject and scope of the study

This study used both literary and empirical research methods in parallel. First, the theoretical study established operational definitions for each, established hypotheses, and developed a model by referring to domestic and foreign research papers and books on Career Orientation, Transfer Motivation, and organizational support established. For the empirical study, the population used was beauty shop workers (hair shop workers, aesthetic shop workers, nail shop workers, and makeup shop workers), and the research subjects were beauty shop workers for about four weeks from March 15 to April 10, 2020. They were workers. After explaining the influence relationship with transfer motivation, 350 copies of the questionnaire were distributed to those who agreed to the survey, and 335 copies were recovered after respondents filled them out (recovery rate 95.7%), of which 25 copies of the questionnaires were insincere and damaged. A total of 310 valid questionnaires were removed and analyzed (effectiveness rate 88.6%).

2.2. Survey design and definition of variables

In this study, the questions developed by Gerpott & Schein[3]. Were modified and used to measure career orientation, and a total of 9 questions were composed with reference to the study of Ryu (2003). '1 = Not at all. ' and '5=very much' and presented on a 5-point Likert scale.

2.2.1. Career orientation

This study consisted of Organizational Orientation and Professional Orientation as subfactors of Career Orientation. There are counterarguments to this two-dimensional classification that claim the multidimensionality of the concept of career orientation, but empirical studies have shown that organizational orientation and career orientation are different from career orientation. It is widely used as a classification standard [4][5][6][7][8][9][10].

Career Orientation is an individual's career preference or desire related to career selection, and can be defined as reflecting the values that an individual seeks in relation to his or her career regarding the type of recognition and standards of performance.

Holland believes that career orientation is influenced by demographic characteristics and individual psychological characteristics during the formative stage, and is continuously influenced by career characteristics such as organizational selection, job experience, interpersonal relationships, and work experience at the individual level throughout social life do[9]. In addition, it is one way to conceptualize a career from a personal perspective, and an individual's career orientation influences career-related decisions such as choosing a job and workplace and an individual's willingness to participate in specific career development activities[6]. Because individuals want to choose an organization that matches their career goals [3].

Schein believes that career choice, life perspective, and related goals have a lasting influence and are characteristics that center one's social experience and work experience with one's values, motivation, attitude, and desires through interaction with others. It was defined as being formed[11][12].

Gerpott (1988) stated that people with organizational orientation are highly interested in getting promoted through recognition from superiors, and people with professional orientation show interest in receiving recognition as professionals from their colleagues[13][14].

Allen & Katz stated that Organizational Orientation-oriented people are highly interested in highlighting their position and career within the organization by applying technology that fits the company's business purpose or making it commercially successful[5][11].

2.2.2. Transfer motivation

Noe & Schmitt defined transfer motivation as the learner's desire to utilize the knowledge and skills acquired through educational training or unstructured OJT[15].

Holton defined transfer motivation as the direction, intensity, and persistence of efforts to apply learned skills and knowledge in the work environment[16][17]. Holton, Bates & Ruona said that it can be defined as the degree to which knowledge, skills, and attitudes learned through education and training are applied to work[14][18][19]. In summary, transfer motivation can be said to be the direction, intensity, and persistence of efforts to apply the knowledge, skills, and attitudes learned through education and training in the work environment.

In this study, to measure Transfer Motivation, the items developed by Noe & Schmitt were modified and used and consisted of a total of 5 questions, with '1=not at all' and '5=very much'. It was presented on a 5-point Likert scale[14].

2.2.3. Organization support

The organizational support environment covered in this study can be explained with the same concept as organizational support recognition[15]. Perception of organization support is defined as the belief held by organizational members based on the extent to which the organization values the individual's contribution and shows interest in the welfare of its members [15].

Among the characteristics of the Organization Support environment, Organization Support is defined as the organization's consideration of its members and recognition of their efforts [13]. In addition, it can be defined as the organizational support that employees or members must have to provide appropriate motivation to perform their work with maximum efficiency.

Items were reviewed and used in research related to Organization Support[8][16][17][18].

There are a total of 6 questions, presented on a 5-point Likert scale divided into '1=not at all' and '5=very much'.

2.2.4. General characteristics

Ten questions were asked about the respondent's gender, marital status, age, highest level of education, experience, position, average income, work area, current work type, and number of employees.

2.3. Research model

In this study, the independent variable was set as Career Orientation as shown in <Figure 1>, and its sub-factors were composed of organization Career Orientation and professional Career Orientation, and the dependent variable was Transfer Motivation. A research model was created by setting organization support, which consists of (transfer motivation) and regulates the relationship between independent variables and dependent variables. The research model is shown in <Figure 1>.

Figure 1. Research model.



2.3.1. Relationship between the components of Career Orientation and Transfer Motivation

Transfer Motivation (motivation to transfer) acts as a significant predictor in training transfer[19]. However, in many other studies, Transfer Motivation[20].

was converted to Transfer Motivation, which is a training outcome influenced by variables such as self-efficacy, usefulness, and organizational environment[21][22].

In this way, researchers' opinions tend to be somewhat inconsistent, with Transfer Motivation being treated as a learning motivation or studied as a training outcome. However, in this study, based on these previous studies, Organizational Orientation and Professional Orientation were studied. In order to reevaluate the influence on orientation and confirm the influence on transfer motivation, the following hypothesis was set[23][24][25].

Hypothesis H1: Career Orientation will have a significant effect on Transfer Motivation.

Hypothesis H2: Organizational support will play a moderating role in the relationship between Career Orientation and Transfer Motivation.

2.4. Data analysis

The data collected through the data analysis method went through data coding and data cleaning processes, and then statistical processing was performed using the statistical analysis package SPSS v.23. Frequency analysis was conducted to determine the demographic characteristics of the study subjects, and Cron assessed internal consistency to determine the reliability of the questions on Career Orientation, Transfer Motivation, and organizational support. Reliability analysis was conducted using Cronbach's Alpha coefficient.

In addition, factor analysis was conducted to determine the validity of Career Orientation, Transfer Motivation, and organizational support.

Next, multiple regression analysis and controlled regression analysis were performed on the comprehensive influence relationship that forms the causal relationship between the variables presented in the research model, and then the hypothesis was tested.

3. Results

3.1. General characteristics of the study subjects

This study describes the general characteristics of a valid sample of 310 beauty shop workers (Hair shop worker, Aesthetic shop worker, Nail shop worker, Makeup shop worker) across the country, focusing on the entire sample.

The gender distribution was 96.8% female and 3.2% male, with most of the participants being female. The largest age group was in their 40s at 43.9%, followed by those in their 30s (25.8%), those in their 50s or older (18.4%), and those in their 20s (11.9%). Marital status was found to be distributed in the following order: married (71.9%), single (23.9%), and other (4.2%). The highest educational level was high school diploma or less (29.4%), followed by graduate school attendance (26.1%), 2-year degree graduation (25.8%), and 4-year degree graduation (18.7%). The most common hairdressing experience was more than 5 years to less than 10 years (24.2%), followed by more than 10 years to less than 15 years (20.0%), more than 20 years (18.7%), and more than 1 year to less than 5 years (16.5%). %), more than 15 years to less than 20 years (16.1%), and less than 1 year (4.5%).

The majority of positions were director (manager) (50.0%), followed by other (23.9%), manager (11.9%), designer (7.4%), and staff (intern) (6.8%). The most common monthly average income was over 3 million won (27.1%), followed by over 1.5 million won to less than 2 million won (21.6%), over 2.5 million won to less than 3 million won (15.8%), and over 2 million won to less than 2.5 million won (14.5%).), less than 1 million won (10.6%), and more than 1 million won to less than 1.5 million won (10.3%).

In addition, almost half of the working area was Gyeonggi (47.7%), followed by other (35.5%) and Seoul (16.8%). The most common type of beauty shop was individual stores (54.8%), followed by others (23.9%) and franchises (21.3%). Lastly, 2 to 4 people worked the most at 39.0%, followed by 1 person (33.2%), 5 to 9 people (20.0%), 10 to 14 people (6.1%), and 15 to 19 people (1.6%). distribution was shown.

3.2. Validation

The validity of the measurement tool used in this study is mainly verified through factor analysis, and the factor extraction method used was principal component analysis using the total variance, which is all the variance of the input variables.

Among the most commonly used orthogonal rotation methods, assuming that there is no

correlation between common factors, the Varimax rotation method was used to simplify the columns so that the number of factors explaining individual variables is minimized [21][26].

The number of common factors was extracted based on the eigen value, which shows the explanatory power of the variable on the common factor extracted from factor analysis, and factors exceeding 1 were extracted. The higher the factor loading related to the influence of the variable on the common factor, the higher the factor loading. Good, but there is no absolute standard, and 0.4 is generally considered an appropriate standard [27].

To determine the suitability of the factor analysis model, Bartlett's test of sphericity and Kaiser-Meyer-Olkin's sample adequacy test were conducted.

3.2.1. Career orientation

In the career-oriented exploratory factor analysis, two factors were extracted from the nine measured variables, but one variable had a double loading value and one variable was insufficient to explain the factor

Factors recognized by experts in the beauty field important has been removed.

Bartlett's approximation of sphericity test is $\chi 2=1254.290$ (df=36, p<.001), showing that the input variables are not unit matrices, and factor analysis is appropriate when KMO's sampling adequacy test is above 0.5[28], but in this study, it was appropriately presented as .880. The commonality, which shows the variance explanatory power of individual questions for the entire factor, was found to be .461~.764.

The factor loadings related to the influence of the factor composition variables were high, ranging from .700 to .839 for factor 1 and .676 to .836 for factor 2, indicating that the variables were appropriate. The factor eigenvalues were 2.908 for factor 1 and 2.828 for factor 2.

The variance explanatory power of each factor was 32.312% for factor 1 and 31.417% for factor 2, and the two extracted factors were found to have a variance explanatory power of 63.73% of the total variance. Based on the results analyzed above, names for the extracted factors were given in consideration of the conceptual relevance of the variables. Factor 1 was named Professional Orientation, and Factor 2 was named Organizational Orientation.

3.2.2. Transfer motivation

Exploratory factor analysis of Transfer Motivation resulted in one factor being created from five measured variables, and the approximation of Bartlett's test of sphericity was χ 2=1414.332 (df=10, p<.001), indicating that the input variables were You can see that it is not an identity matrix, KMO's sample adequacy test can be said to be appropriate for factor analysis if it is over 0.5, and in this study, it was presented as .873. The commonality, which shows the variance explanatory power of individual questions for the entire factor, was .671 ~ .898. The factor loadings related to the influence of the factor composition variables were presented as high as 819 to .948, indicating that the variables were appropriate. The factor eigenvalue was found to be 3.936. The variance explanation power of each factor was found to be 78.72%.

3.2.3. Organization support

Exploratory factor analysis of organization support resulted in one factor being created from six measured variables,

Bartlett's approximation of sphericity test is $\chi 2 = 1108.533$ (df = 15, p < .001), showing that the input variables are not unit matrices, and KMO's sampling adequacy test indicates that factor analysis is appropriate if it is over 0.5, and in this study, it was appropriately presented as .818. The commonality, which shows the variance explanatory power of individual questions

for the entire factor, was found to be .593~.687. The factor loadings related to the influence of the factor composition variables were presented as high as 77. to .829, indicating that the variables were appropriate. The factor eigenvalue was found to be 3.801.

The variance explanation power of each factor was found to be 63.36%.

3.3. Reliability analysis

Reliability evaluates the degree of consistency when one variable is measured in several ways or multiple times. Methods for measuring it include the test-retest method and the internal consistency method. In this study, the most widely used Cronbach's alpha coefficient was used to evaluate the internal consistency between items. In general, the reliability coefficient should be above ,90 in applied research fields and above, 80 in basic research fields, but in exploratory research fields or at the level of analysis of operational units, a reliability coefficient of, 60 or more is considered good.

3.3.1. Verification of reliability of career orientation

As a result of analyzing the reliability of nine career orientation measurement variables, the overall reliability was found to be very good at 0.873. When removing the Career Orientation item, Cronbach's alpha coefficient was $0.849 \sim 0.876$, indicating that there were no variables that lowered reliability.

Therefore, the measurement variable of Career Orientation is reliable. The reliability analysis results of the Career Orientation measurement variable are shown in <Table 1>.

ltem	Average	Standard Deviation	When removing an item Cronbach's alpha Coefficient
 As a beauty shop worker, I think it is important to create original ideas. 	4.34	4.34 .643	
 As a beauty shop worker, I think it is important to contribute to the development of the professional field. 	4.41	.605	.860
3. I value receiving recognition from experts in the beauty field.	receiving recognition from 4.38		.849
 I consider it very important to build my career in a specialized field that requires specific skills (skills). 	4.60	.522	.859
 It is important to be recognized for one's abilities through one's major knowledge and skills. 	4.56	.546	.862
 I want to move up to a responsible position where I will be responsible for supervising and integrating people from various areas of the organization. 	4.24	.802	.853
7.Being promoted to a managerial position is very important to my career.	4.09	.831	.852
8. It is important to demonstrate management skills and be recognized.	4.30	.698	.852

Table 1. Career orientation reliability of measured variables.

 Rather than becoming a general manager after experiencing several fields, I would rather develop expertise in one field and become an expert in that field. 	4.43	.692	.876
Ent	ire reliability(Cronbach's a	alpha) : .873	

Note: Scale. 1 = not at all ~3 = average ~5 = very much / measured variables 6, 7, 9, 10, 11 are reverse coded variables.

3.3.2. Verification of reliability of transfer motivation

As a result of analyzing the reliability of the five measurement variables of Transfer Motivation, the overall reliability was found to be very good at 0.930. When removing the items of Transfer Motivation, Cronbach's alpha coefficient was 0.898~0.931, indicating that there were no variables that lowered reliability.

Therefore, the measurement variable of Transfer Motivation is reliable. The reliability analysis results of the Transfer Motivation measurement variables are shown in <Table 2>.

Item	Average	Standard Deviation	When removing an item Cronbach's alpha Coefficient
 I plan to apply what I learned in job training in the beauty field to practical work, if possible. 	4.26	.628	.931
2. I am confident in applying what I learned in job training to my work.	4.18	.668	.928
 I expect that my work ability will improve if I apply what I have learned in job training to my work. 	4.25	.620	.902
 I expect that my work proficiency or productivity will improve if I apply what I have learned in job training to my work. 	4.27	.611	.898
 I expect that my job performance will improve if I apply what I have learned in job training to my work. 	4.24	.656	.912

 Table 2. Transfer motivation reliability of measured variables.

Entire reliability(Cronbach's alpha) : .930

Note: Scale. $1 = not at all \sim 3 = average \sim 5 = very much.$

3.3.3. Organization support verification of reliability

As a result of analyzing the reliability of six measurement variables of organization support, the overall reliability was found to be good at 0.883. When removing the item of organizational support, the Cronbach's alpha coefficient was 0.854~0.867, indicating that there were no variables that lowered reliability.

Therefore, the measurement variable of organizational support is reliable. The reliability analysis results of the organization support measurement variables are shown in <Table 3>.

ltem	Average	Standard deviation	When removing an item Cronbach's alpha Coefficient			
1. My coworkers give me personal attention.	3.92	.610	.865			
 My colleagues encourage each other to work together. 	4.09	.603	.866			
3. If I encounter difficulties at work, my colleagues help me.	4.04	.647	.861			
 My supervisor highly evaluates my ability to perform my work. 	4.03	.715	.863			
5. My supervisor praises me when I do my work well.	4.03	.628	.854			
6. When I need help from my boss, I can ask him for help.	4.07	.690	.867			
Entire reliability(Cronbach's alpha) · 958						

Table 3. Organization support reliability of measured variables.

Note: Scale. $1 = not at all \sim 3 = average \sim 5 = very much.$

3.4 Influence relationship between career orientation and transfer motivation

Multiple regression analysis was conducted using the Career Orientation factor as an independent variable and Transfer Motivation as a dependent variable.

As shown in <Table 4>, the regression analysis results show that the overall explanatory power R2 value is .371, and the F value that verifies statistical significance is 90.548, p<.001 (df=2, 307).

Therefore, this regression equation can be considered statistically significant.

In addition, when the correlation coefficient between independent variables is large during multiple regression analysis, that is, the tolerance is less than or equal to 0.1, and the VIF is greater than or equal to 10, a multicollinearity problem occurs[11]. As a result of the analysis, the tolerance is .699, and the VIF is 1.431, so multicollinearity did not occur.

If the Durbin-Watson index is close to 0, there is positive autocorrelation, and if it is close to 4, there is negative autocorrelation. Also, if it is close to 2, it means that there is no autocorrelation[9]. As a result of the analysis, the Durbin-Watson index was found to be 1.877, so there was no autocorrelation.

Table 4. Verification of the influence relationship between career orientation and transfer motivation.

Subordination	pordination Independent		ndardized icient	Standardization coefficient	Tuelue	Note	Collinearity statistic	
variable variable	В	Standard error	β	i value	percentage	Tolerance	VIF	
	(A constant)	.860	.256		3.353	.001		
Transfer motivation	Organizational orientation	.241	.050	.261	4.814	.000***	.699	1.431
	Professional orientation	.526	.067	.426	7.863	.000***	.699	1.431

R²=.371, Adjusted R²=.367, F=90.548(df=2, 307), sig.=.000 / Durbin-Watson=1.877

Note: *=p<.05, **=p<.01, ***=p<.001.

Among the Career Orientation factors, Organizational Orientation (t=4.814, p<.001) and Professional Orientation (t=7.863, p<.001) were determined by Transfer Motivation. It was found to have an effect in the (+) direction. In other words, as Organizational Orientation and Professional Orientation among Career Orientation factors increase, Transfer Motivation also increases.

And among Career Orientation factors, Professional Orientation (β =.426) was found to have the greatest influence on Transfer Motivation.

3.5 Verification of the moderating effect between career orientation and transfer motivation of organizational support

To verify the moderating effect, it can be done through a two-step process[20]. First, in the first step, the impact of the independent and control variables on the dependent variable is verified. At this time, it does not matter whether the independent and control variables have a significant effect on the dependent variable or not.

In the second step, in addition to the independent variables and control variables in the first step, an interaction term, which is the product of the independent variable and control variable, is also input. At this time, if there is a difference between the first-stage coefficient of determination (R2) and the second-stage coefficient of determination (R2), it is said that there is an adjustment effect. If the increase in the coefficient of determination is significant (if there is a moderating effect), the interaction term is naturally significant[29].

However, the key to verifying the moderating effect is the interaction term. However, the interaction term has the problem of multicollinearity with the independent and control variables. This is because an interaction term was created by multiplying the independent variable and the control variable. What is needed at this time is mean centering.

To solve the multicollinearity of the interaction term, there is a mean centering method, which subtracts the average value of the variable from each data. In other words, after finding the average value of the independent variable, the independent variable-average is obtained, and then the average value of the control variable is obtained to obtain the control variable-average. This subtraction of the average value from each variable is called mean centering. At this time, the interaction term is not simply the independent variable * control variable, but is obtained as the product of mean-centered variables[30][31][32].

In order to verify the effect of continuous variable variables when there are multiple variables, first, input Thumb and Professional Orientation, which are bands centered on two point variables, into block 1 of the variable focus, and second input the variable variable into block 1 of the various variables. There is a block. In raw block 2 we enter tissue support, which centralizes the muscles that control the variability. Finally, in Block 3, various elasticity terms that are multifunctional and adjustable are input.

As a result of hierarchical regression analysis, the results shown in <Table 5> were obtained.

Subordination	Independent	Non-standardized poefficient		Standardization coefficient	T value	Note	Collinearity statistic	
variable variable	В	Standard error	β		percentage	Tolerance	VIF	
Model 1:	(A constant)	.860	.256		3.353	.001		
transfer motivation	Organizational orientation	.241	.050	.261	4.814	.000**	.699	1.431

Table 5. Verification of the moderating effect of organizational support between career orientation and transfer motivation.

	Professional orientation	.526	.067	.426	7.863	.000**	.699	1.431	
	R ² =.371, Adjusted R ² =.367, F=90.548(df=2, 307), sig.=.000 / Durbin-Watson=1.854								
	(A constant)	.399	.267		1.492	.137			
Model 2:	Organizational orientation	.204	.049	.221	4.165	.000**	.681	1.469	
motivation	Professional orientation	.442	.067	.358	6.585	.000**	.649	1.541	
	Organization support	.246	.053	.225	4.665	.000**	.821	1.218	
R ² =.413, Adjusted R ² =.407, F=71.702(df=1, 306), sig.=.000 / Durbin-Watson=1.854									
	(A constant)	.246	.263		.938	.349			
	Organizational orientation	.172	.048	.186	3.569	.000	.666	1.501	
	Professional orientation	.502	.067	.407	7.476	.000	.610	1.638	
Model 3: transfer	Organization support	.249	.052	.229	4.827	.000	.806	1.241	
motivation	Organizational orientation *organization support	377	.093	204	-4.037	.000**	.710	1.408	
	Professional orientation *organization support	.522	.131	.204	3.975	.000**	.686	1.457	

R²=.451, Adjusted R²=.442, F=49.913(df=2, 304), sig.=.000 / Durbin-Watson=1.854

Note: *=p<.05, **= p<.01, ***= p<.001.

As a result of verifying the adjustment effect, the increase in the coefficient of determination of Model 3 with the addition of the adjustment effect was 3.8%p, and this increase was found to be significant (p<.001). Therefore, it is determined that there is a moderating effect.

Table 6. Results of verification of the moderating effect of organizational support between career orientation and transfer motivation.

	Level 1	Level 2	Level 3
	β	β	β
Organizational orientation	.261***	.221***	.186***
Professional orientation	.426***	.358***	.407***
Organization support		.225***	.229***
Organizational orientation *organization support			204***
Professional orientation *organization support			.204***
R ²	.371	.413	.451
$\triangle R^2$.042***	.038***

Note: *=p<.05, **= p<.01, ***= p<.001.

In the first stage of the impact of independent variables on dependent variables, Organizational Orientation (β =.261, p<.001) and Professional Orientation (β =.426, p<.001) were high. The higher the transfer motivation, the higher it becomes in the positive (+) direction. The explanatory power is 37.1%.

In the second stage where the control variable was added, organization support was added, significantly increasing 4.2%p (p<.001), resulting in an overall explanatory power of 41.3%.

In the third step of verifying the moderating effect of organization support, the coefficient of determination increased by 3.8%p and was significant (p<.001).

In other words, organizational support was found to moderate the effect of career orientation on Transfer Motivation.

Among career orientation factors, organizational support had a lower impact on Transfer Motivation the higher Organizational Orientation (β =-.204, p<.001), and Professional Orientation (It was found that the higher the professional orientation (β =204, p<.001), the higher the influence on Transfer Motivation.

4. Conclusion

In this study, the Career Orientation of beauty shop workers was divided into Organizational Orientation and Professional Orientation to predict Transfer Motivation and organizational support. Variables were analyzed. The purpose was to comprehensively understand the relationship between these variables to identify and empirically verify the influence relationship. Previous research on each variable was reviewed based on domestic and international research papers, books, etc., and a total of 310 valid questionnaires were analyzed using beauty shop workers as the population.

First, the impact of Career Orientation on Transfer Motivation is that among the Career Orientation factors, Organizational Orientation and Professional Orientation are determined by Transfer Motivation. It was found to have an effect in the (+) direction.

In other words, as Organizational Orientation and Professional Orientation among Career Orientation factors increase, Transfer Motivation also increases.

And among Career Orientation factors, it was verified that Professional Orientation has the greatest influence on Transfer Motivation. Therefore, hypothesis H1 was accepted.

Fifth, organizational support was found to moderate the effect of Career Orientation on Transfer Motivation.

Among the Career Orientation factors, organizational support was adjusted to have a lower impact on Transfer Motivation the higher the Organizational Orientation, and the higher the Professional Orientation, the higher the transfer motivation. It was verified that the effect on was adjusted to increase. Therefore, H2 was accepted.

Beauty companies must find appropriate ways to improve career development by considering the personal characteristics of beauty shop workers, and provide organizational support that matches career orientation with human resource development that can decrease transfer. Research will need to be conducted in various fields so that a device can be prepared. Therefore, this study is based on the goal of improving the capabilities of workers through the organization's continuous support for organizational members, making it easier to manage human resources so that they can directly contribute to organizational performance, and ultimately lowering the turnover rate of beauty shop workers and strengthening individual capabilities. I hope that it can be used as a resource.

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6. Appendix

6.1. Author's contribution

	Initial name	Contribution
		-Set of concepts 🔽
		-Design 🔽
Lead	SD	-Getting results 🔽
Author	Author Sr	-Analysis 🔽
		-Make a significant contribution to collection $ ar \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$
		-Final approval of the paper 🛛
		-Corresponding 🗹
		-Play a decisive role in modification $\ igsqcare{}$
Corresponding	VK	-Significant contributions to concepts, designs,
Author*	TK	practices, analysis and interpretation of data $\ oxdot$
		-Participants in Drafting and Revising Papers 🛛
		-Someone who can explain all aspects of the paper $ abla$

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A Study on the Effects of Socio-Cultural Pressure and Health Beliefs on Scalp and Hair Care Awareness and Behavior

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Abstract

Purpose: In modern society, with economic development and improvement of living standards, beauty is no longer solely aimed at physical appearance, but there is a lot of interest in scalp and hair care based on health. This study aims to investigate the influence of socio-cultural pressure and health beliefs on the perception of scalp and hair care.

Method: In modern society, with economic development and improvement of living standards, beauty is no longer solely aimed at physical appearance, but there is a lot of interest in scalp and hair care based on health. This study aims to investigate the influence of socio-cultural pressure and health beliefs on the perception of scalp and hair care.

Results: Pearson's correlation analysis was performed to determine the correlation between the variables. All the variables showed a significant positive correlation with each other. Next, multiple regression analysis was conducted to determine the effects of scalp and hair sociocultural pressure and health beliefs on perception and behavior of scalp and hair care, and it was found that sociocultural pressure from acquaintances, sociocultural pressure from media, intention to use, and maintenance had a significant positive effect on Perception and Behavior of scalp and hair care. Maintenance (β =.403, p<.001), sociocultural pressure from acquaintances (β =.246, p<.001), sociocultural pressure from the media (β =.240, p<.001), and intention to use (β =.129, p<.05) were found to affect perception and behavior of scalp and hair care.

Conclusion: In order to improve 'Perception and Behavior of Scalp and Hair Care', it can be interpreted that it is necessary to pay attention not only to scalp and hair health beliefs but also to socio-cultural pressures. It can be said that this study proves that idealized appearances in the media and relationships can influence not only behaviors such as dieting, but also individuals' perceptions and actual behaviors regarding scalp and hair.

Keywords: Socio-Cultural Pressure, Health Belief, Perception, Behavior, Scalp and Hair Care

1. Introduction

Today's society is developing along with socioeconomic development such as economic growth, improved education level, and improved health level[1], and there is too much emphasis on appearance, and appearance is considered a decisive factor in securing an individual's life. Evaluate the value of life and determine success or failure. The overall social trend of wellness based on health rather than appearanceism represents an obsession[2], and is also affecting beauty, and it is important to protect the scalp and hair for their health. Interest in hair care is growing again. As health-based scalp and hair care becomes more prominent, it is attracting attention as an important factor in improving the quality of life. In other words, in accordance with the social trends of lookism and well-being[3][4], the concept of health-based scalp and hair clinics has emerged, and scalp care for scalp health is emerging[5]. Hairstyle is one of the important means of expressing yourself, and it is a part of the body that allows you to expressing yourself.

yourself more beautifully and confidently. Interest in the scalp and hair of men as well as women is growing, with the purchase of scalp scaling products by men in their 20s and 30s increasing by more than 85% in 2019 compared to 2018[6]. Men's active efforts to have a healthy scalp and attractive hair are gradually becoming more active, going beyond the level of simply viewing scalp and hair problems such as hair loss as subjects of treatment, and the related market is also growing[7]. Correct awareness is important because hair is a body organ that cannot be recovered once damaged, but most people have a low level of awareness about scalp and hair care, and thus show incorrect care behaviors[8]. In particular, hair loss, which is increasing in all age groups, is presented as one of the keywords for anti-aging, but many people are still unaware of the seriousness of the causes of hair loss and are suffering from stress, imbalance of environmental hormones, various new diseases, frequent dyeing and perming, and drinking. ,The balance of the body is broken due to nutritional imbalance caused by smoking and dieting, and the number of hair loss people appears to be increasing due to a decrease in immunity of the autonomic immune system[9].

It is believed that continuous research should be conducted to find solutions for a beautiful and healthy scalp and hair. In this study, we aim to analyze the extent of awareness of scalp and hair care, and the relationship between social and cultural pressure on this and the influence of awareness and behavior on health beliefs about scalp and hair.

1.1. Theoretical background

1.1.1. Sociocultural pressures on scalp and hair care

Socialization is the process by which an individual learns the values, standards, beliefs, and behaviors that society expects and accepts within a certain culture[10]. Through the socialization process, an individual learns the values of the society to which he or she belongs, and learns the norms and norms of the group to which he or she belongs. Personal beliefs and reactions are internalized to match the rules and reactions of others.

In a collectivist society, the 'collective ego' develops rather than the 'individual ego', and there is a tendency to put the group first, suppressing one's own desires in order to help the group achieve its goals rather than the individual's desires[11]. In particular, one of the potential factors that is attracting attention as a potential factor that induces various appearance management behaviors by forming and reinforcing ideal standards for appearance is the sociocultural pressure factor[12]. Thompson & Stice (2001) mentioned the influence of family, friends, and media as mediators that convey sociocultural pressure on appearance management behavior[13].

A social perspective, the higher the level of observation and perception of physical attractiveness, the more it reflects self-acceptance, subjective well-being, positive social and interpersonal relationships, life goals, environmental influence, and proactive autonomy[14]. The hair located above the face complements the facial lines, and its shape can be changed through chemical procedures such as perm, dyeing, and cutting. It has a decorative function that has a huge impact on impression formation even without much effort[15]. When determining a person's first impression, the sociocultural pressure caused by the stress of looking older if one has less hair was investigated through the influence of acquaintances and family, as well as the influence of media outlets. Humans have a desire for affection and belonging through social behavior, and at the same time, smooth social interpersonal relationships are a necessary condition for physical and psychological impact, and an individual's perception of body image also affects psychological well-being[16]. This stress is one of the factors that externally affects people through social and cultural pressure[17]. In previous research, individuals come to conform to similar tendencies and values due to their desire to identify with and be the same as those who influence them, and that these attitudes are internalized, which actually changes one's beliefs to the aspects presented by a specific group. It was said that it leads to [18].

More than 70% of a woman's style is determined by her hair, and shiny hair is perceived as vibrant, non-shiny hair as lifeless, and older, while fuller hair and shiny raw hair symbolize youth [19]. In today's appearance-conscious society, scalp and hair care practices are influenced by sociocultural influences, including body image and body dissatisfaction as well as health beliefs that contribute to appearance-enhancing seeking behaviors, which are linked to usage intentions to improve scalp hair health[20].

1.1.2. Scalp and hair health beliefs

Beliefs are unquestioning, accepted, and consistent views about a number of things, and mental health beliefs, which accept that what is perceived or conceived in a given situation is true, play an important role in health-seeking behavior[21].

Rosenstock (1974) argued that humans must have health beliefs in order to engage in diseasecontrolling behaviors. Deciding what to do about one's health condition is a health behavior that requires the belief that one is susceptible to the disease, that the disease can have serious consequences, that the behavior is beneficial in reducing the severity of the susceptibility, and that the benefits outweigh the disabilities when considering the associated costs and pain [22]. It is assumed that health beliefs play an important role in health-seeking behavior. An individual's perception of health and factors related to prevention and maintenance are predictive of his/her utilization behavior, and these health perceptions and prevention are defined as health beliefs[21][22].

Scalp and hair health beliefs motivate scalp and hair care behaviors based on health beliefs. In modern society, it refers to the belief that maintaining beautiful hair according to universalized aesthetic standards is more beneficial for social life. In other words, scalp-hair health beliefs can explain an individual's perceptions and behaviors about their scalp.

1.1.3. Perception and behavior of scalp and hair care

Modern people form interpersonal and interactive relationships. In interpersonal relationships, the first perceived impression is not easily changed once it is formed. Impressions are abstract shapes formed based on all perceptual facts from the macrocognition, and impression formation is the process of understanding others by synthesizing the information we know about them and finding consistent features[23]. Higher levels of interpersonal dissatisfaction lead to appearance management behaviors, which can include everyday behaviors such as makeup and exercise, as well as regulating and controlling the body, such as dieting and weight control[24].

Women, as well as young men, are increasingly interested in improving not only their skin, but also their scalp and hair in order to change their appearance. Not only are hair loss problems common, but the proportion of hair loss cases in dermatology clinics is increasing, and the healthy appearance of scalp hair is being emphasized as part of the concept of health. This is because the phenomenon of external hair loss not only threatens external health, but also internal health, such as depression and loss of confidence, and has an undesirable effect on social life[25].

The average person has 100,000 to 150,000 hairs on their scalp, and it is considered normal to lose 60 to 80 hairs per day, with the number of hairs lost varying depending on the season, age, and health conditions[26]. The cause of hair loss in women is not yet known, but androgenic alopecia is caused by an increase in the amount of male hormones a woman has and the sensitivity of the hair follicle cells to receive them. Other causes include excessive stress, nutritional disorders such as excessive dieting, frequent perming, dyeing, damage to hair follicles from UV

exposure, pregnancy, menopause, and pressure hair loss due to the habit of tying hair tightly, Intentions and behaviors that are required to perform behaviors for scalp and hair cleanliness include scalp care, use of scalp and hair cosmetics, dietary behaviors that are beneficial for hair because hair is composed of protein, and consumption of health functional foods [27].

Scalp care behaviors are behaviors that individuals engage in to maintain and promote scalp health, such as using chemical scalp hair products such as shampoos, conditioners, and tonics to prevent scalp disease and hair loss, massaging the scalp, practicing healthy eating habits, and receiving care from a professional salon or hospital [28].

Hair care behavior refers to the use of hair cosmetics such as shampoos, rinses, treatments, permanents, waves, dyes, and clarifiers to keep hair healthy and beautiful according to its ecology, morphology, structure, and chemical and physical properties[29].

2. Research Method

2.1. The subject and scope of the study

The sample was collected online from September 27 to October 9, 2021, for men and women, and a total of 300 questionnaires were used for analysis.

2.2. Survey design and definition of variables

The questions consisted of a total of 37 questions and were measured on a 5-point Likert scale(31 questions) and Nominal scale(6 questions)

2.3. Hypothesis

Sociocultural pressures and health beliefs about scalp and hair will have a significant positive effect on Perception and Behavior of Scalp and Hair Care'.

2.4. Research Model

The research model looks like the following <Figure 1>.

Figure 1. Research model.



2.5. Data analysis

Statistical analysis of this study was performed using SPSS 25.0 program for factor analysis, frequency analysis, correlation analysis, and multiple regression analysis.

3. Results

3.1. General characteristics of the study subjects

A total of 300 respondents were surveyed in this study, and their general characteristics were as follows <Table 1>.

Gender was 85 (28.3%) males and 215 (71.7%) females, age was 11 (3.7%) under 20 years old, 55 (18.3%) from 20 to 29 years old, 69 (23.0%) from 30 to 39 years old, 98 (32.7%) from 40 to 49 years old, 56 (18.7%) from 50 to 59 years old, and 11 (3.7%), education level was 63 (21.0%) with high school diploma or less, 7 (2.3%) with 2 years, 66 (22.0%) with 2 years, 25 (8.3%) with 4 years, 100 (33.3%) with 4 years, 39 (13.0%) with graduate or higher, occupation was 62 (20.7%) general office worker, 3 (1.0%) researcher, 45 (15. 0%), self-employed/freelancer 101(33.7%), government employee 15(5.0%), press/broadcasting 1(0.3%), student 29(9.7%), engineer 3(1.0%), other 41(13.7%), and the average monthly income was less than 1 million won 45(15.0%), 100-150 million won 15(5. 0%), 150-200 million won 21(7.0%), 200-250 million won 18(6.0%), 400-450 million won 18(6.0%), 450-500 million won 19(6.3%), and more than 500 million won 51(17.0%). Lifestyle habits related to scalp and hair care (hair loss) were as follows: stress 146 (48.7%), irregular life 42 (14.0%), accumulated fatigue 58 (19.3%), frequent UV exposure 7 (2.3%), proper exercise and regular life 16 (5.3%), frequent wearing of hats when going out 9 (3.0%), and frequent use of hair products 22 (7.3%).

Characteristics	Categories	Ν	%
Gender	Male	85	28.3
	Female	215	71.7
	20s	11	3.7
	30s	55	18.3
4.50	40s	69	23.0
Age	50s	98	32.7
	60s	56	18.7
	60s more	11	3.7
	High school graduation or less	63	21.0
	Currently attending college	7	2.3
Final advectional background	University graduation	66	22.0
Final educational background	Currently attending university	25	8.3
	Graduate school graduate	100	33.3
	Graduate school graduate or higher	39	13.0
	General office jobs	62	20.7
	Researcher	3	1.0
	Stay-at-home mom	45	15.0
Occupation	Self-employed/Freelancer	101	33.7
	Government employee	15	5.0
	Press/Broadcast	1	0.3
	Student	29	9.7

Table 1. General characteristics.

	Engineer	3	1.0
	Etc.	41	13.7
	Less than 1.0 million won	45	15.0
	1.0 to less than 1.5 million won	15	5.0
	1.5 to less than 2.0 million won	21	7.0
	2.0 to less than 2.5 million won	38	12.7
Average monthly income	2.5 to less than 3.0 million won	48	16.0
Average montility income	3.0 to less than3.5 million won	27	9.0
	3.5 to less than 4.0 million won	18	6.0
	4.0 to less than 4.5 million won	18	6.0
	4.5 to less than 5.0 million won	19	6.3
	5 million won or more	51	17.0
	Stress	146	48.7
	Irregular life	42	14.0
	Cumulative fatigue	58	19.3
Lifestyle habits related to scalp and hair care (hair loss)	Frequent UV exposure	7	2.3
	Proper exercise and a regular routine	16	5.3
	Frequent wearing of hats when going out	9	3.0
	Frequent use of hair products	22	7.3
Total		300	100

3.2. Validation

3.2.1. Sociocultural pressures of scalp and hair care

For the socio-cultural pressure of scalp and hair care, three items (items 2, 6, and 7) were excluded because they hindered validity, and the factor analysis was conducted with eight items. As a result of the analysis, the KMO measure was found to be. 824, and Bartlett's test of sphericity was found to be significant (p<.001), so the factor analysis model was deemed appropriate.

The sociocultural pressure of scalp and hair care was categorized into two factors, and the two factors showed a factor explanatory power of 75.573%. The first factor consisted of 4 items, "Sociocultural pressure from acquaintances," and the second factor consisted of 4 items, "Sociocultural pressure from the media. It is as shown in the following <Table 2>.

lterre	Factor		
items	1	2	
I've gotten some unpleasant comments from acquaintances because of my dandruff.	.781	.132	
Family and friends put unspoken pressure on me to manage my hair loss.	.862	.172	
I have a family member or friend who consistently helps me manage my hair loss.	.783	.111	
My friends make unwanted comments about my hair loss.	.891	.137	
I see people with great hair on TV or in magazines, and it makes me want to take care of my hair.	.077	.916	

Table 2. Analysis of sociocultural pressures in scalp hair care results.

I feel like I need to take care of my scalp and hair when I see it on TV or in magazines	.099	.936		
I worry about hair loss when I see it on TV or in magazines.	.277	.794		
I see shampoo commercials on TV or in magazines that make me want to change my shampoo.	.155	.862		
Eigenvalue	2.878	3.168		
Common variance (%)	35.977	39.596		
Cumulative variance (%)	35.977	75.573		
KMO=.824, Bartlett χ2=1587.147(p<.001)				

3.2.2. Scalp and hair health beliefs

For the scalp and hair health beliefs, two items (items 2 and 6) were excluded because they hindered the validity, and finally, a factor analysis was conducted with 8 items. As a result of the analysis, the KMO measure was .893, and Bartlett's test of sphericity was significant (p<.001), so the factor analysis model was deemed appropriate.

The scalp and hair health beliefs were categorized into two factors, which showed a factor explanatory power of 84.707%. The first factor consisted of 4 items of 'intention to use' and the second factor consisted of 4 items of 'maintenance'. It is as shown in the following <Table 3>.

	Fact	or		
Items	1	2		
I want to regularly visit a professional hair and scalp salon or care center for healthy scalp and hair care.	.736	.381		
I want to save money on living expenses such as pocket money and salary to get scalp and hair care.	.897	.267		
I want to make time for scalp and hair care even if the professional hair salon or salon is far from my home.	.863	.287		
I want to take care of my scalp and hair no matter how tired I am.	.864	.152		
If you take care of your scalp and hair, your scalp and hair condition will be better than it is now.	.357	.843		
Your scalp and hair condition will improve more if you have a professional take care of your scalp and hair than if you do it yourself.	.256	.917		
Having your scalp and hair treated by a professional will help you maintain a healthy scalp and hair.	.249	.931		
Your scalp and hair will look better if you have a professional take care of your scalp and hair than if you do it yourself.	.234	.914		
Eigenvalue	3.200	3.576		
Common variance (%)	40.006	44.701		
Cumulative variance (%)	40.006	84.707		

Table 3. Scalp hair health beliefs and factor analysis results.

3.2.3. Scalp-hair care perceptions and behaviors

The scalp and hair care awareness and behavior was factor analyzed with a total of 15 items. As a result of the analysis, the KMO measure was .871, and Bartlett's test of sphericity was significant (p<.001), so the factor analysis model was judged to be appropriate. The factor explained 81.165% of the data. It is as shown in the following <Table 4>.

Items		Factor			
		2	3	4	
Going to bed or going out with wet hair can cause damage to the scalp and hair.	.826	.170	.071	.181	
Nutritional imbalances, such as diets, one-size-fits-all, meat-based, and instant meals, can damage the scalp and hair.	.879	.169	.143	.121	
Hair and scalp are damaged by procedures (dyeing, perming, etc.).	.826	.137	040	.249	
Environmental pollution such as ultraviolet rays, yellow dust, and acid rain damages the scalp and hair.	.876	.147	.083	.108	
Massaging acupuncture points on the scalp can help prevent and manage hair loss.	.792	.292	.099	.096	
I follow mass media (TV shows, internet, newspapers, magazines) for hair health.	.302	.780	.196	.086	
I consult a professional about my hair health.	.089	.746	.257	.258	
I read books, magazines, and search the internet about hair care.	.182	.867	.179	.170	
I read the instructions for the hair products I use and try to use them accordingly.	.327	.746	.198	.161	
For the health of my scalp and hair, I try to avoid eating instant foods.	.103	.218	.928	.081	
I try to avoid irritating foods for the health of my scalp and hair.	.059	.191	.936	.090	
I pay attention to my nutrition for the health of my scalp and hair.	.093	.250	.876	.123	
Always use a rinse (conditioner) after shampooing to care for your scalp and hair.	.228	.079	.096	.897	
Use professional products (hair packs, hair emulsions, mists, etc.) for scalp and hair care.	.164	.280	.133	.826	
Treat your scalp and hair frequently to keep it healthy.	.185	.199	.075	.900	
Eigenvalue	3.908	2.926	2.756	2.585	
Common variance (%)	26.052	19.507	18.371	17.235	
Cumulative variance (%)	26.052	45.559	63.930	81.165	
KMO=.871, Bartlett x2=3697.086(p<.001)					

Table 4. Scalp hair care awareness and behavior factor analysis results.

3.3. Reliability

The reliability analysis was conducted to determine whether the research subjects responded consistently to the questionnaire in this study. The meaning of reliability is that when a measure is measured multiple times, it shows the same result and there is consistency between the items that make up an indicator. To test this, we used the Cronbach's alpha coefficient. In general, an alpha coefficient of 0.6 or higher is considered to be relatively reliable, and all variables had an alpha coefficient of 0.6 or higher, indicating high reliability.

3.4. Descriptive statistics

Means and standard deviations were calculated to determine the level of the study variables measured in this study.

The mean of sociocultural pressure for scalp and hair care was 2.77 out of 5, and the mean of the subfactors of sociocultural pressure for scalp and hair care was 1.98 for sociocultural pressure from acquaintances and 3.56 for sociocultural pressure from the media.

The mean of scalp and hair health beliefs was 3.60 out of 5, and the mean of the subfactors of scalp and hair health beliefs was 3.06 for intention to use and 4.13 for maintenance.

Perception and Behavior of Scalp and Hair Care was 3.27 out of 5.

We also calculated skewness and kurtosis to determine if the normality assumptions of the variables were met. A skewness of less than 3 and a kurtosis of less than 10 are considered to approximate a normal distribution, and we found that all variables met the normality assumption.

3.5. Correlation analysis

Pearson's correlation analysis was conducted to determine the correlation between the variables in this study.

Scalp-hair care awareness and behavior were significantly positively correlated with sociocultural pressure of scalp-hair care (r=.681, p<.001), sociocultural pressure of acquaintances (r=.451, p<.001), and sociocultural pressure of media (r=.647, p<.001), which are subfactors of sociocultural pressure of scalp-hair care.

Scalp and hair care awareness and behavior were significantly positively related to scalp and hair health beliefs (r=.728, p<.001) and the subfactors of scalp and hair health beliefs, intention to use (r=.632, p<.001) and maintenance (r=.659, p<.001).

Scalp awareness, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to sociocultural pressure for scalp-hair care (r=.449, p<.001), sociocultural pressure from acquaintances (r=.159, p<.001), and sociocultural pressure from media (r=.546, p<.001), subfactors of sociocultural pressure for scalp-hair care.

Scalp awareness, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to scalp-hair health beliefs (r=.669, p<.001), intention to use (r=.442, p<.001), and maintenance (r=.766, p<.001), subfactors of scalp-hair health beliefs.

Hair interest, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to sociocultural pressure of scalp-hair care (r=.661, p<.001), sociocultural pressure of acquaintances (r=.442, p<.001), and sociocultural pressure of media (r=.624, p<.001), a subfactor of sociocultural pressure of scalp-hair care.

Hair interest, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to scalp-hair health beliefs (r=.690, p<.001), intention to use (r=.709, p<.001), and maintenance (r=.498, p<.001), subfactors of scalp-hair health beliefs.

Dietary habits, a subfactor of scalp and hair care perceptions and behaviors, was significantly positively related to sociocultural pressure of scalp and hair care (r=.503, p<.001), sociocultural pressure from acquaintances (r=.548, p<.001), and sociocultural pressure from media (r=.293, p<.001), subfactors of sociocultural pressure of scalp and hair care.

Eating habits, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to scalp-hair health beliefs (r=.324, p<.001), intention to use (r=.382, p<.001), and maintenance (r=.177, p<.01), subfactors of scalp-hair health beliefs.

Scalp-hair care behavior, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to sociocultural pressure to take care of scalp-hair (r=.399, p<.001), sociocultural pressure from acquaintances (r=.235, p<.001), and sociocultural pressure from media (r=.405, p<.001), subfactors of sociocultural pressure to take care of scalp-hair.

Scalp-hair care behavior, a subfactor of scalp-hair care awareness and behavior, was significantly positively related to scalp-hair health beliefs (r=.408, p<.001), intention to use (r=.308, p<.001), and maintenance (r=.423, p<.001), subfactors of scalp-hair health beliefs.

3.6. The impact of sociocultural pressures and health beliefs on perception and behavior of scalp and hair care

The results of the multiple regression analysis to determine the effects of socio-cultural pressure and health beliefs on 'Perception and Behavior of Scalp and Hair Care' are shown in <Table 5>.

When the regression model was tested, F=116.912 (p<.001) showed that the regression model was appropriate, and the explanatory power of the model was about 61.3%. The Durbin-Watson statistic was 2.013, which is close to 2, so there was no problem with the assumption of independence of the residuals, and the tolerances were all above 0.1 and the VIF was below 10, so there was no multicollinearity problem.

According to the significance test of the regression coefficients, sociocultural pressure from acquaintances, sociocultural pressure from media, intention to use, and maintenance have a significant positive effect on Perception and Behavior of Scalp and Hair Care. In other words, the higher the sociocultural pressure from acquaintances, sociocultural pressure from media, intention to use, and maintenance, the higher the Perception and Behavior of Scalp and Hair Care.

Maintenance (β =.403, p<.001), sociocultural pressure from acquaintances (β =.246, p<.001), sociocultural pressure from media (β =.240, p<.001), and intention to use (β =.129, p<.05) were found to affect Perception and Behavior of Scalp and Hair Care.

Variables	В	S.E	β	t	р	Tolerance	VIF
(constant)	0.621	0.135		4.612***	<.001		
Sociocultural pressures from peers	0.197	0.033	.246	5.912***	<.001	0.759	1.318
Sociocultural pressures from the media	0.166	0.036	.240	4.596***	<.001	0.481	2.080
Intention to use	0.092	0.039	.129	2.342*	.020	0.435	2.298
Maintenance	0.336	0.040	.403	8.477***	<.001	0.579	1.727

Table 5. The impact of sociocultural pressures and health beliefs on perception and behavior of scalp and hair care.

F=116.912(p<.001), R²=.613, adjusted R²=.608, Durbin-Watson=2.013

Note: * p<.05 *** p<.001.

4. Conclusion

The conclusions from these results are as follows.

Recent adults, regardless of gender, appear to be interested in scalp and hair care[30]. In terms of lifestyle habits related to scalp and hair care, 48.7% perceived stress, 19.3% accumulated fatigue, and 14.0% irregularity. In other words, respondents perceived stress as the most damaging factor to their scalp and hair. This supports a study by Jinju Kang (2018) who found that the more stressed people are, the worse their scalp and hair condition[31]. Since stress has been shown to affect the scalp and hair by worsening health conditions such as hormonal imbalance[32], it would be more effective to take care of the scalp and hair at a professional shop or at home by creating a relaxing environment such as aromatherapy, lighting, and music to reduce stress as well as to relieve hair loss symptoms. In addition, you can also use devices such as foot care and neck and shoulder self-care to relieve accumulated fatigue.

While sun protection is important for scalp and hair care, respondents' awareness of wearing a hat when going out is very low (3%), so there is a need for education on sun protection. There is also a need for education on how to use hair products correctly. Depending on the type of scalp and hair, different products should be used with different ingredients, and the frequency of use should be regular to be effective. While the participants in this study showed a high level of need and intention to care for their scalp and hair, there were differences in the use of treatments and scalp and hair protection and regeneration products. This suggests the need for education on the types and uses of products for scalp and hair care. It is thought that scalp and hair care will become more active if it includes various therapies like other beauty fields[33].

To determine the effects of scalp and hair sociocultural pressure and health beliefs on Perception and Behavior of Scalp and Hair Care, multiple regression analysis was conducted, and it was found that sociocultural pressure from acquaintances, sociocultural pressure from media, intention to use, and maintenance had a significant positive effect on Perception and Behavior of Scalp and Hair Care. Maintenance (β =.403, p<.001), sociocultural pressure from acquaintances (β =.246, p<.001), sociocultural pressure from media (β =.240, p<.001), and intention to use (β =.129, p<.05) were found to affect Perception and Behavior of Scalp and Hair Care. In other words, it can be interpreted that it is necessary to pay attention to sociocultural pressure as well as scalp and hair health beliefs in order to improve scalp and hair care awareness and behavior. This study confirms that idealized appearances in the media and relationships can influence not only dieting and other behaviors, but also individuals' perceptions and actual behaviors regarding scalp and hair.

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6. Appendix

6.1. Author's contribution

	Initial name	Contribution
		-Set of concepts 🔽
Lead	ID	-Design 🔽
Author	51	-Getting results 🔽
		-Analysis 🔽
		-Make a significant contribution to collection $\ oxtimes$
Corresponding	EC	-Final approval of the paper 🛛
Author*		-Corresponding 🔽
		-Play a decisive role in modification $\ oxdot$
		-Significant contributions to concepts, designs,
Co-Author	МС	practices, analysis and interpretation of data $\ igvee$
	IVIC	-Participants in Drafting and Revising Papers 🔽
		-Someone who can explain all aspects of the paper $\ igsqcup$

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A Study of the Effect of Beauty Consumer Sentiment after Covid-19 on Hair Salon Revisit Intention

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Abstract

Purpose: As social distancing continues due to the pandemic, research results show that psychologically exhausted people are willing to increase consumption despite their perception of safety due to compensation psychology. Following research results showing that the safety of beauty must be ensured due to Covid-19, it is being argued that the beauty industry, which was greatly affected by the economic downturn, should be revitalized as Covid-19 enters a phase of calming down again. Therefore, there is a need to verify what factors influence customers who visited hair salons before Covid-19 to revisit the salon. The purpose of this study is to present a positive impact as a way to stimulate the intention to revisit hair salons.

Method: The data of this study was an online survey targeting men and women who had experience of using hair salons. we aim to analyze the effect of Beauty Consumer Sentiment after Covid-19 and its sub-factors on Hair salon Revisit Intention. The data were statistically analyzed using SPSS 25.0, and first exploratory factor analysis was performed to analyze the validity of the measurement tool. Reliability was analyzed using Cronbach's alpha coefficient. Frequency analysis and descriptive statistical analysis were performed. Independent t-test, Pearson's correlation analysis and regression analysis were performed.

Results: Beauty Consumer Sentiment after Covid-19 had a significant positive effect on Hair salon Revisit Intention. Among the subfactors of Beauty Consumer Sentiment after Covid-19, Safety Expectations and Psychological Compensation did not have a significant positive influence on Hair Salon Revisit Intention. Among the subfactors of Beauty Consumer Sentiment after Covid-19, service expectation had a significant positive effect on Hair salon revisit intention.

Conclusion: As Beauty consumer sentiment improves, repeat visits increase. Among consumer psychology, it was found that service expectation had a positive influence. This can be said to be a similar result to how service quality affects repeat visits. The reason why safety expectations have not had an impact after Covid-19 is because safety is fully recognized, so safety cannot be seen as leading to repeat visits. It can be said to be a differentiated study in that it yielded different results from existing studies on safety and compensation psychology. In future research, we hope to overcome the limitations of this study and to achieve objective and clear research results by diversifying the study in more detail by region and age.

Keywords: Beauty Consumer Sentiment, Consumer Psychology, Hair Salon Revisit, Covid-19, Service Expectation

1. Introduction

1.1. Need and purpose of the study

This study pursues more beauty as the desire for beauty increases along with recent social and economic development[1][2]. As household income increases and women's social participation expands due to women's entry into society[3], interest in beauty naturally also increases,

and the importance of the beauty service industry^[4], of which hair shops are representative, is increasing more than ever.

As social distancing continues due to the pandemic[5], research results show that psychologically exhausted people are willing to increase consumption despite their perception of safety due to compensation psychology[6][7][8][9]. Following research results showing that the safety of beauty must be ensured due to COVID-19[10], it is being argued that the beauty industry, which was greatly affected by the economic downturn, should be revitalized as Covid-19 enters a phase of calming down again[11][12]. Therefore, there is a need to verify what factors influence customers who visited hair salons before Covid-19 to revisit the salon.

Accordingly, In this study, we aim to analyze the effect of Beauty Consumer Sentiment after Covid-19 and its sub-factors on Hair salon Revisit Intention.

The purpose of this study is to present a positive impact as a way to stimulate the intention to revisit hair salons.

1.2. Theoretical background

1.2.1. Beauty consumer sentiment after Covid-19

Consumer psychology refers to consumers' attitudes toward consumption based on their sense of the economy, and the American Psychological Association defines consumer psychology as a field of psychology that studies the behavioral and psychological aspects of consumer behavior[13]. Consumers' selection of services, products, purchase and use behavior It is defined as a study that understands and explains psychological factors that influence [14]. As consumer psychological aspects become more important due to changes in consumption values and consumption patterns over time, the importance of concepts related to consumer psychology is increasing[15].

According to previous research, consumers' consumption psychology and purchasing propensity were analyzed as factors that increase consumers' trust, price satisfaction, and value satisfaction[16][17]. Therefore, in light of the many research results showing that consumer satisfaction affects repurchase, it is expected that there is a correlation between consumer psychology and revisit intention.

In this study, Beauty Consumer Sentiment after Covid-19 was set as the independent variable, and Safety Expectations, . Service Expectations[18][19], and psychological compensation were set.

1.2.2. Hair salon revisit intention

Intention to revisit refers to the likelihood that a customer will receive services from a worker and use such services repeatedly[20][21]. In other words, it means that the customer intends to purchase the product once purchased repeatedly. Since the 21st century, among the important fields in the hair industry, various studies related to beauty customer satisfaction and revisit intention have been conducted using various methods. As new customers return due to various influencing factors, business stabilizes, so repeat visits are an important factor[22][23][24][25].

According to previous research, in the hair industry, repeat visits are the most important factor in customer retention and marketing.

It was defined as a concept, and customer return visits were said to be the most important in marketing. In this study, hair salon revisit intention was set as the dependent variable.

2. Research Method

2.1. Research subjects

An online survey was conducted targeting Korean men and women over the age of 20 who use hair salons. A total of 400 questionnaires were collected over a period of 10 days from March 15, 2022, and 368 valid questionnaires were used for analysis.

2.2. Survey design

The contents of the questionnaire were designed by referring to previous research results and modifying and supplementing to suit the purpose of the study. General information consisted of gender, age, Education level, occupation, average monthly income.

The questions consisted of a total of 25questions and were measured on a 5-point Likert scale(20 questions) and Nominal scale(5 questions).

2.3. Research Model

By analyzing the theoretical considerations of previous studies investigated in Chapter 1, a specific research hypothesis was established for empirical research, and a research model and research method were presented accordingly. It is shown in <Figure 1>. presented below.

Figure 1. Research model.



According to the above research model, the following hypotheses were established.

- H1. Beauty Consumer Sentiment after Covid-19 will have a significant effect on Hair salon Revisit Intention.
- H1-1. Safety Expectations will have a significant effect on Hair salon Revisit Intention.
- H1-2. Service Expectations will have a significant impact on Hair salon Revisit Intention.
- H1-3. psychological compensation will have a significant effect on Hair salon Revisit Intention.

2.4. Data analysis

The following statistical analysis was performed on the data of this study using the SPSS 25.0 program.

First, the validity of the measurement tool was analyzed. For this purpose, an exploratory factor analysis method was used. Cronbach's alpha coefficient analysis was used to determine the reliability of each item of the factor.

Second, frequency analysis was conducted to identify the general characteristics of respondents who used hair salon shops. And descriptive statistical analysis was conducted to identify the characteristics of the research variables.

Third, an independent t-test was conducted to determine whether there was a difference in the means of the factors depending on the general characteristics of the study subjects.

Fourth, the correlation between research variables was analyzed. For this purpose, 'Pearson's Correlation' was adopted as a method.

Fifth, simple regression analysis and multiple regression analysis were conducted to verify the effect of 'beauty consumer psychology after Covid-19' on 'intention to revisit beauty salons'.

In the above analysis, the standard for statistical significance was set at a significance level of 5%.

3. Results

3.1. General characteristics of research subjects

The general characteristics of the study subjects are shown in <Table 1> below.

Table 1. General characteristics.

Characteristics Categories		Ν	%
Candar	Male	173	47.0
Gender	Female	195	53.0
A	20 to 49 years of age	175	47.5
Age	Over the age of 50	193	52.5
	High school graduation or less	76	20.7
F 's all a descent in a line all and an and	College graduation	76	20.7
Final educational background	University graduation	144	39.1
	Graduate school graduate or higher	72	19.5
	Student	48	13.0
	Self-employment	51	13.9
Occupation	Profession	78	21.2
	Office worker	129	35.0
	Etc.	62	16.9
	Less than 1.0 million won	57	15.5
Average monthly income	1.0 to less than 2.0 million won	55	15.0
	2.0 to less than 4.0 million won	133	36.1
	4.0 to less than 6.0 million won	78	21.2
	6 million won or more	45	12.2
	368	100.0	

3.2. Validation

3.2.1. Beauty consumer sentiment after covid-19

'Beauty Consumer Sentiment after Covid-19' was subjected to factor analysis with a total of 15 items, and the factor analysis model was judged to be appropriate, as shown in <Table 2> below. (KMO=.910, Bartlett χ^2 =3226.915(p<.001)).

'Beauty Consumer Sentiment' was classified into three factors. The first factor consisted of 'Safety Expectations' with 4 items, the second factor consisted of 'Service Expectations' with 6 items, and the third factor consisted of 'Psychological Compensation' with 5 items.

		Factor			
	Questionnaire	1	2	3	
BQ1	Hygiene management in hair salons has been improved.	.641	.279	.180	
BQ2	The hair salon thoroughly implements disinfection and quarantine.	.825	.193	.219	
BQ3	I am willing to use the service because the environment of the hair salon has improved.	.785	.269	.210	
BQ4	I am willing to use the service because the system of the hair salon is safe.	.720	.245	.272	
BQ5	I am satisfied with the service and atmosphere of the hair salon.	.164	.802	.217	
BQ6	I am satisfied with the service and atmosphere of the hair salon.	.301	.742	.251	
BQ7	The cost-effectiveness (price/performance ratio) of hair salons has improved.	.166	.764	.297	
BQ8	The psychological satisfaction compared to price of hair salon services has improved.	.184	.802	.223	
BQ9	The overall service related to the professionalism and technology of hair salons has improved.	.280	.673	.142	
BQ10	I am satisfied with the counseling and recommendation of the staff at the hair salon.	.391	.739	.205	
BQ11	I want to do a lot of hairdressing that I haven't been able to do since Covid-19.	.314	.123	.713	
BQ12	If a new hair product or service menu comes out after Covid-19, I am willing to try it.	.163	.197	.754	
BQ13	When the Covid-19 situation is stabilized, I want to use the hair salon again.	.130	.443	.580	
BQ14	Hair salons are generally emotionally comforting.	.242	.276	.741	
BQ15	Hair salons are helpful in vicariously satisfying and relieving desires.	.173	.222	.756	
	Eigen value	2.864	3.043	4.040	
	Common variance(%)	19.095	20.285	26.935	
	Cumulative variance(%)	19.095	39.380	66.315	

 Table 2. Beauty consumer sentiment after covid-19 factor analysis.

3.2.2. Hair salon revisit intention

'Hair salon Revisit Intention' was subjected to factor analysis with a total of 5 items, and as shown in <Table 3> below, the factor analysis model was judged to be appropriate and was classified as one factor.(KMO=.836, Bartlett χ^2 =609.268(p<.001)).

Questionnaire		Factor
		1
HQ1	I will continue to use the hair salon I usually go to.	.788
HQ2	I do not consider using other hair salons.	.741
HQ3	I will recommend the people around me to use the hair salon I usually go to.	.803
HQ4	My regular hair salon is the first main hair salon that comes to mind when I try to use a hair salon.	.834
HQ5	Even if I am dissatisfied with the distance and environment of the current hair salon, I will continue to use it.	.642
	Eigen value	2.922
Common variance(%)		58.442
	Cumulative variance(%)	58.442

 Table 3. Hair salon revisit intention factor analysis.

3.3. Reliability analysis

Reliability analysis was conducted to determine whether respondents responded consistently to the survey in this study. Reliability means that the same results appear even when the measurement object is measured multiple times and that there is consistency among the items that make up an indicator.

To verify this, Cronbach's alpha coefficient was used. In general, an alpha coefficient of 0.6 or higher is considered relatively high reliability (Hair et al., 2006), and the alpha coefficient of all variables was 0.8 or higher, so reliability was judged to be high. as shown in <Table 4>.

Table 4. Reliability for each variable.

Variables		No. of items	Cronbach's α
	Safety Expectations	4	.834
Beauty consumer sentiment after covid-19	Service Expectations	6	.905
	Psychological Compensation	5	.840
	total	15	.922
Hair salon revisit intention		5	.807

3.4. Descriptive statistics

The mean and standard deviation were calculated to determine the level of the research variables measured in this study. The average of 'Safety Expectations', a subfactor of 'Beauty Consumer Sentiment after Covid-19', was 3.50 out of 5, the average of 'Service Expectations' was 3.74 out of 5, and 'Psychological Compensation' The average of 'Beauty Consumer Sentiment after Covid-19' was 3.46 out of 5, and the average of 'Beauty Consumer Sentiment after Covid-19' was 3.58 out of 5. In the case of 'Hair salon Revisit Intention', the average score was 3.56 out of 5.

Additionally, Skewness and Kurtosis were calculated to determine whether the normality assumption of variables was met. If the skewness is less than the absolute value of 3 and the kurtosis is less than the absolute value of 10, it is judged to be close to a normal distribution, and all variables were found to meet the assumption of normality.

3.5. Differences in major research variables according to age range (under 50's/over 50's)

Depending on the general characteristics of the research subject, we analyzed whether there were differences between 'Beauty Consumer Sentiment after Covid-19' and its subfactors 'Safety Expectations', 'Service Expectations', 'Psychological Compensation', and 'Hair Salon Revisit Intention'. The results deemed particularly important are described below.

An independent sample t-test was conducted to determine whether there were differences in major research variables depending on the age range (Under 50's/Over 50's) of the study subjects, as shown in <Table 5> below.

Beauty Consumer Sentiment after Covid-19 (t=2.995, p<.01) according to age range (Under 50's/Over 50's) and its sub-factors Psychological Compensation (t=3.354, p<.001), 'Service Expectations' (t=2.773, p<.01), and the difference in Hair Salon Revisit Intention (t=-2.359, p<.05) was found to be statistically significant. Beauty Consumer Sentiment after Covid-19 and its sub-factors Psychological Compensation and 'Service Expectations' were higher in Under 50's than Over 50's, and Hair Salon Revisit Intention was higher in Over 50's than Under 50's.

Meanwhile, the difference in Safety Expectations, a subfactor of Beauty Consumer Sentiment after Covid-19, according to age range (under 50's/over 50's) was not statistically significant (p>.05).

variable	Categories	N	м	SD	t	р
Beauty Consumer	Under 50's	175.00	3.67	0.60	2.005**	.003
Covid-19	Over 50's	193.00	3.50	0.52	2.995**	
Safety Expectations	Under 50's	175.00	3.54	0.69		
	Over 50's	193.00	3.45	0.62	1.250	.212
Psychological Compensation	Under 50's	175.00	3.58	0.73	0.05.444	<.001
	Over 50's	193.00	3.34	0.62	3.354***	
Service Expectations	Under 50's	175.00	3.84	0.68	0	
	Over 50's	193.00	3.65	0.59	2.773**	.006
Hair salon Revisit Intention	Under 50's	175.00	3.47	0.75	2.25.0*	
	Over 50's	193.00	3.64	0.59	-2.359*	.019

Table 5. Differences in major research variables according to age range (under 50's/over 50's).

Note: * p<.05 ** p<.01 *** p<.001.

3.4. Correlation analysis

Pearson's correlation analysis was performed to determine the correlation between the variables of this study.

'Beauty Consumer Sentiment after Covid-19' was significantly positively related to Safety Expectations(r=.820, p<.001), Psychological Compensation(r=.857, p<.001), Service Expectations(r=.888, p<.001) and Hair salon Revisit Intention(r=.578, p<.001).

'Hair salon Revisit Intention' was significantly positively related to 'Beauty Consumer Sentiment after Covid-19'(r=.578, p<.001), 'Safety Expectations'(r=.382, p<.001), 'Psychological Compensation'(r=.375, p<.001), 'Service Expectations'(r=.683, p<.001). As shown in <Table 6>.

Table 6. Correlation analysis.

	Beauty consumer sentiment after covid-19	Safety expectations	Service expectations	Psychological compensation	Hair salon revisit intention
Beauty consumer sentiment after covid-19	1				
Safety expectations	.820***	1			
Service expectations	.888***	.615***	1		
Psychological compensation	.857***	.578***	.609***	1	
Hair salon revisit intention	.578***	.382***	.683***	.375***	1

Note: * p<.05 ** p<.01 *** p<.001.

3.5. Effect of 'beauty consumer sentiment after covid-19' on hair salon revisit intention

3.5.1 Simple regression analysis results

A simple regression analysis was conducted to determine the effect of 'Beauty Consumer Sentiment after Covid-19' on 'Hair salon Revisit Intention'.

As a result of verifying the regression model, the regression model was suitable with F=184.069 (p<.001), and the explanatory power of the model was approximately 33.5%. Meanwhile, the Durbin-Watson statistic was 1.692, a value close to 2, so there was no problem with the assumption of independence of residuals.

As a result of testing the significance of the regression coefficient, 'Beauty Consumer Sentiment after Covid-19' was found to have a significant positive influence on 'Hair salon Revisit Intention' (β =.578, p<.001). The higher the 'Beauty Consumer Sentiment after Covid-19', the higher the 'Hair salon Revisit Intention'. As shown in <Table 7>.

Variables	В	S.E	β	t	q	Tolerance	VIF
(constant)	1.090	0.184		5.911***	<.001		
Beauty consumer sentiment after covid-19	0.690	0.051	.578	13.567***	<.001	1.000	1.000
F=184.069(p<.001). R ² =.335. adjusted R ² =.333. Durbin-Watson=1.692							

Table 7. Effect of 'beauty consumer sentiment after covid-19' on hair salon revisit intention.

Note: * p<.05 ** p<.01 *** p<.001.

3.5.2. Multiple regression analysis results

Multiple regression analysis was conducted to analyze the effect of the sub-factors (Safety Expectations, Psychological Compensation, Service Expectations) of 'Beauty Consumer Sentiment after Covid-19' on Hair Salon Revisit Intention.

As a result of verifying the regression model, the regression model was suitable with F=107.721 (p<.001), and the explanatory power of the model was approximately 47.0%. Meanwhile, the Durbin-Watson statistic was 1.766, which was close to 2, so there was no problem with the assumption of independence of residuals. The tolerances were all above 0.1 and the VIF was below 10, so there was no problem with multicollinearity.

As a result of testing the significance of the regression coefficient, it was found that among the sub-factors of 'Beauty Consumer Sentiment after Covid-19', Service Expectations had a significant positive influence on 'Hair salon Revisit Intention' (β =.741, p<. 001). It can be said that among the sub-factors of 'Beauty Consumer Sentiment after Covid-19', the higher the Service Expectations, the higher the 'Hair salon Revisit Intention'.

Meanwhile, among the sub-factors of 'Beauty Consumer Sentiment after Covid-19', 'Safety Expectations' and 'Psychological Compensation' did not have a significant effect on 'Hair salon Revisit Intention' (p>.05). It appeared as shown in <Table 8> below.

Table 8. Effect of sub-facto	able 8. Effect of sub-factors of beauty consumer sentiment after covid-19 (safety expectations, psychological compensation						
service expectations) on hair salon revisit intention.							
					1		

Variable	В	S.E	β	t	р	Tolerance	VIF
(a constant)	0.975	0.166		5.878***	<.001		
Safety Expectations	-0.045	0.053	044	-0.858	.391	0.556	1.799
Service Expectations	0.779	0.055	.741	14.081***	<.001	0.526	1.902
Psychological Compensation	-0.050	0.050	051	-0.993	.321	0.563	1.777

F=107.721(p<.001), R²=.470, adjusted R²=.466, Durbin-Watson=1.766

Note: * p<.05 ** p<.01 *** p<.001.

4. Conclusion & Discussion

The result of the hypothesis testing conducted previously can be summarized as follows.

As a result of analysis the differences in variables according to general characteristics, the significant result was the difference according to age. Based on people in their 50s, there was a difference in consumer sentiment. Customers under 50 had higher consumer sentiment, but their revisit intention was lower. This can be seen as a tendency to find new shops and to do self-grooming. On the other hand, although consumer sentiment was lower among those in their 50s and older, their intention to revisit was higher. It can be seen that there are many loyal customers in their 50s and above, and their satisfaction level is higher. Therefore, if you encourage repeat visits from customers in their 50s or older, it will be highly effective.

Beauty Consumer Sentiment after Covid-19 had a significant positive effect on Hair salon Revisit Intention. Among the subfactors of Beauty Consumer Sentiment after Covid-19, Safety Expectations and Psychological Compensation did not have a significant positive influence on Hair Salon Revisit Intention. Among the sub-factors of Beauty Consumer Sentiment after Covid-19, service expectation had a significant positive effect on Hair salon revisit intention.

As consumer sentiment improves, repeat visits increase. Among consumer psychology, it was found that service expectation psychology had a positive influence. This can be said to be a similar result to how service quality affects repeat visits [26][27][28]. The reason why safety expectations have not had an impact after Covid-19 is because safety is fully recognized, so safety cannot be seen as leading to repeat visits. It can be said to be a differentiated study in that it yielded different results from existing studies on safety psychology[29][30], and compensation psychology[31][32]. After the disaster passed, we found that expectations for service were again the most important thing. On the one hand, rather than worrying about an economic downturn due to Covid-19, we need to start over again.

A limitation of this study is that it did not compare actual changes in consumer sentiment before and after Covid-19. There is also a need to find more diverse factors for repeat visits to hair salons.

I would like to suggest this for future research. I hope to overcome the limitations of this study and to achieve objective and clear research results by diversifying the study in more detail by region and age.

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6. Appendix

6.1. Author's contribution

	Initial name	Contribution
Author	EC	-Set of concepts -Design -Getting results -Analysis -Make a significant contribution to collection -Final approval of the paper -Corresponding -Play a decisive role in modification -Play a decisive role in modification -Significant contributions to concepts, designs, practices, analysis and interpretation of data -Participants in Drafting and Revising Papers -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone who can explain all aspects of the paper -Someone

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