

Development of Fashion Cultural Products with Korean Traditional Image for the Enhancement of Global Competitiveness:

-Using Korean Traditional Botanic Patterns & Digital Textile Printing Technology-

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ABSTRACT

The purpose of this study was to develop the high-value-added fashion cultural products with Korean image for the enhancement of global competitiveness. For this purpose, theoretical examination of the unique beauty of Korea and Korean image was first performed. Especially, characteristics of Korean traditional botanic patterns were investigated with LOHAS (Lifestyles of Health and Sustainability) philosophy which is the focus of the current design trend. Along with the above, the environmentally-friendly digital textile printing technology and Korean traditional botanic patterns were used to produce creative and globally-competitive fashion cultural products. Finally, a series of fashion cultural products were developed such as table runner, table mat and bedclothes.

Key Words : *fashion cultural products, Korean image, Korean traditional botanic patterns, (digital textile printing) technology*

I . INTRODUCTION

In the age of limitless competition of the 21st century, creative and native cultural values are recognized as a success strategy of nations and enterprises. This trend requires a global perspective which blends Korean cultural identity with modern senses. Also, these days, the paradigm has changed.

In the past, economy led culture, but in the present day, culture leads economy. This change requires developing new culture and products which can promote Korean images and create economical values.

Recently, the so-called 'Korean wave (Hallyu)' in Asia reflects the increased interest in Korea and Korean culture. Also, Korean identity as an advanced nation of IT technology and various international events such as '2002 world cup games and '2005 APEC focus the international attention on Korea. In these global times, Korean native culture

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is the growth power for the next generation. Therefore, developing Korean cultural products is very important because they are one of the best instruments for the promotion of Korean image and the enhancement of Korea's global competitiveness.

Previous researches of Korean cultural products were mostly about development and upbringing plans of folk products such as tourism souvenir, folk souvenir and folk craft products. However, as the importance of cultural products as economical values grows, recent researches focus on developing and designing cultural products with Korean native images. In order to increase global competitiveness, theoretical knowledge of the beauty of Korea and creative approach to designing products should be established. Also, it is necessary to promote the cooperation between industrial and educational areas for developing realistic cultural products. Especially, the development and evaluation of cultural product design equipped with a global sense and perspective is required because the main customers of Korean cultural products will be the global market. Therefore, continuous efforts and researches are needed for developing cultural products which can suit global tastes and senses.

In this context, the purpose of this study was to develop the high-value-added fashion cultural products with Korean image for the enhancement of global competitiveness. For this purpose, theoretical examination about the unique beauty of Korea and Korean image was first performed. Especially, characteristics of Korean traditional botanic patterns were investigated with LOHAS (Lifestyles of Health and Sustainability) philosophy, the key-word of latest design trend. Along with the above, this study was intended to develop creative and globally-competitive fashion cultural products using Korean tradi-

tional botanic patterns and eco-friendly digital textile printing technology.

The method of this study was as follows. First, the concepts and characteristics of fashion cultural products were examined. Second, particularities and characteristics of Korean beauty were redefined based on the examination of symbolism and formative characteristics of Korean traditional botanic patterns. Finally, based on the above, the development and evaluation of practical designs and products were achieved. For the objectivity of design, Lamb & Kallal(1992)'s design process¹⁾ was followed. And the evaluation was done with the application of Grant's α - β model.

II . Theoretical Review

1. Overview of Fashion Cultural Products

1) Concepts and Characteristics of Fashion Cultural Products

Generally, cultural products are the objects of industrial production and consumption created by the combination of cultural and economic areas. In a broad sense, cultural products are all by-products of cultural industry. Korean cultural products are all by-products of cultural industry which use Korean culture and images. Cultural products are the high-value-added products with creative ideas and high technology. The cultural products can fully satisfy customers when functional aspects of scientific technology and aesthetic aspects of art and design are combined into products.

Cultural products reflect not only economic values but also cultural values. Cultural products must include symbolic images of specific nation and region. Symbolic images which cultural products convey become total image of specific nation and

region. Therefore, comprehensive and objective examination of cultural background, behavior patterns, and spiritual aspects of culture is needed before the development of cultural products.

Fashion cultural products are fashion products which have the characteristics of Korean culture. The areas of fashion cultural products include clothes, accessories, living goods, and home & interior items, etc. Fashion cultural products have a great potential for attracting foreigners because of cultural symbolism. Especially, fashion cultural products have several strong points such as having small volume, being easy to pack and not being easily broken. So, it is an item for tourists to easily bring. Because of these strong points, fashion cultural products become foreign tourists' most favorite shopping items since 1995. In addition, fashion cultural products are the high-value-added products which can be sold because they are trendy, and have high consumption turnover.²⁾

2) Necessity and Significance of Developing Fashion Cultural Products with Korean Traditional Image.

In the modern society, high-tech products are preferred. At the same time, a great level of attention is given to cultural products influenced by unique culture and tradition. In Korea, based on Korea's economical growth and rich cultural heritage, the development of globally-competitive cultural products is also required. The specific needs for the development of cultural products inspired by traditional culture are as follows.

Korean traditional culture is the biggest growth power for the next generation. The international conference hosted by the Korean Ministry of Commerce, Industry and Energy was held on July, 2003. It was titled "growth industry for the next

generation". In the conference, fashion industry was chosen as one of the five biggest growing industries for the next generation in Korea. In the conference, futurologists, John Naisbitt and Guy Sorman, suggested that Korean culture would be the biggest growth power for the 'Made in Korea' brand. Especially, Guy Sorman emphasized that high-added values of culture should be created in order to compete with and survive the world market. Furthermore, he stressed that Korea already has rich cultural property enough to form the brand image of 'Made In Korea' and traditional culture and modern elements should be integrated for commercialization.

Second, the development of cultural products using traditional culture directly connected to the enhancement of a nation's competitiveness through promotion of a nation's images. The development of fashion cultural products with modern senses in accordance with global trend enables us to understand our culture and tradition in depth and causes great economical outcomes.

Third, fashion cultural industry is a new niche market. Between 1960 and 1970 major shopping items of tourists were traditional folkcraft products. But, in 1990, clothing were getting popularity. The research on foreign tourists(2001)³⁾ showed that 38% of tourists bought fashion-related products. This fact showed a rapidly-increasing need for fashion cultural products.

Fourth, there is a lack of cultural products which can convey Korean cultural images to the world. Fashion cultural products are an efficient and valuable instrument to make Korean cultural identity known to the world. Therefore, it is very necessary to develop cultural products which have Korean images and also suit modern tastes and senses of global market.

2. Korean Traditional Botanic Patterns

Korean traditional patterns were the symbolic expressions of our common values and feelings. The subjects of traditional patterns were various. Especially, botanic patterns were used in various genres of art. Among botanic patterns, this study focused on patterns of an ume flower and a pomegranate. The patterns of an ume flower and a pomegranate were commonly used in various genres of art. An ume flower and a pomegranate have simplicity, affection, and Korean symbolism. In this study, the ecological characteristics, symbolic meanings and the formative characteristics of an ume flower and a pomegranate were examined. These examinations were used as a theoretical background for the development of the designs of Korean fashion cultural products.

1) An Ume Flower Pattern

(1) Symbolism

Ume flowers derive various symbolic images according to the ecological characteristics and external forms. An ume flower was a harbinger of spring and symbolized rejuvenation. An ume flower was a metaphor for spring. And it symbolized hope, greatness of living and strong will to life, because an ume tree overcomes the harsh coldness of the winter and makes an ume flower bloom in early spring.

An ume flower showed scholarly fidelity and a noble character, because it never surrenders to winter coldness and hardships. An ume flower elegantly boomed in face of the cold winter showed purity and integrity, toughness, and noble-mindedness. In this sense, an ume flower, orchid, chrysanthemum, and bamboo symbolized a man of honor, a man of virtue, and fidelity. Those four plants were called as 'the four gracious plants'.

A literary man and a calligrapher wanted to learn the spirit of a man of virtue, while drawing an ume flower. In this regard, an ume flower was the flower pattern that best symbolized scholarly fidelity. Also, an ume flower, pine, and bamboo were called as 'three friends in winter' and they symbolized fidelity and friendship.

An ume flower also symbolized a woman's purity and integrity. Because of this fact, an ume flower was frequently shown in the paintings of beautiful women and in the background of the portraits of the gentry's wives. Sometimes, an ume flower and bamboo together symbolized a husband and a wife. In this case, an ume flower was a wife and bamboo was a husband.

In this context, the ume flower had a symbolism of moral lessons. The symbolic images of the ume flower were fidelity, loyalty, and virtue, which were cardinal virtues of our ancestors. Also, the beauty of purity and a sweet scent of ume flowers were well matched with our ancestor's tastes. That is, the ume flower contained the essence of 'Korean things' which were beloved by Koreans.

(2) Formative characteristics

The ume flower pattern was widely used in pottery, furniture, personal ornaments, embroidery, dress, and a wall painting.

Compared to other flowers, the form of an ume flower is not too much splendid or gaudy. An ume flower has a simple image. In appearance, an ume flower has a beauty of purity, simplicity, and elegance. An ume flower is a uniflorous flower with 5 petals. The form of a flower is comparatively simple. The ume flower was expressed full-blown or bud.

The ume flower was classified as a white flower or a red flower. For Korean people, who respect

the white color, a white ume flower was more loved than a red ume flower. When a red ume flower was painted, it was expressed lighter than natural color. The white ume flowers had a clear and pure image and a sense of stability.

The characteristics of ume flowers expressed in Korean paintings were the beauty of a blank-space and the beauty of simplicity by sparsely painted flowers. The way that the branches and stems were drawn; i.e. thickness, length, and the direction of extending, expressed the beauty of lines and vitality. The ume flower, which was expressed in ceramics, showed the beauty of harmony by light and shade touch of brush. Also, the ume flowers were often expressed with birds. The ume flowers were mainly matched with a magpie, a sparrow, and sometimes a pheasant or crane.

In the folk paintings, ume flower was the commonly used patterns next to a peony and a lotus flower. The Ume flowers expressed in folk paintings had different characteristics from other paintings. These characteristics were as follows.

First, the ume flowers in folk paintings were not painted alone. Instead, they were expressed with birds or other insects, and sometimes moon. Second, the ume flowers in traditional paintings were expressed realistic. But in folk paintings, they were usually simplified and patternized. Third, the ume flowers in traditional paintings were expressed sparsely. But in folk paintings, they were depicted compactly with many flowers. Fourth, in folk paintings, the red ume flowers were more used than white ones. And the red color was more deep and clear. Fifth, the matched Birds were different. In traditional paintings, the ume flowers were commonly matched with a magpie, a sparrow, and a pheasant. But, in folk paintings, in addition to the above birds, the ume flowers were matched with a

mandarin duck, a peacock and other beautiful birds with various colors.⁴⁾

2) A Pomegranate pattern

(1) Symbolism

A pomegranate was a fruit of long tradition and it was called as 'a carthaginian apple.' The pattern of a pomegranate symbolized fecundity and prosperity of offspring. The reason why a pomegranate symbolized prosperity of offspring was that many small seeds within a pomegranate indicated many children and many sons. Therefore, a pomegranate was frequently used on women's clothing and necessary articles for marriage. The symbolic meaning of a pomegranate as fecundity was also emphasized because the sour taste of a pomegranate attracted pregnant women's appetite.

Flowers, fruits and seeds of a pomegranate are all red. Traditionally, the red color was believed to have a power against an evil spirit. Therefore, a pomegranate was naturally symbolized as an object to avert a disaster.

A pomegranate was also called as 'an alluvial gold pocket' because the form of a pomegranate resembled a lucky bag with a precious stone. A pomegranate symbolized longevity when it was drawn with the herb of eternal youth. Also, a pomegranate symbolized richness and beauty when it was drawn with a golden oriole.

(2) Formative characteristics

A pomegranate was used as an lucky sign patterns, because of it's shape of many inside seeds. The pomegranate patterns appeared in the United Shilla period for the first time. They were shown in a roofing tile.

Pomegranate patterns were used as a symbolizing patterns of fecundity because of its abundant seeds.

Pomegranate patterns were used in buildings, embroidery, lacquerwares inlaid with mother-of-pearl, fabrics and dresses. Especially, They were commonly used in women's stuffs, such as the formal dress of Chosun dynasty, a thimble, a ornamental hairpin, and furniture, etc.

Pomegranate patterns were usually expressed in a way that two fruits were arranged in a row and simplified leaves were placed in the upper and lower sides. The fruits hanging down the branches were totally depicted. In Embroidery, branches, fruits, and leaves of a pomegranate were expressed very softly and delicately. Sometimes, pomegranate patterns were expressed in a way that fruits were flowing over a basket.

III. Development of Fashion cultural products with Korean traditional botanic patterns with Digital Textile Printing Technology.

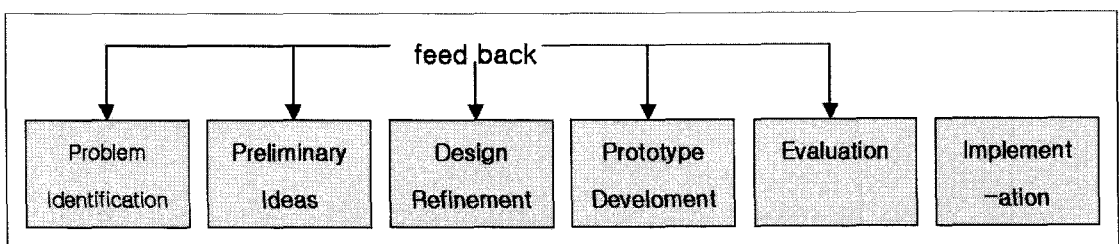
1. Design Intention and Method

This study intended to develop fashion cultural products based on LOHAS philosophy and originality of Korean beauty. For this purpose, Korean traditional botanic patterns and Digital Textile Printing Technology(DTP) were used. The recent trends of cultural products require not only a deco-

rative purpose but also a practical use for everyday life. In this context, this study focus on developing the home-items such as table mat, table runner, bed clothes.

In this study, the design of fashion cultural products with Korean images was performed according to Lamb & Kallal's design process. Lamb & Kallal's design process, the objective problem-solving process of fashion design, divides into six stages, which are problem identification- preliminary ideas-design refinement-prototype development- evaluation-implementation.<fig. 1> In the problem identification stage, the needs and demands of customers were analyzed, and the evaluation criteria were determined. In the preliminary idea stage, various ideas were produced through sketch, brain-storming, and research. In the design refinement stage, the revision of the preliminary ideas, the prioritization of the evaluation criteria, and the compression of multiple solutions are done. In the prototype development stage, samples were produced, and in the evaluation stage, the suitability of the designs were evaluated according to the pre-determined criteria. The main purpose of this study was to develop the designs and thus, the implementation stage was excluded.

DTP, the technological background of this study, goes through the processes of scanning the images, editing images by computer programs, and directly printing images. Because all the processes of DTP



<Fig. 1> Lamb & Kallal's Design Process

are computerized, the consistent results can be produced, and the accumulation of design data is made possible. DTP is eco-friendly technology because it can save man power, time, raw materials, and industrial wastes by the reduction of the conventional printing process. Therefore, DTP is the technology that corresponds to the intention of design development of this study based on LOHAS philosophy. All fabrics for DTP are ink-jet water soluble pretreated and thus, express images in a more clear and delicate way. Especially, DTP has an advantage of multi-item and low-volume manufacturing for fashion cultural products because DTP makes small quantity of printing possible.

2. Design development and evaluation by Lamb & Kallal's design process

1) Problem Identification

These days, the development of fashion cultural products as a means of revealing cultural identity to the world is required. It is important to develop fashion cultural products that fit the needs and tastes of foreigners as well as Koreans.

In this stage, preliminary survey was administered to fashion expert group(graduate students majoring in fashion design) and people who are interested in Korean beauty. As a result, common ideas on fashion cultural products with Korean images have been produced. First, fashion cultural products should have symbolic designs appealing to domestic and global market. Second, Korean images can have a significant meaning when they are in harmony with modern design. That is, fashion cultural products should have aesthetic characteristics. Third, the design of fashion cultural products should have a practical and decorative functionality. These com-

mon ideas were reflected in the development and evaluation of the design process.

2) Preliminary Ideas : a primary design development

In this stage, considerable amount of data on the design concept and elements have been collected based on three major criteria of symbolism, aesthetics, and functionality. The selected design elements were as follows.

First, home-items such as table mat, table runner, bed clothes were selected for design development. This is because the recent trends of cultural products require not only a decorative purpose but also a practical use for everyday life. Home-items have a high practicality in Korea and also in the global world.

Second, the ume flower and pomegranate patterns were mainly used to symbolize Korean images. The related design sources were selected from the traditional paintings, folk paintings and crafted works. The ume flower and pomegranate motive shown in the design sources were used as an original form or a variation form. The selected design sources were as follows.

- S.1.- Rock, bamboo, ume tree, orchid, and chrysanthemum. By Sin Myŏng-Yŏn, the 19th century⁵⁾
- S.2.- Part of the floral tray-table with ume flower tree and bamboo design. Wood. the late 19th century.⁶⁾
- S.3- Part of the "Flowers & Rocks", an embroidery folding screen with 10-panels, the 19th century.⁷⁾
- S.4.- Part of the "Flowers & Rocks", an embroidery folding screen with 10 panels, the 19th century⁸⁾

Third, the colors of the paintings chosen as the design sources were used as basic colors. Also, other colors were used for color arrangement and match. Especially, the characteristics of Korean traditional botanic motif are suitable for the LOHAS philosophy as well as ecological design. Therefore, the color arrangement was chosen to fit the natural or eco decoration of table and interior decoration.

Fourth, considering the output condition of DTP, and the characteristics of home-items, the cotton/cotton canvas fabrics were selected.

As a tool of design development, Adobe Photoshop 7.0 and Adobe Illustrator 10.0 were used. Finally, total 4 series of creative designs(3 series of ume flower and 1 series of pomegranate) were suggested. Based on the preliminary design, variation and supplementation were done to develop a secondary design.

3) Design Refinement : a secondary design development

In the design refinement stage, the variation and reformation of the preliminary designs were performed. The techniques of design variations used in this study were the variation of motive size, arrangement and color, adding new design elements, facet division, surface management, using various filter functions and image effects, etc. Through this process, total 49 designs were suggested. The specific development process of each design series were as follows.

(1) The designs using ume flower patterns

① Design series 1




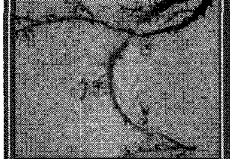
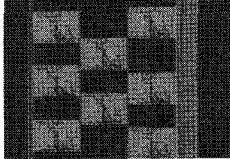











Design series 1 of <Table 1> used the ume flower of Chosun dynasty paintings of the four gracious plants(S.1.) as design sources. D.1 used the whole painting of ume flower as design motive.

Also, D.1 was expressed in optical and modern image by facet division with solid color and stripes match. In the preliminary design of table mat, the direction of ume flower painting was changed and stripes were arranged in upper and bottom sides and in left and right sides.

The colors of the preliminary design of table mat were verified in two ways. One was that only brown color was used to match well with the original color of the ume flower painting. The other was that red, peach, blue, sky blue, and brown color were arranged to create a modern sense. Table runner of the preliminary design arranged the motive on solid ground and the vertical stripes. As in the case of table mat, the colors of table runner were used in two ways.

The preliminary design was expanded into the secondary design by variation of motive size and location, facet division with various color block, variation of stripes arrangement. In D.1-1 the size of ume flower painting was compressed and then arranged in new background with irregular red stripes. D.1-1-a. reduced the size of ume flower and the motives were arranged repeatedly. The ground of D.1-1-a was painted with deep brown color. Through these variations, D.1-d has obtained a sense of modernism and variety. In D.1-1-b., the painting of design source was divided into several irregular pieces. Each piece of painting was re-arranged geometrically and the rest background was divided into different-sized sections filled with red, peach, blue, sky blue and brown color. As a result, D.1-1-b expressed a sense of modern image and colorful richness. Especially, the saturation of colors in D.1-1-b was adjusted to old painting's atmosphere. Through this process, D.1-1-b was intended to express the harmonization of Korean symbolism and modern images.

<Table 1> Design series 1

	Design source	Preliminary designs	Secondary designs
table mat	 <p>S.1</p>	 <p>D.1</p>	 <p>D.1-1</p>
		 <p>D.1-a</p>	 <p>D.1-1-a</p>
		 <p>D.1-b</p>	 <p>D.1-1-b</p>
table runner		<p>D.1-c</p> 	<p>D.1-1-c</p> 
		<p>D.1-d</p> 	<p>D.1-1-d</p> 
		<p>D.1-e</p> 	<p>D.1-1-e</p> 
			

Considering the laterally long shape of table runner, D.1-1-c, D.1-1-d, and D.1-1-e were developed. D.1-1-b was arranged as a motive.

② Design series 2



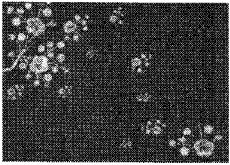
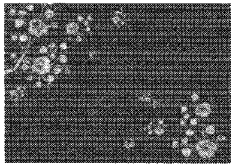
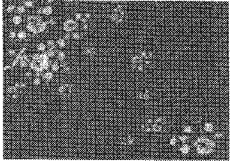
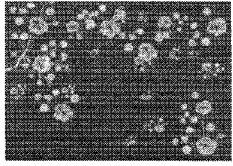
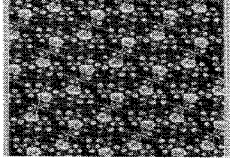
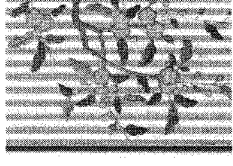






The design source of Design series 2 was an ume flower patterns(S.2-1) expressed in floral wood tray-table(S.2) made in late 19th century. The motive was expressed by the traditional technique of black-lacquered wood with mother-of-pearl inlay. The motive was a branch with full bloomed and bud of flowers. The flowers were expressed simply. In Design series 2, the whole flower was used or only a part of flower was used. Each motive was devel

oped diversely by re-arrangement, size variation and color way.

D.2 was simply developed by changing the ground color into brown and bluish green colors and rearranging an ume flower motive. D.2-b maintained the sense of black-lacquerware with mother-of-pearl inlay and the vertical stripes was added. D.2-c and D.2-d were developed by repetitive arrangement of an ume flower motive or by the changes of the direction of an ume flower motive.

The secondary designs were developed from the preliminary designs. The narrow stripes were added in the solid background of the preliminary designs. D.2-1 and D-2-1-a were renewed by rearrangement of

<Table 2> Design series 2

	Design source	Preliminary designs	Secondary designs
table mat	<p>S.2.</p>  <p>S.2-1</p> 	 <p>D.2</p>	 <p>D.2-1</p>
		 <p>D.2-a</p>	 <p>D.2-1-a</p>
		 <p>D.2-b</p>	 <p>D.2-1-b</p>
		<p>D.2-c</p>  <p>D.2-d</p>  <p>D.2-e</p> 	<p>D.2-1-c</p>  <p>D.2-1-d</p>  <p>D.2-1-e</p> 


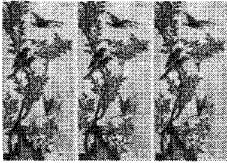
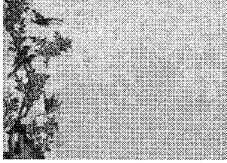
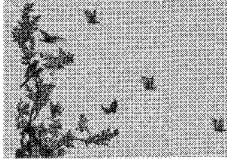
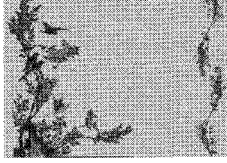
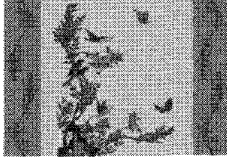






motives. D.2-1-b was developed by adjusting stripe's intervals and changing colors.

③ Design series 3

The design source of Design series 3 was from the work of embroidery which was titled "Flowers & Rocks". It was a ten-fold screen made of embroidery. In Design series 3, only a panel of ume flowers was selected out of 10 panels. In the work of embroidery, the ume flower tree was depicted with many full bloomed red flowers and a pair of birds and butterflies. The whole panel or a cropped part was used as the motive.

Preliminary design was developed to maintain the texture of embroidery. In D.3, the table mat, the whole part of embroidery was used as a motive and the motive was repeated. D.3-a~ D.3-c were developed to maintain the original textual feeling of embroidery, too. D.3-b was developed from rotating the motive and arranging it symmetrically in right and left side. In D.3-b, rock was separated from flowers, and arranged in both ends.

<Table 3> Design series 3

	Design source	Preliminary designs	Secondary designs
table mat	S.3. 	 D.3  D.3-a	 D.3-1  D.3-1-a  D.3-1-b
table runner		 D.3-b  D.3-c	 D.3-1-c  D.3-1-d  D.3-1-e  D.3-1-f





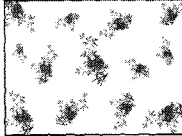
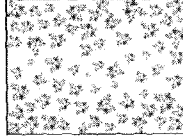
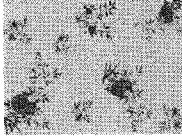
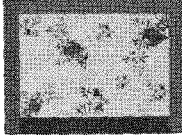
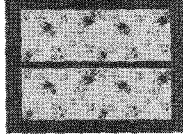




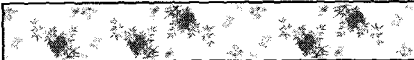






In secondary designs, original textural feeling of design source was controlled. The colors of secondary designs were extracted from design source and they were filled solidly in secondary designs. D.3-1 used only the above part of the motive, excluding rock. In D.3-1-a, butterflies were removed and a new motive was created. The new motive was a branch with bloomed flowers. The new motive, the branch with flowers, had a softly-curved line which well-matched with Korean images. D.3-1-b was designed by positioning the ume flower motive in

center and the color blocks were arranged in left and right sides. The table mats and runners of secondary designs were developed as a set. Especially, the secondary designs of Design series 3 were intended to express Korean symbolism by soft colors, curved lines, and blank spaces.

(2) The designs using pomegranate patterns

<Table 4> is a series of design using pomegranate patterns. As in Design series 3, the design source of Design series 4 was from the work of

<Table 4> Design 4

	Design Source	Preliminary designs	Secondary designs
table mat	<p>S.4.</p> 	 D.4  D.4-a	 D.4-1  D.4-1-a  D.4-1-b  D.4-1-c  D.4-1-d  D.4-1-e
Table runner		<p>D.4-b</p>  D.4-b <p>D.4-c</p>  D.4-c	<p>D.4-1-f</p>  D.4-1-f <p>D.4-1-g</p>  D.4-1-g <p>D.4-1-h</p>  D.4-1-h <p>D.4-1-i</p>  D.4-1-i
Textiles For bed clothes		 D.4-d  D.4-e	 D.4-1-j  D.4-1-k

embroidery titled “Flowers & Rocks”. In Design series 4, only a panel of pomegranate was selected out of 10 panels. In the work of embroidery, the pomegranate tree was depicted with colorful rock and a pair of birds. The pomegranate was comparatively patternized. A pair of pomegranates were arranged in a row with simplified leaves. In Design series 4, the rock and birds were removed and only pomegranate and leaves were cropped and used as a primary motive. Especially, Design series 4 was intended to visualize the motives in a modern way by patternizing the color and form of pomegranate.

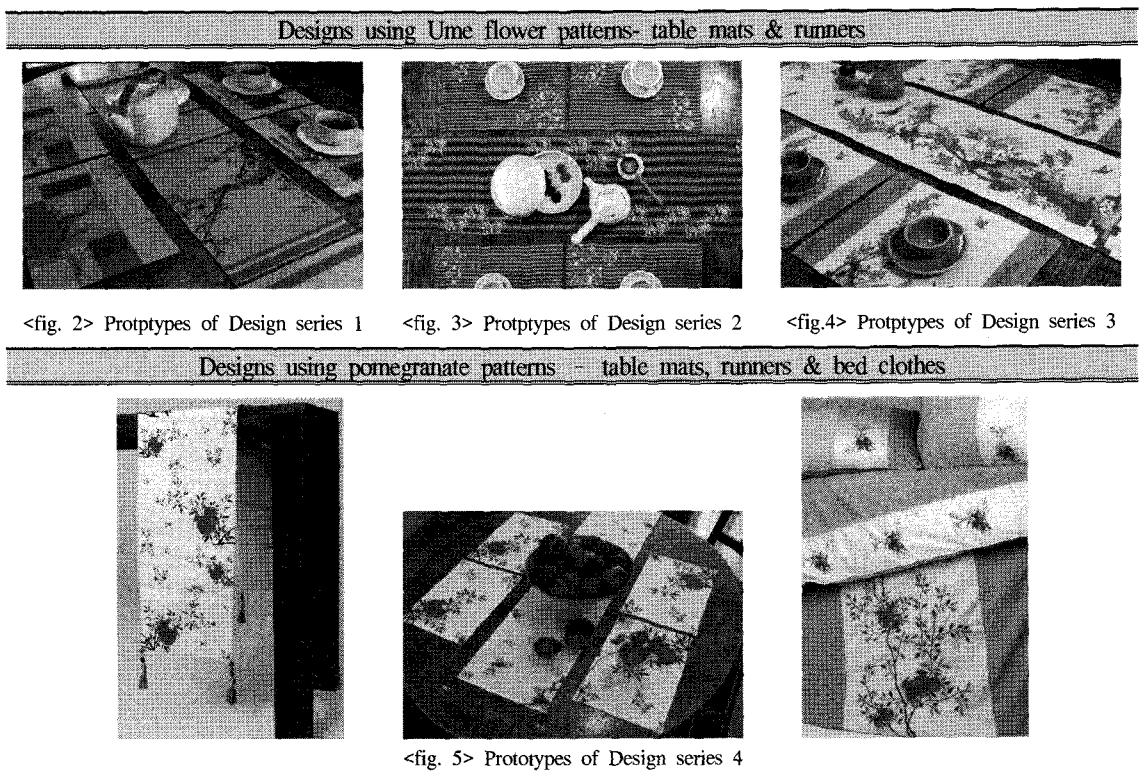
Preliminary design was developed to maintain the texture of embroidery. Focusing on fruits and branches of pomegranate from design source, the preliminary design was developed.

In secondary design, the color and form of pomegranate were patternized more graphically. The original texture of design source was transformed into smooth surface. White and L.Beige were used for ground color. The fruits and branches were separated and rearranged in various styles. D.4-1, and D.4-1-a ~ D.4-1-c were designed by variations in motive’s size and position. D.4-1-d and D.4-1-e were intended to express modern images by arranging color blocks. D.4-1-j and D.4-1-k were designed to develop bed clothes items.

4) Prototype Development

In this stage, the prototypes for the final designs were produced. The final designs were selected by data of preference survey administered to fashion

<Table 5> Prototypes



specialists group(16 graduate students majoring in fashion design) In this study, the 23 actual prototypes, including 15 pieces of table mats and runners inspired by ume flower patterns and 8 pieces inspired by pomegranate patterns were produced. Cotton and cotton canvas fabrics were used for DTP. The printing outputs were completed after post-treatment and sewing. The produced prototypes were shown in <table 5>.

5) Evaluation

The newly-designed fashion cultural products were measured by 3 major criteria of symbolism, aesthetics and functionality. The subject of survey were 16 people from fashion specialist group (graduate students majoring in fashion design) and 14 people from general group. The survey was made to answer after comparison of new designs with existing ones carrying korean images. The degree of satisfaction was rated by 3 criteria above, and 5-point Likert scale was used. The results were evaluated by using Grant's α - β model.

In Grant's α - β model, the index of design importance was α , and the index of design satisfaction was β . Design was rated by the total score of $\alpha \times \beta$ on the criteria dimensions. As a weight of α , 0.5, 0.4, and 0.1 were given in this study. The highest score of 0.5 was given to symbolism, be-

cause this study strongly emphasized whether the design could well expressed korean images and korean identity to the world. The second highest score of 0.4 was given to aesthetics, and the lowest score of 0.1 was given to functionality because functionality could not be easily measured by appearance. In <Table 7>, two designs were compared by the total score of $\alpha \times \beta$ on the criteria dimensions.

Based on the survey, new designs received 3,540, and existing designs obtained 2,392. in total score. Especially, on the criteria of symbolism, new designs received 3,644, 3,569, and existing designs obtained 2,370, 2,250. The new designs also received higher score compared to existing designs on the criteria of aesthetics and functionality. As a result, the fashion cultural products with korean images developed in this study were valued and evaluated in a very favorable way.

IV. Conclusion

The purpose of this study was to develop the high-value-added fashion cultural products with Korean images for the enhancement of global competitiveness. Especially, with the use of Korean traditional botanic patterns and DTP, this study was intended to achieve the visualization and moderniza-

<Table 7> Evaluation results by Grant's α - β model

Criteria	Importance (α)	Existing designs			New designs			
		A	B	Average of A,B	A	B	Average of A,B	
Aesthetics	0.4	2.062	2.785	2.423	3.687	3.428	3.682	
Symbolism	0.5	0.25	2.312	2.428	2.370	3.575	3.714	3.644
		0.25	2.000	2.500	2.250	3.625	3.514	3.569
Functionality	0.1	2.437	2.928	2.682	3.187	3.000	3.093	
Total	1.0	2.146	2.639	2.392	3.593	3.478	3.540	

A= Fashion specialist group(n=16), B=general group(n=28)

tion of Korean images. The results of this study can be summarized as follows.

First, in the problem identification stage, it was acknowledged that the need for developing the designs of fashion cultural products with Korean images to promote Korean cultural identity. In this stage, 3 major criteria of symbolism, aesthetics, functionality, were established.

Second, in the preliminary ideas stage, considerable amount of data on the design concept and element considering the 3 criteria have been gathered. The items selected for design development were home-items such as table mat, table runner, and bed clothes. The ume flower and pomegranate patterns were used to symbolize Korean images.

Third, in the design refinement stage, the variations and reformations of the preliminary designs were performed to develop the secondary designs. Finally, the 4 series(49 pieces in total) of creative designs have been proposed.

Fourth, in the prototype development stage, the preference of each design was surveyed, and based on these data, final designs were selected. As a result, the 23 actual prototypes were produced.

Fifth, in the evaluation stage, the evaluation procedure using Grant's α - β model was performed. As a result, the newly designed fashion cultural products were rated higher than other existing ones in all three criteria of symbolism, aesthetics and functionality.

The development of fashion cultural products with Korean images has a significant meaning in the sense that global universality and uniqueness of Korean beauty are combined into products. Nowadays, Korean fashion design is getting closer to the global position. At this point of time, the fashion cultural products with Korean cultural identity will be an efficient instrument for the promotion of

Korea's national image and the enhancement of global competitiveness. Therefore, much more efforts from various fields are required. In the development of cultural products, this study focused on home items of table mat, table runner, and bed clothes. Further study is needed to develop various genres of items and new experiment of design development should be made.

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