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ORIGINAL ARTICLE

Comparison of High-end Tailored Jackets for Ready-to-wear Produced in Italy and Japan

KyoungOk KIM*, Keiko MIYATAKE**, Kimiko SANO***,
Masayuki TAKATERA* and Tsuyoshi OTANI*

** Faculty of Textile Science and Technology, Shinshu University, 3-15-1 Tokida, Ueda, Nagano 386-8567, Japan*
*** Kyoritsu Women's University, 2-1-1 Hitotsubashi, Chiyoda-ku, Tokyo 101-8437, Japan*
**** Nitto Boseki Co., Ltd., Japan*

Abstract: We studied differences in production process of garments of Japan and Italy. A jacket which was designed by the same designer was produced in Japan and Italy, respectively. We compared jacket parts before and after assembling. We also compared the front, side, and back styles of jackets and the ironing treatments and usages of interlining and tape. For results we found that the influence of the person in charge of each area was different in each country. The progress can be moved to the next stage by checking the previous stage's progress, in Japan. On the other hand, the final product was first considered in Italy. We also found that there was a difference in use of the keeping tape and interlining. In Italy, it was common for the modelist to select the sub material depending on the design. However, cost and production volume is more important in Japan.
Keywords: *couture maison, modelist, production process, Japan, Italy, tailored jacket, pattern, specification sheet*

1. INTRODUCTION

This is the second part of our study to investigate high-class garment production through the process from garment design to manufacture by controlled conditions. In the first paper [1], we compared a jacket pattern made in Japan with one made in Italy. We investigated the details of the patterns by assuming the silhouette of the result jackets. We also investigated the specification sheet for a keeping tape and an interlining.

In the first paper, it became clear that even in the patterns, concepts of producing a jacket were different in each country. The intent in pattern for the pursued appearance is necessary to be reflected in the result garment.

Garment manufacturing processes of high-class clothes were reported by field survey of sewing factory [2, 3]. They described the difference of manufacturing system between Japan and Italy. The high-class garments and those fabrics were investigated using reverse engineering [4, 5]. However, investigation about the effect of modelists' works on garment appearance was not found. The effect of the works will become clear by comparing the final garment made by different modelists under a controlled experiment.

Thus, in this study, we investigated the comparison of actual produced jackets made in Japan according to the Italian production processes. We also compared the garment parts before and after assembling, and the ironing treatments and usages of interlining and keeping tape.

2. EXPERIMENTAL DESIGN

2.1 Producing a tailored jacket in Japan and Italy

We prepared two jackets as experimental samples. They were designed by a Japanese designer. The design was produced in Japan and Italy. Table 1 shows the design and production system for jacket samples.

We selected a designer who had been working as a designer of ladies' garments to be the creative designer in charge of the entire production processes. This designer established the garments' concept and then drew an illustration for designed jacket [6].

We chose modelists and production factories in Japan and Italy, respectively, to produce the designed jackets. Both jackets were produced according to the production processes of Italy. The steps of the producing processes are as follows:

1. The creative director designed a jacket. The illustration and notes on the design was prepared.
2. Trial products of the jacket were produced by both modelists in Japan and Italy.
3. Then the creative director and the modelist in Japan inspected the trial products. According to results of the inspection, patterns made in Japan were revised. Patterns for parts such as the silhouette, armhole, and

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Table 1: Design and production conditions for jacket samples

Task part \ Jacket	J Jacket	I Jacket	I Jacket 2
Designer	A (Japanese)		
Patterns	Japan	Italy	Italy
Modelist	Japanese working in Osaka, Japan	Japanese working in Milan, Italy	Japanese working in Milan, Italy
Production factory	Production factory in Osaka, Japan	Production factory in Milan, Italy	Production factory in Osaka, Japan

sleeve were modified.

4. The patterns were converted into a CAD system format. The converting condition was for mass production of 100 pieces in Japan. The converted patterns became the final patterns.
5. The production factories in Japan and Italy produced jackets using the final patterns (J Jacket and I Jacket).
6. The modelist in Japan made a jacket with patterns in Italy according to the Italian production system (I Jacket 2) to compare the effect of each pattern with same textile, sub-materials and skills as well.
7. We compared the production process stages between Japan and Italy by comparing J Jacket and I Jacket 2.

2.2 Comparing production processes for jacket patterns in Japan and Italy

We first investigated the design process for patterns in Japan and Italy. Under the same textile and the same design, a J Jacket was made in Japan and an I Jacket was made in Italy. We specified textile of tailored suit for sale in Milan, Italy, which was selected for producing jackets. The design was described to the factory orally and in writing. The design process for patterns in Japan and Italy was investigated by interviewing the people in charge such as the modelists and the creative director.

2.3 Comparing jackets made with Japanese and Italian patterns

In another paper, we investigated differences between patterns and specification sheets. In this paper, we describe the comparison of actual jackets.

We compared the jackets made by the modelist in Japan using Japanese and Italian patterns. The evaluation points were:

Point 1. Comparing the body and sleeve parts of produced jackets before assembling the parts.

Point 2. Comparing the front, side and back style of the produced samples.

3. RESULTS AND DISCUSSION

3.1 Characteristics of design process for patterns in Japan and Italy

Through the interviews we investigated characteristics of the pattern design process of each country.

The design of tailored jacket patterns in Milan, Italy, was carried out using basic patterns for a jacket. Modelists have their own basic patterns. The patterns have been improved little by little by repeated revising from years of experience. The patterns also have been changed by trends of the times.

The process of pattern design of Italy was as follows:

1. According to the illustration and concepts presented by a designer, several basic patterns were selected.
2. The patterns considered as the most appropriate by the modelist were selected.
3. Based on the design picture, pattern design was performed.

On the other hand, in Japan, basic patterns are selected from previous year and season.

The process of pattern design of Japan was as follows:

1. The modelist looked for necessary patterns from the similar designs and products of the past.
2. Similar patterns were chosen among the accumulated patterns.
3. By assembling the chosen patterns for the presented design, design patterns were carried out.

As described above, there were a difference between the process on the patterns designed in Japan and Italy. The process of Italy was based on the modelist's *kansei* and experiences.

On the other hand, the process of Japan was based on the previous data. The method of Italy took more time than that of Japan. Similarly, with the making of suits, Italian processes took more time to produce a garment.

3.2 Comparing jacket parts before and after assembling

Figure 1 shows produced jackets. Table 2 shows the sizes of the jackets. To investigate each production stage, jackets parts of I jacket 2 and J jacket were compared before and after assembling.

(a) I jacket

(b) J jacket

(c) I jacket 2

Figure 1: Pictures of produced jackets on dummy.

a) The shape of armhole on sleeve and body

Figure 2 shows armhole in body and Figure 3 shows the sleeves. There was a difference in the length and width of the front and back armscye curve. The shape of armscye in the I jacket 2 was square even though the one of J jacket was round. The shapes of the armhole were also different. Armholes line of I jacket 2 and J jacket were named “cat’s eye” and “egg eyes” respectively according to those shapes. Therefore, we found that there would be little differences between the ideal shapes of the final product.

These differences also made a difference in wearing comfort of the body. The armhole in the body of each jacket also followed the each sleeve cap and it made some difference in jacket comfort.

With regard to comfort, comfort can be evaluated by actual wearing. Thus, comfort follows the country and final taste of any given country. A question then arise: “will the design for the domestic customer’s preference be suitable for the international market?” This can be investigated through further studies on globalization of garment manufacturing.

(a) I jacket 2

(b) J jacket

Figure 2: Pictures of armhole in body.

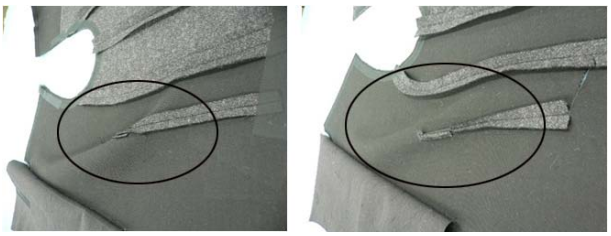
Table 2: Measured sizes of jackets made in Japan and Italy (unit : cm)

Parts / Jacket	shoulder width	bust	waist	bottom width	armscye width	sleeve width	length	Sleeve length	Armscye depth	armhole length
J jacket	38.9	90.6	76.5	92.4	13.0	31.5	61.6	65.8	22.0	45.5
I jacket and I jacket 2	38.0	90.5	79	99.5	12.5	31.3	58	62.6	20.8	42.2

(a) I jacket 2

(b) J jacket

Figure 3: Pictures of sleeve.

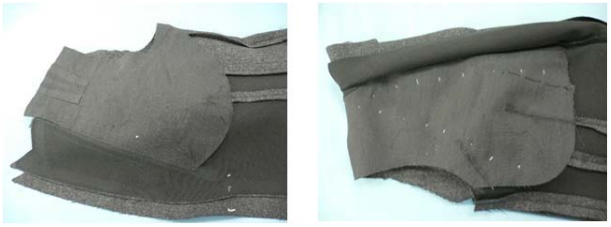


(a) I jacket 2 (b) J jacket

Figure 4: Photos of space amount in the bust part.

(a) I jacket 2 (b) J jacket

Figure 5: Photos of around armhole parts.



(a) I jacket 2 (b) J jacket

Figure 6: Photos of body and parts with interlining used.

b) Amount of space in the bust

Figure 4 shows that the darts amount around the bust of the I jacket 2 were larger than that of the J jacket. Furthermore, the I jacket 2 showed more three-dimensional shape in the bust even in the shape laid out on the desk. In the curve of front panel line, unnatural curves were shown in the J jacket (Figure 4b). Therefore, there was a different ease amount in the busts to make three-dimensional shapes. The different amount to make three-dimensional shapes means the difference between the inclination angles of the sewing line curves for assembling each part. This amount might be formed from the difference of basic patterns which was strongly connected to the silhouette of a garment.

c) Around armholes

Even though the side panel lines of the I jacket 2 showed similar length and lines, the side panels of the J jacket showed significantly unbalanced lines (Figure 5). Differences of those lines in the I jacket 2 and J jackets did not just mean the different line shape because it involved a difference of consideration on the realization of the pattern. It was connected to the improvement of production efficiency in sewing.

Moreover, it was also related to the consideration of the material properties. These differences might come from the difference in their working environment and their consciousness as well.

d) Laminated area with adhesive interlining

Area of the front body with adhesive interlining laminated was different (Figure 6). The laminated area with adhesive interlining on the bust parts was related to the shape retention effect [7]. It was correlated with workability as well. Therefore, it was necessary to consider the balance between the quality of the product and workability in the design steps.

e) Sleeves

We also found differences in the armhole curves and shapes, and the width of the upper arm of the sleeves (Figure 7). The cylinder part of the sleeve of the I jacket 2 fell down almost vertically. The lower arm, which was the part from the elbow to the wrist, was bent toward the front. Furthermore, the cuff line of the I jacket 2 was faced to the front direction and the back style was bent a little.

f) Comparison of jacket style from the front

Differences are as follows (Figure 8):

1) Angle of the chest pocket and waist pocket, 2) curve

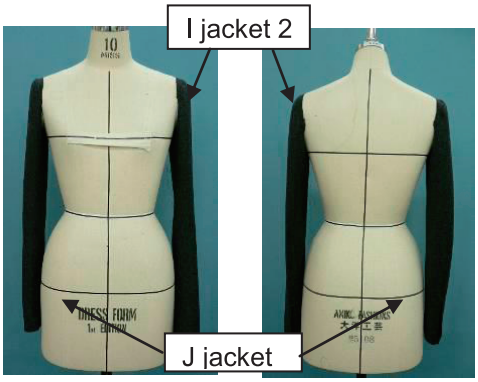
shape of front hem, 3) shape of the line edge of lapel, 4) position of the collar gorge, 5) line of the collar gorge.

These differences came from the process of drawing patterns. There are two approaches for drawing processes. One considers changes in trends. In this case, the patterns are based on the proportional position calculated from the height and the circumference of style. In the other case, the patterns are based on visual judgment. In this visual judgment, the balance drawing with the silhouette of a trial product was mainly considered. However, the discrimination was difficult.

g) Comparison of jacket style from the side

From the side we observed differences in the over-wrapping position of the left and right body in the waist and length of the armscye (Figure 9). In some cases, the position of the overwrapping part in the waist represents the trend. Thus, it might depend on preferences of the producer and the consumer for the garment. Similar tendencies were seen for the depth of the armscye.

However, the cylinder part of the J jacket was slightly bent forward; the cuff part was also faced forward. In



(a) Front direction

J jacket I jacket 2

(b) Side direction

Figure 7: Pictures of sleeves on dummy.

(a) I jacket 2 (b) J jacket

Figure 8: Photos of front body on dummy.

(a) I jacket 2

(b) J jacket

Figure 9: Photos of side body on dummy.

(a) I jacket 2 (b) J jacket

Figure 10: Photos of back body on dummy.

addition, the cuff shape was round and the back was straight. Changes on the sleeve shape were affected by the different design pattern of the sleeve and different preferences of silhouette in each country. The differences between the ironing processes and the sewing process also affected the changes of the sleeve shape.

h) Comparison of jacket style from the back

The silhouette of panel lines, silhouette around the waist and the vent shape showed differences in jacket style (Figure 10). The style in the back of the body was the starting point of the drawing pattern (especially from the back center) and was also an important part for the whole jacket balance. We also considered the whole balance and productivity for matching the fabric to the garment for the back style.

4. CONCLUSION

There were considerable differences between appearances of the I jacket 2 and J jackets. Of course, product design is influenced by the production process. Therefore, it is essential to have precise instructions for product designs. On these issues, the investigation of production processes is very important.

We thus conclude that the differences of production processes between Japan and Italy were due to the final purpose of those products. For example, the remarkably different appearances in clothing hangers are the representative. The J jacket's clothing hanger was beautiful. On the other hand, the I jacket appeared three-dimensional as described in our paper.

The right and power of a person in charge of each area were also different in Japan and Italy (e.g., the working time for each production process). There was a difference in the progress of working between Japan and Italy. In Japan any given stage can only proceed to the next by checking the result of previous stages. On the other hand, the Italian style is to consider the final product. In the Japanese style, after checking the opinions of the design, workers try to finish the production process faithfully according to the provided specifications. On the other hand, modelists in Italy have the right to voice opinions about sewing and producing the garment.

We found that specification sheets given to the garment factory are very simple documents in Italy. We also found differences between the tape and sub-materials which had effects on the outcome of the final products. In Italy, it is common that the factory and modelist select the sub-material, such as the multi-puff and several tapes, depending on the design. On the other hand, in Japan, cost and production volume are more important at the first step of producing a sample in Japan. In Japan, selections of shoulder pads are mainly carried out by designers. Regarding selection of the interlining, this is jointly done by the designer and modelist. The factory only follows their decision.

Therefore, in Italy, if fabrics are applied with a simple specification sheet and patterns, the trial production can be produced. When the order moves to the sewing factory, the garment is mainly under control of the factory.

Our paper's main conclusion is that although the technology exists in Japan, there is a lost art which has disappeared because of trial and error to pursue efficient production. However, the lost art is still present in Milan. This lost art is experts' formality in the production process which takes more time.

This investigation was a case study of manufacturing garments. We believe this study can contribute to researchers' understanding of manufacturing garments and the design of fashions.

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KyoungOk KIM

KyoungOk Kim is currently a researcher of Research Fellowships for Young Scientists, JSPS. She is conducting researches at Department of Bioscience and Textile technology, Shinshu University, Japan. Her interests are Kansei engineering, textile engineering and clothing engineering.

Keiko MIYATAKE

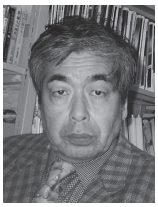
Keiko Miyatake is a Professor of Kyoritsu Women's University, Department of Textile and Clothing since 2011. She was a apparel designer at ONWARD KASHIYAMA Co., Ltd. And King Co., Ltd. She recently interests in research on fashion and apparel based on work experience.

Kimiko SANO

Kimiko Sano is working at Nitto Boseki Co., Ltd. as apparel making expert.

Masayuki TAKATERA

Masayuki Takatera is a Professor of Faculty of Textile Science and Technology, Shinshu University, Division of Textile and Kansei Engineering, Kansei Engineering Course, Japan. He is currently dean of JSKE. His interests are Kansei engineering, textile engineering and clothing engineering.



Tsuyoshi OTANI

Tsuyoshi Otani is a Professor of Faculty of Textile Science and Technology, Shinshu University, Japan. His interests are fashion marketing, design and manufacturing process on international apparel market.