A Study on the Pattern by the Traits of Fabrics of Women's Tailored Jacket

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Abstract

This research aimed to identify the differences, in terms of the pattern, of using wool and jersey for designing jackets and to provide a theorized solution.

The object of this study is development of women's tailored jacket pattern by the traits of fabrics with fabrics those are generally used to develop the power of manufacturing technique about fit of jacket. Basic bodies prototype, graphics of sleeves prototype and graphics of jacket pattern those a clothing company at present(on&on, a brand of Beaucr Merchandising Co.,Ltd) is using were used as basics of tailored jacket pattern. Three kinds of fabric(wool, polyester, jersey) were chosen, we made jackets in the same manufacturing process of the clothing company, modified and made up for the weak points and then we compared and analyzed differences of pattern by the traits of fabrics, the results are as follows: 1) We drafted basic tailored style jacket pattern, made a jacket with wool fabric, made wearing experiment, modified and made up for the weak points by the trend, then developed Jacket I for study; 2) With Jacket I for study as the basic, we made a jacket with polyester fabric, made wearing experiment, modified and made up for the weak points, then developed Jacket II for study; 3) With Jacket I for study as the basic, we made a jacket with jersey fabric, made wearing experiment, modified and made up for the weak points, then developed Jacket III for study; 4) We presented final degree of polymerization of pattern with Jacket I ·II· III for study; 5) We compared and analyzed the differences of pattern with the degree of polymerization of pattern with Jacket I(Wool) for study and Jacket II(Polyester), there was no change of size overall except extra amount which happens because of the trait of the fabric in 20 items of body format pattern, there were differences of size in 3 items(height of a sleeve, width of a sleeve, length of a sleeve) among 5 items of sleeves pattern; 6) We compared and analyzed the differences of pattern with the degree of polymerization of pattern with Jacket I(Wool) for study and Jacket III(Jersey) for study, there were differences of size by the kinds of fabric in 11 items(neck point to shoulder point length, Bishoulder point length, back interocyce length,

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front iscynce length, armhole circumference, depth of armhole, chest circumference, bust circumference, waist circumference, hip circumference, waist dart) among 20 items of body format pattern, there were differences of size by the kinds of fabric in 5 items(height of a sleeve, circumference of a sleeve, width of a sleeve, length of a sleeve, width of bottom of a sleeve) among 5 items of sleeves pattern.

Key Words: Tailored Jacket, Wool, Polyester, Jersey

I. Introduction

1. Necessity of the Study

The current women's clothing market, while showing both luxury and feasibility at the same time, is expanding in terms of luxury goods as the size of the market increases according to the customers' desire for a more diverse and abundant life. As women become more active in society, women's jackets have become an important item in the modern society. Jackets are essential for women in coordinating images that they want to portray and they are also a means of maintaining women’s elegance as well as corresponding to a wider range of circumstances.

In order to make such elegant and luxurious jackets, designs that reflect the latest trends must be made a priority along with quality materials and advanced production technologies. Jackets with an identical design and pattern may become two totally different jackets according to their materials so it is crucial that appropriate materials are chosen in order to maximize the value of a jacket. Materials and patterns have become even more important as the customers are more sensitive to recent fads. Jackets, having a more sophisticated pattern and production process, require thorough researches more so than any other items.

2. Purpose and Content of the Study

In the recent production of clothing, more materials are being used in addition to needing a high level of skills to express the sentiments according to the trends and finding a right fit for a body that is 3-dimensional. In other words, there is an importance relationship between the material and the patterns as the consumers ask for more in their clothing. This research has tried to develop a theory about the differences by developing the jacket patterns that are appropriate for each material. Based on the circular bodice shape and circular sleeves' draft and the jacket pattern draft that are used by the current fashion businesses (on&on, a brand of Beaucr Merchandising Co.,Ltd), this research sought to aid the production of a tailored jacket for women by citing the differences in materials(Wool, Jersey, Polyester) used for tailored jacket patterns for women in their 20s. Also, this study tries to explore the differences in the patterns due to the materials' special characteristics in producing the patterns in addition to finding out the solutions and theorizing such findings. The follows are the specific findings of this study.

First, wool was selected as the chief material for this study after considering the special characteristics of the material, which was then turned into a wool jacket produced with technique using the basic circular bodice shape
and circular sleeve shape. After the fitting tests and correcting minor errors, the basic jacket patterns for this study was produced.

Second, the wool jacket pattern I being the basic pattern, polyester and jersey were used to produce additional jackets which went through fitting tests before being adjusted. Then jacket pattern II and III were produced.

Third, to research the differences according to jacket patterns due to the materials, a polymerization chart of the wool, polyester and jersey jacket patterns were compared and analyzed to suggest the solutions.

II. Research Methods and the process

1. Tested Materials and Design

In order to demonstrate the differences of tailored jacket patterns according to the materials, the target research subjects were adult women in their 20s. The materials used for the study were, as recommended by a women's wear clothing business, Wool 100%, Polyester 100% 2×1 Two-way Jersey were used. For the purpose of this test, with the wool being the main materials, only materials with the difference in weight is less than 20g/m² and the thickness less than 0.2mm were used. In designing the jacket, the most basic style of the jacket selected by the trend was chosen—the basic princess line one–button tailored jacket. The front and the back part of the body were made with the shoulder princess lines and pockets in the front part. The sleeves used double sheets of fabric, with the researched jacket I, II and III being the same design in Wool, Polyester and Jersey.

2. Design of the Tailored Jacket Pattern and the Production Method

In this study, the pattern productions used in this study were the one used by the women's wear business Boq Merchandizing Corp.'s Brand On&On the basic circular bodice shape and the circular sleeve pattern in drafting the jacket. There were 12 criteria for the body part, 2 for the sleeves— a total of 14 criteria overall. Wool, polyester and jersey jackets were produced according to the company's production process. The outer fabric was 100% wool, 100% polyester and jersey. To prevent the shape of the jersey materialized clothing from becoming disorganized, a thin sheet of silk were used as adhesives equally. The cuts were attached to the all of the front part, all of the inside collar, the shoulder area and the lower hem's 4.45cm(1¾ inch) and the lower hem of the sleeve's 4.45cm(1¾ inch). And the tape with the width of 0.64cm(¼ inch) was attached to the inside of the Lapel Fold line that the lapels would fold over well. In the front shoulder, the tape of 0.95cm(⅜ inch) was attached. And the front center was adjusted to

<Table 1> Properties of the Test Cloth

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<th>Thickness (m/m)</th>
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<td>Wrap/2.5cm</td>
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<td>Wool 100%</td>
<td>plain weave</td>
<td>230</td>
<td>0.532</td>
<td>71.79</td>
<td>69.23</td>
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<td>Polyester 100%</td>
<td>plain weave</td>
<td>208</td>
<td>0.472</td>
<td>165.38</td>
<td>65.38</td>
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<tr>
<td>Jersey 100%</td>
<td>knit fabric</td>
<td>211.4</td>
<td>0.481</td>
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look more natural by attaching the tape of 0.95cm (⅛ inch) in the front and the back armhole circumference and attaching 0.64cm (¼ inch) tape from the start of the Lapel Fold Line and below the front adjust line. The lower hem in the margin to the seam is 3.81cm (⅜ inch) while other parts are 0.95cm (⅛ inch). The sewing machine used was SUN STAR KM−250A−7S, the number of the stitch maintained at 3mm, number 14 needle and Koa Silk threads were used.

3. Fitting tests

The wool, polyester and jersey jacket were fit to the test to determine its appropriateness for the body. With the two times of the outside appearance tests and 1 test of the movement function test were done at the Sookmyung University’s Clothing Research Lab and Boq Merchandizing Corp.’s Brand On N On’s Development Lab. The inspectors were made of 6 graduate students of fashion at the Graduate School of Sookmyung Women’s University and On N On’s 4 pattern makers. As its final step, the development lab’s manager checked the tests. For the fitting tests, a torso body in the size of 55, with the measurements of 82.55cm Chest circumference, 64.77cm waist circumference, 90.17cm hip circumference, 38.10cm Waist Back Length, 17.78cm Waist to Hip Length, 34.29cm Back Inter Scye Length and 31.75cm Front Inter Scye Length. For the final jacket’s movement test, a professional fitting model at the On&On with the measurements of 168cm in height, 82cm chest circumference, 65.77cm waist circumference and 90cm hip circumference was selected. The researcher adjusted the test criteria in checking the appropriateness of the body fit of the circular body shape based on the previous studies(30). Seven different movements were tested—20 criteria on the front part of the body. 19 criteria on the side, 22 criteria in the back, 8 criteria in the sleeves and 1 overall. A total of 70 criteria were tested through raising the arms 90 and 180 to the front, raising the arms 90 and 180 to the side, raising the arms 45 to the back, touching the other side’s shoulder after gathering two arms in front, raising the arms to the back of the neck. The patterns were adjusted according to the findings of the tests. Using the 5 point scale of the Likert type, each criterion was marked with points of 5 being ‘Highly Likely’, 4 being ‘Likely’, 3 being ‘Somewhat’, 2 being ‘Not likely’ and 1 being ‘Highly unlikely’. After fitting the finished tailored jacket to a professional model at the On N On, the outer appearance was checked as 7 criteria regarding the movement functions were also evaluated with 5 being ‘Very likely’, 4 being ‘Likely’, 3 being ‘Somewhat’, 2 being ‘Not likely’ and 1 being ‘Highly unlikely’.

4. Analysis of Data and the Analysis Methods

After going through the fitting tests, the average, the deviance and the overall average were calculated.

1) Research jacket I・II・III were evaluated in 70 criteria during the fitting test, of which the average and the deviance were analyzed.

2) The reliability of the research jacket I・II・III was tested through Cronbach’s Alpha to check the 10 test subjects’ evaluations during the fitting tests.

5. Comparison of Pattern

The comparison of the 3 different kinds of materials and jacket pattern analysis included 20 criteria in the body and 5 criteria in the sleeves.
Each part was measured and compared. The body pattern's standard was the chest circumference, and the sleeve pattern's was the elbow line. These two jacket patterns were polymerized, leading to the comparison of the differences in the patterns and making suggestions for solutions.

The tested criteria are from the previous study\(^{45}\) which were organized into the total of 25 criteria that are compared to the criteria currently used at fashion companies.

IV. Research Results and Consideration

1. Results of the Fitting Tests of the Researched Jacket

1) The result of the fitting test for Research Jacket 1

To check the appropriateness of the Research Jacket 1, 3 times of the fitting tests were conducted. The first and the second fitting tests were conducted on a torso body which was evaluated from the appearance. The third fitting test was conducted on a professional model—the appearance was checked then the movement functions were evaluated with the results as follows.

(1) Front

After the first fitting test of the front, the collar position and the overall silhouette received very high marks, but the chest and bust circumference received low marks due to lack of room. However, the waist circumference needed to be smaller for there was enough extra room. And for the front princess line’s starting point was placed too high: it needed to be adjusted lower. After the second fitting test, it received a higher mark on overall appropriateness, but the pattern needed to be adjusted for the length of the jacket appeared too long after the size of the jacket becoming smaller.

(2) Side

The size of the jacket needed to be adjusted for the problem of the lack of the room and the extra wrinkles after the first fitting test of the front. The lowest marks of 2.60 were given to the extra room criterion on the front waist circumference and the wrinkles in the back. After adjusting the problems that were pointed out in the first fitting test, a second fitting test was conducted which showed a higher appropriateness than the first fitting test.

(3) Back

After the first fitting test of the back part, adjustments were needed around the bust circumference area for its lack of extra room and around the waist circumference area having too much extra room, causing the back center line to become loose. The criterion about the extra room for the back waist circumference area received the lowest marks of 2.40. During the second fitting test of the back area, the adjusted patterns around the bust circumference, waist circumference and the back interscye length improved the fit overall.

(4) Sleeve

Although the fit was found to be "average" during the first fit test for the sleeves, a re-design was necessary for the sleeves due to the size becoming smaller as the applied size of the jacket’s body became smaller. The parts that were noticed to have problems were adjusted and the sleeves were redesigned according to
the applied size of the body. This led to a very high level of fit during the second fitting test.

(5) The third fitting test was conducted by the fashion professionals onto the torso body of the fashion company as shown in the <Picture 1>. This showed a high level of satisfaction. Simultaneously, a professional model wore the jacket which was checked and evaluated in its movement functions. Research jacket I was produced according to the latest trends, therefore receiving high marks on its appearance. But it received low marks on the movement functions evaluation portion.

2) Results of the Fitting Test for Research Jacket II

Based on the final pattern of the adjusted Research jacket I following three times of the fitting tests, the Research jacket II made with polyester was produced and tested as follows.

(1) Front

The first fitting test about the front shows the result of 2.50 for the front bust wrinkles, and the 2.80 for the wrinkles about the front armhole circumference in addition to problems of the front princess line wrinkles. Based on the second fitting test of the front, the overall fit was improved after the parts that needed adjustments from the first fitting test results were made.

(2) Side

For the first fitting test of the side, the low marks were about the wrinkles in the front armhole circumference(2.70) and the back armhole circumference(2.50). Such problems occurred since the fabric around the front and back armhole circumference were tight; these needed to be adjusted. In the second fitting tests, a higher fit was displayed than the first fitting test.

(3) Back

After the first fitting test results, the lowest marks were on the wrinkles around the back armhole circumference with the score of 2.80.
The patterns needed to be adjusted for this reason. For the second fitting test, the fit was significantly enhanced after the results from the first fitting test necessitated the wrinkles of the back armpits and the extra rooms in the back armhole circumference pattern be adjusted.

(4) Sleeve

According to the first fitting test of the sleeves, all criteria received low marks. Among those, the sleeves' ease showed the lowest mark of 2.50 while the front and back parts' wrinkles on the sleeves received a low mark of 2.30 which called for a re-design of the sleeve pattern. After conducting the second fitting test, the necessary adjustments as pointed out by the first fitting test were made. The wrinkles in the front part of the sleeve and the back part of the sleeve, created by the ease of the sleeves' circumference in the second fitting test with the re-design of the sleeves in the jacket, called for another design of the sleeve pattern.

(5) The third fitting test was conducted by the fashion professionals onto the torso body of the fashion company as shown in the <Picture 2>. This showed a high level of satisfaction. Simultaneously, a professional model wore the jacket which was checked and evaluated in its movement functions. Research jacket I was produced according to the latest trends, therefore receiving high marks on its appearance. But it received low marks on the movement functions evaluation portion.

3) Result of the Fitting Test of the Research Jacket III

The results of the fitting tests for the research jacket II—produced based on the improved Research jacket I's final patterns (which went through 3 times of fitting tests) and jersey materials—are as follows.

(1) Front

The first fitting test of the front part indicated a high fit on the overall silhouette and the collar's positions. But there were low marks in the front bust, the front interseycye length, and

![Picture 2] The third fitting test of the Research Jacket II
the waist circumference from the front (2.30). The extra room of the front hip circumference and the front armhole circumference were also evaluated low. Adjustments in the patterns regarding the front bust area, front armhole circumference areas, front-side area's wrinkles were necessary. After the second fitting test of the front, the fit was greatly improved overall after adjusting the front bust area, front waist area and the length between the armpits in the front.

(2) Side

The first fitting test about the side, there were many adjustments needed to be made for the low marks were received regarding the wrinkles around the front/back armhole areas, front-side waist areas and the side-back waist areas. After the second fitting tests, a higher fit was displayed after the problems regarding the wrinkles were fixed.

(3) Back

After the first fitting test of the back part, it was decided that the jacket appeared to be too big due to its extra room. All the extra fabric in the back interscy length, the back waist area, the back armhole circumference area and the back waist area led the fabric to appear too loose which needed to be adjusted. And because of the wrinkles in the back armhole circumference area, adjustments needed to be made. Adjustments in the areas near the back armpits, the back armhole areas extra room and the redesign of the body pattern led to a big improvement in the fit and the appropriateness of the fit. However, the back armhole areas' small wrinkles required a re-design.

(4) Sleeve

The results of the first fitting test showed that the lowest marks of 2.30 were about the sleeve length. All criteria showed a low fit, therefore calling for pattern adjustments. Adjustments were made and the patterns were re-designed based on the first fitting test. By adjusting the areas around the sleeves that drooped and giving more extra room, the fit was greatly improved in the second fitting test.

(5) For the third fitting test, real persons responsible for patterns conducted the fitting test on the fashion company's torso body which showed a high level of satisfaction overall. Simultaneously, movement functions test was conducted in which a professional model wore the jacket that was checked. Since the Research Jacket I was produced according to the latest trend, it received high marks for appearance evaluation while receiving low scores on the functions portion.

2. Research Tailored Jacket's Pattern Evaluation Comparison

1) Evaluation Comparison for the Research Jacket I

Based on the results of the first fitting test, second fitting test pattern was re-designed. After comparing the pattern measurements from the first and the second fitting tests, there were differences in 7 criteria in the body and 3 criteria in the sleeves out of a total of 25 criteria. In case of the body, 7 criteria: back interscy length(-0.16cm), front interscy length (-0.16cm), armhole depth(+0.32cm), armhole circumference (+0.64cm), chest circumference (+0.64cm), bust circumference(+0.64cm) and waist circumference(-1.27cm) showed differences.
In case of the sleeves, 3 criteria: sleeve height(+0.32cm), sleeve circumference (+0.64cm) and sleeve width(+0.32cm) showed differences. Third pattern was produced after adjusting what were the results of the first and second research jacket and the fitting tests. Comparing the first, second and the third pattern measurements, there was a difference in 1 criterion: jacket length(−2.54cm) out of the 25 criteria that were tested.

2) Evaluation Comparison for the Research Jacket II

Jacket I for research's third pattern was decided to be the first pattern of Jacket II. After producing jacket II for the first time using polyester, jacket II's second pattern was designed with the adjustments made from the results of the first fitting test.

Research Jacket II’s first and second pattern show that there are four criteria where there are differences: sleeve height(−1.27cm), sleeve circumference(−2.23cm), sleeve width(−0.64cm) and sleeve length(−0.64cm). After the adjustments were made and the new jacket with the adjusted patterns was produced, the third pattern for the Research Jacket II based on the results of the second fitting test were developed. There were differences in the two criteria: sleeve height (+0.64cm) and sleeve circumference(+0.95cm) out of 25 criteria after comparison analysis of second and third fitting tests of the jacket II.

3) Evaluation Comparison for the Research Jacket III

Jacket I's third pattern was decided to be the first pattern for the jacket III. Using jersey, research jacket III was made. After putting this to the first fitting test and making the adjustments, there is a design of the Research jacket II’s second pattern. Comparing and analyzing the first and second pattern measurements of jacket II, there are differences in 11 criteria of the body and 5 criteria of the sleeves. In body, there were differences: neck point to shoulder point length(front:+0.64cm · back:+0.64cm), bishoulder length(−0.32cm), back intercsye length(−0.32cm), front intercsye
length (0.64cm), armhole circumference (-0.64cm), armhole depth (-0.64cm), chest circumference (-0.32cm), bust circumference (-0.64cm), waist circumference (-1.27cm), hip circumference (-0.64cm) and waist dart (front: +0.64cm, back: +0.64cm). In sleeves, there were differences: sleeve height (+0.64cm), sleeve circumference (1.90cm), sleeve width (+0.64cm), sleeve bottom line circumference (-1.90cm) and sleeve length (-1.27cm). The adjusted pattern would produce the jacket. Based on the second fitting test, patterns were adjusted which developed into the third final pattern of jacket II for research. Jacket II’s second and third pattern

<table>
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<th>Table 2: Evaluation Comparison for the Research Jacket I, II, III</th>
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measurements show that there is a difference of
in the armhole circumference (0.64cm) out of 25
criteria.

3. Evaluation Comparison for the
Research Jacket I, II, III

The <Table 2> shows the comparison of the
final patterns’ measurement in the research
jacket I, II, III’s materials (Wool, Polyester,
Jersey). <Fig. 1> shows the final body pattern
and sleeve pattern based on the measurement
of the bust.
V. Conclusion and Suggestion

1. Wool Pattern Jacket and Polyester Jacket

1) Pattern Design

The polyester jacket pattern's design based on the finished wool jacket pattern in this research are as follows.

(1) Body

Compared to wool jackets, materials that do not have flexibility would lead to the princess line having less ease, therefore making the measurement smaller on the princess line. Since the back center's princess line is designed to be longer than the back side's princess line, there are differences in the measurements and extra room. To not have this extra room, there should be a parallel line drawn down to the princess line at 3.81cm(1 1/2 inch) starting from the back center's bust measurements. Then the back center and back side's princess line measurement should be equal. After making these into darts, wrinkles in the princess line were gone. Wool's considering its flexibility—would be able to be have ease in the front, but polyester's fabric without much flexibility— it is more difficult to lessen the ease, thereby creating extra room resulting from the differences in the princess lines in the front center and front side. To get rid of these extra room, the side dart line should be readjusted after Breast Point(B.P) is moved 5.08cm(2 inch) to the center. The differences in the princess line measurements between the front center and front side should be minimized by connecting the B.P. and the side neck point and turning them into dart. This solved the problem with the wrinkles.

(2) Sleeve

Polyester—a fabric without elasticity—has more ease in the sleeves and causes more wrinkles. To decrease the amount of this ease, the sleeve is lowered 0.64cm(1/4 inch) and the circumference of the sleeves are adjusted to be smaller. There should be a straight line drawn from the lower hem on the sleeves to the inside sleeve's center line after moving the inner sleeve's center line 0.32cm(1/8 inch) equally. After drawing these lines, cut and connect them. This leads to the sleeves' width becoming smaller for the sleeves' measurements and the armholes' measurement are minimized. Also since the sleeve is lowered, this lowered amount would be added to the length of the sleeves.

2) Analysis Results of the Pattern Measurement Comparison

The final comparison analysis of the final jacket patterns for two materials show that there was not much difference in the 20 criteria of the body pattern checked other than the basic extra room. However, differences were shown in the 3 criteria out of the 5 criteria: sleeve height (-0.64cm), sleeve circumference(-0.95cm) and sleeve width(-0.64cm) in each material.

2. Wool Jacket Pattern and Jersey Jacket

The final design method of jersey-jacket patterns based on the wool jacket pattern completed through this research is as follows.

(1) Body

Since the jersey material is stretchier than wool, the pattern must be designed for a smaller size considering the nature of the material. The waist front and back measurements
0.32cm(1/4 inch) were reduced while increasing by 0.32cm(1/4 inch) the amount of dart. Also, in order to reduce the sizes of front and back bodies, Armhole depth, and Armhole line, the bust line was lifted while reducing the length between the front and back Armholes. Consequently, the chest line and bust line were lifted while the length between the front and back armhole circumference was reduced leading to requiring a readjustment of the Armhole line of the sleeves.

(2) Sleeve

The sleeves were readjusted by increasing it by 0.64cm(1/4 inch) because of the contraction that results from having a small ease amount at the sleeve line for the stretchy jersey material compared to the wool. Sleeve width was widened at both ends each by 0.32cm(1/8 inch) based on the center line of the interiors of the sleeves. Also, the length of the sleeves was shortened because they are stretched during the production process due to the property of the material.

2) Pattern size comparison analysis result

After comparing and contrasting the sizes of each part of the two final jackets with different materials, there were differences in 11 entries, among the 20 body pattern entries of a total of 25 pattern entries, including shoulder neck line (front:-0.64cm · back:-0.64cm), shoulder neck length(-0.32cm), back armhole wall length (-0.32cm), front armhole wall length (0.64cm), Armhole length(-1.27cm), Armhole depth(-0.64cm), chest(-0.32cm), bust line(-0.64cm), waist length(-1.27cm), hip length (-0.64cm), and waist dart (front:0.64cm · back: 0.64cm) while all 5 entries of sleeve pattern showed differences including sleeve height (0.64cm), sleeve line(1.90cm), sleeve width(0.64cm), sleeve bottom line(-1.90cm), and sleeve length (-1.27cm).

3. The limitations on the study and the subsequent research

1) The basic size may be different according to the business's target consumers or concepts since this study's basic jacket patterns were from only one brand—On N On. Since the size is limited, when applying this to different target consumers or other businesses, it needs a careful consideration. Also for the pattern designs and the designation of the extra room, different sizes may be needed. Therefore, to apply the results of this study to a larger pool needs prudence.

2) This study was conducted around materials (Wool, Polyester, Jersey) special characteristics. The kind of the material and the thickness determines different patterns. Therefore, the same weight and thickness of the materials need to be used. If the researcher develops patterns that are not standardized materials, then the results from such study should not be applied to the production of jackets of other materials. One needs to be careful when applying the above mentioned three materials generally.

3) The fitting test for the research jacket of this study was conducted by one research subject. Therefore, prudence is needed when applying results from fitting tests on torso bodies generally.

4) Suggestions for possible subsequent studies to this research should be the development of the jacket patterns that use special materials like
leather or vinyl or newer materials like the lycra and GoreTex which seem to be continually developed and used in the production of women’s jackets.

References


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