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Characteristics of Ease in Men's Custom-fit Business Jackets

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남성 맞춤 정장 재킷의 여유량을 결정짓는 요인들에 관한 연구

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Abstract

The purpose of this study was to investigate the commonly accepted ease for a custom-fit business jacket, which provides all customers with the optimum fit regarding their individual body sizes, shapes as well as their personal preference, and also to characterize the factors which affects the ease amount, thereby, supply the reference data to manufacturers of the apparel industry. This study consisted of anthropometric measurements as well as sensory evaluations, and analysed ease amount by body sizes, ages, fit satisfaction, self-perception of body, and the prefered fit levels. There were 272 subjects for anthropometric measurement of which 128 subjects were applied for ease analysis and sensory evaluation. The subjects were males of 20 to 65 years old. The ease at chest was the most sensitive to body sizes and shapes, while waist and hip were easily modified to accommodate the silhouette of the jacket. The main dimensions affecting individual perceptions of fit and ease were the characteristics of body shape, in particular, girth, followed by age. Customers paided most attention to the shoulder fit while customers who preferred a more fitted line showed more concern with ease for jacket fit. It was clearly observable in case of waist fit preference. In addition, the preferred fit at chest, waist and hip would be changed by the perception of ons's hip size.

Key words: Custom-fit, Ease, Men's suits, Jacket, Sensory evaluation; 맞춤, 여유량, 남성정장, 자켓, 관능평가

I. Introduction

The men's suits were introduced to Korea in 1880's and had constantly developed as custom-fit system until ready-to-wear system occupied about 90% of apparel market at these days(www.apparel-news.co.kr). However, custom-fit system is still quite popular among older ages and young people who demand better fit and higher size satisfaction than ready-to-wear garments. Therefore, manufacturers need to understand what constitutes a good fit from the wearer's point of view in order to develop efficient custom-fit systems and also to improve the sizing system of mass produced apparel(Ashdown, Delong, 1985).

The development of a mass-produced apparel system has resulted in a need for the quantification of apparel fit characteristics. Manufacturers, as well as many researchers, have shown interest in psychological factors such as individual preference for fit, ease, and body sizes, to improve the fit of ready-to-wear(Workman, 2000; Beazley, 1997; Bye, 1994, etc). However, this information has been scarce because of the difficulty involved in evaluation and the wide deviation in individual preference.

Fit perception and preference is affected by the

concept of comfort encompassing dimensions such as the physical, psychological, and social comfort (Sontag, 1985). The characteristics of body size and shape are the most fundamental factors to make and select a jacket size. The jacket size is decided by body sizes like chest girth, biacromial length, height etc. Other reference sizes including cervical height(back neck to floor), jacket length, sleeve length, interscye, and hip girth etc.(Cabrera, 1984) are not used in the ready-to-wear industry but rather in the custom-fit market. The second factor ensuring jacket size is personal preference as promoted by one's social and cultural environment. Personal preference is a kind of internal variable which is reflected in the ease, which affect the jacket silhouette and style rather than the size itself. Therefore, customers might choose an appropriate jacket size based on their body sizes and then decide whether or not they accept the silhouette of the jacket by evaluating the ease added to some parts.

In order to collect general information on good fit and appropriate ease, independent investigations should be undertaken on various garment items as well as styles. However, there are difficulties in classifying garment items and styles because of the absence of efficient rules as well as clear boundaries. Selecting the most basic and general items might be the first step to quantify fit and ease characteristics. Men's garments have less variety than women's in terms of items as well as styles. In special, the most ongoing uniformity continues to be observable in business suits. The main body frame of it has changed little over time other than in terms of fabric, color, and the detail parts like lapels and collars. Therefore, men's business jackets will be employed as the first style to be investigated for the quantification of the acceptable range of ease. Unlike other garments, almost all custom-fit business jackets are made of pure wool or rarely made of mixed wool. The simplicity of fabric for business jackets is another advantage in researching men's suit jackets, because the physical characteristics of the fabric could be another factor affecting ease.

Much of the art in producing a made-to-measure garment is in disguising the actual body shape and using the tailor's skill to adapt the garment to make the body appear "normal"(Tait, 1998). This modification can be successfully incorporated into a custom-fit garment. Accordingly, a custom-fit garment could well be the ideal instrument since it is capable of providing the optimum fit for all customers regarding their individual body sizes, shapes as well as their personal preference. For total balance and individual preference, the ease would be adjusted by means of the pattern maker's ability to visualize a flat pattern as a three dimensional garment. In the custom-fit system, the ease level was usually decided after 2 steps, pattern developing and modification after fitting. Therefore, the ease level of a custom-fit garment could be a practical standard for comparison with a ready-to-wear garment in order to identify fit problems of ready-to-wear garments.

The purpose of this study was to investigate the range of ease that was commonly accepted for a custom-fit business jacket, and also to characterize the factors which affected the ease amount of jacket parts, thereby supply the reference data to manufacturers in the apparel industry.

II. Method

The perception of ease is very complicated and delicate as influenced by many dimensions, so that, it should be evaluated by both physical measurement and sensory evaluation. This study was consisted of anthropometric measurements as well as sensory evaluations. Through physical measurement, the acceptable range of ease for customers can be identified. The measurement should be done at wearing condition because the concept of ease became relevant to the extended wearing. However, in a worn condition, measurement can be inconvenient and inaccurate because of the reasons that the wearers move continuously and that the Anthropometric landmarks be covered up with apparels. Accordingly, in this study, the ease amount resulted from

measuring the body sizes and the pattern sizes of jackets on the same areas.

Identifying the integral parts for good fit besides the range of acceptable ease could be a useful and prior. The result of it can prevent subjects from being worn out during evaluating huge amount of samples constructed with minor size differences in specific areas. Accordingly, the sensory evaluation in this research included evaluating the influence of individual parts for fit satisfaction, in addition to self-perception of body and the preferred ease level at specific areas.

There were 272 subjects for anthropometric measurement and 128 subjects among them were attended at the ease analysis and the sensory evaluation. The subjects were males, between 20 to 65 years old. They wore a pair of pants and a shirt during the measuring process since men usually wear a jacket over pants and a shirt. The measurement was conducted with an expert, who was working in the field for over 30 years. All fabrics of jacket were 100% pure wool and were suitable for spring and autumn jackets with 2-buttoned, or 3-buttoned. The styles were the same with no vent except the little deference of the lapels. All process was taken between September to November in 2002.

1. Anthropometric Measurements

Anthropometric measurements have 11 profiles<Table 1>, which were commonly in use for jackets in custom-fit market. The measurement data was collected at studios in order to identify the characteristics of body size and shape of the custom-fit customers. The studio is one of the most renowned men's custom-fit studios in very downtown in Seoul.

2. Ease Analysis

Ease Analysis used 9 profiles among 11 profiles for comparison between body size and pattern size. The profiles were cervical height(backneck to floor), jacket length, sleeve length, biacromial length(shoulder width), interscye, front interscye, chest circumference, waist circumference, and hip circumference. The half size of cervical height(backneck to floor) is mainly used for jacket length instead of the actual measurement. The ease amount was calculate from the deduction between pattern sizes and body sizes. In addition, the percentiles of ease in terms of body size were also analysed to investigate whether there were any significant difference between actual ease amount and relative ease amount.

Table 1. Profiles and Statistics of Measurements (cm).

Profiles	Mean	Min.	Max.	Group 1 (n=137)	Group 2 (n=122)	Average of Korean Men*	
						25-39(age)	40-51(age)
Cervical Height (Back neck to floor)	147.07	130.76	165.04	147.37	146.43	144.6	142.5
Length of jacket	74.01	66.01	81.25	74.16	73.70	-	-
Length of sleeve	58.68	49.51	66.01	58.60	58.64	-	-
Waist Height	102.45	91.40	115.52	102.49	102.34	102.3	100.2
Scye Depth	25.02	20.95	30.47	25.11	24.89	24.6	25
Biacromial Length (shoulder width)	48.34	43.16	57.76	48.89	47.65	44.2	43.3
Interscye	37.41	31.10	45.70	35.17	33.83	40.0	40.1
Front Interscye	37.50	27.93	48.24	38.62	36.06	35.8	35.7
Chest Circumference	100.15	81.25	121.87	103.11	96.87	90.9	92.4
Waist Circumference	87.89	67.28	106.64	91.67	83.33	80.4	85.4
Hip Circumference	106.25	87.60	123.14	108.88	103.04	93.1	93.1

*Average of Korean men was the data of 1997 National Anthropometric Survey of Korea.
The average age of each group was 39(group 1) and 51(group 2)

3. Sensory Evaluations

The sensory evaluation test was divided into 3 parts: the influences of ease at jacket areas for fit satisfaction, the self-perception of body, and the preferred fit level at specific areas. All questionnaires offered 5 levels of choices: very much so, a little so, normal, not much so, absolutely not so. While answering the sensory evaluation, the subjects stood in front of a mirror wearing their new custom-fit jacket.

To judge the influence of ease at each area for fit satisfaction, there were questionnaires based on: the jacket length and sleeve length, sleeve appearances(upper arm, at elbow, and at hemline), and the front-back appearances(shoulder, back neck, interscye, chest, waist, and hip). The questionary about self-perception of body shape based on the thickness, width, and length of integral body parts, and the questions focused on preferred fit level at specific areas were also based on integral areas like shoulder, interscye, waist, hip as well as upper arm.

4. Analysis

The analysis was completed with the SPSS program. Firstly, Factor Analysis and K-cluster run to classify subjects, and then the characteristics between groups were compared by ANOVA or T-test. Secondly, the ease amounts were compared to identify whether there were significant differences between groups. Thirdly, to find out some factors affecting ease amount, Correlation was used to identify the relationships among actual ease, perceptions of body, preferred fit levels at specific ares as well as the influence of each area for fit satisfaction.

III. Results

1. Analysis of Anthropometric Measurements

The anthropometric measurements were used to classify custom-fit consumers by their body characteristics(Table 1). The sizes of subjects were bigger in terms of girth and width than the mean of 1997 national anthropometric survey of Korea. This result can be explained by the fact that the wearers of custom-fit garments tended to be bigger and fatter than average size people, because they had difficulties to choose suitable size in ready-to wear market. Moreover, the chest and hip circumferences of them were noticeably bigger because the measurements of this research were taken over pants and shirts while the anthropometric survey was conducted wearing underwears. The hip circumference included the most external protruding abdomen sizes.

The waist size is an integral size when it comes to evaluating the fatness and it is one of the key dimensions in choosing garment sizes. Therefore, the distribution of waist size was analyzed(Table 2). 43.40% of subjects were over 34 inch(84cm), much more than the subjects under 32 inch(81.3 cm), although 44.5% of them fell into men's sample garments size in the ready-to-wear industry. This result reflected again the fact that custom-fit consumers were fatter than average and were having

Table 2. The Distribution of Waist (Inch/cm) by Age Groups : Frequency (%).

Waist Age	Under 28 / ~71.1	28-29.9 /71.2-75.9	30-31.9 /75.9-81	32-33.9 /81.1-86.1	34-35.9 /86.2-91.2	36-37.9 /91.3-96.2	38-39.9 /96.3-101.3	Over 40 /101.4 ~	Total
20	2 (0.7)		3 (1.1)	10 (3.7)		3 (1.1)		1 (0.4)	19 (7.0)
30	2 (0.7)	1 (0.4)	10 (3.7)	25 (9.2)	7 (2.6)	4 (1.5)	1 (0.4)		50 (18.4)
40		3 (1.1)	4 (1.5)	37 (13.6)	26 (9.6)	10 (3.7)	10 (3.7)	4(1.5)	94 (34.6)
50		3 (1.1)	4 (1.5)	40 (14.7)	21 (7.7)	20 (7.4)	5 (1.8)	1 (0.4)	94 (34.6)
60			1 (0.4)	9 (3.3)	3 (1.1)		2 (0.7)		15 (5.5)
Total	4 (1.5)	7 (2.6)	22 (8.1)	121 (44.5)	57 (21.0)	37 (13.6)	18 (6.6)	6 (2.2)	272 (100)

Cells of over 20 subjects were bolded.

difficulties in choosing their sizes among ready-to-wear garments.

To classify all subjects into several groups, 11 measurements were divided into 3 factors and these explained 71.69% of the total individual differences. The cervical height(backneck to floor), waist height, jacket length, and sleeve length, belonged to the first factor, which is strongly related to stature, and the girth and width like biacromial length(shoulder width), interscye, front interscye, chest circumference, waist circumference, hip circumference, and scye depth belonged to the second factor. Age was

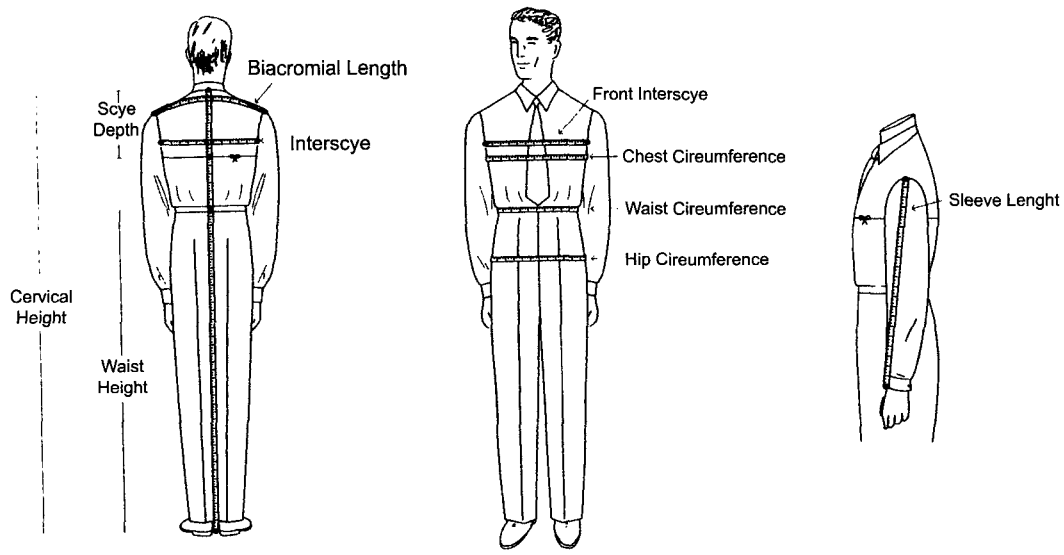

Fig. 1. The Method of Measurements.

Table 3. The Sizes and Chest Ease of Jacket Pattern Making Systems (cm).

Systems	Sizes	Ease at chest
Lee, Eun Jin (2003)	backnect-to-waist, shoulder length, sleeve length, chest circumference	B + 20
Kim Jin Sun (2001)	cervical height, backnect-to-waist, biacromial length, front nect-to-waist, chest circumference, waist circumference, hip circumference, front interscye, interscye, sleeve length, wrist circumference	B × 1.1
Kuek Young Chul (2001)	height, backnect-to-waist, sleeve length, shoulder length, chest circumference, waist circumference, hip circumference, wrist circumference	B + 20
Lee Sang Hee (2001)	height, chest circumference, waist circumference, hip circumference	(2/5B-0.5+1+0.8) +(B/5+0.5+5.5)+(2/5B+1.8)
Rye Kung Jin (2001)	height, backnect-to-waist, sleeve length, chest circumference, under-chest circumference, waist circumference, hip circumference, front interscye, interscye	B + 30
Jung Jae Eun (2000)	backnect-to-waist, armhole depth, hip length, chest circumference, chest width, armhole width, shoulder width	B+(19~25)
Nam Jung Eun (1999)	height, sleeve length, chest circumference, abdomen circumference, hip circumference	{(B/8+jacket length/ 10+3)+(B/10+6.5)+(B/ 4+3)}*2
Lee Heong Suk, Nam Yun Ja (1995)	height, chest circumference, waist circumference, hip circumference, sleeve length	{(1/5B-1)+(3~3.5) +(B/ 10+1+4.5)+ (1/5B+2)+(2~2.5)}*2
Mun-Wha system (1984)	backnect-to-waist, sleeve length chest circumference, hip circumference, shoulder width, front interscye	B+(16~20)

an independent factor. Subjects were divided simply into two groups by these 3 factors. It is of note that scye depth was sorted by means of horizontal factors despite its vertical character. This fact would explain by the reason why scye depth is strongly related to chest circumference in the development of bodice patterns.

2. Analysis of Ease Variation

The investigation of general ease amount during pattern developing, showed that different sizes were employed to make patterns(Table 3). Several sizes including backneck-to-wiast, sleeve length, and biacromial length, were used without addition, and the

Table 4. Ease Analysis (cm).

Body Measurement Items		Prototypes		All Subjects (mean)	*t* value
		1(mean)	2(mean)		
Age		42	41	41	1.15
Chest Circumference	Body	111.23	101.19	105.13	8.08***
	Jacket	128.40	119.67	123.05	7.05***
	Ease	16.89	18.48	17.87	-2.21*
	Percent of Ease	15.28	19.09	17.61	-3.29***
Waist Circumference	Body	94.32	86.17	89.37	6.51***
	Jacket	111.44	102.84	106.22	6.94***
	Ease	17.12	16.67	16.85	0.47
	Percent of Ease	18.49	19.56	19.14	-0.88
Hip Circumference	Body	115.18	106.15	109.70	7.13***
	Jacket	123.04	112.98	116.93	7.65***
	Ease	7.86	6.83	7.24	1.84
	Percent of Ease	6.84	6.50	6.63	0.68
Biacromial Length (shoulder width)	Body	51.37	48.87	49.85	5.25***
	Jacket	52.05	49.95	50.78	4.87***
	Ease	0.68	1.17	0.97	-1.89
	Percent of Ease	1.36	2.47	2.03	-2.04*
Scye Depth		25.03	24.41	24.65	2.91**
Front Interscye	Body	41.40	38.36	39.56	7.01***
	Jacket	45.25	42.09	43.34	6.88***
	Ease	3.74	3.73	3.73	0.02
	Percent of Ease	9.13	9.81	9.54	-0.89
Interscye	Body	41.68	38.96	40.03	6.52***
	Jacket	49.27	46.94	47.86	4.51***
	Ease	7.60	7.98	7.83	-0.88
	Percent of Ease	18.30	20.71	19.77	-2.11*
Jacket Length	Cervical Height/2	73.87	75.77	75.42	-1.78
	Jacket	76.16	76.66	76.46	-0.96
	Ease	1.29	0.89	1.05	1.71
	Percent of Ease	0.43	0.30	0.35	1.72
Sleeve Length	Body	58.87	60.36	59.77	-2.82**
	Jacket	61.55	62.73	62.27	-2.21*
	Ease	2.68	2.38	2.49	1.08
	Percent of Ease	4.60	3.96	4.21	1.26

*p<.05, **p<.01, ***p<.001

modification of chest circumference substituted for some sizes. Therefore, the accurate ease amount of each parts weren't achieved by analysing pattern making systems. The ease at chest was between 9.5~12.5cm in half, and the ease at waist was 5.59cm. The ease at hip didn't reflect its size rather than chest, and easily modified for jacket silhouette(Kang Yeusun, 2004).

In this research, subjects were classified by body characteristics and also by age, and then the ease amount of groups were compared. About body characteristics<Table 4>, prototype 1 was shorter and fatter than prototype 2. The chest size and hip size of type 1 were more than 10cm larger than type 2. The waist size of type 1 was over 94.32 cm(37 inches), 3 inches bigger than type 2. The chest girth of type 1 corresponded to size 115, which is the largest, longest and least common size in the ready-to-wear market in Korea. Accordingly, it is predicted that Prototype 1 customers could have problems in choosing their sizes, both suitable for the width and the length. With this reason, they would be likely to opt for custom-fit garments. On the other hand, prototype 2 is taller and slimmer than prototype 1. Their chest and waist sizes were a little larger than size 100, whereas, their stature, which were generally over 178 cm, would correspond to size 105-110 in the ready-to-wear market. Therefore, when trying on ready-to-wear jackets, prototype 2 customers were more likely to experience loose fit and would want a more fitted line. This could well be one of the reasons why they would become custom-fit consumers.

The range of ease accepted at each area was remarkably different. The least ease was at shoulder(about 1cm), and the most ease was at chest(17.87cm). At waist(16.75cm), a similar ease to chest was accepted, and the ease at hip and at interscye were 7.24cm and 7.83cm. The ease at jacket length and sleeve length were 1.05cm and 2.49cm.

The ease of prototype 1 were 16.89cm at chest, 17.12cm at waist, and 7.86cm at hip whereas, prototype 2 were 18.48cm(chest), 16.67cm(waist), and 6.83cm(hip). There were no significant differences between groups except at chest. It means that the ease at chest was decided by body size while the ease at waist or hip was not strongly affected by single body size. The ease deviation at chest was reduced and became insignificant at the waist and hip. Consequently, the waist and hip can be pinpointed as the areas where pattern makers should adjust ease to compensate for disadvantages in body proportion.

The ease at shoulder width was 0.68cm for type 1 and was 1.17cm for type 2 and the ease at interscye was 7.60 cm for type 1, 7.98 cm for type 2. Among these widths, the most ease was at interscye as the sufficient ease for arm movement was needed, and the least was at shoulder for the reason that shoulder width reflected contemporary fashion trends, that is, natural shoulder expressed with the limited extension. Any significant difference of ease between prototypes was not indicated in shoulder and interscye, though the ease percentiles in prototypes were significant. This result can be interpreted in two ways: (1) shoulder had too little ease compared to other areas to reveal a significant difference by means of the usual type of analysis, and the ease at interscye was developed similarly for arm movement, however, (2) the eases at shoulder and interscye could lead to dissimilar feeling of fit for customers.

The ease at jacket length and sleeve length of prototype 1, who was shorter but fatter than type 2, were more than prototype 2. This adjustment was interpreted as for the purpose of concealing actual body proportions and pursuit of desirable proportions in length.

3. Sensory Evaluation

In the investigation of general facts, about half of the subjects(45.3%) were aged from 40-49, 27.3% were 30-39, 21.9% were 50-55, and 5.5% were 20-29, so a business suit is mainly worn by men aged 30-55. About jacket style, all age groups preferred 3-buttoned jackets, and subjects in their 20's and 30's uniformly preferred 3-buttoned while some in their 40's and 50's chose 2-buttoned jacket.

The sensory evaluation included questionnaires targeting 3 components: the influence of ease at

jacket parts for fit satisfaction, the self-perception of body shape, and the preferred fit level at specific areas.

The influence scores of ease for good appearance is shown in Table 5. For the total subjects, the most important part for good fit was the shoulder fit at the front(4.51), that is, customers checked the shoulder fit first and most importantly. The next checking parts were jacket length(4.23), sleeve length(4.11), front interscye(4.09), and back appearance at waist (4.07). Comparing influence scores at the front with scores at the back, the front appearance at interscye, waist and hip were less scrupulously checked than the back appearance, although the appearance at shoulder and chest showed higher score than the back appearances. This does not mean that customers were more concerned with the back appearance. It could well mean that since the front appearance of the business jacket was carefully constructed by means of several layers of fabric, so it usually kept the neat fit at those areas whereas the back appearance wasn't. Unexpectedly, the appearances at both the front and back of the chest were evaluated as being at the middle level of influence. In addition, the upper arm was rated as most important among the arm areas.

The influence scores were analyzed according to prototypes, age groups, and job groups to see whether there were any differences among groups. Subjects were divided into 2 age groups, under 43 and 44 to 65 by K-cluster. The most influential factor was the prototypes, followed by age. Meanwhile, Job and Income was also considered as a factor though there was no significant result because of the social homogeneity of custom-fit consumers.

Significant differences between prototypes were reported in 4 areas; interscye, front chest, front waist, and back waist. Prototype 1, the fatter customers, was more concerned with girth areas than the prototype 2. The analysis by age groups revealed significant differences at waist, hip, elbow, and at the hemline of sleeve, and the biggest difference was at

Table 5. The Influence of Partial Areas for Good Fit.

Areas(total mean)		t-test for Equality of Means					
		By Prototypes			By Age Groups		
		Mean		*t* value	Mean		*t* value
		Type 1	Type 2		Group 1	Group 2	
Jacket length (4.23)		4.36	4.16	1.416	4.39	4.19	1.354
Sleeve length (4.11)		4.25	4.01	1.547	4.26	4.06	1.214
Front	Shoulder (4.51)	4.57	4.38	1.693	4.48	4.52	-0.251
	Interscye (4.09)	4.27	3.91	2.554*	4.06	4.09	-0.188
	Chest (3.75)	4.07	3.59	3.482***	3.90	3.70	1.448
	Waist (3.98)	4.30	3.85	2.554*	4.55	3.79	4.922***
	Hemline of jacket (3.23)	3.30	3.21	0.541	3.48	3.14	2.181*
Back	Back neck (3.02)	3.05	3.07	-0.196	3.13	2.98	0.926
	Interscye (3.95)	4.02	3.90	0.952	3.97	3.95	0.135
	Chest (3.83)	3.98	3.78	1.590	3.87	3.81	0.392
	Waist (4.07)	4.34	3.99	2.287*	4.45	3.95	3.526***
	Hem line of jacket (3.10)	3.32	3.32	-0.034	3.45	3.26	1.293
Arm	Upper arm (3.40)	3.50	3.34	1.127	3.48	3.37	0.750
	Elbow (2.77)	2.84	2.79	0.382	3.10	2.66	3.487***
	Hem line of sleeve (2.74)	2.80	2.79	0.011	3.03	2.65	2.974**

*p<.05, **p<.01, ***p<.001

Table 6. The Fit Preferences between Prototypes and Age Groups.

The Fit Preferences (mean of total)	t-test for Equality of Means					
	By Prototypes			By Age Groups		
	Mean		*t* value	Mean		*t* value
	Type 1	Type 2		Group 1	Group 2	
Overall fit (3.30)	3.27	3.29	-0.147	2.87	3.43	-3.673***
Shoulder (3.08)	3.07	3.06	0.066	2.87	3.14	-1.699
Chest (3.41)	3.43	3.40	0.266	3.16	3.49	-2.334*
Waist (3.16)	3.05	3.19	-0.852	2.71	3.30	-3.420***
Hip (3.23)	3.16	3.24	-0.579	3.03	3.29	-1.956
Sleeve (3.20)	3.18	3.24	-0.559	3.10	3.24	-1.436
Jacket Length (3.43)	3.48	3.47	0.060	3.81	3.31	4.917***
Sleeve Length (3.12)	3.16	3.12	0.536	3.10	3.12	0.334

*p<.05, **p<.01, ***p<.001

the waist. The younger age group were more concerned to the jacket silhouette, specially to the waist.

To analyse fit preferences<Table 6>, it was compared between prototypes and age groups, and results indicated no significant difference between prototypes because of the size homogeneity of custom-fit customers. However, between age groups, there were significantly different fit preferences at chest, waist, sleeve length, and jacket length as well as for overall appearance. The younger group preferred a more fitted line at the chest and waist, and a longer jacket. This preference of the younger age group reflects the contemporary fashion in men's wear that is slim and a little longer looking.

4. The Correlation of Self-perception of Body, Prefer Fit, Actual Ease, and the Checking ares for Good Fit

To investigate whether there were any correlations between factors affecting jacket fit, fit preference was compared with body perception as well as with the influence of ease at areas for good fit. Personal body perception was also compared with actual ease of jacket.

The Correlation between fit preference and the influence of ease were significantly appeared almost all relations(Table 7). As customers prefer fitted silhouette, they are most sensitive to concerning the ease of jacket in terms of fit satisfaction.

Considering the relation between fit preference and personal body perception<Table 8>, there were several significant correlations. The prefer fit at the horizontal factors like chest, waist, and hip were related to the perception of hip size. This could be understood in light of the fact that the preferred fit at chest, waist and hip was able to change according to the body perception of hip size and also the fact that the customers were accustomed to preserve the suit silhouette controlling ease in those 3 areas. In addition, fit preference at the waist had a negative correlation with the perception of stature. That means that if a customer is tall, he tends to prefer a loose fitting at waist for reconstruct his body proportion. The preference in jacket length was related to perceptions of waist, arm length, and leg length.

Personal body perception was also compared with actual ease of jacket to identify correlation and tendency(Table 8). In analyzing the actual ease difference by prototypes<Table 4>, the chest was the only part revealing significant difference. However, in analyzing the relation between personal body perception and actual ease, significant correlations were revealed at lots of parts and the ease at waist was the most strongly correlated with body perception. All of them were negative relations, so when customers

Table 7. The Correlation between Fit Preference and The Influence of Ease for Good Fit.

Influence of Ease for Good Fit		Fit Preference					
		Overall Fit	Shoulder	Chest	Waist	Hip	Jacket Length
Length	Jacket	-0.232*	-0.225*	-0.219*	-0.284*	-0.263*	-0.156
	Sleeve	-0.253*	-0.230*	-0.233*	-0.309*	-0.276*	0.201*
Front	Shoulder	-0.252*	-0.265*	-0.232*	-0.419*	-0.335*	0.100
	Interscye	-0.253*	-0.161	-0.192*	-0.298*	-0.159	0.121
	Chest	-0.187*	-0.067	-0.164	-0.290*	-0.113	0.246*
	Waist	-0.406*	-0.243*	-0.371*	-0.473*	-0.282*	0.340*
	Bottom of jacket	-0.229*	-0.069	-0.176*	-0.198*	-0.068	0.215*
Back	Interscye	-0.110*	-0.123	-0.093	-0.188*	-0.086	0.140
	Chest	-0.224*	-0.038	-0.049	-0.197*	-0.038	0.183*
	Waist	-0.368*	-0.163	-0.288	-0.339	-0.146	0.354*
	Bottom of jacket	-0.181*	-0.039	-0.110	-0.065	-0.076	0.209*
Upper arm		-0.181*	-0.132	-0.184*	-0.276*	-0.176*	-0.194*

*p<.05, **p<.01, ***p<.001

Table 8. The Correlation between Fit Preference and Personal Body Perception.

Personal Body Perception	Fit Preference					
	Overall Fit	Shoulder	Chest	Waist	Hip	Jacket Length
Overall	0.041	0.020	0.100	-0.019	-0.069	-0.136
Torso	0.015	-0.011	0.090	-0.043	0.024	-0.148
Waist	0.110	-0.055	0.126	0.097	0.019	-0.210*
Hip	0.097	0.148	0.240*	-0.184*	0.217*	-0.042
Shoulder	-0.001	0.111	0.077	0.106	-0.063	-0.052
Stature	-0.173	0.003	-0.076	-0.218*	-0.004	0.125
Torso Length.	0.043	0.060	-0.039	0.152	0.094	0.049
Arm Length	-0.161	-0.020	-0.093	-0.137	0.079	0.191*
Leg Length	-0.112	0.010	-0.040	-0.007	0.084	0.234*

*p<.05, **p<.01, ***p<.001

Table 9. The Correlation between Actual Ease of Jacket and Personal Body Perception

Personal Body Perception	Actual Ease of Jacket					
	Shoulder	Front Interscye	Back Interschye	Chest	Waist	Hip
Overall	-0.035	-0.114	-0.092	-0.187*	-0.270*	-0.055
Torso	-0.076	-0.184*	-0.078	-0.163	-0.277*	-0.002
Waist	-0.153	-0.165	-0.089	-0.140	-0.333*	-0.114
Hip	-0.087	-0.046	0.042	-0.157	-0.147	-0.088
Shoulder	-0.151	-0.068	0.017	-0.164	0.025	0.028
Stature	-0.086	-0.036	0.027	-0.164	0.132	-0.095
Torso Length.	0.027	-0.025	0.054	0.101	-0.007	-0.150
Arm Length	-0.115	-0.034	0.029	-0.130	0.131	-0.008
Leg Length	-0.105	-0.079	-0.039	-0.156	-0.021	-0.073

*p<.05, **p<.01, ***p<.001

recognize their body big or thick, they accept less ease.

IV. Conclusion and Discussion

The purpose of this study was to investigate the commonly accepted ease in a custom-fit business jacket, and also to identify integral factors to influent ease and fit, and thus to supply reference data to manufacturers in the apparel industry.

First of all, both prototypes accepted similar ease at almost all areas except the chest while the body sizes of them were statistically different. Therefore, the chest was the area that could be the most sensitive to body sizes and shapes. However, the body characteristics of waist and hip were easily modified to accommodate the silhouette of the jacket. The ease of shoulder was most marginal and that of chest was largest. In addition, the waist area demonstrated one of the most various amounts of ease, for the reason that the waist size of the jacket was developed not as a reflection of body size but bearing in mind the jacket silhouette. For the length measurements, ease was added more for Prototype 1, who was smaller but fatter, to alter the balance of body length. Further, the tendency for the hip to generally be bigger than the chest was camouflaged by the modification for this aesthetic purpose.

Secondly, the main dimensions affecting individual perceptions of fit and ease were the characteristics of body shape, in particular, girth, followed by age. Customers who were fatter and smaller accepted less ease at chest, and they might feel different fit at shoulder and at interscye. Additionally, job and income could also be the factors, though in this research there was no significant result because of the physical and social homogeneity of custom-fit consumers.

Finally, customers paid most attention to the shoulder fit while customers who preferred a more fitted line showed more concern with ease for jacket fit. It was clearly observable in the case of waist fit preference. In addition, the preferred fit at chest, waist and hip would be changed by the perception of one's hip size. Customers recognize their body big or thick, they accepted less ease at waist.

This study was focused on custom-fit jackets of which wearers were a physically homogeneous group with similar economical backgrounds. These results could be expected to be different from ready-to-wear customers whose body size and economic background are much more various than custom-fit consumers. This study was restricted to custom-fit business jackets, therefore research on other garment items or with other subjects would result in different conclusions.

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요 약

본 연구는 개개인에게 최적 맞음새를 제공하는 남자 맞춤 재킷 소비자들을 대상으로 신체 부위별 치수 및 재킷 치수를 측정하여 여유량을 산출하였고, 또한 여유량 특성을 파악하기 위해 각 여유량을 신체 특성, 연령, 신체 인식정도 및 선호하는 재킷 실루엣별로 비교 분석하였으며 동시에 소비자들이 재킷 전체 맞음새를 고려할 때 중요하게 여기는 부위를 연령 및 체격별로 분석하였다. 신체 치수에 따라 가장 민감하게 여유량이 변화한 부위는 가슴둘레였으며 허리둘레와 엉덩이둘레의 여유량은 신체 치수보다는 재킷 실루엣을 위해 조정되는 부위였다. 신체 치수 다음으로 맞음새와 여유량에 가장 큰 영향을 미치는 요인은 연령이었다. 또한 재킷의 전체 맞음새를 위해 소비자들이 가장 중요하게 여기는 부위는 어깨의 맞음새였으며 특히, 피트되는(fit) 스타일을 선호하는 소비자들은 전체적으로 각 부위별, 특히 허리 맞음새에 특별한 관심을 보였다. 자신의 신체에 대한 인식 중 엉덩이에 대한 인식에 따라 가슴둘레, 허리둘레, 엉덩이둘레에서의 선호 맞음새가 달랐다. 또한 뚱뚱하다고 생각하는 소비자들이 오히려 여유가 적은 허리둘레 맞음새를 선호하였으며 이는 허리둘레 여유량을 조정함으로써 전통적인 재킷 실루엣을 유지하기 위한 것으로 해석할 수 있다. 이상과 같이 각 체격별로, 연령별로 그리고 선호 스타일별로 중요하게 여기는 맞음새 부위와 실제 재킷 부위별 여유량이 달랐으므로 기성 재킷 생산 업체에서는 타겟 체형 및 타겟 연령에 따라 재킷 부위별 여유량과 맞음새 중요 순위 및 그 정도를 달리하여야 소비자 만족도를 높일 수 있을 것이다.