

## **A Study on Classification of Chinese Men's Body Types**

- Focused in Beijing and Shanghai -

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### **Abstract**

The purpose of this study is to provide for some basic data useful to production of the apparels fit and measured well for the Chinese men. For this purpose, 389 men aged between 20 and 49 and living in Beijing and Shanghai, China were sampled to be measured for their constitutions. Then, their constitutions were classified and thereupon, according to the Men's Wear Specifications (GB/T 1335.1-1997), National Standards of People's Republic of China. The collected data were statistically processed using SAS 6.12 for technical statistical analysis, correlation analysis, factor analysis, group-wise analysis. The results of this study can be summarized as follows;

1. As a result of the factor analysis aiming to determine Chinese men's constitutional components, five components could be identified: constitutional obesity, lateral body size, longitudinal body size, shoulder and back width, and shoulder drooping.
2. As a result of classifying Chinese men's constitutions according to drop measurements, four types could be identified. Y type had the lowest obesity and the highest longitudinal body size. A type had a lower obesity and had an average longitudinal body size. B Type had the second highest obesity, the smallest longitudinal body size and shoulders/back width. C Type had the highest obesity, upper body length and shoulders/back width.
3. In terms of distribution, 'B' type (39.10%) of the sample, followed by 'A' type (29.26%), 'C' type (19.95%) and 'Y' type (11.70%). In all, the results of this study suggests that 'B' type represents the Chinese men in contrast with GB specifying that 'A' type represents the Chinese men. On the other hand, Beijing region was dominated most by 'B' type (37.06%), followed by 'A' type (28.82%), 'C' type (22.35%) and 'Y' type (11.76%), while Shanghai region was dominated most by 'B' type (41.13%), followed by 'A' type (31.21%), 'C' type (19.15%) and 'Y' type (8.51%).

**Key words:** classifying, constitutional components, distribution, GB/T

### **I. Introduction**

Since the establishment of Sino-Korean diplomatic relationship in 1992, numerous Korean

apparel companies have advanced into the Chinese apparel markets due to the geographic and cultural advantages. Although China's economy has grown rapidly with their great

socio-cultural changes, many Korean apparel companies have failed to establish in the Chinese apparel market due to poor understanding of Chinese consumers' needs and their fashion culture as well as institutional, custom-wise and cultural differences and various political, social and cultural obstacles.

Now, Korean apparel companies who have learned lessons from their failures are attempting to shift from the low-price marketing strategy to the high-price strategy through license, collaboration or joint venture agreements with the local apparel companies. If Korean apparel companies want to sharpen their competitive edges against other foreign rivals in the great potential Chinese market being liberalized, they are requested to arrange a systematic and efficient business strategy based on their lessons learned from their failures. In order to advance effectively into the Chinese apparel market rapidly changing, it is necessary for the Korean apparel companies to survey Chinese constitutions thoroughly, to develop the patterns fitting the constitutions by region, to reinforce the merchantability through development of creative and differential designs, to reduce the costs and enhance mobility through localization of the production bases, to maximize the sales efficiency by segmenting the target markets and to develop a unique marketing route through a longer-term investment strategy.

Efficient strategies for the Korean apparel companies to advance into the Chinese markets can be enumerated in multi-faceted ways as above, but it is essential to plan and develop high value-added commodities in order to sharpen their competitive edges. In this vein, it seems to be pre-requisite to develop the commodities fitting Chinese constitutions, and to this end, it is

necessary to collect precise information on their constitutions and reflect them on apparel designs.

Likewise, if the Korean men's wear companies can advance into the Chinese markets effectively, it is essential to survey Chinese men's constitutions, sizes and patterns, but the database is very insufficient. Since China is very wide with various peoples, it may be reasonable to develop some unified apparel specifications and patterns not for all the population but for each region in order to enhance fitting and perfection of the apparels.

With such basic conceptions in mind, this study was aimed at improving the physical fitness of the Korean apparels for Chinese men and thereby, providing for some basic data useful to the Korean companies doing business in China. To this end, those men aged in their 20's, 30's and 40's and living in the Chinese capital, Beijing, and the Chinese fashion center, Shanghai, were sampled randomly and thereupon, their constitutions were classified in terms of drop size (difference between upper chest circumference and waist) according to the Chinese national standard or GB Constitution Classification.

## II. Methods of Study

For the subjects of this study, 414 Chinese men aged between 20 and 50 and living in Beijing and Shanghai and engaged in office works or other professional jobs were randomly sampled and thereupon, 389 men were finally selected in consideration of age distribution. Then, the subjects' body sizes were measured from July 1 to 18, 2000.

The measurement list required for under-

standing of Chinese adults' constitutions and manufacturing of their apparel patterns was determined in reference to the "Report on the Survey of People's Standard Constitutions" in 1997 as well as their standard constitution measurement methods and terms before being referred to men's apparel pattern producers for advice. The measurement list consisted of a total 38 items: 6 items regarding height, 4 items regarding width, 3 items regarding thickness, 8 items regarding circumferences, 14 items regarding length, 2 items regarding angles and 1 item regarding weight.

For this study, R. Martin's human body measurement scale was used, while the "Report on the Survey of People's Standard Constitutions" were referred to. On the other hand, the baselines or base points for measurement of constitutions were set in reference to KS A 7003 (Terms for Human Body Measurements) and KS A 7004 (Methods for Human Body Measurements).

Those living in Beijing accounted for 53.50% (208 persons) and those living in Shanghai accounted for 46.5% (181 persons). On the other hand, those in their 20's accounted for 47.56% (185 persons), those in their 30's for 31.36% (122 persons) and those in their 40's accounted for 21.08% (82 persons).

The data collected were statistically processed using the SAS System for Window (Release 6.12). In order to determine the components forming Chinese adults' constitutions, factory analysis was conducted for the entire components of the bodily measurements, while Varimax Orthogonal Rotation was applied to rotate the components. In order to determine the characteristics and differences of Chinese men's constitution by group, their constitutions were classified depending on their drop sizes (upper chest

circumference - waist), and thereby, the data about a total of 39 items were processed for means and standard deviations the significance of which was tested with F-test; the differences among groups were tested posterior with Duncan-test. In addition, in order to determine the distribution among regions and age groups depending on constitutions, frequency and percentage were calculated.

### III. Results of Study and Discussions

#### 1. Determination of the components forming Chinese adults' constitutions

In order to determine the components forming Chinese adults' constitutions, all 38 items for measurement were analyzed by factor. The results of the analysis can be summarized as follows:

In determining the factors determining Chinese adults' constitutions, 38 measurement items were analyzed by factor. The number of factors was determined *a priori* in consideration of the results of scree-test and interpretation of factors. In particular, in order to make clear the characteristics of factors, Varimax method was applied. The weights, unique values and variances of each factor are shown in <Table 1>.

The factors connoting Chinese adults' constitutions were identified as five, the accumulated contribution ratios of which were 72.83%. The characteristics of each factor can be described as follows:

##### 1) Factor 1

Factor 1 may be reduced to 'a factor indicating bodily obesity' due to higher values of all widths,

<Table 1> Components forming Chinese Adults' Constitutions

Item	Factor1	Factor 2	Factor 3	Factor 4	Factor 5	Commonality(h <sup>2</sup> )
Waist circumference	.93*	-.05	.15	.08	.03	.88
Abdomen circumference	.91*	-.04	.13	.12	.00	.86
Weight (kg)	.89*	.23	.17	.22	.05	.92
Waist depth	.88*	.13	.11	.21	.08	.86
Upper arm circumference	.88*	-.06	.04	.13	.12	.81
Hip circumference	.88*	.13	.13	.22	.07	.86
Waist breadth	.87*	.10	.21	.16	-.01	.82
Upper chest circumference	.80*	.07	.08	.16	.00	.68
Upper chest depth	.80*	.01	.05	-.04	.05	.64
Neck circumference	.78*	-.08	.10	.13	.19	.68
Hip depth	.74*	-.10	-.04	.08	-.23	.62
a)	.72*	.18	.14	.08	.08	.58
Arm scye circumference	.70*	.06	.01	.03	.11	.51
Chest breadth	.70*	.14	.00	.39	-.12	.67
Thigh circumference	.68*	-.05	.05	.28	.09	.55
Hip breadth	.68*	.26	.09	.17	.07	.56
b)	.64*	.20	.19	-.07	.05	.48
Front interscye length	.63*	.18	.14	.13	.00	.46
Pants length	-.07	.91*	-.17	.06	.03	.86
Gnation height	.05	.90*	.22	.08	-.02	.87
Acromion height	.13	.87*	.25	.00	-.10	.85
Stature	.05	.87*	.24	.13	-.01	.82
Arm length	.08	.86*	.17	.06	-.03	.77
Hip height	.11	.81*	.09	-.04	.01	.67
Neck back to wrist length	.18	.80*	.15	.29	.05	.78
Tibial medial length	-.07	.77*	-.33	.03	-.04	.70
Inner leg length	.00	.76*	.15	.02	-.08	.61
Neck height posterior	.08	.75*	.30	.21	-.01	.70
Neck height anterior	.16	.75*	.21	.05	.04	.63
Waist height	.04	.70*	-.05	-.09	.04	.50
Neck side - waist line	.33	.36	.79*	.07	.01	.86
Waist back length	.29	.31	.78*	.16	-.04	.82
Neck side - nipple - waist line	.47	.26	.67*	.06	.04	.73
Shoulder to shoulder length	.36	.17	.08	.77*	.19	.79
Acromion to acromion breadth	.27	.28	.13	.74*	.21	.75
Back interscye length	.48	.05	.06	.66*	-.02	.66
Left shoulder slope angle(°)	.08	-.05	-.02	.09	.89*	.81
Right shoulder slope angle(°)	.17	-.08	.02	.13	.82*	.73
Unique value	15.71	9.22	1.98	1.67	1.28	
Contribution to variances(%)	38.31	22.49	4.83	4.08	3.13	
Accumulated ratio (%)	38.31	60.80	65.62	69.70	72.83	

a) Front Upper chest circumference line ⊥ Arm scye circumference-Back center line ⊥ Back Upper chest circumference line  
 b) Front Upper chest circumference line ⊥ Arm scye circumference-Back Upper chest circumference line ⊥ Arm scye circumference  
 \* mark means the contribution of 0.5 or more.

thicknesses, circumferences and weights. The highest value was shown in waist (.93), followed by belly circumference (.91), weight (.89), hip size and upper arm circumference (.88) in their order. These five items may well represent obesity. This factor which was highest among five factors showed a unique value of 15.71, the explanatory power of which was 38.31%.

**2) Factor 2**

Factor 2 may be reduced to 'a factor indicating the longitudinal bodily size' due to higher values of all lengths and heights. The highest value was shown in trouser length (.91), followed by height of jaw tip (.90), shoulder height and entire body height (.87) and arm length (.86) in their order. This factor showed a unique value of 9.22, the explanatory power of which was 22.49% and the accumulated contribution ratio of which was 60.80%.

**3) Factor 3**

This factor may be reduced to 'a factor indicating upper body length' due to medium values of rear length (.79), back length (.78) and front length (.67). The higher this factor was, the man had a longer upper body. Its unique value was 1.98, while explaining 4.83% of the entire variances. Its accumulated contribution ratio was 65.63%.

**4) Factor 4**

This factor may be reduced to 'a factor indicating 'sizes of shoulder and back width' due to medium or higher values of length between shoulder tips (.77), shoulder width (.74) and Back interscye length(.66). The higher this factor was, the shoulders and back were more developed. Its unique value was 1.67, while explaining 4.08%

of the entire variances. Its accumulated contribution ratio was 69.70%.

**5) Factor 5**

This factor may be reduced to 'a factor indicating shoulder drooping' due to higher values of left shoulder slope angle (.89) and right shoulder slope angle (.82). Its unique value was 1.28, while explaining 3.13% of the entire variances. Its accumulated contribution ratio was 72.83%.

**2. Classifications of constitutions by drop size and characteristics of types**

The sample men's constitutions were classified into four types as shown in <Table 2> in terms of drop size (difference between upper chest circumference and waist) according to GB Constitution Classification standards. Namely, the drop size 17-22cm was classified into 'Y' type, 12-16cm into 'A' type, 7-11cm into 'B' type and 2-6cm was classified into 'C' type.

In order to determine the characteristics and differences of each constitution type, factor analysis was conducted for each type. Means, standard deviations, results of F-test and Duncan-test for 38 measurement items and 1 index item are presented in <Table 3>. On the other hand, the results of comparing the scores

**<Table 2> GB constitution types and scope of drop sizes**

Constitution type	Scope of drop sizes
'Y' type	17~22cm
'A' type	12~16cm
'B' type	7~11cm
'C' type	2~6cm

<Table 3> Classification of constitutions by drop size

	Statistics Measurement item	'Y' type(N=32)		'A' type(N=93)		'B' type(N=121)		'C' type(N=65)		F-test	Duncan -test
		mean	SD	mean	SD	mean	SD	mean	SD		
factor1 obesity factor	Waist circumference	74.02	6.76	76.07	4.98	84.60	93.11	6.60	5.72	139.44***	c c b a
	Abdomen circumference	77.03	6.50	77.41	5.23	83.80	92.07	7.25	6.29	79.25***	c c b a
	Weight (kg)	64.19	7.99	63.66	7.29	70.26	75.96	8.86	9.42	33.60***	c c b a
	Waist depth	19.38	2.30	19.92	1.66	22.62	25.42	2.34	2.23	112.07***	c c b a
	Upper arm circumference	27.90	3.13	28.04	2.04	29.89	31.45	2.37	1.85	38.09***	c c b a
	Hip circumference	92.14	4.90	92.40	4.47	96.13	99.40	5.12	4.83	34.49***	c c b a
	Waist breadth	26.18	2.51	26.75	1.74	28.71	30.92	2.18	1.95	71.56***	c c b a
	Upper chest circumference	92.75	7.26	89.86	4.86	93.78	97.47	6.41	5.41	23.75***	b c b a
	Upper chest depth	22.34	2.07	22.03	1.61	23.28	24.50	1.95	2.29	24.34***	c c b a
	Neck circumference	36.14	1.92	36.39	1.59	37.85	39.03	2.12	2.16	31.35***	c c b a
	Hip depth	23.36	1.97	23.97	2.00	25.41	26.39	2.31	2.28	24.49***	c c b a
	a)	44.90	2.52	45.39	2.22	46.52	48.29	2.30	2.76	24.76***	c c b a
	Arm scye circumference	42.11	3.35	42.99	3.36	44.44	46.73	3.50	2.93	22.40***	c c b a
	Chest breadth	30.78	2.12	30.19	1.71	31.06	32.05	2.11	2.06	12.17***	b c c b a
	Thigh circumference	51.74	4.22	52.04	3.74	54.58	55.20	3.91	3.58	14.95***	b b a a
	Hip breadth	32.70	1.29	33.07	1.86	33.98	34.72	1.67	1.68	17.95***	c c b a
	b)	35.91	1.94	36.66	2.00	37.30	38.86	2.10	2.40	20.21***	c b c b a
Front interscye length	39.72	2.46	39.43	2.48	40.71	42.01	2.64	2.41	15.73***	c c b a	
factor2 longitudinal size factor	Pants length	106.92	4.35	105.61	4.34	103.90	103.15	3.79	4.70	8.99**	a a b b
	Gnation height	150.88	4.57	148.80	5.53	147.61	148.42	5.04	6.83	3.13*	a b b b
	Acromion height	142.21	4.97	140.69	5.22	139.56	140.10	4.83	6.65	2.33	
	Stature	174.79	4.99	172.52	5.69	171.24	171.63	5.32	6.94	3.58*	a b b b
	Arm length	57.71	2.27	56.88	3.03	56.31	56.80	2.70	3.33	2.22	
	Hip height	86.15	3.18	86.10	4.05	85.06	85.69	4.03	4.73	1.42	
	Neck back to wrist length	79.18	2.66	77.69	3.35	77.08	77.99	3.33	4.77	3.15*	a b b a b
	Tibial medial length	59.28	3.28	58.78	2.85	57.18	56.76	3.11	3.39	10.01***	a a b b
	Inner leg length	80.05	3.62	78.91	3.81	77.63	78.57	3.61	5.49	3.69*	a a b b a b
	Neck height posterior	148.16	4.50	146.69	5.31	145.67	146.50	4.72	6.40	2.11	
factor3 upper body length factor	Neck height posterior	32.65	1.54	32.35	1.80	32.01	32.59	1.60	1.96	2.35	
	Waist height	106.63	7.24	104.12	5.74	102.99	102.94	5.79	6.85	3.50*	a b b b
	Neck side - waist line	48.22	1.85	47.71	2.29	48.52	49.59	2.65	2.63	8.18***	b b b a
factor4 shoulder & back width factor	Waist back length	45.43	2.18	45.05	2.42	45.59	46.84	2.62	2.99	6.85***	b b b a
	Neck side - nipple - waist line	47.58	3.47	46.91	2.16	47.91	49.53	2.68	3.25	12.65***	b b b a
factor5 Should-droop factor	Shoulder to shoulder length	44.06	2.76	42.85	2.55	43.37	44.27	2.07	2.29	5.91***	a b c b a
	Acromion to acromion breadth	39.80	1.90	38.93	2.07	39.09	39.52	1.99	1.62	2.50	
Others	Back interscye length	37.95	2.43	37.30	2.35	38.19	39.62	2.76	2.74	11.11***	b b b a
	Left shoulder slope angle(°)	20.53	3.66	19.50	4.01	20.93	19.88	3.88	3.31	2.97	
	Right shoulder slope angle(°)	20.20	4.44	19.96	3.51	22.01	21.22	3.65	3.52	6.51***	b b a a b
	Roher index	1.21	0.18	1.24	0.14	1.40	1.51	0.17	0.17	47.09***	c c b a

\*p<.05 \*\*p<.01 \*\*\*p<.001

<Table 4> factory analysis across the types

	components	Y type	A type	B type	C type	F-test	Duncan-test
factor1	obesity	-0.86	-0.61	0.12	0.91	54.58***	c c b a
factor2	longitudinal body length	0.46	0.13	-0.18	-0.02	3.90**	a ab b b
factor3	upper body length	-0.06	-0.26	0.02	0.30	4.10**	ab b ab a
factor4	shoulder/back width	-0.10	-0.13	0.03	0.60	4.55**	b b b a
factor5	shoulder drooping	-0.00	-0.19	0.30	-0.05	4.31**	ab b a ab

\*p<.05 \*\*p<.01 \*\*\*p<.001

across the types and thereby, analyzing the components of each type are presented in <Table 4>.

As a result of testing significance level for the total 39 items, there were found some differences in 32 items but 7 items among types; among 7 items, 5 items were related with the longitudinal sizes such as Neck height posterior, Acromion height, Hip height, Elbow length and Arm length, while 1 item was related with shoulder or back width such as Acromion to acromion breadth and the other item was related with shoulder drooping such as left shoulder slope angle. As a result of comparing the scores accross types, there were found some significant differences in all 5 factors among types. The characteristics of each type can be enumerated in the following table.

1) 'Y' type

Men with their drop size ranged between 17~22cm were classified into 'Y' type. This group accounted for 10.29% of the sample. They were found to have the smallest measurement in terms of such items indicating obesity and flatness as width, thickness and circumference and also in terms of upper body length and shoulder drooping items. However, this type showed the largest measurements in terms of such items indicating longitudinal bodily height and length.

This group with the obesity ratio of 1.21 are tall and slim. As a result of comparing the scores across types, this group showed the highest score in the item 2 regarding longitudinal bodily length, while showing relatively lower scores in the remaining factors of 1, 2, 4 and 5. After all, 'Y' type may belong to the group with the largest longitudinal body length.

2) 'A' type

This type had the drop size between 11 and 16cm. They accounted for 29.90% of the sample. They had the largest measurements in four items related with the lower body size such as trouser length, knee length and inner leg length, while showing the smallest measurements in 6 items related with obesity and other items related with upper body length, shoulder and back width. Their average Rohrer index was 1.24. Namely, although they were short, their legs were long. In all, they had a smallest constitution. As a result of factor analysis across the types, it was found that this group scored lowest in all 5 factors.

3) 'B' type

'B' type had the drop size of 7~11cm. They accounted for the majority (38.9%) of the sample. They scored highest in the item related with shoulder drooping or right shoulder slope angle,

while scoring second highest in such items related with obesity (but thigh circumference) as width, thickness, circumference and weight. However, this group showed the smallest measurements in various longitudinal items, upper body length and shoulder/back width items. Their obesity ratio was 1.40, and therefore, they looked short and stout. As a result of factory analysis across the types, it was found that they scored highest only in the item 5 or shoulder drooping and that they scored second highest in item 1 or obesity. They scored highest also in the remaining 2, 3 and 4 factors. After all, they had a medium constitution size with their right shoulder drooped.

#### 4) 'C' type

'C' type had the drop size ranged between 2 and 6cm. They accounted for 20.9% of the sample. They scored highest in such items indicating obesity as width, thickness and circumference, upper body length, shoulder/back width, and shoulder drooping. However, they scored lowest in such items indicating longitudinal body length. Their obesity ratio was 1.51, which suggests that they were short and fat. As a result of factory analysis across the types, it was found that they scored highest in item 5 (shoulder drooping), item 1 (obesity) and item 3 and 4, while scoring lowest in item 2 (longitudinal body length). In all, this group was short and fat with their upper body developed well.

### 3. Distribution of each type

The distribution of each type per region and age can be featured as in <Table 5>. The highest distribution ratio was shown by 'B' type (39.10%), followed by 'A' type (29.56%) and 'C' type (19.90%) in their order.

When reviewed by region, it was found that Beijing region was dominated most by 'B' type (37.69%), followed by 'A' type (28.14%), 'C' type (22.60%) and 'Y' type (14.57%), while Shanghai region was dominated most by 'B' type (40.68%), followed by 'A' type (30.51%), 'C' type (19.21%) and 'Y' type (9.60%). On the other hand, when reviewed by age group, 'A' type accounted for most of the sample (40.56%) in their 20's, while 'B' type accounted for 40.00% and 43.21% of the sample in 30's and 40's, respectively. All in all, it could be confirmed through this study that distribution of the constitution types were different among regions and age groups.

The distribution per regions and age group of four types classified by drop size according to GB is shown in <Table 6>.

The ratio of coverage by this study was 96.66%, which is very similar to GB's coverage ratio of 96.79%. When broken down into regions, the coverage ratio of this study was 95.67% for Beijing region compared with GB's coverage ratio of 94.96% (including Northeast and Hapei regions). In case of Shanghai region, the coverage ratio of this study was 97.79%, while GB's coverage ratio (including the region around the lower reach of Yantze River) was 95.37%.

On the other hand, there was found some difference of distributions between GB and the results of this study both in Beijing and Shanghai regions. The results of this study suggest that 'B' type represents the Chinese men's constitutions, while GB specifies that 'A' type represents Chinese men's constitutions. In addition, GB specifies that 'Y' type has a ratio similar to 'B' type, but in this study, 'Y' type has the smallest portion of the sample. Meanwhile, GB specifies that the ratio of 'C' type is lowest, but the results of this study suggest that its ratio is relatively higher



<Table 5> distribution of each type per region and age

	region		age			total
	Beijing	Shanghai	20'	30'	40'	
Y type	27	17	30	10	4	44
	7.18	4.52	7.98	2.66	1.06	
	61.36	38.64	68.18	11.70	9.09	
	13.57	9.60	16.67	8.70	4.94	
A type	56	54	73	23	14	110
	14.89	14.36	19.41	6.12	3.72	
	50.91	49.09	66.36	29.26	12.73	
	28.14	30.51	40.56	20.00	17.28	
B type	75	72	66	46	35	147
	19.95	19.15	17.55	12.23	9.31	
	51.02	48.98	44.90	31.29	23.81	
	37.69	40.68	36.67	40.00	43.21	
C type	41	34	11	36	28	75
	10.90	9.04	2.93	9.57	7.45	
	54.67	45.33	14.67	48.00	37.33	
	20.60	19.21	6.11	31.30	34.57	
total	199	177	180	115	81	376
	52.93	47.07	47.87	30.59	21.54	100.00

<Table 6> distribution of each type (The results of this study and GB)

unit: %

type	total		Beijing		Shanghai	
	this study	GB	this study	GB	this study	GB
Ytype(17-22cm)	11.31	20.98	12.98	25.45	9.39	22.89
Atype(12-16cm)	28.28	39.21	26.92	37.85	29.83	37.17
Btype( 7-11cm)	37.79	28.65	36.06	24.98	39.78	27.14
Ctype( 2-6cm)	19.28	7.92	19.71	6.68	18.78	8.17
total	96.66	96.79	95.67	94.96	97.79	95.37

in the Chinese population. All in all, the ratio of the men with thicker waist is higher in this study than that specified in GB.

#### IV. Conclusions and Suggestions

The purpose of this study was to provide for some basic data for the Korean apparel

companies to design men's apparels fitting Chinese men most. For this purpose, 389 men aged between 20 and 50 and living in Beijing and Shanghai were sampled randomly to be subject to a measurement. The resultant data were classified by drop size according to GB national standards. This study can be concluded as follows with some suggestions.

1. As a result of the factor analysis aiming to

determine Chinese men's constitutional components, five components could be identified: constitutional obesity, lateral body size, longitudinal body size, shoulder and back width, and shoulder drooping.

2. As a result of classifying the Chinese adult men's constitutions into 4 types by drop size, it was found that 'Y' type was least obese, while their longitudinal body length was highest. Their upper body length was normal, while their shoulder/back width was smallest. Summing up, they were tallest and slimmest among the 4 types. In contrast, 'A' type was less obese with their longitudinal length normal and their upper body shortest. Their shoulder/back width was most narrowest. In short, their height was normal with longer legs. 'B' type was most obese second to 'C' type, and their shoulder/back width was smallest and their upper body length was normal. Their right shoulder was drooped. Summing up, they were short and fat. Meanwhile, 'C' type was most obese and their upper body was long. Their shoulder/back width was largest, while their longitudinal body length was shortest. In all, they were short and fat with longer and wider upper body.

3. In terms of distribution, 'B' type with the drop size of 7~11cm accounted for most (39.10%) of the sample, followed by 'A' type (29.26%), 'C' type (19.95%) and 'Y' type (11.70%). In all, the results of this study suggests that 'B' type represents the Chinese men in contrast with GB specifying that 'A' type represents the Chinese men. On the other hand, Beijing region was dominated most by 'B' type (37.06%), followed by 'A' type (28.82%), 'C' type (22.35%) and 'Y' type (11.76%), while Shanghai region was dominated most by 'B' type (41.13%), followed by 'A' type (31.21%), 'C' type (19.15%) and 'Y' type (8.51%).

Such findings suggest that 'B' type represents Chinese men's constitutions in both regions against GB specification that 'A' type represents Chinese men's constitution in the regions covering both regions, northeast region, Hapei regions and lower reach of Yangtze River. On the other hand, 'A' type accounted for most of those in their 20's (37.16%) and 'B' type with a thicker waist accounted for most of those in their 30's (38.14%) and 40's (43.94%), respectively.

Since only 389 men aged between 20 and 50 and living in Beijing and Shanghai out of 6 regions were sampled, the results of this study may not be generalized much. Thus, it is hoped that this study will be followed up by future studies with larger samples to improve fitness of the Korean apparels for Chinese men and It is hoped that future studies on Chinese adults' constitutes will use more diverse measurement list and methods, while applying a more systematic method of analysis as well as conducting more positive and scientific tests.

In particular, it is required to set men's wear dimensions in more details which reflect various demographic variables such as age, birth places, living areas, jobs and income levels. In order to design apparels fitting well Chinese adults' constitutions, this study should be followed up by future studies focused on development of the prototypes for Chinese adults' apparels, development of item-wise or design-wise patterns and their applications.

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