



THAI CHILDREN STRANDARD SIZE

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Abstract: The objective of this research was to determine Thai children standard sizes. Thai body structure data step 4 collected in 2000-2001 by the Thai Industrial Standards Institute were used. Samples were 2,288 girls and 2,233 boys aged 2-15 years. The sizes were divided into seven intervals: extra extra small (XXS), extra small (XS), small (S), large (L), extra large (XL), and extra extra large (XXL). Means of body measurements were assigned as medium size. The results were as follows: 1) The medium sizes (M) of Thai girls aged 8-9 years were 128.00 cm height, 64.50 cm chest, 57.00 cm waist, and 70.00 cm hip. 2) The medium sizes (M) of Thai boys aged 8-9 years were 129.00 cm height, 64.50 cm chest, 60.00 cm waist, and 68.50 cm hip.

Key Word: Thai children standard sizes, Thai girls standard sizes, and Thai boys standard sizes

1. Introduction

Thai garment industry has produced ready-to-wear products for both overseas and domestic markets. In 2005, the consumption value of products in Thailand was at 317,059 million baht of which about 70 per cent were produced locally. In 2006 – 2015, the garment market has been expected to grow up at 2 per cent per year [6].

At present, most Thai manufactures use American and British standard patterns, and sizes which seem to be close to Thai body sizes. However, they do not perfectly fit Thai body sizes. Therefore, Thai children standard body sizes are needed to improve the quality of garment production for Thai people. The objective of this research was to determine Thai children standard sizes to serve the need mentioned.

2. Objective

This research was to determine Thai children standard sizes.

3. Material and Methods

3.1 Thai children body structure data

In order to determine Thai men and women sizes, the Thai body structure data Step 4, collected in the years 2000- 2001 were used [5]. Samples were 2,288 Thai girls out of 31,660,225 Thai women population aged 1 – 49 years, and 2,233 Thai boys out of 31,139,647 Thai men population aged 1 – 49 years.

1,531 Thai girls and boys (34%) were from Bangkok and suburbs; 1,018 persons (22.5 %), from the central part; 784 persons (17.3 %), from the northeastern part; 784 persons (17.3 %), from the northern part; and 404 persons (8.9 %), from the southern part of the country.

The descriptions selected for girls sizes were height, weight, head circumference, neck size, chest, waist, hip, front waist length, chest width, center neck to bust point, bust point to bust point, center back length, back width, across shoulder, shoulder length, shoulder slope, upper arm, arm length, wrist, crotch depth, crotch length, thigh, ankle, crotch to soles of feet, waist length to knee, waist length to ankle, and waist length to floor.



The descriptions selected for boys sizes were height, weight, head circumference, neck size, chest, waist, hip, front waist length, chest width, center back length, back width, across shoulder, shoulder length, shoulder slope, upper arm, arm length, wrist, crotch depth, crotch length, thigh, ankle, crotch to soles of feet, waist length to knee, waist length to ankle, and waist length to floor.

3.2 Determination of Thai girls and Thai boys standard sizes

Samples were Thai girls and Thai boys aged 2 – 15 years. The Thai children standard sizes were seven intervals. The seven sizes were 2 – 3 years (XXS), 4 – 5 years (XS), 6 – 7 years (S), 8 – 9 years (M), 10 – 11 years (L), 12 – 13 years (XL), and 14 – 15 years (XXL). To find the mean sizes and grading sizes, the girls and the boys body measurements were used in calculation as follows:

- 1) To determine the mean body measurement of each body description.
- 2) To determine the range body measurement of each body description.
- 3) To determine the grading size of each body description by dividing the range value by seven intervals.
- 4) The mean values were then assigned as the medium size.
- 5) In the seminar, the medium size was used to make patterns by 3 D program; and samples were made by instructors and students of Rajamangala University of Technology Thanyaburi (RMUTT) and manufacturers from garment industries. All participants discussed the results and adjusted the medium body sizes and the grading sizes to whole numbers or to 0.50 for convenience in pattern making. Finally, all sizes were then determined.

4. Results and Discussion

The adjusted mean body measurements were assigned as medium sizes. With the grading sizes, the XXS, XS, S, L, XL, and XXL sizes were determined. Letter sizing was used in order to specify the size designations. Brown and Rice stated that letter sizing helps to reduce inventory [2]. In the seminar, participants selected the letter sizing system for Thai standard sizes because most of them were garment manufacturers who produce moderate price garments. Furthermore, the letter sizing system also offers different size ranges [3]. Results are shown in Figure 1, Table 1 and Table 2.

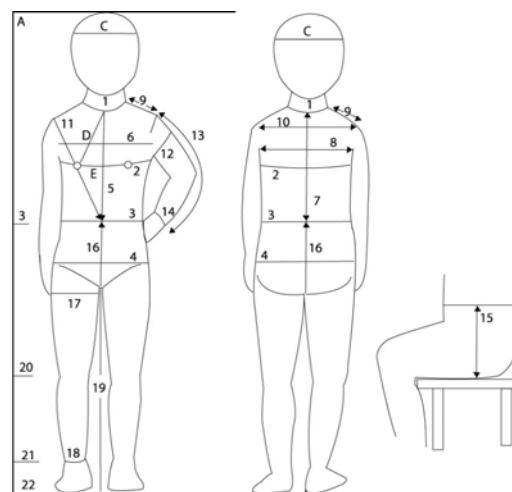


Figure 1: Body Measurement for Thai Children Standard Sizes



A. Height B. Weight C. Head circumference

1. Neck size 2. Chest 3. Waist 4. Hip 5. Front waist length 6. Chest width D. Center neck to bust point E. Bust point to bust point 7. Center back length 8. Back width 9. Across shoulder 10. Shoulder length 11. Shoulder slope 12. Upper arm 13. Arm length 14. Wrist 15. Crotch depth 16. Crotch length 17. Thigh 18. Ankle 19. Crotch to soles of feet 20. Waist length to knee 21. Waist length to ankle 22. Waist length to floor.

Table 1: Thai girls standard sizes

No	Body Description (Centimeter)	Aged/years						
		2-3	4-5	6-7	8-9	10-11	12-13	14-15
		XXS	XS	S	M	L	XL	XXL
A	Height (cm.)	101.00	110.00	119.00	128.00	137.00	146.00	155.00
B	Weight (Kg.)	15.00	20.00	25.00	30.00	35.00	40.00	45.00
C	Head Circumference	48.50	49.50	50.50	51.50	52.50	53.50	54.50
1	Neck size	28.00	29.50	31.00	32.50	34.00	35.50	37.00
2	Chest	52.50	56.50	60.50	64.50	68.50	72.50	76.50
3	Waist	51.00	53.00	55.00	57.00	59.00	61.00	63.00
4	Hip	55.00	60.00	65.00	70.00	75.00	80.00	88.00
5	Front waist length	21.50	23.00	24.50	26.00	27.50	29.00	30.50
6	Chest width	23.00	24.00	25.00	26.00	27.00	28.00	29.00
D	Center neck to bust point	13.00	14.00	15.00	16.00	17.00	18.00	19.00
E	Bust point to bust point	13.50	14.50	15.50	16.50	17.50	18.50	19.50
7	Center back length	23.50	25.50	27.50	29.50	31.50	33.50	35.50
8	Back width	28.50	30.50	32.50	28.50	30.50	32.50	34.50
9	Across shoulder	6.50	7.50	8.50	9.50	10.50	11.50	12.50
10	Shoulder length	25.50	27.50	29.50	31.50	33.50	35.50	37.50
11	Shoulder slope	30.00	31.00	32.00	33.00	34.00	35.00	36.00
12	Upper arm	46.00	47.50	49.00	50.50	52.00	53.50	55.00
13	Arm length	33.00	37.00	41.00	45.00	49.00	53.00	57.00
14	Wrist	11.50	12.00	12.50	13.00	13.50	14.00	14.50
15	Crotch depth	20.00	21.00	22.00	23.00	24.00	25.00	26.00
16	Crotch length	51.50	53.50	55.50	57.50	59.50	61.50	63.50
17	Thigh	33.00	36.00	39.00	42.00	45.00	48.00	51.00
18	Ankle	15.00	16.00	17.00	18.00	19.00	20.00	21.00
19	Crotch to soles of feet	48.00	50.00	54.00	57.00	60.50	64.00	67.00
20	Waist length to knee	33.50	37.50	41.50	45.50	49.50	53.50	57.50
21	Waist length to ankle	52.00	58.50	65.00	71.50	78.00	84.50	91.00
22	Waist length to floor	59.00	66.00	73.00	80.00	87.00	94.00	101.00

Table 1 shows the Thai girls standard sizes. The extra extra small sizes (XXS) were 101.00 cm height, 52.50 cm chest, 51.00 cm waist, and 55.00 cm hip. The extra small sizes (XS) were 110.00 cm height, 56.50 cm chest, 53.00 cm waist, and 60.00 cm hip. The small sizes (S) were 119.00 cm height, 60.50 cm chest, 55.00 cm waist, and 65.00 cm hip. The



medium sizes (M) were 128.00 cm height, 64.50 cm chest, 57.00 cm waist, and 70.00 cm hip. The large sizes were 137.00 cm height, 68.50 cm chest, 59.00 cm waist, and 75.00 cm hip. The extra large sizes (XL) were 146.00 cm height, 72.50 cm chest, 61.00 cm waist, and 80.00 cm hip. The extra extra large sizes (XXL) were 155.00 cm height, 76.50 cm chest, 63.00 cm waist, and 88.00 cm hip.

When compared to those of Japanese, British and American sizes: it was found that the body measurements of the children aged seven years were not equal to those of the three countries. 7-year Thai girls sizes were 121.00 cm height, 62.00 cm chest, 56.00 cm waist, and 67.00 cm hip. 7-year Japanese girls sizes were 120.00 cm height, 60.00 cm chest, 54.00 cm waist, and 63.00 cm hip [1]. 7-year British girls sizes were 122.00 cm height, 59.00 cm chest, 52.90 cm waist, and 64.00 cm hip[3]. 7-year American girls sizes were 122.50 cm height, 76.50 cm chest, 60.00 cm waist, and 75.00 cm hip [4]. Therefore, it could be concluded that the Thai girls height was higher than the Japanese but lower than the British and American. The Thai girls chest size was bigger than the Japanese and British but smaller than the American. The Thai girls waist size was bigger than the Japanese and British but smaller than the American. The Thai girls hip size was bigger than the Japanese and British but smaller than the American. These Thai girls standard sizes would be a perfect database for patternmaking, models and fitting of Thai girls garment industries.

Table 2: Thai boys standard sizes

No	Body Description (Centimeter)	Aged/Years						
		2-3	4-5	6-7	8-9	10-11	12-13	14-15
		XXS	XS	S	M	L	XL	XXL
A	Height (cm.)	99.00	109.00	119.00	129.00	139.00	149.00	159.00
B	Weight (Kg.)	33.50	39.00	44.50	50.00	55.50	61.00	66.50
C	Head Circumference	49.00	50.00	51.00	52.00	53.00	54.00	55.00
1	Neck size	28.50	30.00	31.50	33.00	34.50	36.00	37.50
2	Chest	52.50	56.50	60.50	64.50	68.50	72.50	76.50
3	Waist	51.00	54.00	57.00	60.00	63.00	66.00	69.00
4	Hip	55.00	59.50	64.00	68.50	73.00	77.50	82.00
5	Front waist length	22.50	24.00	25.50	27.00	25.50	24.00	25.50
6	Chest width	23.00	24.50	26.00	27.50	29.00	30.50	32.00
7	Center back length	22.50	25.00	27.50	30.00	32.50	35.00	37.50
8	Back width	23.00	25.00	27.00	29.00	31.00	33.00	35.00
9	Across shoulder	6.50	7.50	8.50	9.50	10.50	11.50	12.50
10	Shoulder length	24.50	27.00	29.50	32.00	34.50	37.00	39.50
11	Shoulder slope	30.00	31.00	32.00	33.00	34.00	35.00	36.00
12	Upper arm	17.50	19.00	20.50	22.00	23.50	25.00	26.50
13	Arm length	33.00	37.00	41.00	45.00	49.00	53.00	57.00
14	Wrist	12.50	13.00	13.50	14.00	14.50	15.00	15.50
15	Crotch depth	19.00	20.00	21.00	22.00	23.00	24.00	25.00
16	Crotch length	51.50	54.00	56.50	59.00	61.50	64.00	66.50
17	Thigh	33.00	35.50	38.00	40.50	43.00	45.50	48.00
18	Ankle	15.50	16.50	17.50	18.50	19.50	20.50	21.50
19	Crotch to soles of feet	47.00	50.50	54.00	57.50	61.00	64.50	68.00
20	Waist length to knee	33.00	37.00	41.00	45.00	49.00	53.00	57.00
21	Waist length to ankle	51.50	58.00	64.50	71.00	77.50	84.00	90.50
22	Waist length to floor	57.00	64.50	72.00	79.50	87.00	94.50	102.00



Table 2 shows the Thai boys standard sizes. The medium sizes were from Thai boys aged 8 – 9 years. The boys extra extra small sizes (XXS) were 99.00 cm height, 52.50 cm chest, 51.00 cm waist, and 55.00 cm hip. The extra small sizes (XS) were 109.00 cm height, 56.50 cm chest, 54.00 cm waist, and 59.50 cm hip. The small sizes (S) were 119.00 cm height, 60.50 cm chest, 57.00 cm waist, and 64.00 cm hip. The medium sizes (M) were 129.00 cm height, 64.50 cm chest, 60.00 cm waist, and 68.50 cm hip. Thai boys large sizes were 139.00 cm height, 68.00 cm chest, 63.00 cm waist, and 73.00 cm hip. The extra large sizes (XL) were 149.00 cm height, 72.50 cm chest, 66.00 cm waist, and 77.50 cm hip. The extra extra large sizes (XXL) were 159.00 cm height, 76.50 cm chest, 69.00 cm waist, and 82.00 cm hip. When comparing the height of Thai girls and Thai boys, it was found that almost all of the Thai boys sizes were higher than the Thai girls except the XXS size. These Thai boys standard sizes would be a perfect database for patternmaking, models and fitting of Thai boys garment industries.

5. Conclusion

The body measurements of Thai girls and boys aged 2 -15 years, collected in the year 2000-2001, were determined to find Thai standard sizes. Means of body measurements were calculated and assigned as a medium size (M). The other sizes were XXS, XS, S, L, XL and XXL. The results revealed that 1) Thai girls medium sizes were of Thai girls aged 8 - 9. Thai girls medium sizes (M) were 128.00 cm height, 64.50 cm chest, 57.00 cm waist, and 70.00 cm hip. 2) Thai boys medium sizes were of Thai boys aged 8 - 9. Thai boys medium sizes (M) were 129.00 cm height, 64.50 cm chest, 60.00 cm waist, and 68.50 cm hip. The height comparison of Thai girls and Thai boys indicated that almost all of the Thai boys sizes were higher than the Thai girls except the XXS size. The Thai children standard sizes from this study would certainly be a perfect database for garment industries.

6. References

- [1] Anonymous, *Lady Boutique*. No. 370. Joie.Inc, Tokyo. 2003.
- [2] Brown, P. & J. Rice. *Ready – To – Wear Apparel Analysis*. 3rd.ed. Prentice – Hall: New Jersey. 2001.
- [3] Cooklin, G. *Pattern Grading for Children Clothes: The Technology of Size*. Oxford : BSP. 1991.
- [4] Joseph, H & Armstrong. *Pattern Making for Fashion Design*. 3 rd.ed. New Jersey: Prentice Hall. 2000.
- [5] Thai Industrial Standards Institute. *Thai Body Structure Report, Step 4: 2000-2001*. Bangkok: Ministry of Industry. 2001.
- [6] Thailand Textile Institute. *The Complete Report: The Strategy and the Master Plan of Increasing the Competitive Strength for Textile and Ready to Wear Industries (2007-2011)*. Thailand Textile Institute. n.d.