

Prediction of Bangladeshi 20-30 aged men's human body shape

Abstract

Describing the varieties of the human body shape is in a general sense essential to numerous applications going from liveliness to item plan. This research is aimed to develop the types of men's human body shape available in Bangladesh. Bangladesh has more than 5000 garments factories. To create loyal customer and own brand in Bangladesh it is very much important to have a specific size chart for this country. To develop a specific size chart, the 1st attempts to detect the body shape variation. In this research the authors took 37 men's human body from different regions of Bangladesh to detect the human shape. Most of the body age is limit to 20-30 years old. After putting all the summarized data in the X and Y graph the author tries to detect the body shape types available in Bangladesh. The results of this research will help to develop the size chart individually for different types of men's body.

Keywords: anthropometry, human body, age, survey, statistical analysis

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Introduction

In modern time, 3D scanning technology is very much advance body scanning method. 3D body examining innovation has become more famous in the dress business. Numerous applications have been created. This permits retailers to hold their old clients with worth-added proficient assistance and to draw in new clients who request individual fit. 3D Body checking is an innovation that delivers a 3D model through examining. A singular stand in the perspective on the scanner, while it catches his self-perception and produces 3D pictures in no time. The scanner utilizes a progression of light sensors to deliver a 3D picture. Pictures are caught in 360 degrees inside a brief timeframe alongside body estimations and human body surface. This information is chronicled or further handled by necessity. The availability of the 3D scanning machine is not sufficient for different countries. Most of the high-income countries can effort this machine. Because of these reasons, they have developed their own body shape and national size chart. But in low-income countries cannot effort this machine. Because of these reasons, they can use anthropometry method to collect the body measurement of the human body. Different countries like India, Pakistan has followed this method to collect the human body measurements to develop the types of human body shape for developing the garments size chart. Men's body type comes in different forms and shapes and with different characteristics. Knowing your body shape and features will allow you to decide what to wear perfectly. There are several types of male body shapes, none are the same, but these are among the most common to describe different physical figures.¹⁻³

Oval body shape

The oval is a prominent body form among men, characterized by slender hips and shoulders as well as a larger tummy. You should focus on investing in items with hazier tones or vertical stripes because the concentrate on ovals is trying to downplay the feeling of the midsection area. Getting custom jeans can also be paired with these hues to produce the illusion of more slimness.^{4,5}

Rectangle body shape

The abdomen and hips will typically be perfectly proportional in square forms. This body type can experiment with prints and samples and is generally easy to deal with. Vertical stripes, however, should

be avoided since they could exaggerate your normally rectangular shape.^{6,7}

Triangle body shape

Like the oval, the triangle has a larger abdomen. Because the shoulder area is considerably smaller, use modestly dim colors, try to compliment your upper half more, and constrict down your lower half.

Trapezoid body shape

One of the easiest body types to work with is the trapezoid, which has wide shoulders, a chest that is narrow, and a constricted abdomen. Off-the-rack apparel is often sized to fit a trapezoid body type, according to industry standards.

Inverted triangle body shape

This body type, which is heavy with a prominent midsection, is generally associated with males who compete or put a lot of effort into working out. Most articles of apparel are flattering for a tense triangle. But shirts will almost always list in various places at the mid-region if the chest area is larger. Spend money on polo shirts or V-necks to focus on showcasing your body. You start to notice how the breast makes your shoulders appear more modest and how the fistedness of the clothing (Figure 1).

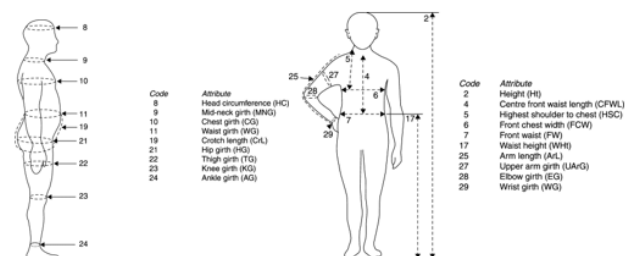


Figure 1 Total key points of the human body.

Materials

(Table 1) (Table 2)

Methodology: In this study anthropometry method has used to collect the body measurement of the human body (Men's). Body has selected from different regions of Bangladesh. The human body

has categorized by the age of the human body. The methodological framework has given in below for clear understanding (Figure 2).

Table 1 Materials used in this study

Materials	Types
Human Body (Men's)	20-30 Aged
Measuring Scale	Normal
Measuring tape	Polyester tape
Weight Machine	Digital Weight measuring machine
Method	Anthropometry

Table 2 Cluster distribution of the region has selected for this research.⁸

Cluster Distribution				
Cluster		N	% of Combined	% of Total
1		22	59.50%	59.50%
2		15	40.50%	40.50%
	Combined	37	100.00%	100.00%
Total		37		100.00%

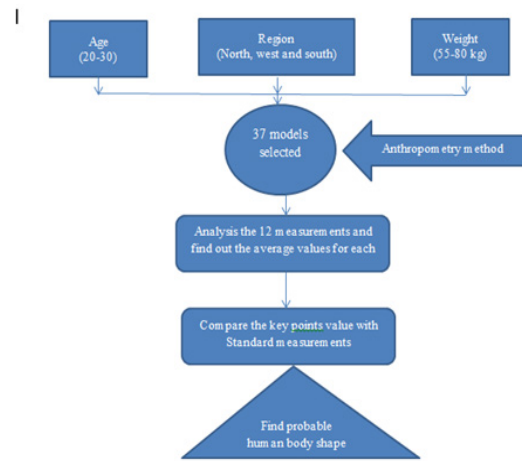


Figure 2 Methodological framework of this research.

Result & discussions (Table 3)

Table 3 Summary of all the taken body measurements by anthropometry method

Model	Age	Weight	Full Bust	Half Bust	Waist	High Hip	Front Rise	Back rise	Arm Length	Arm Hole	Back Shoulder	Neck Round
Model-1	26	61	92	46	82	92	59.5	59	58	42.3	43	37
Model-2	25	70	95.5	47.5	86	97	65	63	56	44	42.5	38
Model-3	29	82	102	51	98	102	64	63	62	43	42	42
Model-4	26	61	98	49	86	89	61.5	60	59	95	41	37
Model-5	26	60	92	46	82	92	59.5	59	58.5	42	43	38
Model-6	26	55	86	43	78	86	60	59	58	42	43	37.5
Model-7	25	61	91	45.5	81	84	57	57	56.5	33	41	36.5
Model-8	26	57	86	43	78.5	86	62	60	59	43.5	43	38
Model-9	23	63	92.5	47	82.5	92	60	59	58	42	43	36.8
Model-10	26	61	92	46	82	85	57.5	57	56.5	33	41	36.5
Model-11	25	60	95	48	85	94	63	62	61	43	42	37
Model-12	26	55	86	43	78	86	60	59	58	42	43	38
Model-13	26	74	94	47	84	94	62	60	59.5	42	42	39.5
Model-14	26	82	92	46	82	85	56.5	57	56.5	33	41	36.5
Model-15	29	61	92	46	82	92	60	59	58	42	43	38
Model-16	28	60	92	46	82	92	64.5	64	63	42	43	38
Model-17	26	55	92	46	82	85	57	57	56.5	33	41	36.5
Model-18	26	61	92	46	82	92	60	59	58	42	43	38
Model-19	25	57	92	46	82	92	65	64	63	42	43	38
Model-20	25	63	92	46	82	85	57	57	56.5	33	41	36.5
Model-21	25	61	92	46	82	92	60	59	58	42	43	38
Model-22	29	60	95.5	47.5	86	97	65	63	56	44	42	38
Model-23	26	55	92	46	82	85	57	57	56.5	33	41	36.5
Model-24	26	74	95.5	47.5	86	97	65	63	56	44	42	38
Model-25	26	82	92.5	46.5	83	93	61	59	58	42	43	38
Model-26	26	61	92	46	82	92	60	59	58	42.3	43	38
Model-27	26	60	95.5	47.5	86	97	65	63	56	44	42	38
Model-28	25	55	92	46	82	92	60	59	58	42	43	38
Model-29	25	61	95.5	47.5	104	108	65	62.5	60	46	42	41
Model-30	26	57	92	46	82	85	57	57	56.5	33	41	36.5
Model-31	26	63	95.5	47.5	102	106	64	61	60	46	44	42
Model-32	26	61	92	46	82	92	60	59	58	42	43	38
Model-33	26	60	106	53	82	92	60	59	58	42.3	43	38
Model-34	28	55	92	46	104	108	65	62.5	60	46	42	41

Table Continued....

Model	Age	Weight	Full Bust	Half Bust	Waist	High Hip	Front Rise	Back rise	Arm Length	Arm Hole	Back Shoulder	Neck Round
Model-35	28	74	105	52.5	82	85	57	57	56.5	33	41	36.5
Model-36	27	80	92	46	86	97	65	63	56	44	42	38
Model-37	28	78	100	53	86	97	65	63	56	44	42	38

Hourglass: If (bust - hips) ≤ 1” AND (hips - bust) < 3.6” AND (bust - waist) ≥ 9” OR (hips - waist) ≥ 10”

Bottom hourglass: If (hips - bust) ≥ 3.6” AND (hips - bust) < 10” AND (hips - waist) ≥ 9” AND (high hip/waist) < 1.193

Top hourglass: If (bust - hips) > 1” AND (bust - hips) < 10” AND (bust - waist) ≥ 9”

Spoon: If (hips - bust) > 2” AND (hips - waist) ≥ 7” AND (high hip/waist) ≥ 1.193

Triangle: If (hips - bust) ≥ 3.6” AND (hips - waist) < 9”

Inverted triangle: If (bust - hips) ≥ 3.6” AND (bust - waist) < 9”

Rectangle: If (hips - bust) < 3.6” AND (bust - hips) < 3.6” AND (bust - waist) < 9” AND (hips - waist) < 10”

Figure 3 and Table 4 shows the values of all the key points of the human body measurements. From these figures the authors find out the average value of the measurements. From those values we can easily find out the average body shape types from 37 models. We know, the male body shapes depend on cultural guidelines that are abstract and are diverse in various societies.⁹ The calculations used in this number cruncher are based on reviews published in the International Journal of Clothing Science and Technology, which classifies female physical conditions into seven classes. In all formats, the actual size range is very wide. The resulted value means that most of the men's human bodies are related to inverted triangle body shape in Bangladesh according to 37 models.

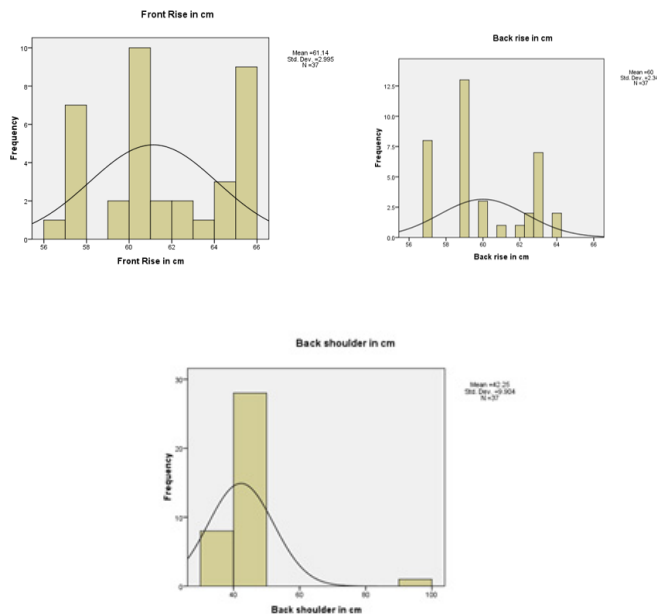


Figure 3 Mean and standard deviation of all the key points' value.

Table 4 Summary sheet to detect human body shape types

Measurements	Mean	Standard deviation (SD)	Frequency (±)
Full bust	93.59	4.034	Moderated
Half bust	46.88	2.314	Accepted
Waist	84.76	6.486	Moderated
High hip	92.35	6.426	Moderated
Front rise	61.14	2.995	Accepted
Back rise	60	2.342	Accepted
Back shoulder	42.25	9.904	Rejected

From the above Table 5 and Figure 4 clearly denote the summery the of the total distribution of the human body shape available in Bangladesh. Here, we can see that, most of the 50% of the human body is like inverted triangle, similarly hourglass id 43%, Triangle is 38% and rectangle is 19% available human body shape in Bangladesh.¹⁰

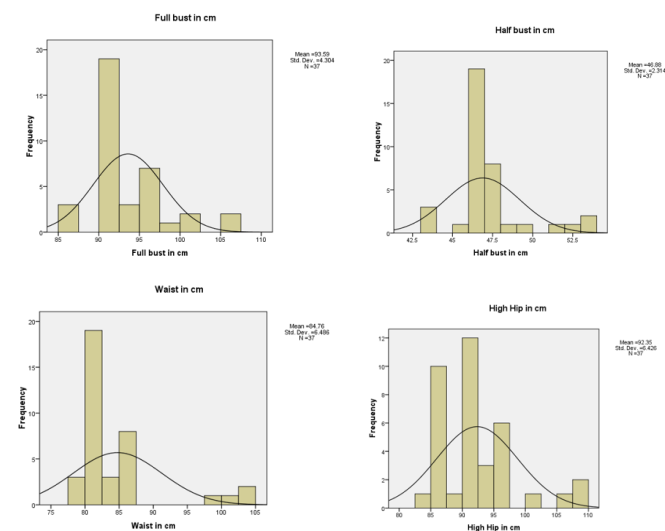


Table 5 Final distribution chart according to analysis

Measurements	Value in cm	Rectangle	Hourglass	Triangle	Inverted triangle	In total
Full bust	93.59	7	8	10	12	37
Half bust	46.88	0	6	9	22	37
Waist	84.76	12	11	0	14	37
High hip	92.35	0	17	18	2	37
Averages		19	42	37	49	

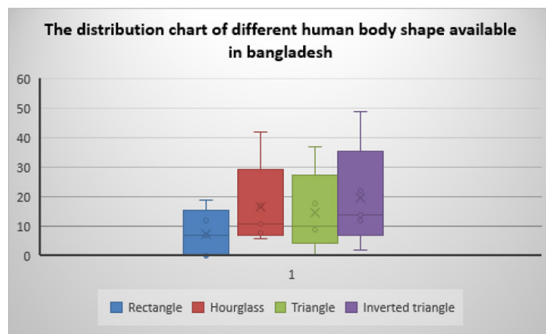


Figure 4 The distribution chart of different human body shape available in Bangladesh.

Conclusion

Anthropometry is the most effective and cost-effective method to analysis the human body. In this method, the authors have tried to find out the effective key points for everybody measurements. If the 3D scanning method can follow, the results will show more specific than anthropometry. The most effective limitations of this study are sample number. If we can use more sample number, the results will show more accurate specific body shape types. These results will be helpful for detection of the final body shape types of Bangladesh.

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Conflicts of interest

The authors declare no conflict of interest.

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