Development Of Addressed Design Solution For Men's Suits

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Abstract: The article is devoted to the targeted design of men's suits, analyzing the results of the study of measurement values for the targeted design of men's suits based on the analysis of the results of 30 main measurements from 400 respondents aged 18 to 35 years in Tashkent and regions, studying the body structure and size. and a size and height scale table was compiled for indigenous men aged 18 to 35 years. An addressable design system for different shapes of men's suits has been developed. It was found that the differences between them vary depending on the body position and as a result affect the front and rear parts of the item.Methods of clothing design for the targeted design of men's suits were analyzed and the optimal method was recommended.

1. Introduction.

The urgency of targeted design of garments is to determine the "addressee" of the product produced by the enterprise and to meet the demand of the population for clothing. To do this, based on the requirements of a specific typological group of the population, the process of designing and manufacturing clothes on the basis of individual orders of the population in mass production and individualization of processes, taking into account the characteristics of individual consumers.

2. Literature reivew

A number of foreign companies are also involved in the design and production of clothing. In particular, the activities of companies engaged in the study and development of technological processes from the selection of models to the production of luxury clothing were analyzed. Analysis of the performance of manufacturing enterprises in the world market shows that specialized enterprises have a place in the world and domestic markets. [1,2].

Mass-produced garments do not fully meet the specific needs of the population. As part of the needs, it is considered that the clothes fit the population.

Only a dimension standard composed of a minimum number of frame sizes can help solve this problem. Therefore, when designing clothing, it is necessary to know not only the external characteristics of the human body, but also its dimensional characteristics. Dimensions are determined by a series of measurements of the human body. It is possible to produce clothes that fit the shape and size of the human body only if you have information about the specific dimensions of the human body and the dimensions between different groups of the population [3].

Experimental research and its results. Taking into account the above, research was conducted among the population of Uzbekistan. A specific group of the population was selected for the study: according to it, the respondents were men aged 18 to 35 years.

The survey was conducted in the city and regions of Tashkent, and included Respondents: students, college students, intellectuals, entrepreneurs, and artisans.

The sizing program used for garment design includes sizes from 60 to 70. However, 30 size indicators that were exactly what the jacket needed for the study were selected.

Men's clothing is mainly determined by 3 size indicators. Therefore, the results of 3 dimensional indicators were analyzed. These dimensional indicators are:
-height (P); chest circumference (Og); waist circumference (Horse).

The values were divided into intervals in order to know in which dimension-height range the values of the obtained measurement indices were. The results are presented in the form of a diagram (Figures 1,2,3).
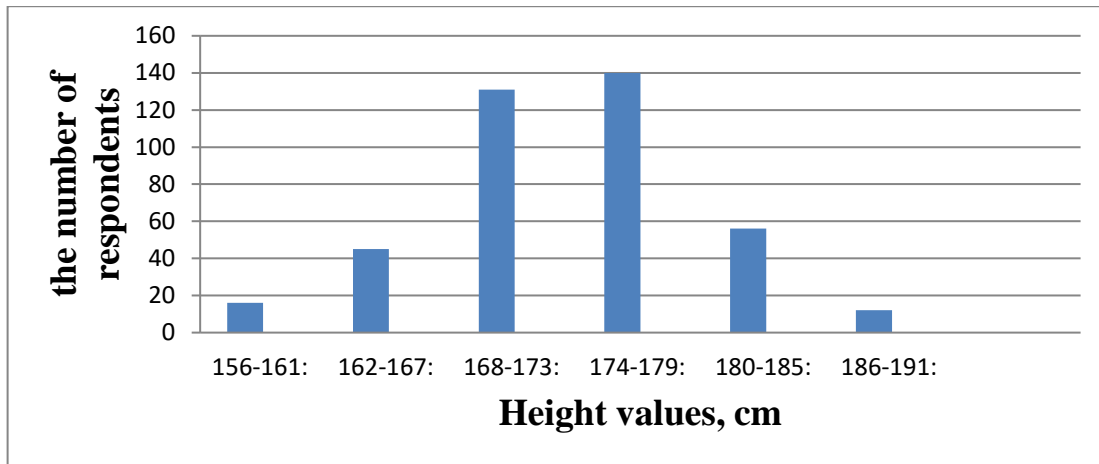
Figure 1. Indicators of height measurement of the local population

The diagram shows that the majority of the local population was 35% male in the 174-179 height range. The lowest heights were 4% of males in the 156-161 height range. The tallest were men aged 185-191 with 3%.
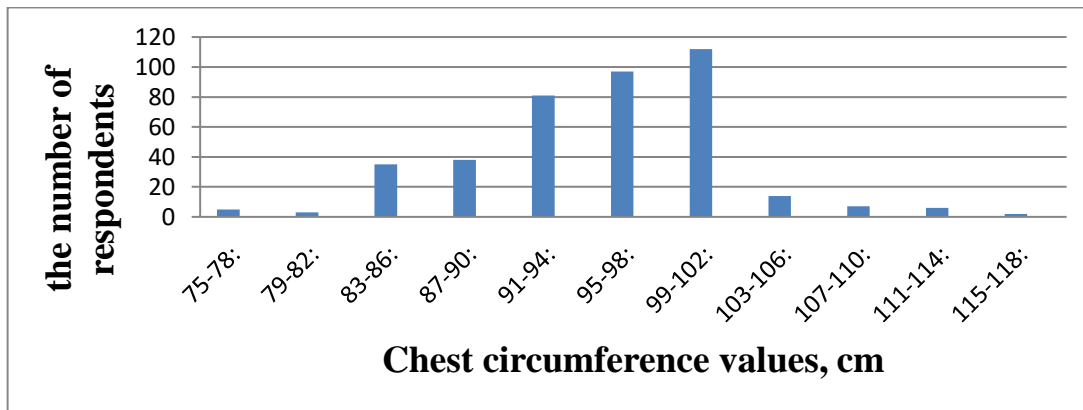

Figure 2. Indicators of breast size of the local population

As can be seen from the diagram, the majority of the local population was 30.5% 95-98, 24.25% 91-94, 20.25% 87-90 men in the breast circumference range. The smallest breast circumference ranged from 0.75–1.25% between 75–78 and 79–82. The largest breast circumference ranged from 114-118 to 0.5%.
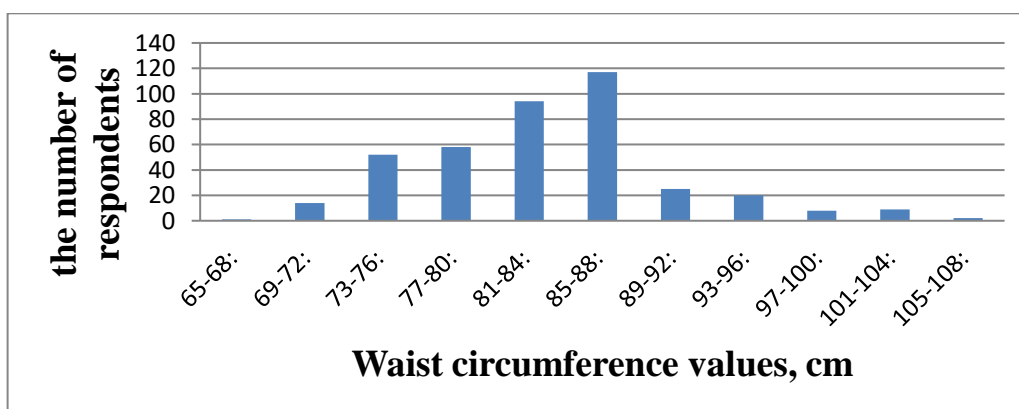

Figure 3. Indicators of waist circumference of the local population

The diagram shows that the majority of the local population is 29.25% 85-88, 23.5% 81-84, 14.5% 77-80 men with a chest circumference, the smallest waist circumference 65-68 0.25%, the largest waist circumference 105-. Those in the 108 range were 0.5%.

Taking the above into account, a study among respondents showed that the 46–48 measurements had the most common III and IV height indicators in the young men aged 18 to 35 years of the local population. Therefore, it is recommended to develop a design of men's jackets that will adhere to the body for sizes III and IV heights 48-50. According to the results of the study, the physical condition of the local population was also studied. Posture refers to the steady state of the body when a person is standing still or walking properly. In the sewing industry, three main postures are accepted: normal, bent, and arrogant. The physical condition of the local population was analyzed among the respondents and the results of the analysis were presented in the form of a diagram (Figures 4,5,6).

Figure 4. An address design system for a men's suit for a normal figure
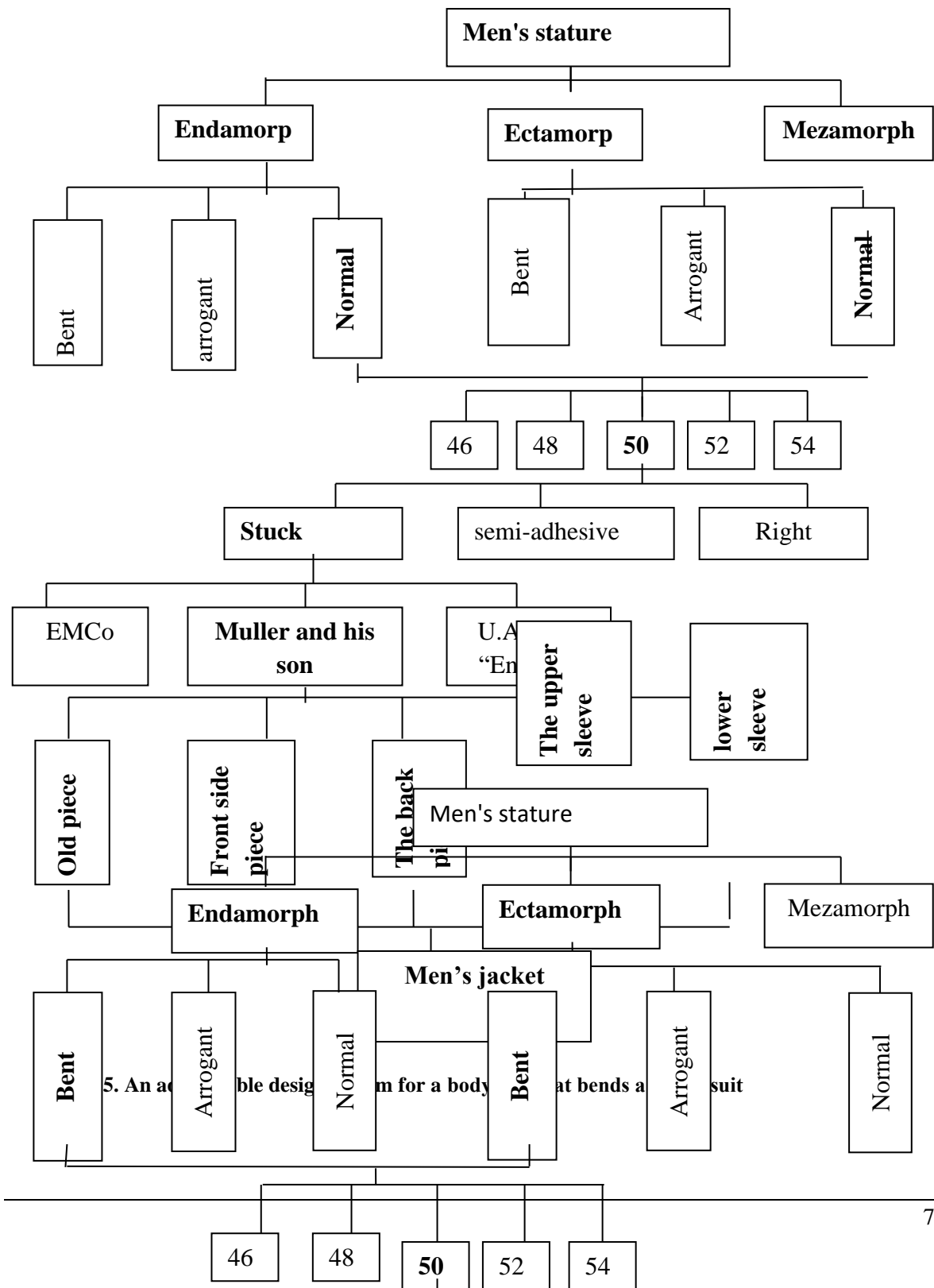
The results of the study show that the physical condition of the local population was the most 41% normal, 33% arrogant and 26% obese. It is obvious that the main task of scientific research is to develop a solution for the design of men's suits, depending on the physical condition of the population.
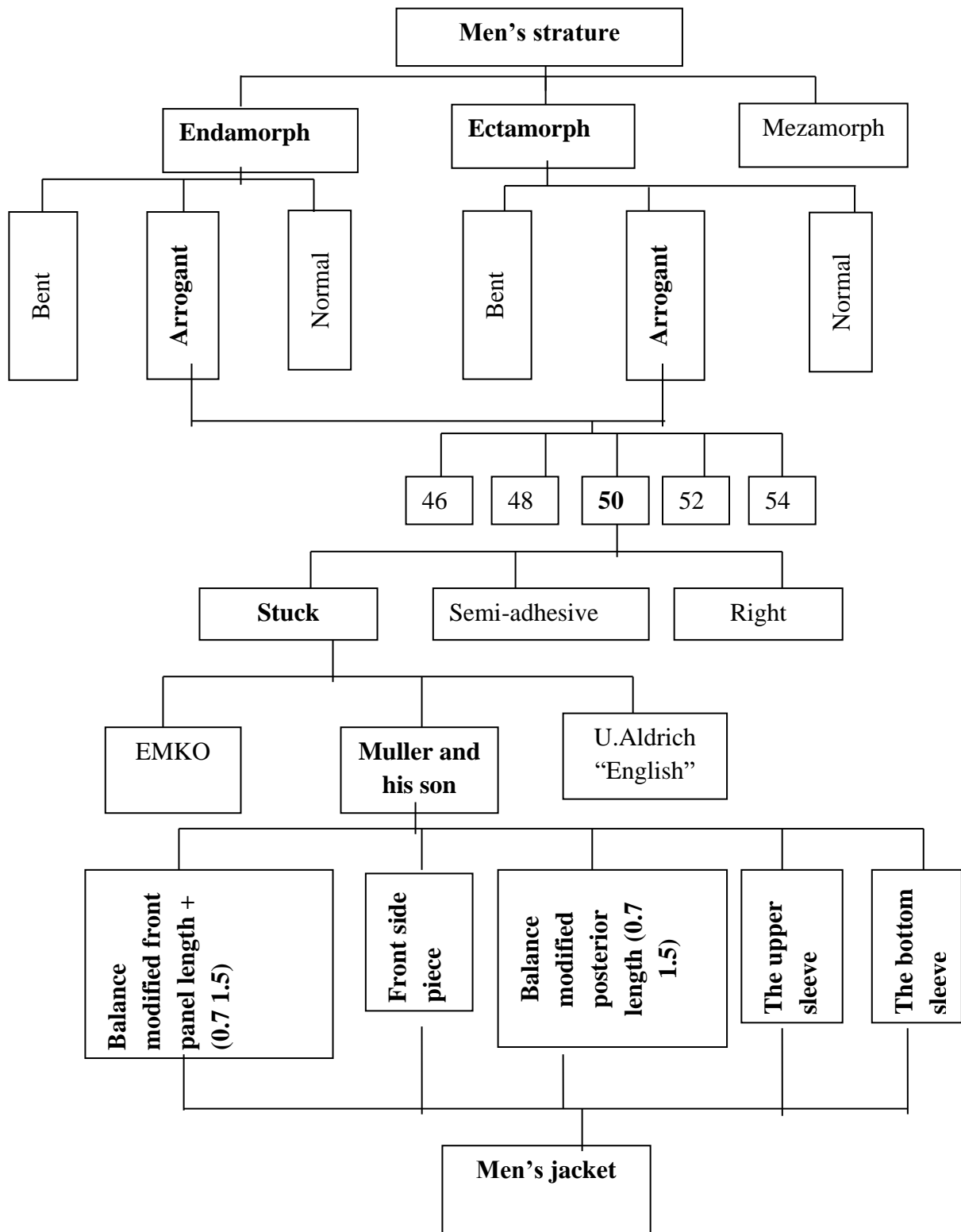

Figure 6. An addressable design system for a man's suit's arrogant figure

The solution to the task of addressing the design of men's suits. A table of size and height scales for men's suits was compiled based on the size values of men's body size (Table 1), which shows the percentage of size and height

corresponding to each other, with the aim of knowing how many sizes and heights are most common in the 18- to 35-year-old population [4 -5].

Table 1
Size and height scale for men's suit

Size, cm	40		42							
Height, cm	III	IV	I	II	III	IV	V			
Recommended percentage of size and height,%	0.75	1.25	0.75	1.25	3	2.5	1.25			
Size, cm	44				46					
Height, cm	II	III	IV	V	II	III	IV	V	VI	
Recommended percentage of size and height,%	0.75	2	5	1.75	2	8.25	7.5	2.25	0.25	
Size, cm	48					50				
Height, cm	II	III	IV	V	VI	II	III	IV	V	VI
Recommended percentage of size and height,%		8	8.75	3.25	1.25	0.5		10.25	5.25	2
Size, cm	52					54				
Height, cm	II	III	IV	V	VI	II	III	IV	V	
Recommended percentage of size and height,%	0.5	1.25	1.25	0.25	0.75	0.5	1.25	1	0.5	

The results of the survey among the respondents show that the local population was 48-50, with the III and IV height indicators being the most common in men aged 18 to 35 years. According to the results of size and height scale, the most common 50-dimensional IV height was 10.25%, and 48-dimensional IV height was 8.75%.

Hence, it is recommended to design a men's suit that adheres to the body for sizes III and IV in sizes 48-50. When designing a men's suit, it should be borne in mind that for mass production of sizes III and IV, sizes 48-50, are intended only in accordance with the standard figures.

Ease of processing of the garment design of the address design allows to spend the minimum cost of constructive and technological preparation in manufacture, application of advanced technological methods in production streams; the result is a constructive solution of details, assemblies and products that provide high productivity and minimum cost.

The most important aspect of address design is the systematization of the production process. Proper and precise implementation of the system in targeted design simplifies the production process and reduces time spent.

In the research work, a part of this system was implemented and its address was determined. The convenience of the system is easy and quick to design when the customer orders the body structure, product dimensions, product silhouette, product design and other information when ordered by the customer. The targeted design system for men's suits for normal, arrogant, and curvy bodies has been studied for endamorphic, i.e., short-legged, ectamorphic - long-legged, mesamorphic - broad-shouldered male body types. The system of addressing the design of men's suits for different shapes is developed in Figures 4.5 and 6.

In this system, 3 addressees are shown, the differences of which vary depending on the body position. Changes in body position affect the front and back of the item. This change is related to the length of the piece, and if the distance from the normal stand to the spine while standing is 8.1 cm, more or less than 8.1 cm, the front of the piece will be long or short. The fact that the body position is 2 cm larger or smaller than the normal body position affects the length of the item by 0.7-1.5 cm.

The men's suit was designed with the address in mind, taking into account the body structure of the body. The correct and accurate implementation of the system in the design of the address simplifies the production process and reduces the time spent.

The main purpose of clothing construction is to create a spatial shape from a flat material, or the reverse solution of this problem is to build a distribution of clothing details given in the sketch, model example.

The drawing of the product is characterized by the construction of the model given in the sketch on the basis of the dimensions of the figure and the corresponding additions.

Recently, various design methods have become widespread in the sewing industry. In order to select the optimal option for the targeted design of men's suits, a men's suit design was built using 3 different methods. They are: "EMKO (SEV)" [6], "Müller i Syn" [7] and U. Aldrich's "English" [8] methodology.

These techniques were chosen because they were widely used in the construction of men's suit designs. The table below provides an analysis of the widths of the posterior lobe, most lumbar, and anterior lobe sections in 3 different methodologies (Table 2).

Table 3 provides an analysis of chest circumference values and their additions in 3 different methods.

Table 2
Analysis of the width of the posterior lobe, most lumbar and anterior lobe parts of the item

Methodics	Back width	Sleeve	Front width
Emko(SEV)	22.7	15.8	21.7
Myuller and his son	21.9	17	22
English	22.5	15.6	21.9

Table 3
Analysis of breast circumference and its appendix

Methodics	Chest circumference	Chest circumference appendix
Emko(SEV)	60.15	10.15
Myuller and his son	61	11
English	60	10

The analysis of ergonomic correspondence, convenience of construction, accuracy of calculations of methods TsOTShL, EMKO SEV and EMKO TsNIISHP was investigated and carried out. The research results are shown in the form of a diagram (Fig. 8)

It can be seen from the diagram that in the methodology of the COTSL, the ergonomic compliance was 85%, the convenience of construction was 79%, and the accuracy of calculations was 83%. The EMCO method SEV showed an ergonomic correspondence of 80%, ease of construction 92%, and an accuracy of calculations 85%. The EMKO TsNIISHP method showed an ergonomic compliance of 82%, ease of construction 85%, and an accuracy of calculations 85%. Comparative analysis showed that high accuracy of construction was not achieved by any of these methods.

The most progressive form of designing industrial products is the use of unified basic structures. The basic designs of special clothing developed by TsNIISHP in the form of technical conditions are convenient for construction, have a good fit on the human figure, and are reliable in the same way as the first-order formulas are used. A distinctive feature of the TSOTSL methodology is the use of direct measurements by the customer and constructive increments in determining the sizes of structural sections, as well as the absence of proportional calculations. The technique is convenient when designing clothes for an individual customer.

The EMKO CMEA technique is very convenient for construction, since the symbolism and designation of construction points are given in numerical terms.

To achieve the set task, it is necessary to create a unified baseline that allows you to reduce the time for design development, as well as a high-quality baseline.

The analysis shows that today there is an opportunity to choose different methods of construction. They all differ in both the number of input dimensions and the sequence of calculation and structure. However, today there

is no single opinion about their effectiveness in designing men's suits. Therefore, in the development of the basics of the design of men's suits, their experimental examination is very important to confirm the suitability of this or that methodology.

According to the results of the research, the best choice for the construction of men's suits is the method of "Mueller and his son", which is superior to other methods due to its convenience and beautiful appearance.

The general and universal feature of the methodology is the method of determination and identification of the main set of constructive sections. The set of cuts is repeated in any type of clothing, divided into two parts for the upper and lower parts of the body.

3. Conclusion

1. In the targeted design of the men's suit, taking into account the body structure of the body, the size parameters were studied in the men of the local population aged 18 to 35 years.

2. The physical condition of the local population was studied and analyzed among the respondents. According to him, 41% are divided into normal, 33% arrogant and 26% bent.

3. Size and height scale were developed for men's suit. It was found that the most common size 48-50 with height indicators III - IV. According to the results of size and height scale, the most common 50-dimensional IV height was 10.25%, and 48-dimensional IV height was 8.75%.

4. An address design system has been developed for a men's suit with a normal, arrogant and curvy figure. It was found that the differences between them vary depending on the body position and as a result affect the front and rear parts of the item.

5. Methods of clothing design for targeted design of men's suits were analyzed and the optimal method was recommended.

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