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# “Selection of the Optimal Design of Women’s Fur Outerwear”

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**ABSTRACT:** This article describes the styles, modeling features of women's fur products, the definition of consumer requirements and trends in the formation of women's upper fur products. The following characteristics were selected as the leading signs for choosing the optimal design of women's upper fur products: color, silhouette, pattern, look, decoration. Ways to achieve the extension of the product range by improving its quality.

**KEYWORDS:** Clothing, fur products, tailoring, collection, trends, formation, colors, consumer.

## I.INTRODUCTION

Taking into account harsh continental climatic conditions, the production of various garments made from natural fur, including karakul (astrakhan fur), is developing in the Republic of Uzbekistan.

A number of scientific achievements can be noted in the field of designing fur products: the need for the development of designs for fur products based on a set of properties of fur is determined (All-Union House of Knitwear Models, Central Experimental Technical Sewing Laboratory). Methods have been developed for constructing reamer drawings of details of fur products according to body dimensions [1], principles have been developed for designing fur products taking into account the molding properties of fur [7].

The styles of fur and sheepskin-fur products, that is, their cut and shape, can be very diverse depending on the age and sex group, fashion direction, purpose of the product, type of semi-finished product and method of cutting it.

Modeling and designing of fur products has its own characteristics due to the fact that fur is a specific material that does not allow to obtain the shape of parts due to wet heat treatment. In textile materials, only the model dictates the number of details and parts of clothing. In fur products, the number of details, in addition to style, is determined by the area of the sheepskin.

When modeling and decorating fur products, the physique and proportions of a person’s body at different periods of his/her development are taken into account. In addition, clothing must meet hygienic, aesthetic, economic requirements.

Given this, it is advisable to make clothes from light, fluffy and cheap skins. The skins can be natural, dyed, sheared, ordinary and special processing. All types of skins are used with natural or artificial coloring.

The color of the fur plays a major role in modeling fur clothing. A successful selection of fur skins by color and originality of their location on the coat allows to create new models.

When choosing the form of fur clothing, the main attention is paid to the texture of the hairline and mainly its height, which is of paramount importance in the visual perception of the mass of clothes. Therefore, in products, long-haired fur is mainly used for details such as a collar, cuffs, furnish, and other finishing products.

Coats and short coats are designed with a central or offset fastener of a straight semi-adjacent, silhouette extended downward, with various shapes of sleeves and collars, hoods, with straps or belts. Silhouettes with an underlined waistline can be used. Product length to the knees, above and below the knees. The waist line is located in a natural place and can be emphasized by cut, decorative means (belt, cord, chain, etc.). Fur coats are created according to the principle of placing skins in a coat for women. To create a three-dimensional shape of the products, seams and tucks are used. A typical coat scheme is a product with set-in sleeves (Figure 2). A coat with a turn-down collar and detachable lapels.

. Sleeves in such products are single-seam and two-toned, set-in, raglan, half-raglan. Sleeves are usually straight, narrowed, can end with cuffs of various shapes. Figure 2 (a) shows a structure with a complex cut of skins with a tucked-out two-seam sleeve with an upper and lower seam. The upper seam is necessary in this case in order to position the skins at an angle.

When designing products with raglan sleeves, the typical layout with almost no changes can be used or the sleeve may have a division (Figure 2B). Coat with a clasp to the top and a hood.

In products with a transverse arrangement of skins, the basic scheme of the raglan cut design changes. The scheme proposed in Figure 2 can be used in designing, for example, a coat with a hood and raglan sleeves made of non-plucked nutria fur. The upper parts of the sleeves, moved to the upper parts of the front and back, make it possible to arrange whole skins in the upper parts of the front and back. Tucks on the front and back are placed in the seams of the connection of the skins. Under the board completely cut with the front.

When designing a model with a transverse arrangement of skins, a typical coat design with completely cut sleeves can be used (Figure 2C). Coat with a shawl collar. The front and back of the whole-cut sleeves are cut off from the upper parts of the front and back. The front and back of the sleeves are combined along the upper line and get a single-seam sleeve. The upper tuck is moved to the armhole and placed in the seam of the connection of the skins. A tuck on the back is placed in the armhole in the seam of the connection of skins.

The design of the sleeve can be of combined cut. For example, Figure 2 shows the design of a coat with combined sleeves made of fur like columns. Closure to the top, turn-down collar. The location of the skins on the back and sleeves is "herringbone", and on the front is horizontal. When designing a model, a typical design can be used. Chest tucks, pockets, as well as tucks on the back of the sleeves are located at the seams of the skin joint.

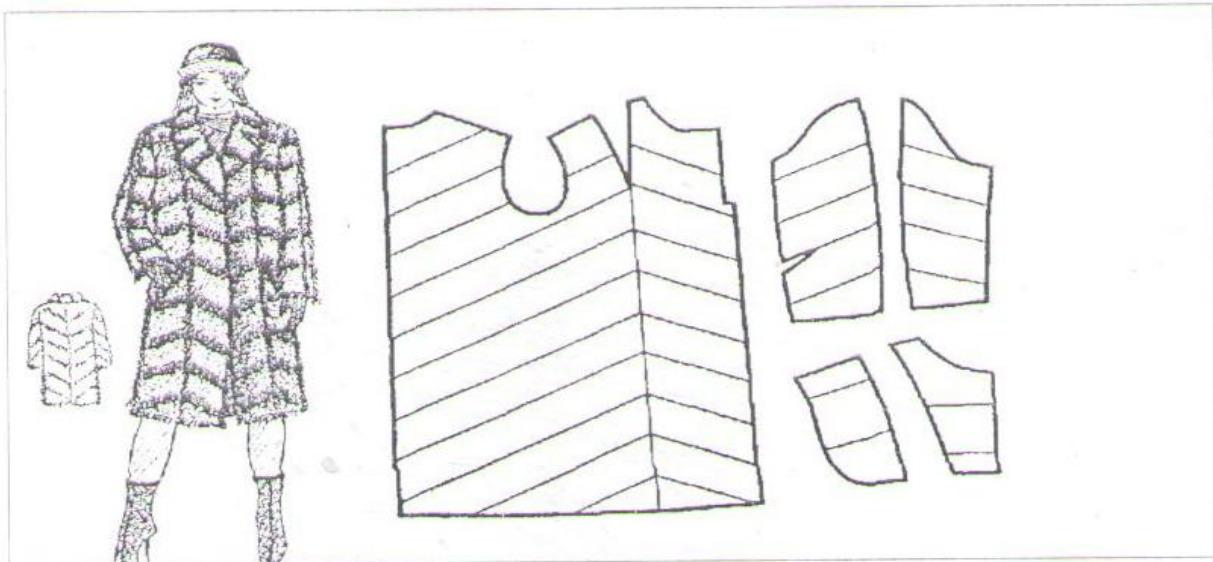


Figure 2 (a). Design with a complex cut of skins with a set-in two-seam sleeve

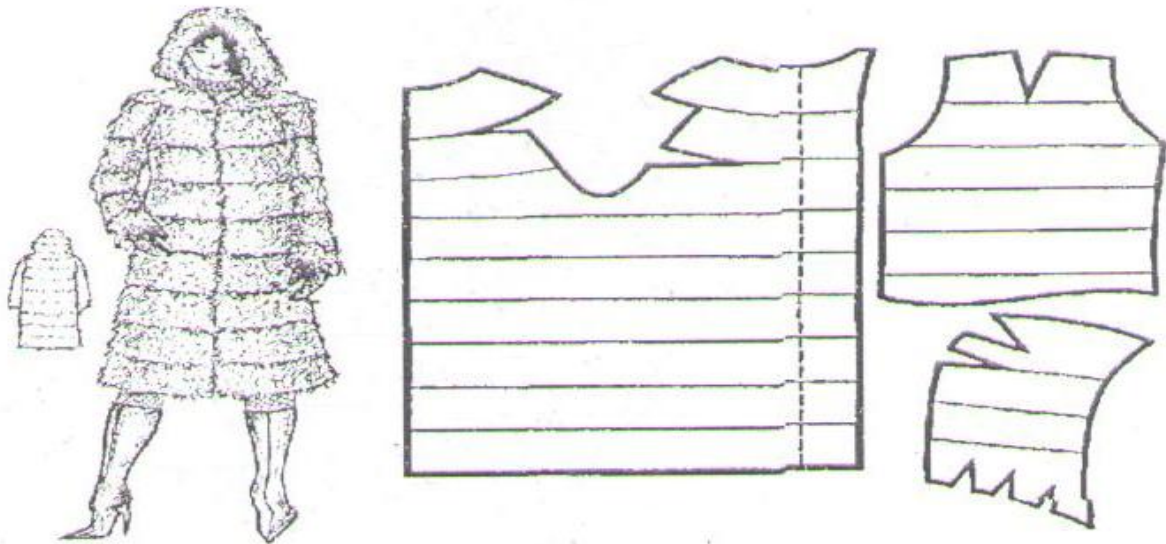


Figure 2 (b). Coat with zipper to the top and hood

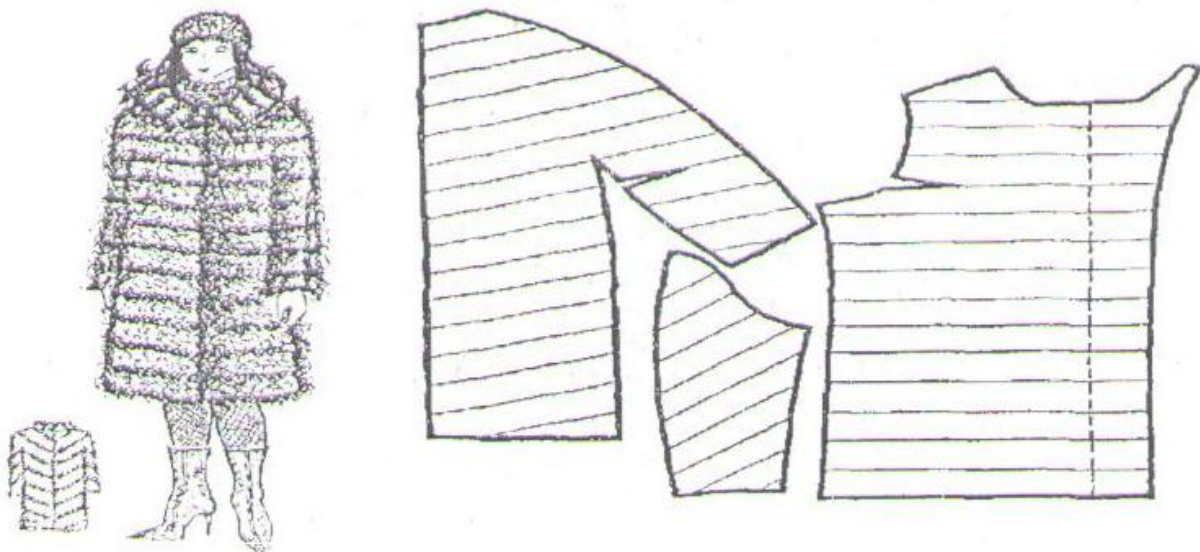


Figure 2 (c). Coat design with one-piece sleeves and a shawl collar

## II. EXPERIMENTAL PART

The following were selected as the leading features of women's upper fur clothing: color, silhouette, pattern, type of decoration. Highlighted signs form the basis for the drafting of a questionnaire for marketing research.

In this work, the purpose of marketing research was to determine consumer requirements and trends in the formation of women's upper fur clothing. To get the results, the front error, not exceeding 5%, the sample size must be at least 400 people [7].

As an object of study, an assortment of women's upper fur clothing was chosen: a short coat, a coat. The survey was conducted in 2017 among business women entrepreneurs, teachers, doctors, intellectuals and students, since this particular group of respondents is the most attractive for women's clothing manufacturers.

The survey covered 130 women living in the city of Bukhara aged 18 to 60 years. A special questionnaire was developed for (P2). Statistical processing of the results was carried out at the Computer Science of Bukhara

Engineering and Technology Institute by Access -2000 software. The characteristics of the consumers surveyed are shown in table 1, figure 3 through 9.

**Table 1. Univariate distribution of preferences and socio-demographic characteristics of consumers surveyed**

Designation of characteristics, options	Code	Preference frequency	
		Relative value (%)	Absolute value
Age:			
18-25	1	23.0	99
26-35	2	26.0	112
36-45	3	27.2	117
45 and older	4	23.7	102
Place of residence:			
Bukhara		53.4	230
Ethnicity:			
Uzbeks	U	48.0	210
Kyrgyz	K	12.0	50.0
Tadjik	T	7.0	30.0
Russians	R	24.0	105
Tatars	T	9.0	35.0

As can be seen from table 1 and the histograms constructed, the majority of respondents (27.2%) aged 36-45 years, 18-25 years old - 23%, 26-35 years old - 26% of middle age and 23.7% of older age. Most of them relate to local nationality - 81.8% and only 18.1% to European nationality.

### III.RESULTS AND DISCUSSION

Analysis of the results of the survey at the place of work and occupation of the respondents showed that many of them are employees: economists, engineers, entrepreneurs, business staff and employees of government agencies. Most women prefer the classical style in clothes - 68.6%; romantic style (delicate, feminine things).

As for the issue of colors for fur clothes, the majority of respondents preferred saturated, calm colors and combinations. The choice of colors was associated with a particular type of clothing made of fur, the age group of the respondent and the purpose of the products.

Eight colors are leading: white (18.2%), black, beige and silver (14.4%), brow (13.2%), grey (12%), yellow (2.7%), khaki (11%). It should be noted that most of the respondents prefer a short coat. Since most of the respondents were business women, the answers corresponded to their lifestyle.

For business meetings (restaurant, office) they prefer a short coat that goes well with two subject suits: a skirt-jacket, a jacket-trousers that can be combined with each other.

The results of the survey on preferred types of clothing made of fur were divided as follows: among youth and middle-aged women, the short coat turned out to be the most popular type (41.3%).

Many sociological studies considered important characteristics of respondents: education, work situation, comfort, age, income, and type of body.

**Table 2.** Data on the tightness of the correlation between the biosocial characteristics of the respondents with the characteristics of the fur clothing model

No.	Model characteristics (variables)	Biosocial characteristics of the respondents					
		Education	Work situation	Income	Comfort	Body type	Age
1	Style	0.90	0.95	0.41	0.35	0.26	0.74
2	Silhouette	0.74	0.77	0.60	0.84	0.29	0.48
3	The cut of the sleeves	0.86	0.48	0.52	0.69	0.27	0.42
4	Length of the product	0.96	0.84	0.83	0.69	0.47	0.62
5	Composition elements	0.85	0.60	0.78	0.78	0.57	0.62



6	Color	0.84	0.88	0.53	0.38	0.56	0.83
7	Type of the fur	0.86	0.90	0.56	0.93	0.54	0.83
8	Education	-	0.95	0.82	0.86	0.52	0.70
9	Work situation	0.95	-	0.47	0.82	0.58	0.70
10	Income	0.82	0.86	-	0.72	0.61	0.76
11	Comfort	0.83	0.89	0.71	-	0.73	0.69
12	Body type	0.34	0.25	0.52	0.37	-	0.65
13	Age	0.67	0.70	0.82	0.78	0.64	-

It should be noted from the analysis of the tables that some biosocial characteristics of the respondents' personality are closely related. This is because the influence of the above factors duplicates each other, and one pair of factors explains the change in the result under the influence of the second factor.

For example, for the couple comfort [1] and education, the correlation score is  $B_{v*3} = (0.83)^2 - 100 = 69$  or for color and education  $B = (0.84)^2 - 100 = 70$

The sum of the correlation points for each factor is a numerical expression of the total variance of the resultant attribute explained by this factor. The correlation factor bears the greatest load in this system. The calculation results are shown in table 3.

**Table 3.** Correlation of the biosocial characteristics of the respondents with the characteristics of the fur clothing model

The requirement for a model of clothing made of fur	Biosocial characteristics of the respondents					
	Education	Work situation	Income	Comfort	Body type	Age
Style	81	90	17	12	7	55
Silhouette	55	59	36	70	8	23
The cut of the sleeves	74	23	29	48	7	18
Length of the product	90	70	68	61	22	38
Composition elements	72	36	61	61	32	38
Color	70	77	21	14	31	69
Comfort	69	48	31	86	29	69
<b>Total points</b>	<b>511</b>	<b>403</b>	<b>269</b>	<b>339</b>	<b>136</b>	<b>310</b>

As can be seen from table 3, the education, the situation associated with work, the comfort and age of the respondents account for the largest part of the fluctuations in consumer requirements when choosing fur clothes.

Thus, as a result of marketing research, the following was established:

- top fur items made from karakul (astrakhan fur) must be in the form of a short coat;
- when modeling fur products from karakul (astrakhan fur), it is advisable to use the classic style;
- consumers prefer mainly artistic and constructive signs: length, silhouette, color;
- the most appropriate form of fur products from karakul are adjacent and straight silhouettes.

#### IV. CONCLUSION

1. Analysis of existing methods for designing fur products showed the need for their significant adjustment in the design of the shape and design of fur products that differ in properties from analogues. New methods for designing fur products should be based on in-depth knowledge of the properties of materials, on the one hand, and ergonomic studies of the dynamic properties of products on the other.
2. Modeling and designing of fur products has its own peculiarities due to the fact that fur is a specific material that does not allow obtaining the shape of parts due to wet-heat treatment. In textile materials, only the model dictates the number of details and parts of clothing. In fur products, the number of parts, in addition to style, is determined by the area of the sheepskin.
3. The main artistic and constructive signs of designing top products from karakul (astrakhan fur) were developed on the basis of a marketing research of consumer demand.



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4. The design is developed and the rational design parameters of the armhole-sleeve unit of women's fur clothes are determined using the mathematical theory of the experiment.

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