



“AESTHETIC PROPERTIES AND HAND FEEL OF FABRICS AS CRITERIA FOR COMPREHENSIVE ASSESSMENT OF TEXTILE QUALITY”

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Abstract. *The article examines the main aesthetic indicators of fabrics and analyzes their influence on the quality of textile products. The role of appearance, color, texture, luster, and drapeability in shaping the consumer properties of textile products is discussed. It is shown that aesthetic characteristics are an important factor in the competitiveness of textile products and are directly related to their performance and functional properties.*

Keywords: *textile products, aesthetic indicators, functional properties of fabrics, color properties of fabrics, fabric hand feel, fabric drape, indicators of aesthetic value, consumer value.*

Introduction. Aesthetic indicators are an integral part of the comprehensive assessment of fabric quality and reflect their ability to satisfy the artistic, aesthetic, and emotional needs of consumers. These indicators represent a set of properties that characterize the appearance and artistic expressiveness of a material. They are determined both by the natural characteristics of fibers and by the fabric structure, type of weave, finishing, and dyeing.

The main aesthetic indicators of fabrics include color and color properties. Color is one of the most important aesthetic indicators, exerting a psychological impact on consumers. The harmony of shades,

color saturation, and resistance to washing and light directly affect the quality and durability of textile products.

Texture and surface structure also play an important role. The texture of a fabric is determined by the type of weave, the thickness of the yarns, and the nature of the finishing. A smooth, grainy, or embossed surface affects both the visual and tactile perception of the material, which in turn influences its perceived quality, functional suitability, and area of application.

The luster of a fabric depends on the nature of the fiber and the finishing processes applied. Depending on its intensity, luster can enhance the decorative characteristics of the material or create an effect of restraint and subtlety, which is particularly relevant for functional and apparel products.

Drapeability characterizes a fabric's ability to form soft folds and waves. This indicator is especially important for garments, as it determines fit, silhouette, and wearing comfort. Aesthetic indicators are closely related to the performance properties of fabrics. For example, uneven coloring or structure reduces not only the visual appeal but also the overall quality assessment of the product. Good drapeability and a pleasant hand feel enhance garment comfort, which positively affects their consumer value.

Moreover, aesthetic characteristics play an important role in shaping the brand image and market appeal of textile products. Items with high aesthetic quality are perceived as more valuable, modern, and competitive.

Literature Review. In the field of evaluating the aesthetic indicators of textile materials, numerous studies have been conducted by

both international and domestic researchers. In a number of review papers¹, the aesthetic properties of fabrics are considered as a set of visual characteristics—such as style, texture, drapeability, and shape retention—that influence the perception of a product’s appearance and attractiveness. It is noted that aesthetic indicators are closely related to the functional properties of fabrics and can be improved not only through traditional finishing methods but also through modern technological approaches.

The study “*Aesthetic Properties of Fabrics, Weave Structure, and Fabric Quality*”² is devoted to the evaluation of the aesthetic properties of small-pattern woven materials used in clothing. It includes an analysis of the influence of weave types and structural parameters on the visual qualities and consumer properties of fabrics.

The authors of a study³ on the design of aesthetic parameters of materials proposed a method for producing denim with predetermined drapeability, which is one of the key aesthetic characteristics of a fabric—its ability to fall gracefully and shape the silhouette of a garment.

The relationship between aesthetic and ergonomic properties is discussed in the study “*Ergonomic and Aesthetic Approaches in the Development of Children’s Clothing Models*”⁴, emphasizing their

¹ Review on Functional and Aesthetic Properties of Textiles Vol. 6 No. 3 (2021)

² Ortiqov, O.A., & Tadjieva, S.A. (2025). *Assessment of the Aesthetic Properties of Apparel Fabrics*. In *New Research in Yangi O'zbekistan*. Tashkent Institute of Textile and Light Industry, Uzbekistan.

³ Rakhimkhodzhaev, S. S., Sobirova, G. N., & Asanov, E. R. (2022). Designing the aesthetic properties of denim fabric according to a given drapeability. *ResearchJet Journal of Analysis and Inventions*.

⁴ Yuldashaliyeva, Z.O. (2025). *Ergonomic and Aesthetic Approaches in the Development of Children’s Clothing Models*. *Journal of Science-Innovative Research in Uzbekistan*.

interconnection and their influence on the overall assessment of fabric quality.

Existing data on consumer demand for fabrics and textile products indicate that in recent years the importance of aesthetic design has been increasing. These requirements are increasingly taking priority, often surpassing demands for durability and even hygiene. Despite the significance of aesthetic indicators and hand feel, their influence on the comprehensive assessment of fabric quality remains insufficiently studied.

Research Methods. The evaluation of the aesthetic characteristics of fabrics was carried out using expert and sociological methods. As a methodological basis, the technique for determining the aesthetic value and hand feel of textile materials, developed and presented in the works of Professor V. P. Sklyannikov,⁵ was employed.

Analysis and Results. Composite indicators for groups of properties, as well as integral indicators of aesthetic value and hand feel, were calculated based on assessments obtained from experts and respondents, taking weighting coefficients into account using the geometric mean method.

The average values of the weighting coefficients for evaluative characteristics were distributed as follows: suitability for purpose — 0.28; fashionability — 0.16; novelty and originality — 0.18; compositional integrity — 0.11. The weighting coefficients for physico-morphological properties were as follows: color and pattern — 0.32; stiffness — 0.18; luster and transparency — 0.21; texture — 0.16; hand feel — 0.13.

⁵ Sklyannikov, V.P. (1998). Assessment of the Aesthetic Properties and Hand Feel of Textile Materials. Moscow: "Economika".

Analysis of the obtained data showed that, when evaluating aesthetic value, consumers primarily focus on color and pattern, luster, and the fabric's suitability for its intended purpose, as well as its alignment with national traditions.

The aesthetic value indicators (Em), determined by experts, ranged from 0.50 to 0.86. Among the studied fabric samples, 37.5% received an "excellent" rating (Em = 0.76–1.00), while 62.5% received a "good" rating (Em = 0.51–0.75).

Respondents' ratings for the Em indicator ranged from 0.60 to 0.80: 31.3% of the fabrics were classified as "excellent," while 68.7% were classified as "good."

The overall composite indicators of the aesthetic value of fabrics generally fell within the middle and lower ranges of the "good" and "excellent" categories. The main reasons for lower scores were incomplete alignment with national traditions and fashion trends, as well as insufficient novelty and originality. The hand feel of fabrics is an important criterion in their aesthetic and consumer evaluation. The results of the expert analysis showed that the hand feel indicator ranged from 0.50 to 0.86: 40% of the samples were rated as "very pleasant," 53.3% as "pleasant," and 6.7% as "moderately pleasant."

Respondents' evaluations ranged from 0.57 to 0.80: 20% of the fabrics were characterized as "very pleasant," 73.3% as "pleasant," and 6.7% as "moderately pleasant."

The decrease in hand feel indicators is mainly due to increased stiffness, hardness, and density of the fabrics, which do not fully correspond to the conditions of a hot and dry climate.

A correlation analysis was conducted to examine the relationship between the aesthetic value of fabrics and their physico-morphological properties (color, pattern, luster, transparency, stiffness, drapability, texture, and hand feel), as well as their suitability for purpose, alignment with national traditions, fashion trends, novelty, originality, and compositional integrity. The identified relationships were linear in nature. The correlation coefficients were high (0.87–0.98) for almost all indicators, except for relationships with national traditions and fashion (0.60 and 0.65, respectively). This indicates that not all of the studied fabrics fully meet the aesthetic criteria.

Mathematical processing of the results of the aesthetic value assessment revealed a strong correlation ($r = 0.85$) between expert and respondent evaluations. This confirms the possibility of using the expert method as a reliable and less labor-intensive approach to studying consumer preferences, especially when evaluating new products and materials.

Conclusions and Recommendations. Based on the conducted research, it has been established that the demand for fabrics is determined not by the entire set of their properties, but primarily by their aesthetic characteristics and hand feel, which consumers are able to assess organoleptically. When evaluating aesthetic properties, the greatest attention is paid to color and pattern, as well as to the fabric's suitability for its intended purpose, its alignment with national traditions, and the preferences of the regional population. These indicators have a decisive influence on the overall aesthetic value of fabrics.

Thus, aesthetic indicators represent a crucial component of the comprehensive assessment of fabric quality. They significantly influence consumer perception, product competitiveness, and compliance with modern market requirements.

Based on the results of the study, and in order to supply the market with high-quality and affordable domestically produced fabrics that meet national traditions, current fashion trends, and consumer demands, the following recommendations are proposed:

- In fabric production, particular attention should be paid to aesthetic property indicators that are most important to consumers, namely: color design, pattern, surface texture, as well as compliance with national traditions and current fashion trends.

- To increase the consumption of domestically produced fabrics, it is advisable to expand the product range by incorporating national patterns and traditional color schemes targeted at different consumer segments.

- When designing new types of fabrics, it is recommended to apply the expert survey method as a reliable and cost-effective tool for assessing the aesthetic value of textile materials and forecasting consumer preferences.

The application of this approach helps reduce risks associated with the introduction of new products to the market and enhances their demand.

References

1. Valieva, M.R. Consumer Properties of Textile Materials. Tashkent, 2021.

2. Kuznetsova, L.A. Materials Science in the Textile Industry. Moscow: Legprom, 2020.
3. Tokhirova, D.A. The Influence of Fabric Structure on Their Aesthetic Properties. Textile Industry, No. 3, 2023.
4. ISO 9001:2015. Quality Management Systems – Requirements.
5. GOST 3811-2019. Textile Fabrics – Methods for Determining Appearance.