

**A NEW INTERPRETATION OF CLASSIC FURNITURE DECORATIONS
BASED ON NATIONAL MOTIFS: ANALYSIS AT THE INTERSECTION OF
ARCHITECTURE AND DESIGN**

Zafar Matniyazov

Zuxra Abduraxmonova

Tashkent University of Architecture and Civil Engineering

Abstract: *This scientific article investigates the compositional, tectonic, and ergonomic synthesis patterns between classical furniture styles and traditional national motifs of Uzbekistan in modern interior design. In the context of globalization, preserving cultural identity and adapting it to contemporary spaces is one of the critical challenges in architecture and design. The research is based on the IMRAD structure, analyzing the integration of Uzbek traditional patterns (girihi, islami) into classical European furniture forms (neoclassicism, baroque, and empire). Through comparative analysis, grapho-analytical methods, case studies, and visual design modeling, the study developed geometric and proportional rules for incorporating traditional motifs into furniture architectonics. The results indicate that the linear geometry of girihi patterns demonstrates the highest level of visual compatibility with the strict tectonics of neoclassical forms, while the biomorphic characteristics of islami patterns harmonize with curved furniture elements. In conclusion, practical recommendations for applying national motifs to classical furniture and directions for future design research are outlined. The findings of this study can serve as a practical guide for architects, interior designers, and furniture industry professionals. The developed principles can be integrated into designer training curricula and implemented in furniture production.*

Keywords: *Classical furniture, national motifs, interior design, ornamentation, compositional synthesis, ergonomics, architectonics.*

INTRODUCTION

In modern architectural and interior design practice, against the backdrop of globalization trends, the demand for solutions expressing local cultural identity is steadily increasing. The interplay between historical experience and contemporary technologies has become a key factor in creating new aesthetic and functional values. Recent scientific research indicates that furniture design based on cultural orientation not only satisfies aesthetic needs but also revitalizes society's historical memory (Huang et al., 2025). One of the essential tasks facing the builders of New Uzbekistan is precisely the development of design solutions that are internationally competitive, innovative, and rooted in cultural heritage while maintaining national identity. In this process, the issue of reinterpreting traditional decorations, particularly ganch and wood carving compositions formed over centuries in Uzbekistan and widely used in interiors (Shkolna et al., 2024), in the design of furniture—a primary element of residential and public building interiors—acquires special relevance. Therefore, integrating the achievements of the time-tested Western classical

furniture school with the rich ornamental traditions of the East is of significant scientific and practical importance for contemporary architectural and design theory.

The aim of the research is to develop new design principles and compositional models for modern interiors based on the synthesis of classical furniture forms and Uzbekistan's national patterns (girihi and islami). To achieve this goal, several interrelated tasks were defined. First, a comparative analysis of the morphological and tectonic structure of classical furniture carving and traditional Uzbek patterns. Second, identification of ergonomic and constructive regularities for adapting national motifs to the load-bearing and decorative elements of furniture. Third, implementation of visual design modeling based on the obtained analytical data and formulation of criteria for introducing optimal design concepts into practice.

The object of the study is classical-style furniture pieces and their decorative elements, as well as the ornamentation of Uzbek traditional folk applied arts. The subject of the study is the compositional, spatial-ergonomic, and functional patterns of harmonizing classical furniture forms with national motifs. The scientific novelty lies in the fact that, for the first time, the proportional system of patterns used in traditional ganch and wood carving has been scientifically and grapho-analytically adapted to the architectonics of classical furniture (based on the golden ratio and modular grids). The practical significance of the research is demonstrated by the fact that the obtained results and developed principles can be directly applied in furniture manufacturing enterprises, within startup projects for creating exclusive products, and in interior design practice, potentially increasing economic efficiency and aesthetic appeal. The conceptual foundations of compositional synthesis are presented in Figure 1.

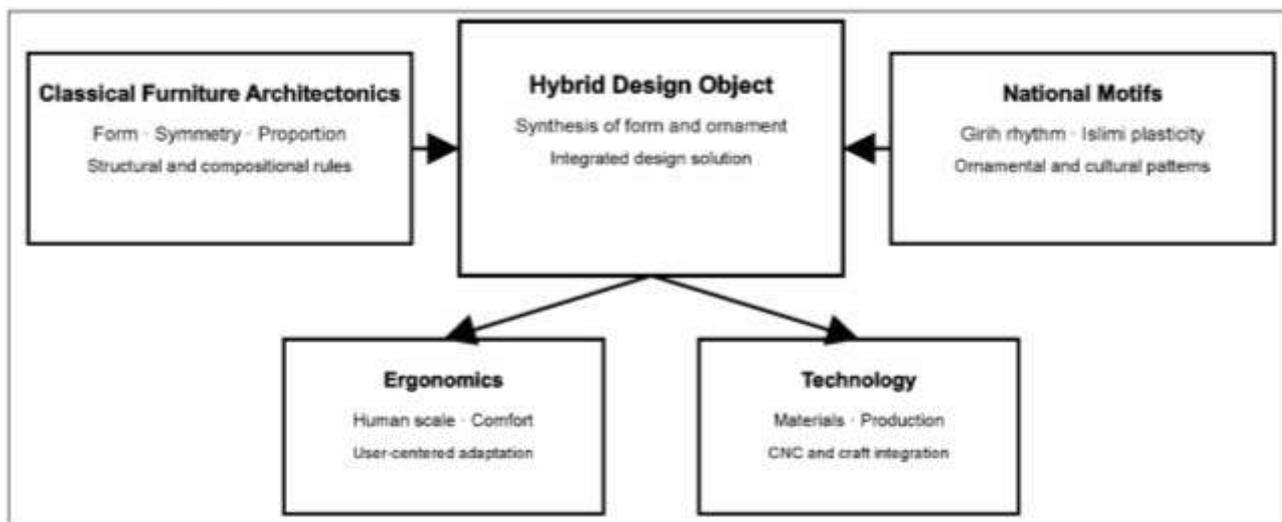


Figure 7. Conceptual framework of compositional synthesis. Source: developed by the author.

METHODS

A complex of integrated scientific and design methods was employed to achieve the research objectives and solve the defined tasks. At the initial stage, the comparative analysis method was used to study the objects in terms of form. Within this method, the architectonic structure and decorative system of European classical furniture (specifically, French and

Italian examples from the 17th-19th centuries) were compared with the decorations of traditional Uzbek architectural details (columns, arches, lattice screens). This process identified the specific visual centers of gravity, axes of symmetry, and hierarchy of ornament placement for each style. Particularly, the impact of decorative elements on human visual perception was studied in depth from the perspective of the overall interior atmosphere.

In the practical verification stage of the research, case study and design modeling methods were applied. Several examples currently being produced in Tashkent furniture



Figure 8. Grapho-analytical breakdown of national motifs on classic panels. Source: developed by the author.

workshops, combining classical and national elements, were selected as case studies. These included a set of straight-line neoclassical-style tables and chairs (with girih patterns) and baroque curved-line armchairs (with islimi patterns). Their ergonomic comfort, structural strength, and design integrity were critically evaluated. The design modeling methodology served to create new hybrid objects in three-dimensional (3D) space, test the physical properties of materials (wood texture, light and shadow play), and optimize the furniture's contact with the human body from an ergonomic perspective. This design process utilized the capabilities of visualization and immersive technologies widely implemented in modern architectural education and practice (Rakhmatillaeva & Matniyazov, 2025). At this stage, the thickness of each detail, relief depth, and corner radii were determined based on strict architectural standards. The grapho-analytical breakdown of national motifs on classical panels is shown in Figure 2.

RESULTS

The application of the complex methodology revealed several systematic regularities between classical furniture tectonics and Uzbek traditional ornamentation. First and foremost, the existence of clear boundaries regarding the compatibility of form and pattern type was confirmed. The strict rectilinear lines, symmetrical panels, and flat surfaces of the

neoclassical style harmonize excellently with the geometric grid of the girih pattern. Girih's precise mathematical system visually reinforces the constructive logic of the furniture. On the other hand, it was found that classical furniture with curved lines and dynamic shapes, incorporating baroque and rococo elements (e.g., curule legs, armrests, cabriole legs), integrates organically with the biomorphic, plant-like curves of the islami pattern. Due to its plasticity, the stems of the islami pattern create a natural flow along the complex curves of the furniture.

Ergonomic studies showed that carved elements based on national motifs on surfaces in direct contact with the human body (e.g., seat backs, the top surface of armrests) need to be lightened and the relief depth reduced according to special parameters. While the relief depth in traditional wood carving ranges from 15-25 mm, it was substantiated that on contact surfaces, this indicator should not exceed 3-5 mm for comfort and safety reasons, or should be entirely replaced with the incrustation (flat decoration) technique.

DISCUSSION

The obtained results indicate that the synthesis of classical furniture and national motifs is not merely a mechanical mixing of elements from different cultures but an intellectual process requiring deep architectonic and compositional harmony. The geometric compatibility principles developed during our research align with the results of similar cross-cultural design studies conducted in Near Eastern and European countries. For instance, foreign experts also emphasize the importance of using the art of compositional synthesis and strict mathematical grids when integrating Islamic and Andalusian geometric patterns into furniture fabrics and surfaces (Sulaimani, 2025). Furthermore, the trend of seeking national identity in furniture design has a global character. Representatives of other cultures are also conducting scientific research to reflect their cultural codes in modern furniture—for example, the distinctive "Indianness" characteristics in design (Pathan, 2024). However, the uniqueness of Uzbekistan's traditional patterns (specifically, the centrifugal and centripetal dynamics of pattern elements) differs from foreign experiences by allowing the creation of entirely new axes of symmetry in furniture composition.

Another important aspect identified in this study is that introducing traditional motifs into classical forms inherently creates an environment of psychological comfort. Even when people see national forms preserved in their genetic memory within the image of strict European classics, they find it easier to assimilate the space (our preliminary observations in this regard could serve as a basis for further psychological research). At the same time, certain limitations of the study must be noted. First, executing complex patterns through high-quality carving techniques sharply increases the cost of furniture, which may pose some difficulty for mass production. Second, when extremely fine pattern details are executed on an industrial scale using CNC (Computer Numerical Control) machines, there is a risk of losing the vitality and unique "warm" texture provided by hand craftsmanship. Therefore, designers will need to find compromise solutions regarding which details should be machine-made and which handcrafted. The formation of such a hybrid design direction could be a unique tool for creative youth and architects in Uzbekistan to showcase their

talents on the international stage. Entering global markets while preserving national identity is precisely achieved through such innovative syntheses.

CONCLUSION

This research has been a significant step in exploring the connection between classical furniture design and Uzbekistan's national ornamentation. Based on the analyses and design

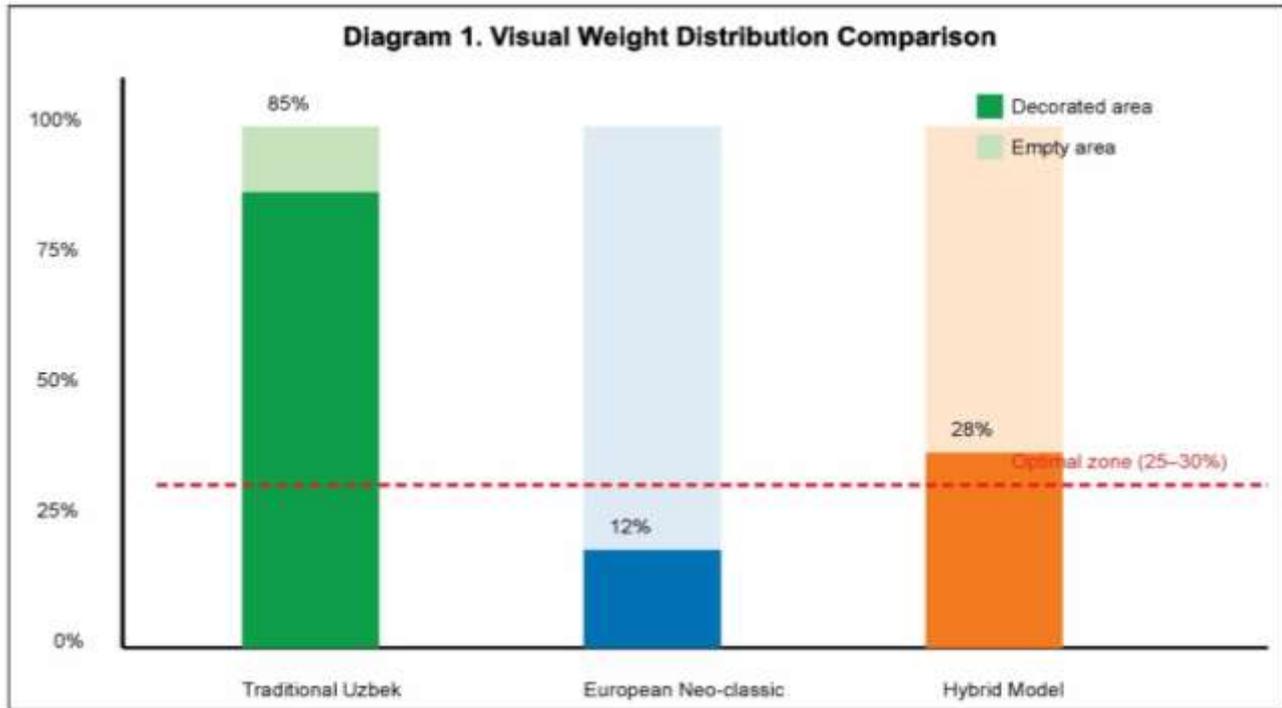


Figure 9. Comparative diagram of visual weight distribution across furniture typologies

investigations conducted, the following conclusions can be formulated. First, classical furniture and Uzbek traditional patterns can achieve complete architectonic and visual compatibility, with the correct choice of form (straight or curved lines) and pattern type (girihi or islami) being decisive. Second, to preserve the ergonomic qualities of synthesized objects, the depth and placement of decorative reliefs must be strictly adapted to the biomechanics of the human body. Third, such hybrid furniture serves not only as a functional item in the interior but also as a powerful carrier of aesthetic and cultural codes. Quantitative analysis of the distribution of decorative and empty area confirms these qualitative observations Figure 3

The final principles scheme developed in this study is summarized in Figure 4.

As practical recommendations, furniture manufacturing enterprises and design studios are advised to adhere to the proposed "25-30% coverage" rule when applying national ornaments to furniture surfaces and to use incrustation and bas-relief techniques judiciously. Furthermore, these design concepts may also gain value as virtual objects within the digital economy and various platforms, enriching the open design resources base. As a direction for future research, it would be appropriate to study the possibilities of applying these principles not only to classical but also to modern styles such as Art Nouveau, high-tech, or minimalism. Additionally, investigating the technological parameters for creating these national-classical objects using modern composite materials and 3D printing technologies instead of traditional materials (e.g., walnut and sycamore wood) represents an important scientific prospect.

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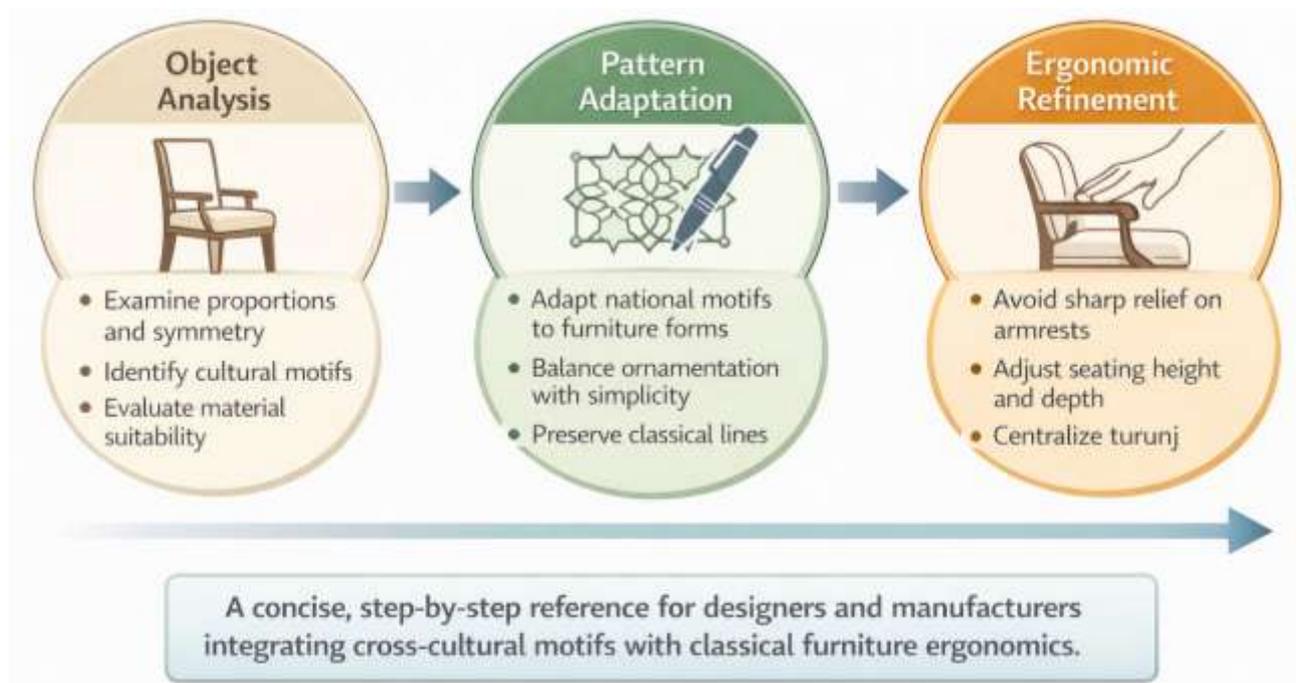


Figure 10. Final principles scheme for cross-cultural furniture design. Source: developed by the author.

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