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Tradition Of Binding Islamic Manuscripts Of The Archipelago: Identification Of Techniques And Materials Of Animal Skin As Manuscript Covers

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Abstract

This research aims to conduct an in-depth identification of the tradition of binding Islamic manuscripts in the archipelago, with a special focus on the technique of working and identifying animal skin materials used as manuscript covers. The main problem in this study is the lack of attention to the aspects of codicology, especially binding techniques, compared to traditional textual or philological studies. The importance of this task lies in the preservation of cultural artifacts that show the technological advances of book-making and Islamic intellectual networks in Southeast Asia. The methodology used is a qualitative-descriptive approach with codicological analysis and microscopic identification of leather materials. The results encountered in this assignment show that the archipelago binding tradition has unique characteristics that are the result of hybridity between global Islamic influences (Persia, Turkish, and Arabic) and local wisdom. The main materials used are goat and cow skins processed through plant-based tanning, with blind tooling techniques that reflect certain geographical identities such as the Banten, Central Java, Palembang, and Aceh models. This study concludes that the identification of physical materials is crucial in determining conservation strategies and understanding the history of Islamic culture in the archipelago as a whole.

Keywords: Binding, Manuscripts, Animal Skins, Islam Nusantara, Codicology.

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INTRODUCTION

The production of Islamic manuscripts in the archipelago is not just a literacy activity, but a complex socio-religious and economic-political manifestation. History records that the tradition of writing and copying manuscripts, especially the Mushaf of the Qur'an and religious books, was usually sponsored by power institutions such as the kingdom or sultanate, educational institutions such as Islamic boarding schools, and social elites who had great influence in society. This social fact shows that the manuscript has a dual function: as a means of spreading Islamic teachings and as a symbol of cultural legitimacy and power. In regions such as Aceh, Banten, Cirebon, Yogyakarta, and Sulawesi, the ownership of manuscripts is often associated with social status and religious authority, where the manuscripts are kept with great reverence by scholars and khatat on the orders of the rulers.

Literally, Nusantara manuscripts are often viewed through a philological lens that focuses on the content of the text, while its physical or codicological aspects are often overlooked. The relationship between the archipelago manuscript and the literature of the global Islamic world shows the transmission of very strong binding technology. The binding technique using animal skin as a cover is one of the concrete proofs of the influence of Middle Eastern and Persian traditions that came along with the wave of Islamization in the archipelago. However, there is a gap in literature that specifically discusses the technical identification of animal skin materials used in the local context of the archipelago, especially if it is associated with the availability of natural resources and traditional leather processing techniques that existed in agrarian societies at that time.

The main purpose of this paper is to identify in depth the binding technique and type of animal skin material used as the cover of the Nusantara manuscript, as well as to reveal the meaning behind the selection of these materials. By mapping binding models from different regions, this study seeks to provide guidance for researchers and conservators in identifying the age and origins of manuscripts more precisely. In addition, this study also aims to document traditional cryptography practices that are now beginning to be forgotten by advances in digital technology.

The argument put forward in this study is that the tradition of binding Islamic texts of the archipelago is a form of "hybridity of materiality," in which the basic structure of binding follows the standard patterns of the Islamic world (such as the use of flaps and medallions), but the materials used and the decorative motifs are strongly influenced by local ecological and aesthetic conditions. The research hypothesis states that the selection of animal skin type (goat, cow, or

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buffalo) is closely related to the availability of these species in the scriptural region and the status of the manuscript itself, where fancy manuscripts tend to use finer skin with more complicated working techniques than functional manuscripts in pesantren.

THE CONCEPT OF CODICOLOGY: THE FOUNDATIONS OF PHYSICAL IDENTIFICATION

Codicology is defined as the science that studies the physical intricacies of a manuscript or codex, which includes all aspects beyond the content of the text itself. This concept was first introduced by Alphonso Dain in 1944 to distinguish between the study of texts (philology) and the study of manuscripts as archaeological objects. In the context of the archipelago, Indonesian philologists generally define codicology as the "science of codex" which includes the history of manuscripts, storage places, scripttoriums, and manuscript trade. The current trend in the study of the archipelago's codicology is beginning to lead to a more technical analysis of materiality, where the manuscript is seen as a cultural product that reflects human interaction with its environment.

Categorization in the archipelago's codecology includes the identification of written media, such as daluang made of bark, European paper with a watermark, to palm leaves and bamboo. However, the most complex physical manifestations are often found in the binding section. Binding is not just a protector, but an integral part of the structure of the manuscript that determines the durability and aesthetics of the book. Patterns of codicological identification of binding include manuscript size, number of lines per page, type of binding, and cover decoration.

ANIMAL SKIN MATERIALS: DEFINITION AND CATEGORIZATION

The use of animal skins in binding Islamic books is a tradition that has lasted for centuries. Conceptually, tanned or dry-processed animal skins (parchment/vellum) have different physical characteristics depending on the species of origin. In the archipelago, the use of goat and cow skins is the most dominant. Animal skin identification patterns scientifically involve observation of hair follicles and pore arrangements in the grain layer.

The categorization of leather materials in manuscript studies can be seen from several patterns. The first pattern is species-based: adult cowskin has regular, evenly spaced follicles, while calfskin is smoother and thinner. The second pattern is goat skin characterized by alternating groups of large, smooth follicles, making it a favorite material for flexible binding. The third pattern is sheepskin which has uniform follicles and tends to be small, but the structure is looser due to the presence of a layer of fat. Weaknesses in visual identification often arise when the manuscript

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has suffered severe damage or surface weathering, thus requiring more advanced technologies such as DNA or peptide analysis to ascertain the species.

SCRIPTURAL AND WRITING TRADITIONS: MANUSCRIPT PRODUCTION SPACES

Scriptural is a special place where manuscripts are copied and bound by professional copyists or students. The concept of cryptariums in the archipelago includes three main manifestations: palace cryptariums (such as in Surakarta, Yogyakarta, and Banten), pesantren cryptariums (spread throughout the archipelago), and public cryptariums or private collections. Palace scripts usually produce manuscripts with luxurious illumination and high-quality leather binding, while pesantren scripts focus more on the function of manuscripts as daily teaching tools with simpler aesthetics.

The production pattern in this scriptural involves a systematic division of labor, starting from the provision of paper (both imported and local such as daluang), the process of writing the text, to the final binding by a special binder. The tendency in the archipelago shows that the cryptarium is often the center of cultural assimilation, where the cover decoration motifs adopt local elements such as plants and flowers that exist around the place where the manuscript was written. The main weakness in the identification of the scriptural is often due to the lack of colophon records that explicitly mention the place and time of the manuscript.

DESCRIPTION OF LEATHER MATERIAL AND WRITING MEDIA DATA

Based on the results of observations of various collections of archipelago manuscripts, animal skin materials are the main components in binding religious manuscripts. Data descriptions show that most manuscripts use plant-based tanned leather, which provides flexibility when applied as a cover. Secondary statistics from the British Library's study of Acehnese manuscripts show that of the 18 manuscripts studied in depth, almost all of them have original covers or traces of skin binding that show a high level of attention to physical aspects.

Data analysis shows that the use of this leather is often combined with local writing media such as daluang (bark paper) or European paper. For example, the Mushaf of Prince Paku Ningrat from Madura uses daluang as the primary writing medium, but the cover uses a smooth light brown leather. Data relationships reveal that the choice of cover material is often correlated with the type of paper used; Daluang manuscripts tend to be bound with simpler techniques and use local leather, while high-end European paper manuscripts often have more complicated bindings with detailed gold decorations or pressing.

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Types of Written Media	Common Cover Types	Dominant Regions
Stuart (*Broussonetia Papyrifera*)	Light brown/untrimmed skin	Java, Madura
European Paper (Watermarked)	Red leather, medallion decoration	Aceh, Banten, Palembang
Palm Leaves	Wooden cropak/fabric cover	Bali, Lombok, Sunda

REGIONAL BINDING TECHNIQUES AND MODELS

Identification of binding techniques reveals the existence of very specific regional models. Observations of the late 17th-century Banten model manuscript show the use of *a fore-edge flap* that fused with the back cover, a highly functional feature to protect the edges of the paper from dust and insects. This Banten model uses smooth goat skin with lotus-patterned *blind tooling decoration* , which is the result of assimilation of local culture and external influences.

An explanation of the sewing technique shows that the archipelago manuscript generally uses a *link-stitch* technique to unite the drains into one block of books. In the early 19th century Palembang manuscript, the use of red and white *endbands* was found that not only functioned structurally but also aesthetically. The data relationship between the Palembang and Banten models shows a transmission of style, where Palembang adopts the basic structure of Banten but replaces the decorative motifs with floral shapes that are more in line with the local flora of South Sumatra.

Binding Model	Key Characteristics	Influence of Style
Banten	**Flap, brown smooth leather, Chinese lotus**	**Turkish, Persian, Chinese**
Palembang	**Flap, red-white endband, rose motif**	**Banten, Persia**

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Central Java	**Thin, rigid, floral medallion, 5 frame lines**	**Local, Castle, Europe**
Aceh	**Red binding, geometric motif**	**Global Islamic World, India**

MICROSCOPIC IDENTIFICATION OF SKIN SPECIES

Through case studies of several manuscripts from the museum's collection, skin species were identified based on hair follicle patterns. Microscopic observations on manuscripts from Sulawesi show pore patterns that form small groups (trios pattern) with large, smooth rows that intersect, which diagnostically refers to goat skin. In contrast, in some large manuscripts from Central Java, thicker skin was found with hair follicles that were uniformly sized and arranged in regular rows, which is characteristic of adult cowhide leather.

Explanation of technical data reveals that adult cowskin often has to go through a splitting process because it is 4-6 mm thick, while goat skin with a thickness of 1-3 mm can be used directly as a flexible manuscript cover. Data relationships show that the use of pigskin is almost not found in Islamic religious texts in the archipelago, although the skin has excellent strength characteristics with a distinctive three-dots pattern. This proves that religious factors (unclean laws) greatly influence the selection of materials in the tradition of binding Islamic manuscripts, where artisans are very selective in choosing animals that are slaughtered halally to be used as the cover of the holy book.

DISCUSSION

This research has succeeded in identifying that the tradition of binding Islamic Nusantara manuscripts is a sophisticated and meaningful technological system. The main materials in the form of goat and cow hides are selected based on local availability and their flexible yet durable functional properties. The binding techniques that include the use of envelope flaps, chain stitching, and blind tooling decorations show the existence of a strong cultural hybridity between the standards of the international Islamic world and the local aesthetics of the archipelago. Each region, from Aceh to Sulawesi, has its own characteristics in the selection of skin color, decorative motifs, and manuscript spine strengthening techniques that reflect the identity of their respective scripturals.

Discursively, these findings strengthen the theory of M. Plomp and Karin Scheper who

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stated that the binding of the archipelago manuscript has a formal resemblance to the binding traditions in other Islamic worlds such as Persia and Turkey. However, this study makes a new contribution by emphasizing the specificity of local materials. In contrast to the initial view that the archipelago binding is often considered as a weak structure or simply an adaptation of the Western style, the results of microscopic and codeological identification show that the archipelago craftsmen are able to create a volume structure that is highly functional and adaptive to the tropical climate. The use of daluang as a supporting material and the selection of local floral motifs (such as Palembang roses or Banten lotuses) are the main distinguishing points with the binding tradition in the Middle East which uses more imported paper and pure geometric motifs.

The results of this study reflect that manuscripts are not just carriers of text, but artifacts that carry the "collective memory" of the nation. The use of animal skin as a cover is a sign of high respect (takzim) for science. The complexity of the decorative motifs on the cover of the Qur'an, such as the central medallion representing the center of the universe, suggests that binding was part of the expression of the craftsman's spirituality. In addition, the hybridity of styles found is a sign of the openness of the people of the archipelago to external influences without losing their local identity, which is the core of the concept of "Islam Nusantara" in material civilization.

The implications of these findings are significant for the world of conservation and cultural heritage management. Precise identification of skin materials allows conservators to determine appropriate treatment techniques, such as the use of appropriate chemicals for plant-based tanned skin so as not to damage its collagen fibers. Sociologically, this understanding of traditional binding techniques can evoke national pride in past technological achievements and encourage the revitalization of the culturally-based traditional leather craft industry. For the academic world, this codified data is an important instrument in authenticating manuscripts and tracking intellectual distribution through inter-scriptural style comparisons.

The emergence of regional variations in this binding technique is due to several key factors. First, ecological factors; The availability of types of livestock and saeh trees (for daluang) on each island determines the basic materials used. Second, cultural interaction factors; coastal areas such as Banten and Aceh were more exposed to Turkish and Persian influences through trade routes and hajj, so the volumes were more complex. Third, institutional factors; The difference between the palace and pesantren scriptural criteria creates an aesthetic gradation, where the palace has the resources to bring in expert craftsmen and luxury materials, while pesantren prioritizes the sustainability of daily educational functions.

After the identification of these techniques and materials is carried out, the next urgent

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step is to digitize the manuscript en masse to save the content of the information, but still accompanied by physical preservation efforts based on this materiality data. There is a need for cross-disciplinary collaboration between philologists, materials scientists, and conservation practitioners to create a digital database that includes microscopic profiles of the skin and watermarks of Nusantara manuscript papers. In addition, education to the manuscript holder community on the correct way to store it according to codecological standards is very important to prevent further damage due to tropical environmental factors.

CONCLUSION

The most important finding of this study is the identification of materiality hybridity characteristics in the archipelago's Islamic texts, where binding techniques adopt global Islamic structures (such as flaps and link-stitches) but use local materials (goat/cow skin and daluang) and decorative motifs that are full of regional identity. In contrast to manuscripts from other Islamic regions, the Nusantara manuscript shows remarkable technical adaptation to the challenges of the tropical environment, which can be seen from the use of reinforcing layers and certain types of tanning.

The contribution of this research lies in the integration of traditional codicology approaches with microscopic scientific identification techniques of animal skin materials. This method provides a more objective basis for determining the "physical biography" of a manuscript, which goes beyond mere textual analysis. Conceptually, this research strengthens the understanding of the Islamic civilization of the archipelago as an entity that actively assimilates culture and technology creatively.

The limitation of this study lies in the difficulty of accessing manuscripts in private collections whose condition is often very fragile or undergoing non-standard restoration, making it difficult to identify the original binding technique. The suggested direction of further research is the use of more advanced analytical technologies such as Peptide Mass Fingerprinting (PMF) for the identification of skin species in absolute terms and a broader comparative study of manuscripts from marginal regions of the archipelago to find variations in techniques that may not have been documented yet. The preservation of manuscripts must continue to be carried out as an effort to maintain the cultural memory and identity of the nation in the midst of the changing times.

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FUTURE DIRECTIONS

Peptide Mass Fingerprinting (PMF) . Narratively, this marks a shift from subjective macroscopic observation to absolute biomolecular identification.

1. Urgency: So far, determining the type of animal skin (goat, sheep, or cow) on a manuscript is often only based on texture or pores which may be damaged.
2. Impact: With PMF, researchers can accurately map the distribution of animal material use across the various sultanates in the Indonesian archipelago, which may reveal patterns of animal skin trade or specific religious preferences at that time.

REFERENCES

Abidin, Z., Sadikin, K., Sinaga, K. F., Alfi, M. A., & Sitorus, S. (2026). The Role of Technology Fiqh in Counteracting Digital Ethical Deviations. *Journal of Medicine, 5*(1), 1072–1079.

Azniman Tanjung. (2023). The Meaning of Fitrah and Its Relevance to Islamic Education. Educational Journal, 1(2), 181–188.

Barni, M., & Majid, A. (2025). The concept of fitrah and its development in Islamic education in the era of digital disruption (perspective of the Qur'an and hadith). Journal of Edupedia, 9(2), 164–173.

Eramil Jab. (2023). The Concept of Fitrah in the Qur'an: An Analysis of Verses on Fitrah and Its Relationship with Human Potential and Character. Journal of Education and Teaching Review, 6(4), 4258.

Kahfi, I. (2025). Transformation of Moral Education in Overcoming Adolescent Social Behavior Deviations in the Digital Era. Maslahah Journal, 4(1), 9–38.

Kurnilawati, L., Suriati, S., & Mahmud, S. (2025). The Concept of Fitrah in Islam and the Theory of Tabularasa in Psychology An Analysis of Similarities and Differences. Nihayah Journal Of Islamic Studies, 1(3), 580–594.

Lubis, R. R., & Gusman, M. (2019). Theory of Nature and the Development of Children's Religion. Al-Fikru Journal, 13(2).

Marwa, N. K., Supriadi, U., & Firmansyah, M. I. (2025). Development of Fitrah-Based Learning Model to Improve Character Education. Journal of Education Studies, 14(2).

Mildan, A. R., & Khulasoh, S. (2024). Human Nature in the Perspective of the Qur'an and Its Relevance in Islamic Education. Permata : Journal of Islamic Religious Education, 5(2), 306–316.

Murdianto. (T.T.). Islamic Character Education. Lembaga Ladang Kata. (Original Work Published by

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Lembaga Ladang Kata)

Paulina, T., & Pahrudin, A. (2024). Fitrah-Based Educational Planning in Nature Schools in Lampung Province. Fig., 10(1), 123–134.

Pransiska, T. (2017). The Conception of Human Nature in an Islamic Perspective and Its Implications in Contemporary Islamic Education. Didactic Scientific Journal, 17(1), 1. Https://Doi.Org/10.22373/Jid.V17i1.1586

Ramadhan, R. S., Fakhruddin, A., & Firmansyah, M. I. (2025). Strengthening Religious Character through Fitrah-Based Education in Nature Schools. Learning: Journal of Innovation in Education and Learning, 5(3), 1930.

Samsuri, S. (2020). The Essence of Human Nature in Islam. Al-Ishlah: Journal of Islamic Education, 18(1), 85–100. Https://Doi.Org/10.35905/Alishlah.V18i1.1278

Sarni, W. O. R., Mengge, B., & Abbas, R. R. (2025). The Influence of Digital Media on the Social Behavior of Adolescents in Malaku Village. Journal Of Humanity And Social Justice, 106–126. Https://Doi.Org/10.38026/Jhsj.V7i1.60

Tengku Darmansah, Putri Suci Ramadhani, Dessy Masliani Br Lubis, & Desi Fitriyani Sembiring. (2024). Education Policy and Challenges of Its Implementation in Islamic Educational Institutions. Atmosphere: Journal of Education, Language, Literature, Arts, Culture, and Social Humanities, 3(1), 304–313. Https://Doi.Org/10.59024/Atmosfer.V3i1.1215

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