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Reinterpreting Botanical Motifs in Ecoprint Art through Cultural Identity and Changing Aesthetic Meanings in Contemporary Society

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Abstract:
Research on ecoprint has examined dye transfer, botanical aesthetics, cultural motifs, and artisan development, but has rarely specified how physical plant traces acquire defensible cultural meanings and social value. This integrative critical review synthesises 20 purposively selected scholarly publications to connect material processes, visual composition, cultural representation, and socio-ecological responsibility. Its original contribution is a four-stage evidentiary threshold model encompassing material contact, aesthetic curation, cultural coding, and negotiation of social value. A complementary risk matrix contrasts traceability of cultural references with socio-ecological accountability. The synthesis shows that pigment transfer and fastness tests establish material properties, whereas aesthetic significance depends on composition and cultural legitimacy depends on documented narratives and the recognition of relevant communities. Claims about empowerment or sustainability also require evidence concerning agency, benefit distribution, resource use, and durability. Together, the threshold model and risk matrix distinguish artistic innovation from unsupported identity or ecological claims, offering criteria for textile criticism, design practice, and higher-order art education. The proposed relationships are conceptual and invite empirical examination.

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Introduction (مقدمة)

Ecoprint raises a central issue in contemporary textile art: the movement from botanical contact to cultural representation. A leaf can transfer pigment, texture, and contour to cloth, but material resemblance does not itself explain an artwork's identity or public meaning. Through plant selection, fibre preparation, placement, and finishing, makers transform botanical material

into deliberate aesthetic choices. The work therefore engages material processes, artistic agency, and social conditions of recognition simultaneously (Tessariol, 2025).

This characteristic distinguishes ecoprint from textile ornament that merely depicts flora. Botanical objects act simultaneously as tools and sources of visual form, making their traces evidence of material contact. However, a leaf's contact with fabric does not establish that its motif represents a community's history, identity, or values. Conflating trace and symbol risks turning technical contingency into an unverifiable cultural narrative. This distinction places aesthetic and social interpretation within the same analytical field.

Experimental studies provide a basis for understanding ecoprint's material properties. On silk, combinations of colour sources, leaves, and mordants produce differences in motif appearance and wash fastness. Such findings show that artistic outcomes depend on technical parameters that can be studied and reproduced. Nevertheless, laboratory assessments of brightness and durability do not explain why a composition signifies locality or who has authority to narrate its meaning (Wahyuningsih et al., 2022).

Differences between production techniques do not establish a universal hierarchy of aesthetic value. Comparisons of pounding and steaming using teak leaves reveal variations in motif clarity and colourfastness under particular test conditions. These techniques offer different visual characteristics rather than a quality ranking applicable to every fibre and plant. Judgements of a 'good motif' should distinguish trace clarity, technical consistency, compositional experimentation, and the relationship between form and artistic concept (Adriani & Sari, 2023).

In Indonesia, plants belong to networks of local knowledge, craft practice, and creative economies. Ethnobotanical exploration in Bangka documents plants suitable for motif production, providing an inventory of visual resources. Species availability, however, cannot justify treating every leaf silhouette as a regional heritage symbol. Cultural signification still requires accountable naming practices, explanations of form, and shared interpretation (Sulastri, Henri, & Akbarini, 2023).

Some ecoprint projects connect plant forms with specific decorative traditions. Exploration of Maluku's kakehan motif deliberately links cultural research, design, and artistic realisation through teak leaves. Cultural representation thus emerges through selecting references, interpreting patterns, and reorganising visual structures, rather than through plants alone. The relationship between designers' interpretations and recognition by the communities concerned requires separate evidence (Candra, Nurjanah, Magh'firoh, & Firmantika, 2025).

From the sociology of art, an artwork's value extends beyond technical precision. Appreciation also depends on exhibitions, makers' communities, branding, price, education, and curatorial authority. The same textile may signify a material experiment to an educator, identity to a community, or an ethical commodity to a consumer. Social value is consequently negotiated rather than inherent in materials. Social semiotic research on heritage representation likewise shows that visualisation selects what becomes visible and what remains excluded (Skrede & Andersen, 2023).

The issue becomes more pressing when 'natural', 'local', and 'sustainable' function as promotional attributes. Plants may reduce reliance on some dyes without establishing water and heat consumption, waste management, failed production, durability, or labour distribution. Research on plant transfer printing identifies opportunities for fashion design while treating pH, colour fixation, and wash fastness as practical concerns. Ecological appeal must therefore be distinguished from environmental performance that has actually been assessed (Šabarić, Sutlović, Filipčić, & Karin, 2024).

Previous research has addressed these dimensions largely through separate lines of inquiry. Experimental studies establish pigment behaviour and fastness, creative investigations discuss colour and motif organisation, ethnobotanical work documents available flora and local practices, and education or empowerment studies report learning and production outcomes. These contributions do not, on their own, show how a botanical index becomes an accepted cultural symbol or when a product's ecological appeal constitutes accountable sustainability. The unresolved problem is therefore not an absence of ecoprint research but an absence of explicit evidentiary transitions connecting technical performance, visual interpretation, cultural authority, and social value. Treating results from one domain as proof of another risks overstating both artistic and ethical claims (Sulastri et al., 2023; Sumarwahyudi, 2024; Sholikhah et al., 2026).

To address this gap, this review brings material and fibre research into dialogue with social semiotics and the sociology of artistic valuation. Material inquiry identifies what a process actually produces; social semiotics explains how selected visual forms acquire meaning in particular contexts; and the analysis of social value examines recognition, market mediation, participation, and benefit distribution. The study is guided by three linked research questions: how botanical traces are transformed through aesthetic curation; what kinds of evidence warrant interpreting motifs as expressions of cultural identity; and how artisan agency and socio-ecological accountability shape the social value assigned to ecoprint. These questions concern the justification of claims, not the measurement of universal preferences.

The study advances a four-stage evidentiary threshold model and a two-axis risk matrix as an integrated conceptual contribution. The stages distinguish material contact, aesthetic curation, cultural coding, and negotiation of social value; each transition identifies evidence that cannot be supplied by the preceding stage alone. The matrix then identifies tensions between cultural-reference traceability and socio-ecological accountability. Rather than assigning a single score to ecoprint quality, the framework enables researchers, artists, curators, and educators to evaluate the scope of specific claims, locate missing evidence, and formulate empirically testable propositions.

Method (منهج)

An integrative critical literature review was adopted to connect empirical and interpretative work on textile technology, artistic practice, ethnobotany, cultural representation, education, and sustainable design. Integrative reviewing is appropriate when heterogeneous studies must be compared through a shared analytical problem rather than pooled into a single effect estimate (Snyder, 2019). The unit of analysis was the claim made in each publication, together with the study design and evidence supporting that claim. The review is neither a meta-analysis nor a systematic census of all research on ecoprint.

A bounded corpus of 20 scholarly publications, all identified in the reference list, was selected purposively. The thematic search vocabulary combined English and Indonesian variants of ecoprint or eco-printing with botanical motifs, natural dyes, fabric fastness, visual aesthetics, cultural identity, ethnobotany, social semiotics, artisan empowerment, upcycling, and sustainability. Selection required a direct contribution to at least one of five domains: (1) pigment, fibre, and processing conditions; (2) visual composition and creative decisions; (3) local flora, motif adaptation, and cultural references; (4) maker, audience, or educational practices; and (5) social or environmental accountability, including review methodology. Publications limited to describing a workshop activity without relevant analytical evidence were not prioritised. This curated coverage is not represented as a comprehensive database search or a PRISMA screening process.

The retained sources were examined through a common extraction structure recording author and publication year, research object and setting, method, principal reported findings, possible cultural or socio-ecological claims, and limits of inference. Technical outcomes such as motif intensity, pigment transfer, and wash fastness were coded as evidence of material performance. Accounts of motif development and reference adaptation were coded as evidence of aesthetic or design reasoning. Descriptions of learning, empowerment, and markets were distinguished from independently demonstrated participation, recognition, income, or environmental outcomes. This prevented laboratory measures from being treated as audience responses and artistic intentions from being treated as community endorsement.

Synthesis proceeded in four analytical steps. First, findings were grouped according to the type of claim that their methods could support. Second, contrasting cases were examined to identify where one kind of evidence was inappropriately extended into another domain, such as equating clear prints with cultural identity or natural inputs with sustainability. Third, recurring inferential distinctions were abstracted into four stages: contact produces a botanical index, compositional selection produces visual form, cultural referencing produces an interpretable identity claim, and social negotiation governs recognition and public benefit. Finally, the evidence needed to justify movement between stages was formulated as a threshold model. The two-axis matrix was constructed by contrasting traceable cultural representation with evidence of environmental and distributive responsibility. These are authorial analytical constructions, not categories or scales statistically derived from the source publications.

Interpretation was checked against the settings and measures reported by each study. For example, the South Sulawesi exploration identifies 213 colour-producing samples among 297 tested botanical samples (Nuraeni et al., 2022), whereas the Bangka study describes techniques used in 60 local motifs (Sulastri et al., 2023). Neither result estimates nationwide practice or cultural recognition. Likewise, reports of improved production quality support a training-related outcome but do not by themselves demonstrate durable artisan control or equitable benefits (Sholikhah et al., 2026). The corpus does not provide direct reception interviews, comparative life-cycle assessment, or testing of the proposed framework. Accordingly, the synthesis separates reported findings from conceptual interpretation and does not infer causal effects.

Result (نتائج)

Stage I: Material contact and botanical evidence

The synthesis shows that colour and form have no simple relationship in ecoprint. Plants producing strong colour may leave indistinct contours, whereas clear forms may fade during use. An exploration of South Sulawesi flora tested 297 plant samples, of which 213 produced colour; pattern formation was not equivalent to pigment release. A trace can therefore be strongly indexical in colour while offering limited representation of botanical form (Nuraeni, Nasri, Hamzah, & Wahyudi, 2022).

Mordants do more than enable fabric dyeing. Alum, ferrous sulphate, and lime can alter hue, intensity, and durability for particular fabrics and plants. Research on jenitri leaves with ketapang leaf dye reports performance differences across mordants and test indicators. Rather than declaring one mordant universally 'best', analysis should identify the property being optimised, treatment conditions, and visual consequences. Technical decisions are consequently also aesthetic decisions (Sholikhah & Widowati, 2024).

Fibre selection further shapes the translation of material into visual form. Research using floral waste on cotton, silk, and linen examines colour transfer and fastness under comparable study conditions. A design effective on one textile may not retain its characteristics on another. These changes affect artists' decisions about backgrounds, negative space, silhouette density, and surface contrast (Ningtarich, Wahyuningsih, & Wahyuningsih, 2025).

Research on the iron blanket technique examines colour transfer through fabric previously treated with natural dyes. Layer arrangement affects colour distribution and control over outcomes. Uneven pigmentation may be expressive or defective depending on artistic intention and functional standards. Uniqueness therefore cannot be reduced to chance: makers should explain whether variation reflects compositional intention or an uncontrolled technical limitation (Tsani, 2024).

Stage II: Aesthetic curation and visual meaning

Stage II concerns choices that turn the transferred trace into a visual composition. Printing success concerns dye transfer, contour legibility, and durability for the intended textile use. Artistic quality additionally concerns rhythm, contrast, figure–ground relationships, spatial hierarchy, and coherence between the chosen technique and artistic purpose. A study of motif, colour, and texture offers relevant aesthetic categories, but it cannot decide the merit of every composition without attending to design intention and reception (Sumarwahyudi, 2024).

The distinction can be described through three overlapping sign functions. A transferred impression is indexical because botanical contact caused it; its contour may be iconic when viewers recognise the plant depicted. The same motif functions symbolically only when shared narratives, conventions, or communicative practices provide additional meaning. A recognisable leaf therefore cannot serve as independent proof of cultural identity. Aesthetic curation occurs where makers select, repeat, simplify, juxtapose, or omit traces to structure visual interpretation; cultural coding requires a further contextual basis (Skrede & Andersen, 2023).

The first two thresholds are thus distinguishable. Material claims require documented plants, textile substrates, mordants, processing conditions, and performance indicators relevant to use. Aesthetic claims additionally require attention to composition, alternatives, and the relationship between formal choices and intended expression. Differences among techniques can support comparison within a study's conditions, not a universal hierarchy of artistic merit. Technical reliability makes an artwork materially assessable; it does not in itself establish either aesthetic excellence or cultural recognition (Adriani & Sari, 2023; Wahyuningsih et al., 2022).

Stage III: Cultural coding and the legitimacy of identity

Cultural coding requires an accountable relationship between botanical resources, local practices, and represented meanings. Ethnobotanical findings identify materials and situated making traditions, but a record of local species is not equivalent to recognition of a regional symbol. In one Bangka investigation, 60 motifs were classified by production technique: 68.3% steaming, 20.0% pounding, and 11.7% boiling. These proportions describe motifs documented in that study, not Indonesia-wide artisan preferences. They support analysis of local making repertoires while leaving the cultural interpretation of each design to be established separately (Sulastri et al., 2023).

A stronger identity claim specifies the motif reference, its history or source, the artist's transformation of that reference, and the position of the people whose culture is being represented. In the Maluku-inspired kakehan exploration, the connection between reference material, interpretation, and design is more explicit than an unsupported assertion that teak leaves are intrinsically Malukan. However, documenting an artist's intention does not demonstrate endorsement by tradition holders. Source traceability and community recognition are related but distinct requirements, especially where heritage names function in public-facing communication (Candra et al., 2025).

Hybrid techniques make these boundaries especially important. Combining ecoprint and hand-drawn batik can create new compositional possibilities while drawing upon different technical histories. Research into ecobatik illustrates the potential for artistic experimentation, but a technique's innovative character cannot alone justify claims to cultural representation or inherited authority. Naming, attribution, and engagement with relevant practices are therefore

part of the evidence used to evaluate cultural coding, not obstacles to artistic renewal (Shanti & Nahrowi, 2025).

Stage IV: Negotiated social value, agency, and markets

Stage IV moves from intended representation to negotiated social value. Ecoprint circulates through classrooms, artisan groups, galleries, fashion markets, and online branding, where the same textile may be judged by different criteria. Classroom activities can develop exploratory skill and expression, but completed samples do not automatically demonstrate students' capacity to evaluate cultural claims (Aulia Yolla, 2025). The fourth stage therefore concerns who recognises a motif, whose interpretation is privileged, and whether those contributing knowledge and labour share in the resulting value.

Evidence from community-based training illustrates the distinction between capacity and agency. Women's ecoprint activities in Gunungpati report improvements in skills and product quality (Sholikhah et al., 2026). These outcomes support conclusions about technical development in that setting; they do not independently establish control over design decisions, bargaining power, intellectual attribution, or long-term distribution of income. A stronger empowerment assessment would examine who selects motifs, defines products, determines prices, manages marketing narratives, and receives benefits. Agency is therefore evaluated through decision-making and recognition as well as finished textile quality.

Commercial circulation can reward uniqueness while demanding predictable standards of fit, finishing, colour stability, and durability. Upcycling research demonstrates the creative reuse of ecoprinted textiles in fashion products, but the existence of a marketable collection is not a measure of its net environmental performance (Mahanani & Nabillaarifatul, 2025). Market recognition may expand an artwork's visibility while simplifying its cultural narrative or obscuring labour relationships. Claims of ecological value therefore require process and use-phase evidence, rather than an inference from distinctive botanical imagery.

Across the four stages, the reviewed studies support different and non-substitutable conclusions: material experiments describe transfer and fastness; aesthetic and creative studies explain visual decisions; ethnobotanical and heritage projects document situated references; and education or empowerment studies describe particular learning and production conditions. Table 1 links these findings to the evidence required for broader interpretative claims. The proposed stages are an analytic sequence of justification, not an assertion that makers or viewers necessarily experience meaning in a fixed chronological order.

Table 1. Four stages of meaning formation and evidentiary thresholds

Analytical stage	Evidence in the reviewed literature	Threshold for defensible interpretation
I. Material contact	Plant, fibre, mordant and fastness studies (Wahyuningsih et al., 2022; Sholikhah & Widowati, 2024)	Specify treatment conditions and relevant performance; colour transfer is not cultural symbolism
II. Aesthetic curation	Technique comparisons and aesthetic analysis (Adriani & Sari, 2023; Sumarwahyudi, 2024)	Document compositional choices and artistic purpose; clarity alone does not rank artistic merit
III. Cultural coding	Local ethnobotany and motif-adaptation projects (Sulastri et al., 2023; Candra et al., 2025)	Trace cultural references and adaptation; artistic intention is not community endorsement
IV. Negotiated social value	Education, empowerment and upcycling cases (Sholikhah et al., 2026; Mahanani & Nabillaarifatul, 2025)	Examine recognition, agency, benefit distribution and market context; product quality alone is insufficient
Cross-cutting ecological claims	Plant transfer printing and natural-dye reviews (Šabarić et al., 2024; Pranta & Rahaman, 2024)	Match sustainability claims with evidence on inputs, durability, impacts and comparison boundaries

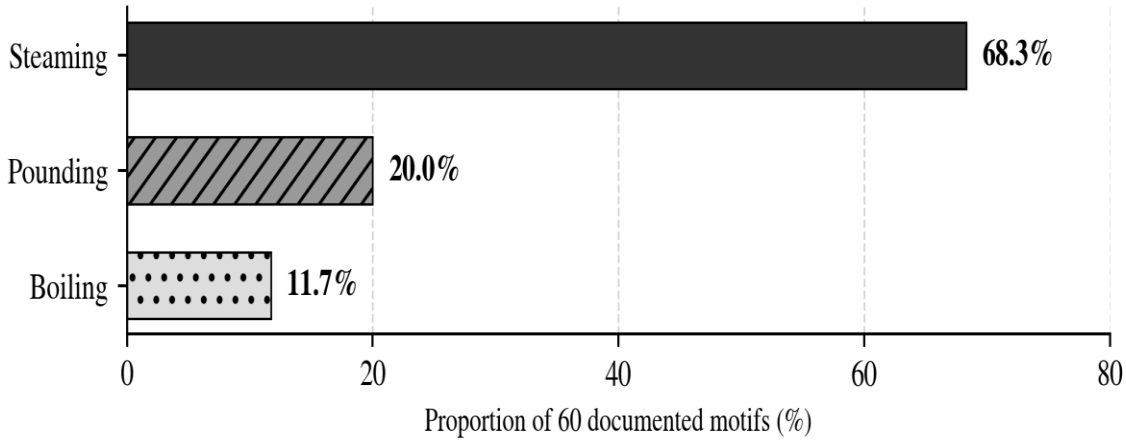


Figure 1. Motif-making techniques among 60 ecoprint motifs documented in Bangka (Sulastri et al., 2023).

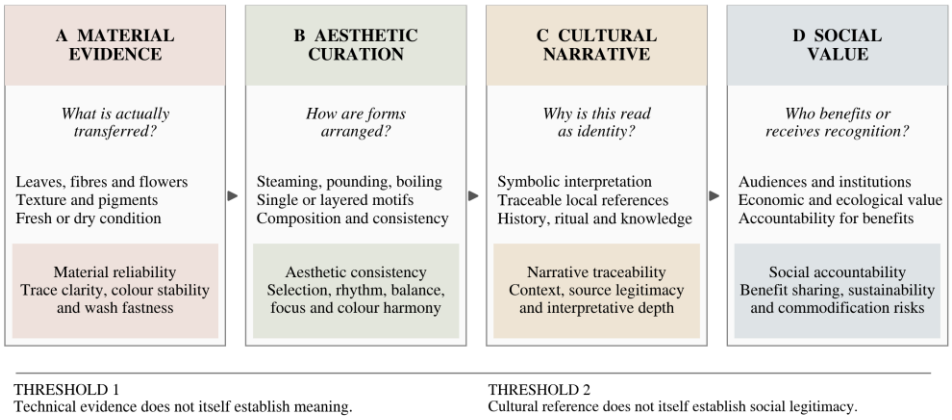


Figure 2. Four-stage evidentiary threshold model of botanical trace, aesthetic form, cultural coding, and social value

Discussion (مناقشة)

Cultural legitimacy, interpretative authority, and social value

The synthesis reveals two recurrent inferential shortcuts. Technical reduction treats clearly printed plant forms as sufficient evidence of artistic achievement, whereas cultural reduction treats local botanical origin as direct evidence of collective identity. Neither establishes the social conventions through which visual form is interpreted. In social semiotic terms, meaning depends on the selection and circulation of representational resources within institutions and communities, not simply on their physical resemblance to plants. The threshold model specifies what evidence is needed when an interpretation advances from material contact to a public cultural claim (Skrede & Andersen, 2023).

The distinction between index, icon, and symbol sharpens evaluation without imposing a single reading of a work. A detailed leaf impression may be materially authentic and visually powerful without referencing inherited meanings. Conversely, an abstracted motif may retain significance when its links to recognised histories and practices are documented. Such interpretations are claims to be supported through sources and social reception, not intrinsic properties of botanical species. The framework therefore protects creative interpretation while testing the explanatory grounds on which collective identity is invoked.

Community recognition is more demanding than the inclusion of a regional name in a designer's statement. Historical accounts and motif archives can establish the provenance of a reference; conversations with relevant practitioners or community representatives can establish how its use is received and contested. These are not interchangeable forms of evidence. An artist

may faithfully document inspiration but lack authority to speak for an entire group; equally, community interpretations can be diverse rather than unanimous. Where such engagement is absent, the claim "inspired by local heritage" is more defensible than "representing the identity" of a community. This distinction follows from the evidence needed for public claims and should not be read as an assertion that the reviewed creative studies conducted reception research.

Recognition also changes when motifs circulate through institutional and commercial settings. Curators may value conceptual innovation, learners may emphasise procedural skill, buyers may favour colour and price, and cultural custodians may focus on naming and representation. No single audience has a monopoly on aesthetic interpretation, yet cultural claims affecting a named community create obligations of accuracy, attribution, and dialogue. The ecoprint–batik combination demonstrates how formal innovation can coexist with respect for the histories of the forms being adapted (Shanti & Nahrowi, 2025).

Market mediation complicates legitimacy. Local identity may be used to distinguish products and justify higher prices, even where the people or practices referenced remain invisible in branding. Conversely, artisans may possess design expertise without controlling distribution channels or promotional narratives. These tensions call for separate assessments of aesthetic coherence, reference traceability, recognition by relevant groups, and equitable economic participation. A high-quality textile may be culturally contested, and a culturally traceable product may have inequitable value distribution. Those combinations are precisely what a single aesthetic or sales-based score cannot reveal.

Figure 2 visualises these non-substitutable thresholds. Evidence of colour transfer supports the material stage, but not automatically compositional quality; design rationale supports aesthetic interpretation, but not necessarily heritage recognition; and documented cultural inspiration does not itself demonstrate shared authority or fair benefits. The model functions as an argument-checking device: whenever a claim crosses a threshold, the supporting evidence must be made explicit. It does not measure beauty, rank communities, or assume that all makers pursue the same aims.

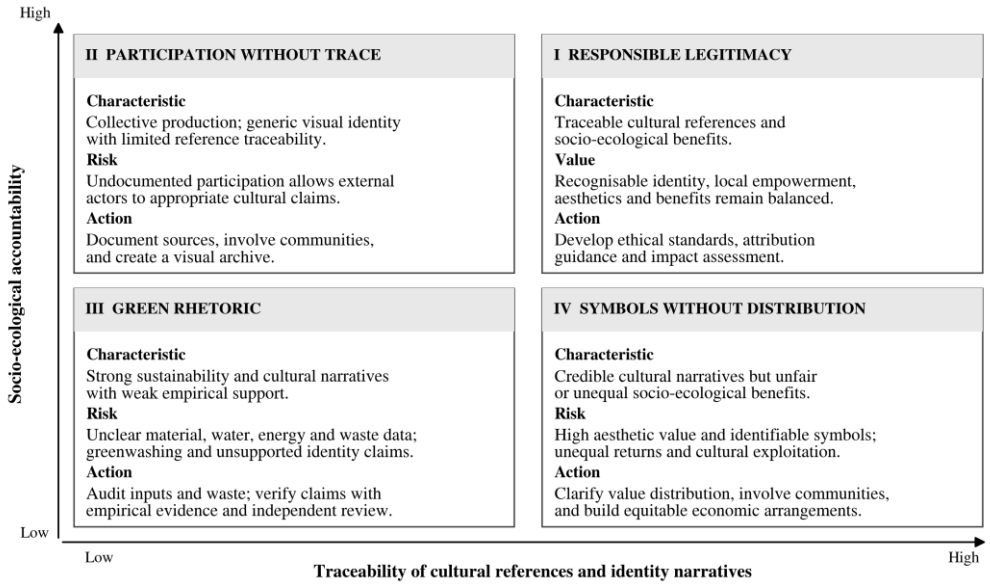


Figure 3. Risk matrix relating cultural-reference traceability to socio-ecological accountability.

Figure 3 extends this argument by cross-classifying two independently assessable domains. High cultural traceability and high socio-ecological accountability indicate responsible legitimacy; low traceability combined with high accountability identifies participation without adequately evidenced identity claims. Low performance on both axes creates a risk of green rhetoric or unsupported representation; high traceability with weak distributive or environmental evidence risks symbols without distribution. These labels identify patterns of

potential overclaiming, not observed prevalence among the reviewed cases. They direct evaluators towards different remedies: source documentation and dialogue on one axis, and production, attribution, and benefit evidence on the other.

The matrix makes a normative distinction that the empirical literature alone cannot settle. Experimental studies supply measurable technical outcomes, whereas social justice or representational responsibility requires justified standards and, ultimately, stakeholder evidence. The proposed quadrants are conceptual comparisons, not statistical classifications of artworks or artisan communities. Critical evaluation should therefore avoid replacing cultural voice with an expert score, or treating environmental compliance as a substitute for meaningful participation. The framework limits unwarranted public claims while leaving artistic experimentation open.

Environmental accountability, artisan agency, and design responsibility

Botanical origin is an attribute of the input, not a measure of a product's full environmental impact. The cultivation or collection of leaves, preparation of fibres, extraction, mordant use, heating, rinsing, disposal, and product lifespan determine the appropriate scope of an ecological assessment. Reviews of natural dyes and biomordants identify opportunities for improved processes but also constraints relating to efficiency and performance (Pranta & Rahaman, 2024). Accordingly, a claim of reduced impact should specify its comparison, functional unit, and system boundary; absent such assessment, the defensible statement concerns the use of plant-derived materials rather than demonstrated overall sustainability.

Durability is simultaneously a technical property, an aesthetic constraint, and an issue of resource responsibility. In apparel, premature colour loss can shorten useful life and increase replacement needs, while one-off art pieces may be evaluated for a different intended use. Work on plant transfer printing highlights the significance of treatment conditions, colour fixation, and fastness for sustainable fashion applications (Šabarić et al., 2024). Evaluation should match tests to the product's purpose and acknowledge the trade-off between repeatable performance and intentional material variation rather than assigning one universal standard.

Material sourcing presents a further distinction between an ecological opportunity and proven environmental benefit. Reusing rose waste in cotton ecoprint provides evidence for a route to creative valorisation of discarded biomass (Simanungkalit & Syamwil, 2020). However, it does not by itself quantify water and heat inputs, auxiliary chemicals, effluent, or useful-life changes. Similarly, upcycled garment design demonstrates material reuse without determining total life-cycle savings (Mahanani & Nabillaarifatul, 2025). The relevant question for evidence is which environmental process has actually been measured and against which alternative.

The creative economy introduces a reciprocal relationship between aesthetic distinction and production risk. The statement that no two ecoprint fabrics are identical can reinforce artistic differentiation, but variation may also complicate promised specifications for ready-to-wear products. Documenting treatment conditions, acceptable variation, and durability can support market trust while retaining expressive difference (Martina et al., 2021). Market value should nevertheless be separated from the social distribution of value. Community knowledge, artisan labour, designer authorship, and brand ownership do not necessarily receive proportional acknowledgement or financial return. Reports of better product quality do not establish who sets prices, retains profits, or controls the narrative of cultural origin (Sholikhah et al., 2026).

These distinctions create a demanding yet teachable approach to higher-order thinking in art education. Students can produce material portfolios showing plants, textiles, treatments, and durability observations; develop visual comparisons addressing motif hierarchy, contrast, rhythm, and negative space; document the historical and community basis of any cultural references; and evaluate the evidence behind ecological or empowerment claims. Assessment can thus distinguish procedural execution from analysis, interpretation, and ethical argument. Table 2 operationalises this approach through artefacts that support specific judgements, rather than expecting every textile to convey an identical cultural meaning.

The framework also yields a research agenda that can be examined through complementary methods. Practice-based studies can document rejected and selected compositions; reception research can compare artists, referenced communities, visitors, and buyers; technical work can assess colourfastness under specified conditions; and environmental assessment can follow material inputs and use over time. Three propositions follow from the synthesis: (1) source traceability and stakeholder involvement may strengthen cultural legitimacy more than the presence of local plants alone; (2) the relationship between aesthetic quality and cultural narrative may vary across audiences and contexts; and (3) trust in sustainability claims may depend on transparent processes and product durability rather than botanical origin alone. These propositions require new empirical research and cannot be inferred causally from the selected publications.

The distinctive contribution of the threshold model is to locate the exact inferential transition at which evidence becomes insufficient; the risk matrix shows how shortcomings in cultural traceability and socio-ecological accountability may combine. Together they prevent the conflation of pigment success with artistic quality, motif resemblance with cultural legitimacy, and natural inputs with demonstrated sustainability. This integrated contribution connects technical textile inquiry, visual semiotics, and the social negotiation of cultural and economic value while providing practical criteria for criticism, curatorial writing, and art education.

Table 2. Evidence-based criteria for ecoprint criticism and art education

Domain	Critical judgement	Documentation supporting judgement
Material	Evaluate treatment choices against function and stability	Samples, plant and fibre details, treatment records and fastness observations
Visual	Justify composition in relation to artistic intention	Alternative layouts; analysis of rhythm, contrast, contours and figure–ground relationships
Cultural	Evaluate the basis for a shared-identity interpretation	Source records, adaptation rationale, attribution and relevant community perspectives
Socio-ecological	Assess participation, benefits and environmental assertions	Decision and labour records, distribution of value, material inputs and durability evidence

Conclusion (خاتمة)

Botanical imprints acquire interpretative significance through four analytically distinct stages: material contact, aesthetic curation, cultural coding, and negotiation of social value. Technical tests establish the conditions of transfer and use; formal analysis evaluates aesthetic selection; documented references and reception inform cultural legitimacy; and evidence of agency, benefits, and resource use supports socio-ecological claims. No single stage can substitute for the evidence required by the next.

The original evidentiary threshold model specifies where unsupported inference occurs, while the complementary risk matrix identifies contrasting combinations of cultural traceability and socio-ecological accountability. Together, they offer a structured basis for assessing contemporary ecoprint as textile art, cultural communication, and a learning context for critical judgement. Their contribution is analytical rather than a validated measurement of aesthetic quality or community outcomes.

The review is bounded by a purposive corpus of 20 publications and does not include original audience interviews, comparative life-cycle calculations, or tests of the proposed criteria. Future studies can assess the model through artwork documentation, stakeholder reception, artisan decision-making, and longitudinal product-use evidence. Such work would clarify when culturally referenced ecoprint earns shared recognition and when its production distributes environmental and economic benefits in demonstrable ways.

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