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Translating Place Identity into Textile Motif Design

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ABSTRACT

Place identity is expressed through symbols, practices, and visual representations. Translating regional identity into textile motifs requires a systematic approach that connects local visual sources with meaningful design decisions. This study aims to identify Pangandaran's visual identity sources, translate them into textile motif compositions, and evaluate the resulting prototype. A practice-based design research approach was employed using a modified design thinking process incorporating a visual-semantic translation matrix. Five visual sources were identified and classified, with the Marlin Fish Monument serving as the primary motif, supported by coastal landscapes, fishing activities, marine biota, and vegetation. These sources were transformed through stylization, visual hierarchy, and repeat pattern development into three design alternatives. The selected coastal panorama composition was evaluated as a digital prototype by 17 respondents comprising textile industry experts, textile design academics, and potential users. Descriptive analysis revealed favourable perceptions of recognizability, visual distinctiveness, aesthetic quality, and textile applicability, with pooled mean scores ranging from 4.3 to 4.9. The findings provide preliminary evidence of perceived regional associations rather than independently verified recognition. This study contributes a traceable visual-semantic translation approach that connects regional identity sources with textile design decisions, offering a methodological reference for developing place-based textile products.

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INTRODUCTION

Regional identity is continually created through cultural activities, symbols, objects, and visuals. In this study, place identity is understood as the dimension of identity that is shaped by people's relation to a physical setting, i.e., its environment, landmarks, and shared meanings [1]; it is expressed and communicated through visual signs and cultural artefacts [2]. Place identity here refers to the set of place-specific visual signs, and the meanings attached to them, through which Pangandaran is represented and recognised. Textiles are an important form of expression of such identity because shapes, colors, motifs, materials, and the manufacturing of textiles can carry the community's memories and express cultural affiliation. As shown in research on traditional weaving, textile manufacturing, and garment motifs, these could serve as visual markers for expressing and maintaining cultural identity [3]. Recent research on contemporary batik shows that regional identity can be created by transforming ecological and cultural aspects into recognizable visual motifs [4].

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The connection between textiles and identity becomes especially important regarding contemporary batik. The distinctive features of regional batik extend beyond traditional forms; the choice of environmental features, cultural symbols, regional stories, and visual elements can shape its identity. For example, reference [4] shows how ecological icons can be stylized and visually represented as markers of regional identity. At the same time, research on Batang batik shows that regional character is defined not only by the forms of motives but also by specific decisions regarding the color scheme [5].

The chosen location, Pangandaran, offers such opportunities for the following reasons: first, its place identity is strongly related to natural landscapes, coastal tourism, and locally based creative potential. Studies of the branding of Pangandaran revealed that natural and tourism-related potential is the most valuable resource of the region's identity from the visitors' perspective [4]. In addition to the touristic landscapes, local natural resources have been used to develop creative products [5]. For example, reference [5] shows how pandan resources and craftsmanship in Pangandaran can be used to develop new products that combine environmental protection, economic benefits, and innovation. Because [4] reflects the visitors' perspective, it captures Pangandaran's destination image rather than an identity held by its residents. This study therefore aims to represent Pangandaran's place identity as it is publicly documented and observable through documents or field observation and communicated outwardly, in a form that residents are also expected to recognise. This choice has two implications: the identity translated here may over-represent tourism-related features relative to local lived meanings, and the appropriate respondents for a recognition evaluation are people familiar with Pangandaran, including residents. Both are addressed in the Method and in the Limitations. Taken together, [4] and [5] indicate that Pangandaran has rich environmental, tourism-related, and craft-based references, and [6] point to its cultural references e.g., Sundanese cultural practices such as the Hajat Laut sea-offering tradition, local performing arts, and local history, which can be transformed into a visual identity. The regency's relatively recent administrative establishment Law No. 21/2012, further increases the urgency of constructing a shared visual identity.

In textile design, some previous work has begun to investigate this potential. Reference [6] created batik patterns using the marine environment of Pangandaran as a source and applied this design to tourism souvenirs. Using design thinking as its design process model, this study demonstrated that local marine resources can be transformed into innovative batik patterns that, in turn, can be used to produce functional products. This study is important because it establishes a strong link among the region's environmental qualities, the development of motifs, and the innovation of tourism-oriented products. However, the design development in this study focused primarily on the imagery of the marine park and a specific product application, leaving other identity sources unexplored, namely landmarks (e.g., the Marlin Monument), fishing livelihoods, coastal flora, and cultural references, as well as the visual relations among them.

Reference [7], conducted another initiative related to Pangandaran, exploring the distinctive features of the region using visual literacy and alginate as an alternative resist medium in cold-wax batik (batik malam dingin). This study demonstrates that meaningful sources for motif development can be found, contributing not only to design but also to cultural and entrepreneurial learning processes. However, this project was educational and community-oriented and did not develop a visual system that traces how selected regional characteristics were transformed and how motifs composed from them could be understood as images of Pangandaran identity.

Further evidence from other regional batik environments supports the fact that successful motif creation is more than simply choosing a locally recognized object to represent. For example, in the production of Baluran batik, the inclusion of ecologically inspired elements, such as local animals, becomes regionally significant through visual stylization, interpretation, and reconstruction rather

than mere literal representation [2]. In the same way, unique local features in Batang batik coloring may be recognized and incorporated into the design parameters, even when there is room for innovation in terms of materials and aesthetic values [3]. Such studies suggest that the strength of a regional textile identity depends less on the presence of local symbols than on how sources are selected, interpreted, and composed.

This approach is in line with the latest trends in the design research field, which pay close attention to culture-oriented Design. According to reference [7], the Design of products should be guided by a cultural approach that entails interrelated processes of understanding cultural contexts, synthesizing cultural differences and values, and translating them into Design. As the framework suggests, it is important to make the process of translating cultural knowledge into design concepts visible rather than relying on intuitive aspects of such translation. Moreover, according to reference [8], it is important to identify and map symbolic-semantic information when creating design concepts based on cultural traditions, underscoring the need to translate cultural knowledge through specific semantic relations.

This step is crucial because the communication of cultural knowledge through design depends largely on users interpreting visual signs correctly. Reference [10] demonstrates that visual cultural symbols play an important role in shaping cultural cognition and cultural identity, as each component of design contributes to the perception of visual symbols and cultural meanings. Therefore, the process of evaluating design becomes connected not only with aesthetic but also communicative functions of the visual representation of cultural associations. Along with this trend, reference [11] pays special attention to the user experience in culturally sustainable communication, highlighting the benefits of heritage-based design.

Three strands of theory ground the translation process in this study. First, place identity [21] defines what is translated: the physical setting and the shared meanings attached to it, which become the identity sources and their local meanings in the matrix. Second, semiotics, following Peirce [20], distinguishes icons (signs that refer by resemblance), indices (signs that refer through a direct physical or causal connection), and symbols (signs that refer by convention). These categories inform the transformation strategy and motif function components of the matrix, that is, whether an element refers to Pangandaran by resemblance, as a stylised depiction of waves or flora, or by convention and association, as a landmark such as the Marlin Monument does.

Third, cultural product design models describe the movement from cultural features to design attributes and finally to the product [8], [22], [26]. Lin's model [22], for instance, organises cultural features into outer (tangible), mid (behavioural), and inner (intangible) levels that are translated into design features, and Leong and Clark [26] emphasise culture-based knowledge as a basis for design practice. These models inform the staged structure of the process in this study, in which sources are identified (empathize), interpreted and mapped (define), transformed into compositions (ideate), and evaluated (prototype and test). Gestalt principles [23] play no role in the design process; they are used only as a post hoc interpretive lens in the Discussion.

The above examples indicate the difference between using a local object as inspiration for design motifs and building a recognizable regional visual language. Whether a fish, coastal area, local performance, local plants, monument, or tourist object has a beautiful appearance or not, the presence of the object itself does not guarantee that users recognise the design motif as specific to a particular region. This study therefore examines how selected sources are combined and ranked to support Pangandaran-specific recognition, and reports perceived distinctiveness as preliminary evidence only. It means that cultural sources should go through a traceable process in which the meanings of the sources are uncovered, their visual characteristics are extracted, transformed through stylization, and organized into relationships of textile compositions. It is important to conduct a user evaluation to determine whether the regional associations remain recognizable after the transformations. The

above idea is supported by current research on culture-oriented design, which emphasizes cultural value translation, symbolic-semantic mapping, and user recognition.

Previous studies on Pangandaran, which were used for the literature review in this project, showed the possibility of creating motifs from the marine environment, usage of local features for education and production of batik fabrics, natural resources, and craft activities as sources for creativity of the region [5], [6], [7]. Nevertheless, these studies addressed separate parts of the design problem and only partially covered the entire process. No effort was made to comprehensively analyze the regional identity sources mapping, their interpretation and visual characteristics, their transformation into motif elements and repeat patterns, and user recognition of the Pangandaran identity.

Beyond Pangandaran, culture-based motif and textile design research has examined how ecological and cultural sources are stylised into regional batik motifs [2], how color defines regional character [3], how traditional patterns can be redesigned and reorganised [16], [17], [19], and how cultural knowledge can be translated into design concepts [8], [9]. This work tends either to focus on motif outcomes or on general cultural frameworks, and it offers limited explicit, replicable guidance on how place-identity sources are translated, through interpreted meaning and visual transformation, into a hierarchised motif system whose recognizability can be evaluated. The gap addressed here is therefore one of design knowledge rather than only a geographical one: Pangandaran is the context in which a traceable translation procedure is demonstrated.

Consequently, what makes the current research novel is not the use of design thinking per se, since design thinking has already been applied to the development of Pangandaran-related motifs in [6]. The contribution of this study is the adaptation of symbolic-semantic mapping [9] into a visual-semantic translation matrix embedded in the define and ideate stages of design thinking, which makes the translation from source to motif traceable. The matrix was developed by the authors, building on the cultural-translation logic of [8] and the symbolic-semantic mapping of [9]. The matrix has six components: identity source, local meaning, visual characteristics, transformation strategy, motif function (the role of an element in the motif hierarchy), and composition rule. It helps to trace how regional identity sources, contextual meanings, unique visual features, transformations, motif functions, and composition methods are linked. The perception of the design is not a matrix component; it is evaluated in the Test stage against the matrix, in order to examine the link between design intentions and identity recognition. Thus, the positioning of the research aligns with contemporary culture-oriented design methodologies, in which cultural research, semantic translation, and audience perception play important roles.

The study addresses three research questions: (RQ1) Which visual identity sources of Pangandaran can be identified, and how are they interpreted and selected? (RQ2) How can the selected sources be translated, using the visual-semantic translation matrix, into hierarchised motif elements, compositions, and repeat patterns? (RQ3) How do experts and potential users perceive the recognizability, distinctiveness, aesthetic quality, and applicability of the resulting prototype? Accordingly, the objectives are to identify and map visual identity sources that represent Pangandaran, to interpret their contextual and symbolic meanings, to translate selected sources into textile motif components, to design alternative motif compositions and repeat patterns, and to evaluate the resulting design in terms of perceived recognizability, distinctiveness, aesthetic quality, and applicability to textile products. The evaluation involves textile industry experts and textile design academics, who judge aesthetic quality and applicability, and potential users, who represent the intended consumers' perception of recognizability. Instead of developing isolated decorative motifs, this study creates a visual design system that helps to transfer the characteristics of the Pangandaran region into modern textile design. Such a system may serve as the basis for future applications in fashion, textile products, tourist goods, souvenirs, and other creative-industry products with clear regional connections.

METHOD

This study applied a design-oriented approach, specified as practice-based design research (research through design), in which designing the artefact is the main means of generating and testing knowledge [27]–[30]. The approach is predominantly qualitative, supplemented by descriptive quantitative data from a perception-based evaluation. Design development follows a design thinking process comprising the stages empathize, define, ideate, prototype, and test. Design thinking is used here only as the process model within this research paradigm; it was chosen for its structured, exploratory, and user-informed staging.

In this study, design thinking is not used as an absolutely general framework. It has been modified by incorporating a visual-semantic translation matrix into the define and ideate stages (Figure 1). The matrix has six components: identity source, local meaning, visual characteristics, transformation strategy, motif function, and composition rule. It was developed by the authors, adapted from [8] and [9]. Local meanings were derived from documents; visual characteristics from the researchers' formal analysis of the source images; and transformation strategy, motif function, and composition rule were design decisions made by the first author as designer. The completed matrix is presented in Table 3. This has been done through culture-oriented design principles, which focus on identifying, analyzing, integrating, and transforming socio-cultural factors into design attributes. This research produced a Pangandaran textile motif design using place-identity sources. Table 1 aligns the five objectives, the design thinking stages, and the research activities.

Table 1. Alignment of objectives, design thinking stages, and research activities

Stage	Objective	Research activity
Empathize	1. Identify and map visual identity sources	(1) Collect visual sources through observation, visual documentation, interviews, and document analysis
Define	2. Interpret contextual and symbolic meanings; 3. Translate selected sources into motif components	(2) Select sources, interpret their local meaning, complete the matrix, and assign roles in the motif hierarchy
Ideate	4. Design alternative compositions and repeat patterns	(3) Explore forms and compositions; develop three alternatives and their repeat structures
Prototype	4. Design alternative compositions and repeat patterns	(4) Develop the prototype of the selected composition
Test	5. Evaluate recognizability, distinctiveness, aesthetic quality, and applicability	(5) Perception-based evaluation by experts, academics, and potential users

During the empathize stage, data were collected through environmental observation, visual documentation, and document analysis. The documents analysed were e.g., the regional spatial plan [15], tourism and branding documents [4], and official portal content. Visual and narrative data were compiled into a database that served as the basis for selecting design sources. Such a procedure is typical of culture-oriented design [8], [9], in which knowledge of the socio-cultural context is a prerequisite for developing design features.

During the define stage, the collected visual and narrative data were assessed against five criteria: relevance to Pangandaran, visual distinctiveness, meaning, prominence in the source data (how often and how prominently a source appears in documents, and field observation), and transformability into textile motifs. Chosen elements were mapped using the visual-semantic translation matrix. Roles were assigned on three bases: strength of identity association, visual dominance (silhouette strength and scalability), and symbolic importance. Each element was assigned the role of a primary, secondary, supporting, or filler motif.

Formal exploration (exploration of form) was carried out at the Ideate stage, using simplification, stylization, and abstraction, along with variations in scale, orientation, color, composition, and repeat structure [12], [13]. Three design alternatives were generated by systematically varying composition strategy and repeat logic: a diagonal-narrative all-over composition, a coastal panorama with horizontal layers, and a medallion/lattice geometric composition. They were developed through sketching and digital development in software and were chosen because they represent distinct repeat structures [19] and make different trade-offs between narrative density, hierarchy legibility, and structural order. Option 1 was intended to communicate narrative richness, Option 2 an immediate focal hierarchy and legibility of the coastal landscape, and Option 3 structural order and repeat stability.
The Prototype stage involved developing the selected composition as a digital repeat pattern and a digital fabric mock-up. The prototype comprised the primary motif, secondary motifs, fillers, color scheme, repeat pattern, and a simulation of the design's application. The prototype enabled the design to be examined in application scenarios and served as a useful tool for communicating and evaluating design decisions, which fits the role of prototyping described in [14].

During the Test stage, the selected prototype was presented as a digital image or mock-up and evaluated against four criteria: (1) perceived recognizability of Pangandaran place identity, (2) perceived visual distinctiveness, (3) aesthetic quality, and (4) perceived applicability to textile products. Respondents were selected using purposive sampling based on their expertise, experience, and familiarity with Pangandaran. The study involved 17 respondents comprising three textile industry experts, four textile design academics, and ten potential users. Textile industry experts were selected based on their professional experience in textile production, motif development, or product design. Textile design academics were selected based on their expertise in textile design, visual aesthetics, and motif development. Potential users were selected based on their interest in textile or fashion products and their previous visits to Pangandaran. All respondents had visited Pangandaran, providing a contextual basis for evaluating the visual representation of the region's identity in the developed textile motifs. A closed-ended questionnaire with 11 indicators under the four criteria was used, rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

In general, the data analysis was performed in accordance with the type of data produced at each stage. The qualitative data from observations, interviews, documentation, images, and open-ended questionnaires were analyzed through coding approach (e.g., thematic analysis), coder(s), and derivation of categories (inductively from the data and/or deductively from the matrix components). Trustworthiness was supported by triangulation of observation and documents and member checking or peer debriefing. The Likert data were analyzed using means and standard deviations per indicator and per respondent group, and a pooled mean across all 17 respondents. Mean scores were interpreted using equal-interval categories: [1.00–1.80 very low; 1.81–2.60 low; 2.61–3.40 moderate; 3.41–4.20 high; 4.21–5.00 very high]. A design is described as recognizable or applicable when the mean falls in the very high category. Preference data (frequencies and percentages) were used only to select the option to be prototyped; the Likert evaluation concerns the selected option, and the two data sets were not combined. The combination of qualitative and quantitative analysis was used to describe the process of translating Pangandaran place-identity sources into the textile motif system and the perceived level of communication of place identity through the design.

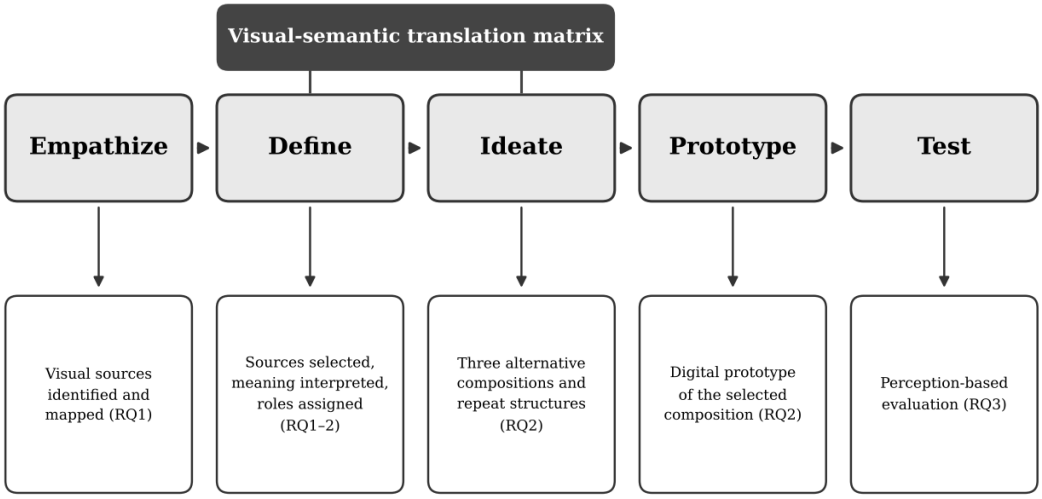


Figure 1. Design process framework: design thinking stages with the visual-semantic translation matrix applied at the define and ideate stages

RESULTS AND DISCUSSION

Identification and Selection of Visual Sources Related to Pangandaran for Motif Development

The empathize stage revealed a wide variety of visual sources related to Pangandaran Regency. The visual sources were sorted into five groups: coastline and marine landscape; fishing and ships; marine fauna; conservation zones and coastal flora; and landmarks and cultural references of the region. As shown in Figure 2 and Table 2, the place identity of Pangandaran is scattered around environmental, socioeconomic, and symbolic aspects, not confined to any single visual source. Such an approach is consistent with the official documents of regional spatial planning in which coastal, marine, conservation, fisheries, and tourism functions are seen as essential elements of Pangandaran territorial structure [15].

From the perspective of textile development, the significance of these visual sources lies not merely in their visual appeal but also in their ability to convey a connection among people, place, and the local environment. Fashion-related design can facilitate connections between community and place, and according to reference [16], motif textile design can be developed based on shared visual references and reinterpreted into a new visual vocabulary. In this way, the initial exploration phase of this study was understood as involving the identification of the region's signifiers.

The Visual references representing the regional identity of Pangandaran were primarily collected through a document-based review of secondary sources, including published documents, relevant literature, and publicly accessible online portals. The collected materials were examined to identify visual elements associated with Pangandaran's natural environment, coastal activities, cultural characteristics, and regional landmarks. These references provided the initial basis for identifying and categorizing potential visual identity sources for textile motif development. The identified visual elements were subsequently evaluated based on their relevance, visual distinctiveness, contextual meaning, visual prominence, and potential for transformation into textile motifs. This process supported the systematic selection and classification of visual sources according to their roles in motif composition, including primary, secondary, and supporting elements.

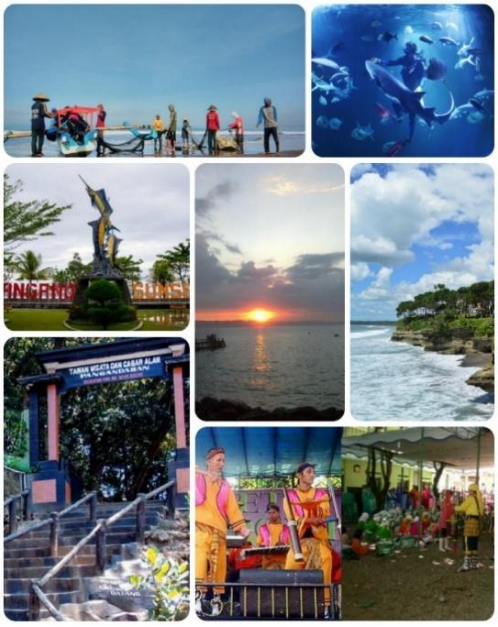


Figure 2. Visual references identified during the Empathize stage

Source: Pangandaran Regency Government portal

The visual sources were selected in the Define stage using five criteria: (1) relevance to Pangandaran; (2) visual distinctiveness; (3) meaning; (4) prominence in the source data; and (5) transformability into textile motifs, including the ability to be combined with other elements. Table 2 shows how each source was assessed against each criterion. Filtering visual sources was necessary because being local is not the sole criterion for ensuring that visual sources would function well as motifs.

Table 2. Visual sources and their role mapping

Visual source	Role
Marlin Fish Monument	Primary
Beach, ocean, and waves	Secondary
Boats and fishing activities	Supporting
Marine biota	Supporting / filler
Nature reserve and coastal vegetation	Supporting / filler

The Marlin Fish Monument was selected as the primary visual source. Its potential for use in this study is mostly formal and representative: an elongated body, a pointed bill, a big dorsal fin, and a forward-looking gesture make a distinctive silhouette that remains identifiable after being reduced and simplified. These elements enable the source transformation without being realistically depicted. Table 3 presents the completed visual-semantic translation matrix and illustrates how each visual element informed design decisions, including the stylization of the marlin silhouette, the scale relationship between primary and secondary motifs, and their arrangement within the repeat pattern.

Table 3. Visual-semantic translation matrix for Pangandaran

Identity source	Local meaning	Visual characteristics	Transformation strategy	Motif function (basis for role)	Composition rule
Marlin Fish Monument	A regional landmark symbolising agility, dynamism, and independence. The Pangandaran Tourism and Culture Office (2023) explicitly identifies the Blue Marlin Monument as an icon of Pangandaran and explains its symbolic association with the characteristics of the blue marlin fish	Elongated body, pointed bill, large dorsal fin, strong directional silhouette	Simplification and stylization of the silhouette, keeping body shape, bill, dorsal fin, and directional form	Primary motif (highest on identity association, visual dominance, and symbolic importance)	Focal unit and largest element in the repeat; its placement differs by option (diagonal interlocking, horizontal layers, or geometric unit)
Beach, ocean, and waves	Dominant features of Pangandaran's coastal landscape and tourism identity. Indonesia's official tourism portal describes Pangandaran as a coastal destination characterised by its peninsula, sandy beaches, ocean scenery, and marine tourism activities (Indonesia Travel).	Curving lines with a rhythmic feel; suitable for continuous repetition	Stylization into curved and wave lines	Secondary motif (environmental context)	Rhythmic layers or connecting lines around the marlin
Boats and fishing activities	Represent the traditional coastal livelihoods and fishing activities of local communities. Official fisheries statistics document 1,271 marine capture-fisheries households in Pangandaran Regency, supporting the significance of fishing in the local economy (BPS Kabupaten Pangandaran, 2025; data for 2022).	Narrative silhouettes that extend the social context of the motif	Reduction to narrative silhouettes	Supporting motif (livelihood reference)	Secondary accents that do not compete in scale with the marlin

Identity source	Local meaning	Visual characteristics	Transformation strategy	Motif function (basis for role)	Composition rule
Marine biota	Represent the marine biodiversity of Pangandaran's coastal ecosystems. Coral reef ecosystems identified and 66 reef fish species in Pangandaran's coastal waters, providing ecological evidence for the inclusion of marine organisms as visual references.	High variation of organic forms suitable for secondary accents	Simplification to organic accent forms	Supporting / filler (ecological reference)	Accents between larger motifs
Nature reserve and coastal vegetation	Represent the ecological richness and forested coastal landscape of Pangandaran. Official descriptions of the Pananjung Pangandaran Nature Reserve document diverse vegetation and wildlife, including deer, long-tailed macaques, and other native fauna (Pangandaran Regency Government.; Directorate General of KSDAE, 2017).	Organic silhouettes and foliage forms that balance marine elements	Stylization into geometric or organic forms	Supporting / filler (ecological reference)	Balances marine elements and fills negative space

The contribution of this study lies in making the translation from source to motif traceable through the visual-semantic translation matrix, which links each design decision to a source and its local meaning. A local landmark is abstracted, simplified, and reorganised into a new hierarchy of primary, secondary, and filler motifs. Research on redesigning traditional patterns demonstrates that visual elements, culturally significant in one way or another, can be extracted and reorganized through carefully orchestrated changes in form, composition, colors, and texture [16]. In the context of Indonesian batik, reference [17] also emphasizes the possibility of combining traditional references with contemporary design techniques while preserving cultural significance.

A single element of marlin was nonetheless considered too limited in conveying the overall space of Pangandaran. The major motif was thus combined with references to coastal contexts. This choice is supported by the territorial character of Pangandaran Regency's spatial plan, in which development related to coastal, fisheries, conservation, and tourism functions was identified as part of the regency's spatial organization [15]. Within the design, these context references were not depicted realistically in the landscape; they were instead decomposed into visual elements such as waves, surf lines, horizon, sun, clouds, coconut palm trees, coastal plants, dots, and linear ornaments. These elements are of two kinds: Pangandaran-specific (the Marlin Monument) and generic coastal (sun, clouds, palm trees, horizon). The generic elements form a contextual layer that frames the marlin; they are not claimed to carry Pangandaran specificity, and they may dilute distinctiveness, which was not tested against other coastal motifs (see Limitations).

Such a hierarchy comprises three layers. First, the stylized marlin forms the identity element. Secondly, the waves, the sun, the horizon, and the coastal plants constitute the contextual elements of a marine and coastal environment. Thirdly, the clouds, dots, lines, and smaller organic shapes serve as filler elements that create rhythm and negative space. This is done to ensure that the supporting elements do not conflict with the theme and can be used to form multiple icons.

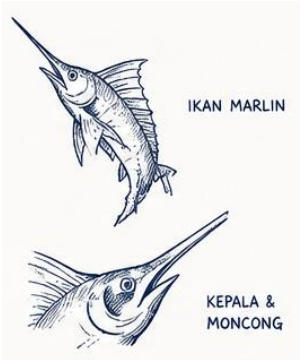
Thus, in the Define stage, the design concept "Marlin in the Pangandaran Coastal Landscape" was formed. It serves as both a conceptual and a compositional boundary: the marlin must be the most identifiable form, whereas the coastal elements should reinforce rather than weaken its regional connection. The Empathize and Define stages led to the design decision to focus on a few carefully chosen sources and to differentiate their visual roles, rather than to collect many local symbols. Whether this is more effective than alternative strategies was not tested. This approach is consistent with culture-based batik design, in which reinterpretation, rather than reproduction, enriches the visual language without losing connections to cultural sources [16].

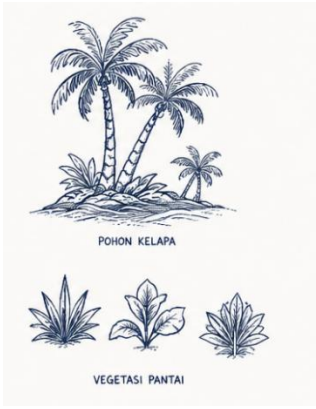
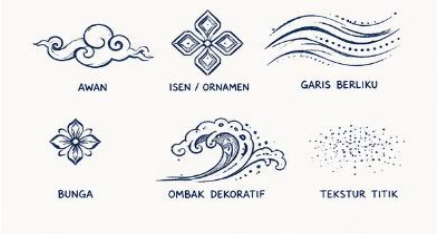
Alternative Textile Stimulation and Functional Mapping

The Ideate phase involved transforming the visual hierarchy generated from the Define phase into alternative textile motifs. Instead of trying to find one solution right away, this phase experimented with changes in form, size, orientation, placement, density, rhythm, positive-negative space, and repetition. Design thinking is generally described as an iterative process in which ideation, testing, prototyping, and reflection are performed to generate solutions [18]. In this study the stages were applied largely sequentially; refinements were made between ideate and prototype, and the test results were not fed back into redesign (see Limitations).

Stilization involved keeping the characteristic features of the sources without going into much descriptive details. The marlin maintained the body shape, pointy nose, dorsal fin, and general directional form; the coastal environment was represented through waves, surfing shapes, sun, horizon lines, clouds, and coconut trees; and small environmental forms were represented using either geometric or organic forms. The objective was not to capture Pangandaran photographically but to create a visual vocabulary that can be reconfigured differently in various textile compositions. This is in line with research indicating that pattern innovation in traditional cultures may involve the extraction, deformation, and redesign of recognizable structures, and that the contemporary development of batik involves digital and formal experimentation while maintaining its cultural referent [9].

Table 4. Stylization of the selected visual sources

Visual reference	Transformation result	Function in the design
Marlin Fish Monument		Primary motif

Beach and ocean		The secondary motif
Coastal vegetation		Supporting motif
Coastal environmental details		Filler elements

When translated into modular visual units, the sources were considered components of a repeat pattern system rather than illustrations. Therefore, pattern design became an exercise involving considerations of connections, alternations, reflections, alignments, and the use of positive or negative space in the units. According to reference [10], the transformation of traditional textile patterns into new pattern systems entails operations such as motif selection, simplification, combination, symmetry, and repetition. In the current research, these operations yielded three alternatives with distinct visual logics, enabling contrast of the impact of hierarchy and repetition.

Development of Alternative Textile Motif Compositions

The design development exercise involved creating alternative visual compositions that tell a story about the coastal region by combining the marlin, ocean waves, and native vegetation. To achieve aesthetic freedom, story legibility, and functional use, the development was undertaken through three compositional alternatives.

Option 1 – Diagonal-Narrative all-over

In Option 1, motifs such as the marlin, waves, coastal vegetation, sun, clouds, and minor fillers are arranged in an overcrowded all-over composition. Motifs are connected by means of curvilinear and diagonal connections that create an unbroken visual link without the presence of any horizontal connection. Option 1 creates the greatest number of environmental narratives because the principal motif, the marlin, is part of a vast coastal environment. However, the problem associated with this alternative is visual competition. If there are too many supporting motifs and fillers, or if they are similar in size, the principal motif will lose its hierarchy.



Figure 3. Diagonal-Narrative all-over

Option 2 - Coastal Panorama

Option 2 features a coastal panorama in which marlins serve as the major motifs, while waves, coastal flora, the sun, and decorative bands form horizontal layers. Unlike option 1, there is a clear hierarchy between the major and secondary motifs, and the coastal theme is immediately visible. However, due to the highly horizontal orientation of the design, there are restrictions on the number of applications in which it can be used.



Figure 4. Coastal panorama composition

Option 3 - Medallion / lattice geometric composition

Option 3 arranges the motifs within a more symmetrical geometric field: diamond- or medallion-like units form a regular pattern. In addition, waves and ornamental curvilinear fillers are

applied to support the pattern design; these fillers are decorative and are not an identity source of Pangandaran. This alternative offers the highest degree of structural order and repeat stability due to the clear motif units and their rhythmic arrangement. The disadvantage of this approach is that the coastal landscape becomes more decorative and abstracted. If the marlin silhouette is minimized, the regional narrative will be perceived as geometric ornament.



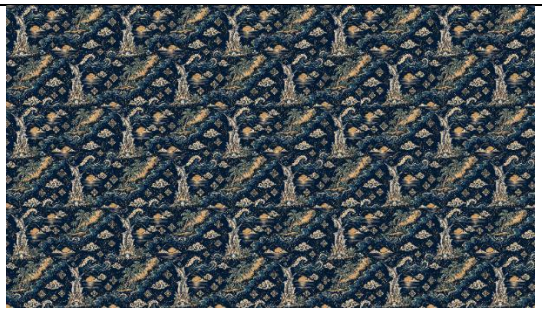
Figure 5. Medallion / lattice geometric composition

Table 5. Comparative characteristics of the three Pangandaran textile motif compositions

Option	Composition strategy	Relationship among elements	Visual character	Development considerations
1	Diagonal-Narrative all-over	Marlin is repeated among waves, sun, clouds, palms, and fillers through curved and diagonal interlocking movement	Dynamic, dense, immersive, and environmentally rich	Strong narrative richness, but scale and spacing must be controlled so that supporting motifs do not weaken the main motif hierarchy
2	Coastal panorama	The large marlin shapes act as focal points, with the coastal elements arranged in directional horizontal layers	Legible, narrative, and highly directional	Strong identity hierarchy, but single-direction composition might limit placement and multidirectional use of garments
3	Medallion / lattice geometric composition	The marlin and coastal motifs are incorporated in repeated geometric shapes in an ornamental symmetrical pattern.	Orderly, decorative, rhythmic, and formal	Good repeat stability and high decorative coherence, but the regional narrative gets more abstract and relies on maintaining the recognizability of marlins.

The additional repeat tests help to reveal the differences in functionality between the three. The first alternative becomes a whole piece repeat, with the dense story field covering the entire fabric. The second alternative creates a horizontal repeat with a strong directional stripe, while the third alternative makes a geometric lattice repeat. These differences matter because repeat structure influences not only the decoration rhythm but also the versatility of the textile pattern during scaling and across various products. Hence, the significance of the ideation phase lies in its ability to clarify such trade-offs before choosing a prototype.

Table 6. Repeat structures of the three composition alternatives for the prototype motif design

Option	Design repeat master	Repeat result	Observed composition type
1			Diagonal-Narrative all-over
2			Coastal panorama
3			Medallion / lattice geometric composition

In terms of comparative analysis, Option 1 stresses storytelling and environment, while Option 2 stresses immediate focal hierarchy and the legibility of the landscape, and Option 3 stresses geometry and repeated patterns. It increases the significance of the ideate phase of analysis, since it reveals clear design compromises rather than treating alternative generation as an illustrative process.

Respondents' preferences among the three options are reported in Table 7. Option 2 was prototyped and evaluated (Table 9); it was selected by 10 respondents on the basis of the highest preference and the clarity of its hierarchy.

Table 7. Respondents' preferences among the three composition options (n = 10)

Option	Frequency	Percentage
1 – Diagonal-Narrative all-over	1	10%
2 – Coastal panorama	7	70%
3 – Medallion / lattice geometric composition	2	20%

Results of the Preliminary Evaluation of the Pangandaran Textile Motif Prototype

To obtain a preliminary evaluation of the perceived recognizability, distinctiveness, aesthetic quality, and applicability of the prototype, a perception-based evaluation was conducted during the Test stage with 17 respondents in three groups: textile industry experts (n = 3), textile design academics (n = 4), and potential users (n = 10). Table 8 describes the respondents. The prototype was presented as a digital image or mock-up; respondents were informed beforehand that the design represents

Pangandaran. The evaluation used a 5-point Likert scale on four criteria with 11 indicators. Table 9 reports the means and standard deviations for each group and the pooled mean (n = 17).

Table 8. Respondent profile

Group	n	Selection criteria and sampling	Previous Experience of Visiting Pangandaran
Textile industry experts	3	Professionals with experience in textile production, motif development, or textile product design; purposive sampling.	visited
Textile design academics	4	Academics with expertise in textile design, motif development, or visual aesthetics; purposive sampling.	visited
Potential users	10	Individuals interested in textile or fashion products and familiar with Pangandaran through previous visits; purposive sampling.	visited

Table 9. Results of the preliminary evaluation of the Pangandaran textile motif prototype (Likert scale, 1–5)

No	Aspect	Indicator	Description	Textile Experts (n=3)	Textile Academicians (n=4)	Potential Users (n=10)	Pooled Mean (n = 17)	SD (n = 17)
1	Perceived Recognizability of Pangandaran Identity	Presence of Main Visual Icon	Clarity of the marlin form as the primary icon of the Pangandaran region.	4.7	4.5	4.4	4.5	0.51
		Coastal Landscape Characteristics	Presence of supporting visual elements reflecting the distinctive ecosystem.	4.7	5.0	4.9	4.9	0.33
		Cultural Narrative Resonance	Ability of the visual composition to evoke an intuitive sense of place (local atmosphere) of coastal Pangandaran without needing verbal explanation.	4.3	4.25	4.6	4.5	0.51
2	Perceived Visual Distinctiveness	Perceived Differentiation	Distinctiveness of the visual character compared with the respondent's own knowledge of coastal West Javanese textile motifs or marlin	4.0	4.25	4.4	4.3	0.47

No	Aspect	Indicator	Description	Textile Experts (n=3)	Textile Academicians (n=4)	Potential Users (n=10)	Pooled Mean (n = 17)	SD (n = 17)
			motifs from other regions					
		Compositional Identity Strength	The level of visual recall respondents has toward the distinctive arrangement of the motif elements.	5.0	4.25	4.5	4.5	0.51
3	Aesthetic Quality	Balance and Rhythm	Evenness and balance of the visual arrangement of the evaluated design including the rhythm of its line movements.	4.3	4.5	4.4	4.4	0.51
		Visual Hierarchy	Clarity in the role distribution between the primary motif (marlin), supporting motifs (waves/ vegetation), and fillers.	4.7	5.0	4.9	4.9	0.33
		Scale	Proportionality of inter-element sizes and contrast in negative space to prevent a cluttered appearance or excessive void.	4.3	5.0	4.9	4.8	0.39
4	Perceived Applicability to Textile Products	Repeat Regularity	Perceived seamlessness of the repeat pattern, as judged from the digital repeat	5.0	4.75	4.7	4.8	0.44
		Cutting Flexibility	Perceived ease of cutting the pattern into garment components without compromising the motif's aesthetic integrity, as judged from the digital mock-up	4.3	4.5	4.6	4.5	0.51

No	Aspect	Indicator	Description	Textile Experts (n=3)	Textile Academicians (n=4)	Potential Users (n=10)	Pooled Mean (n = 17)	SD (n = 17)
		Product Adaptability	Perceived suitability of the motif composition for various product categories (casual wear, formal shirts, long cloth, or interior products).	4.7	5.0	5.0	4.9	0.24

As shown in Table 9, the respondents provided generally positive evaluations of the digital textile motif prototype across all four assessment aspects, with pooled mean scores ranging from 4.3 to 4.9 on a five-point Likert scale. The group means also ranged from 4.0 to 5.0, indicating favourable perceptions among textile industry experts, textile design academics, and potential users. As presented in Table 8, all 17 respondents had previously visited Pangandaran and were selected through purposive sampling based on their professional expertise, academic knowledge, or interest in textile and fashion products. Their previous exposure to Pangandaran provided an experiential basis for evaluating the visual references incorporated into the motif. Nevertheless, the frequency and depth of their visits, as well as their understanding of local cultural identity, were not independently assessed. Furthermore, because the evaluation did not include unprompted recognition tasks or comparison stimuli, the consistently high ratings may partly reflect acquiescence or demand effects rather than independently demonstrated recognition. Accordingly, the findings should be interpreted as preliminary perceptions of a digital textile motif prototype rather than conclusive evidence of its cultural representativeness or technical feasibility. The following discussion interprets these findings through established concepts in textile design and visual semiotics, which serve as theoretical perspectives rather than hypotheses empirically tested in this study.

1. Perceived Recognizability, Semiotic Framing, and Place Identity

The high pooled mean scores for coastal landscape characteristics (4.9) and the presence of the main visual icon (4.5) suggest that respondents perceived the selected visual elements as effective in communicating associations with Pangandaran. The motif integrates a stylised marlin as its primary visual element, supported by representations of waves, coastal vegetation, and other marine-related forms. These elements reflect the visual characteristics identified during the preliminary mapping of Pangandaran's regional identity.

From Peirce's semiotic perspective [20], the stylized marlin, waves, and coastal vegetation can be interpreted primarily as iconic signs because their forms retain visual resemblance to their real-world references. The marlin may also acquire symbolic significance through its association with the Marlin Fish Monument, which has been identified in the documentary sources as a regional landmark of Pangandaran. However, this symbolic interpretation should not be understood as evidence that all members of the local community attribute the same meaning to the motif.

The findings can also be interpreted in relation to place-identity theory [21], which recognises the role of physical environments and visual characteristics in shaping associations with particular places. Respondents gave cultural narrative resonance a pooled mean of 4.5, suggesting that the visual composition was perceived as capable of evoking the coastal atmosphere of Pangandaran without

requiring extensive verbal explanation. Given that all respondents had previously visited Pangandaran, these evaluations may have been informed by their personal experiences of the destination. Nevertheless, the results demonstrate perceived visual associations rather than the formation of place identity or community-wide recognition of regional symbols.

2. Perceived Distinctiveness: Formal Innovation and Cultural Continuity.

The evaluation of perceived visual distinctiveness produced positive ratings for perceived differentiation (4.3) and compositional identity strength (4.5). These findings suggest that respondents considered the motif visually distinguishable and its arrangement relatively memorable. The combination of a stylised marlin, coastal imagery, marine elements, and ornamental fillers contributes to the overall visual composition while maintaining references to Pangandaran's documented environmental characteristics.

The motif development process emphasised the transformation of selected regional visual references into a decorative textile composition rather than their direct photographic reproduction. Through stylisation, simplification, and the arrangement of visual elements within a repeat pattern, the design sought to establish a coherent composition while retaining recognizable references to the region.

However, the assessment of distinctiveness was based on respondents' existing knowledge of textile motifs, without presenting comparative examples from other regions. Therefore, the findings should not be interpreted as demonstrating the motif's uniqueness relative to established West Javanese or Sundanese textile traditions. Rather, they indicate that the respondents perceived the evaluated composition as visually distinctive within the limits of their prior experience. Further comparative evaluation involving documented regional textile motifs would be necessary to substantiate claims of visual originality or differentiation.

3. Aesthetic Quality: Formal Principles and Visual Perceptions.

The aesthetic quality assessment produced favourable ratings, particularly for visual hierarchy (4.9), scale (4.8), and balance and rhythm (4.4). These findings indicate that respondents generally perceived the composition as visually organised, proportionate, and balanced. The arrangement establishes a hierarchy between the dominant marlin motif, supporting coastal elements, and smaller decorative fillers. This relationship can be interpreted through Gestalt principles of visual perception [23], particularly the distinction between figure and ground and the organisation of visual elements into a coherent whole. These principles are applied here as an interpretive framework rather than as criteria explicitly tested during the design development process.

Variations in motif scale, directional movement, and the distribution of negative space contribute to the perceived visual balance of the composition. The repeated use of curved lines and coastal forms also creates a sense of rhythm and continuity, consistent with two-dimensional design principles discussed in [24]. Nevertheless, these interpretations reflect the perceived aesthetic qualities of the digital prototype and do not establish universal design preferences or objective aesthetic superiority.

4. Perceived Applicability to Textile Products: Technical Repeat and Materiality

The perceived applicability of the motif to textile products also received positive evaluations, with pooled mean scores of 4.8 for repeat regularity, 4.5 for cutting flexibility, and 4.9 for product adaptability. These findings suggest that respondents considered the digital motif potentially suitable for application across different textile and fashion products.

The high rating for repeat regularity indicates that the arrangement of repeated visual elements was perceived as continuous and visually coherent. This interpretation is consistent with the textile repeat design considerations discussed in [25], particularly the importance of continuity and adaptability across different surfaces. The three textile industry experts assigned a mean score of 5.0 to repeat

regularity, suggesting favourable professional perceptions of the digital repeat arrangement. However, these evaluations were based exclusively on the digital prototype and cannot confirm its technical performance during fabric printing or production.

Similarly, the positive rating for cutting flexibility reflects respondents' perceptions that the motif could be incorporated into garment components without substantially disrupting its visual composition. This judgment was based on digital mock-ups rather than physical cutting or garment construction. The high product adaptability score further indicates favourable perceptions of the motif's potential use in casual wear, formal shirts, long cloth, and interior textile products. Nevertheless, the actual suitability of the design for these applications remains to be established through material testing, physical printing, and product prototyping.

5. Limitations

This study has several limitations. The preliminary evaluation involved a small purposively selected sample limiting the generalisability of the findings. Although all respondents had previously visited Pangandaran, their level of cultural familiarity was not systematically assessed. Furthermore, the absence of unprompted recognition tasks, comparative visual stimuli, and alternative design prototypes limits the interpretation of the consistently positive ratings, which may have been influenced by response bias. The visual references were primarily derived from documents and online portals without direct validation by local communities, potentially overlooking less-documented cultural expressions. Additionally, the researcher's involvement in both designing the motifs and interpreting the findings may have introduced interpretive bias.

The design process was largely sequential, without a documented redesign cycle following the preliminary evaluation. Moreover, the prototype was evaluated exclusively in digital form, without physical printing, material testing, or garment construction, limiting conclusions about its practical applicability. Certain visual elements also represent general coastal characteristics rather than features unique to Pangandaran. Future research should therefore incorporate community-based validation, comparative recognition assessments, iterative design refinement, and physical textile prototyping to strengthen the cultural relevance, visual distinctiveness, and practical feasibility of the developed motifs.

CONCLUSION

This study demonstrates how selected visual sources representing Pangandaran's place identity can be systematically interpreted and translated into textile motif designs through a modified design thinking process incorporating a visual-semantic translation matrix. Addressing the first research question, five categories of visual identity sources were identified, comprising the Marlin Fish Monument, coastal landscapes and waves, fishing activities, marine biota, and coastal vegetation. These sources were interpreted and selected based on their regional relevance, visual distinctiveness, contextual meaning, prominence, and potential for transformation into textile motifs. The Marlin Fish Monument was established as the primary visual reference, while coastal and environmental elements provided supporting visual contexts.

Regarding the second research question, the visual-semantic translation matrix facilitated a traceable transformation from regional identity sources into stylised motif elements, compositional hierarchies, and repeat patterns. Three design alternatives were developed, representing diagonal-narrative, coastal panorama, and geometric lattice compositions. The coastal panorama was selected for prototype development, demonstrating how the arrangement of primary, secondary, and supporting

motifs can establish visual coherence while maintaining references to Pangandaran's coastal characteristics.

Addressing the third research question, the preliminary evaluation involving 17 respondents indicated favourable perceptions of the selected digital prototype across four aspects: perceived recognizability of Pangandaran identity, visual distinctiveness, aesthetic quality, and applicability to textile products, with pooled mean scores ranging from 4.3 to 4.9. These findings suggest that the developed motif was perceived as visually coherent and associated with Pangandaran's regional characteristics. However, the results represent preliminary perceptions rather than independently verified regional recognition or production feasibility.

The principal contribution of this study lies in the integration of a visual-semantic translation matrix into the design thinking process, providing a traceable approach for connecting place-identity sources, contextual meanings, visual transformations, and textile composition decisions. This approach offers a methodological reference for developing place-based textile designs and supporting regional creative-product development. Further validation through community participation, comparative recognition assessments, iterative design refinement, and physical textile prototyping is necessary to establish its broader cultural relevance and practical applicability.

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