

Development of Craft Art Based on Batak Visual Culture Through Digital Modelling to Support Lake Toba Tourism

Zulkifli¹, Wahyu Tri Atmojo, Gamal Kartono, Barli Kifli, Ryan Dallion

{zulkiflifbs@unimed.ac.id¹}

Faculty of Languages and Arts, Universitas Negeri Medan, Medan, Indonesia

Abstract. Batak craft art has long existed as a part of the community's visual culture, connected to traditional cultural rituals. To support Lake Toba tourism, there is a need for craft products that embody local cultural characteristics, developed through conservation mechanisms involving digital modeling. This article examines the potential for developing Batak craft art with the aim of preserving traditional visual culture within Lake Toba's tourism platform. A descriptive-qualitative method was employed within the framework of artistic creativity and cultural sociology. Data were collected from various sources, analyzed, and interpreted interactively through data reduction, data display, verification, and conclusion drawing. The research results indicate that the development of craft art for Lake Toba tourism conserves the traditional visual features of crafts, though it distances from the social and cultural aura of traditional rituals. The rich variety of Batak visual culture, in terms of types and forms, becomes more diverse through digital modeling exploration in its conservation process.

Keywords: Batak, digital modelling, tourism, culture

1 Introduction

The Batak Ethnic Group in North Sumatra has a rich variety of visual cultures of high value, derived from Batak cosmology, and developed by the community across generations to support their cultural rituals and beliefs. As society evolved into modernity, the visual cultural products of the past Batak era were no longer functional. Some of them have almost disappeared due to the lack of preservation efforts [1].

It is understandable that modern life demands something practical and efficient, making the visual cultural products of the past seem irrelevant. However, in the context of cultural identity preservation, these products should serve as the foundation for creating contemporary cultural products, so that new cultural products today possess their own identity due to having a strong sense of tradition [2], [3]. In this regard, the visual culture of the past Batak must be preserved, serving as the basis for the development of contemporary craft art. This is essential, in line with the policy of promoting the creative economy to support tourism, especially tourism around Lake Toba in North Sumatra. To ensure the optimal development of this craft art, it should be developed through digital modeling.

Digital modeling in the development of craft art is an effort to develop digitally-based craft design. New configurations of elements from past Batak visual culture can be more easily

created in various forms and sizes due to the availability of digital technology that enhances the exploration of craft art design by involving the characteristics of materials, the production of knowledge, emerging tectonic configurations, and interactions made possible through technology [4]

2 Literature Review

This literature review establishes a solid foundation for further research on the potential of Batak visual cultural products within the context of craft art.

2.1 Batak Socio-Culture and Its Craft Art

The Batak ethnic group in North Sumatra possesses a rich visual culture, which in the past was part of the cultural ritual equipment, a manifestation of the theology and cosmology of the community [5]. Due to the passage of time, many of these visual cultural products are no longer in use, with some even being banned by missionaries since the introduction of Christianity to the Batak Land [1]. In fact, Batak visual cultural products have great potential to be developed within the creative economy, in line with the growing tourism industry in North Sumatra, particularly in the Lake Toba area. In this context, tourism requires symbols and markers as identifiers, which determine the success of a tourist destination [6].

Tourism in North Sumatra has been developing since the Dutch colonial period, with the primary destinations being Lake Toba, Berastagi, and Nias [7]. Its potential is now even greater, especially with the issuance of Presidential Regulation No. 49 of 2016 concerning the Lake Toba Tourism Area Authority, which aims to elevate Lake Toba tourism to an international standard. This development should ideally be supported by the availability of craft art products as tourism products. The existing products have not been developed creatively; the same forms are often repeated and copied by all artisans, including those involved in this research. Therefore, it is urgent and necessary to develop these products by exploring the visual culture of past Batak as their basis.

This applied research on the development of craft art begins with an exploration of the potential of Batak visual culture, and the identification of several products as representative references. W.T. Atmojo stated that the ability to study local cultures containing traditional values provides opportunities to build a foundation for creation that does not merely transform what already exists, but also considers local absorption with a global nuance [8]. In this way, creative and innovative findings will emerge. In line with this, I.G. Pitana argued that tourism is a means for the preservation of culture [6]. Tourism inspires the processes of enrichment, conservation, adaptation, reconstruction, and reinterpretation of cultural products [6].

According to research by Zulkifli in the Samosir region, many of the past Batak visual cultural products are poorly preserved and are on the verge of extinction. Some are displayed in the Huta Bolon Museum, but their condition is neglected [9]. Therefore, revitalization efforts are needed, developing these products in accordance with the needs of contemporary society, specifically as craft art products for tourism. The development of Batak visual culture is carried out through a creative and innovative approach.

The essence of creativity is to bring something new into being or to establish new relationships from what already exists [1], [10]. In this research, creativity is framed by cultural values and the characteristics of traditional products. Thus, the tourism craft art products developed will remain original, with a strong local character, based on Batak visual culture.

Koentjaraningrat classified culture into various forms, one of which is culture in the form of objects or products created by humans [11]. These human creations include visual cultural products. Batak visual cultural products are understood not only in terms of their physical form but also the meaning they carry. Some of the products to be developed in this research include: *tunggal panaluan*, *gondang Batak*, *sigale-gale*, *singa-singa*, *sahan*, *pustaha*, *solu bolon*, *hombung*, *rumah bolon*, and *ulos*. These products will be explored as the basis for the development of tourism craft art, which will be carried out within the one-year research period. The development of these craft arts is also supported by strong resources. The people in the Lake Toba region are many of whom are craftsmen (*kriyawan*), and there are also vocational schools for crafts/skills. There are several craft marketing centers for souvenirs, such as Tomok, Tuktuk, and Siallagan in Samosir Regency.

So far, the craft products marketed have not been developed creatively and have not been developed with a digital basis. In line with technological advancements, the development of craft art in this research is carried out through digital modeling. The use of digital technology can help discover and enhance the quality of reconstructed forms [12], particularly when exploring models for the development of tourism craft art. A digital basis for modeling is important for the digitization of assets [13]. In this case, design models are valuable assets in the development of tourism craft art, which will subsequently be stored in a database.

Craft art is a part of craftsmanship or skill-based art that is economically oriented [14], [15]. SP. Gustami stated that craft art is a branch of art that prioritizes manual skill over expression, supported by high precision, so that the result reaches a classical (noble) level [16]. Traditional art is considered to contain deeper values related to its function, including aspects of ritual and status symbolism. Furthermore, Soedarso SP. mentioned that, as the name suggests, craft art is rich in *kriya* (craftsmanship). Craft art has utilitarian value, is born from a rich cultural heritage, and accommodates artworks created with deep appreciation and aesthetic taste [17]. In line with this understanding, tourism craft art is craft art developed for the tourism market.

Tourism requires authentic (original) products. Tourists desire items that have distinct characteristics from the culture of the community they are visiting. Westerners appreciate traditional Batak craft art [18]). The development of tourism craft art based on Batak visual culture is part of an effort to revitalize one of the local cultural elements. Revitalization is a process or effort to bring back to life a product that was previously underutilized, making it something significant. In relation to Batak local culture, revitalization can be achieved by fostering pride in Batak culture and skills, as well as recognizing its artistic capacity [19].

3 Method of Research

This research on the development of craft art based on Batak visual culture through digital modeling uses a combination method, which includes both survey and creative creation methods, carried out in a structured and systematic manner. The survey method is applied starting from the policy development stage and the collection of data on the potential of Batak visual culture, by mapping various traditional Batak visual cultural products from the past as representative references. Next, critical and appreciative feedback is gathered from observers

and the community regarding the aesthetic quality, technical aspects, and other factors related to the craft art products resulting from the development, through activities such as exhibitions and seminars. These exhibition activities, along with discussions and seminars, are part of the prototype testing in a limited environment and product testing in a real-world setting.

The creation method applied in the development of craft art refers to Graham Wallas' theory of the creative process, which involves six stages: preparation, incubation, illumination, execution, confirmation, and validation [20]. The exploration of innovative craft art prototype development refers to the representation of traditional Batak visual culture forms from the past, including: *tunggal panaluan*, *gondang Batak*, *sigale-gale*, *singa-singa*, *sahan*, *pustaha*, *solu bolon*, *hombung*, *rumah bolon*, and *ulos*. In line with Graham Wallas' creative process theory, the exploration of this innovative prototype development includes the preparation and incubation stages through digital modeling, followed by illumination and execution through the creation of the prototype. Data from the prototype development exploration process are collected through daily notes and careful recordings. The collected data are then formulated into the development of product descriptions and prototype specifications, with documentation in the form of photos and videos.

The craft art prototype based on Batak visual culture as a tourism product for Lake Toba is tested for its quality through testing in a limited environment. This aligns with the application of Graham Wallas' theory of the creative process, specifically the confirmation and validation stages. The prototype product test in a limited environment is conducted through the development and marketing of the product within a limited scope in collaboration with industry partners.

The product testing process is carried out through two assessment models. The first involves evaluating the technical and aesthetic quality, as well as other aspects related to the innovation of tourism craft art by competent art observers and critics. The second involves appreciative feedback from the community of art enthusiasts and consumers during the exhibition and craft art discussions. Based on Graham Wallas' theory of the creative process in exploring craft art based on Batak visual culture, the initial stages of exploration are the preparation and incubation processes, aimed at producing innovative craft art product models. The early exploration stage is an effort to find a conceptual development idea based on existing references, specifically the wealth and variety of traditional Batak craft art from the past.

4 Results and Discussion

4.1 Exploration of the Development of Craft Art Prototypes Based on Batak Visual Culture

"Based on the observations and identification conducted, various forms and characteristics of Batak craft art, diverse materials/ingredients, and techniques applied have been recorded. In the exploration process to produce innovative products, this can be done by deforming existing shapes or repeating forms through repetition in certain compositions. Additionally, it can be achieved by combining or composing existing shapes into new forms, or by combining materials that allow for the creation of new forms of Batak-characterized craft art.

The processes of deformation, repetition, and combination will result in new innovative shapes as an effort to conserve Batak craft art. Deformation, or 'de'form' in English, is the change in shape or form. This change was initially understood as a deterioration, but in the world of art, this change is intended for aesthetic purposes. A deliberate change in shape or form can give

birth to a new work that differs from its original form. Repetition and combination are part of the effort to make the intended changes in shape or form..

Several alternatives in the deformation process could include, for instance, practically creating a single stacked *panaluan* shape, deforming the *sahan* shape, or the lion shapes, or any form to give birth to a new innovative representation. Deformation can also be done by creating, for example, *sahan* shapes in an opposing composition or lion shapes in a contrasting arrangement. The magical character of some Batak traditional reliefs and statues can be deformed into a humanistic character by producing artistic caricature forms.

Furthermore, the exploration of craft art through repetition has many possibilities, especially from the three-dimensional forms of Batak craft. All three-dimensional forms of Batak crafts can be recomposed repetitively, either through repetition of the whole form or by splitting the form to give the impression of relief shapes. The *sahan* shape, *solu bolon*, traditional statues, and masks of the Batak culture are potential for such repetitive compositions. Repetitive compositions require a medium to unify them, which also serves as the foundation or background of the composed craft artwork. As a background, it can also be replaced with thread if it is not meant to be displayed, or with chains if it is to be emphasized."

"Exploration of craft forms through the combination of various open forms is carried out through any type of shape, including two-dimensional forms. All two-dimensional craft forms can serve as backgrounds for three-dimensional shapes in new combinations. The two-dimensional forms in question include woven crafts such as *ulos* (traditional Batak fabric) or woven crafts made from rattan or pandan leaves. The single forms of *panaluan* or *sahan* can be attached to the background of *ulos* woven fabric or pandan weaving, which is commonly made into sacks (*tandok*). The product forms that are attached can be cut or split, creating a relief-like appearance. Relief forms represent an intermediate form or a unifying shape between three-dimensional and two-dimensional forms. The combined shapes can be made more intricate by combining more than two types of products. For example, combining *ulu paung* (traditional Batak headgear) with Batak statues, accompanied by *sortali* (traditional binding). In this case, the process of combination not only relates to the merging of different shapes but also to the combination of various materials."

"Exploration of the development of craft art prototypes through the processes of deformation, repetition, and combination leads to logical consequences, namely changes in the appearance of previous craft works as an effect of the transformation of the product's form, changes in composition, differences in the foundation or background, and other differences, thus creating a new design. Another effect can also be understood as the creation of synergy between simplicity and complexity. Theoretically, it is said that simplicity and complexity complement each other. For example, if simplicity is dominant, complexity will weaken; conversely, if complexity is dominant, simplicity will weaken. Complexity in this case is the inherent characteristic of traditional craft, through the surface relief of the work full of protrusions and indentations that give the work its character, especially when made with the craftsmanship of the craftsperson without the use of standard measuring tools. Meanwhile, simplicity arises from the processing of forms assisted by carving tools and modern machines that create measured and standardized forms, such as using lathes, cutting tools, or machines that can create geometric, cubic, or cylindrical shapes.

The development of Batak craft art through deformation, repetition, and combination brings a new nuance to craftsmanship, which is the synergy of traditional characteristics with modernization through the use of materials and techniques. Traditional materials are those sourced from local Batak natural resources, such as wood, bamboo, buffalo horns, gourds, horsehair, and others. In contrast, modern materials are industry-based, produced through

machines or factories as society enters the era of modernization, such as stainless steel, glass, acrylic, and others. Therefore, in the exploration of Batak craft art based on traditional visual culture, it is possible to involve various skills to create innovative works. These skills include those of carvers, relief artists, sculptors, weavers, basket makers, welders, lathe operators, glass workers, acrylic workers, and others.

The logical consequence of this exploration process is the transformation of a society's traditional work, no longer exactly as it was in the past. However, to preserve traditional products through conservation, they must undergo changes for their development. This is because traditional values never truly die; they are always alive and revived by their people. The important mechanism of control to ensure that the form and character of traditional crafts do not disappear is to always refer to the primary sources during the exploration process. The craftsperson must thoroughly understand the philosophical, historical, and sociological backgrounds of the craft products they are developing, as well as understand the original character as the primary form referenced for innovative craft development. Practically, the craftsperson should always refer to the primary sources, even referring to forms that have already been developed by other craftspersons. Below is a diagram showing how changes from exploration should refer to primary sources, and how they no longer refer to primary sources."

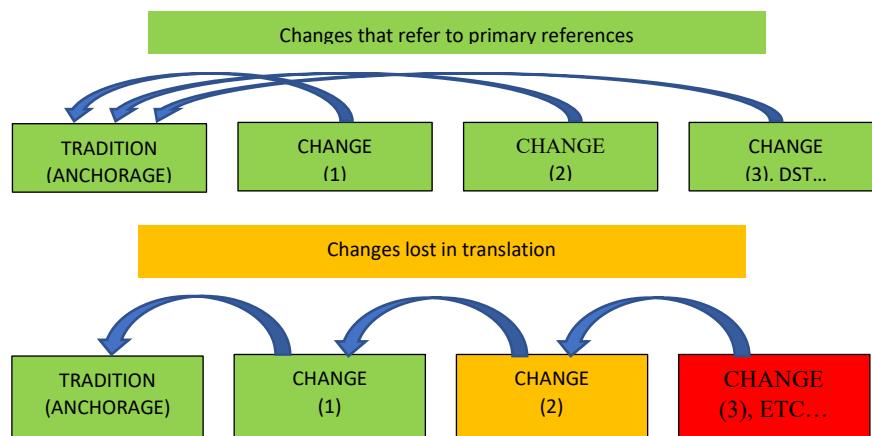


Fig. 1. Model Diagram of Craft Art Exploration Based on Primary References.

The diagram above shows different colors, namely three colors commonly used in traffic light design. With a relevant intention, the green color represents something that is permitted and should be done by the craftsperson, which is the exploration of craft art by referring to its primary source. Every craftsperson who develops a craft art prototype based on tradition should refer to the original traditional form, not one that has already been developed by another craftsperson. Conversely, the yellow color represents exploration that does not refer to the primary source, and the red color represents exploration that has gone far beyond the primary reference, as it refers to sources that have already been repeatedly developed by other craftspersons.

4.2 Exploration of the Development of Craft Art Prototypes Based on Batak Visual Culture

According to the research method that refers to Graham Wallas' creativity theory, the process of developing craft concepts through digital modeling is at the illumination stage, which is the phase of discovering creative concepts after exploring through an incubation process based on the Batak visual culture of the past. When this stage runs smoothly, the next step is to execute it into an innovative craft product as a tourism product in the Lake Toba region of North Sumatra. Digital modeling is intentionally applied in the development of this creative concept for the purpose of modernizing traditional craft designs. In the past, craftspersons worked by following their instincts, without relying on pre-prepared designs. However, in line with the development of virtual digital technology, it is now essential for craftspersons to also utilize it. This is done to generate a variety of design alternatives, and this diversity can be archived as creative work documents and registered for copyright protection through the Directorate General of Intellectual Property (DKJI) at the Ministry of Law and Human Rights of the Republic of Indonesia. Here are several craft product designs as models developed based on digital modeling. These designs are conceptualized using deformation, repetition, and combination approaches, all rooted in the traditional Batak visual culture.



Fig. 2. Model of Concept Development for Craft with a Deformation Approach Through Digital Modeling (Source: Research Team)

The image above shows several craft designs developed through the deformation of shapes. The two upper images are based on traditional craft forms called *sahan* or *naga morsarang*. Socially and culturally, this traditional product was used as a container for medicinal concoctions, which were mystically processed and, in the past, owned by a *Datu* (traditional healer) or *Dukun* (shaman). Its original form was made from buffalo horns as a storage cavity for medicinal ingredients, with a wooden cover that was richly decorated. Visually, the shape is very artistic, full of carvings, reliefs, or small figurines arranged in a non-realist manner. The deformation done in the design development is by creating a composition of facing each other, allowing two, three, or even four *sahan* to be united. Deformation can also occur through its placement, for example, by putting it on a different base than usual.

This deformation of the *sahan* is placed on a cylindrical base, which is made from lathe-turned wood. The lathed round wood used to place the *sahan* can also be complemented with elements of *ulos* (traditional Batak woven fabric) or a *ditores* (Batak calendar). This product is

created as an innovative craft item for display on a table or shelf, where the base is made of metal, unlike in the past when it was hung with string. This form of deformation also intersects with repetition and combination, which are logical consequences. The repetition is evident in the composition of *sahan* arranged face-to-face, especially when the number reaches four, which gives the impression of a radial composition. The combination is seen from the merging of the *sahan* form with a cylindrical shape, representing the fusion of complexity and simplicity, as well as tradition and modernization.

The development of this craft art does not eliminate the characteristics of the traditional *sahan* or *naga morsarang* form; instead, its deformation enriches the shape as an innovation in an effort to provide an alternative tourism product for the Lake Toba region. Its social-cultural function has clearly shifted to a commodification function. Likewise, the aura of the past no longer exists, as Walter Benjamin (Benjamin in [9]) mentioned that traditional products of a society have an aura of tradition. However, as a culture-based tourism product, this item still retains the ethnic Batak characteristics, with new formative values as a cultural entity of the Lake Toba community.

Next, the three images below show the deformation of the *panaluan* single form. Traditionally, this product was used as a symbol of authority, owned by the village head, known as *Datu* or *Dukun*. Its original form was a long staff, about the height of a human, with the handle located in the middle of the staff. At the very top of the staff, there was decoration, typically horsehair. Visually, this staff was very artistic, with the entire shaft covered in reliefs. These reliefs were developed from human and animal figures that were deformed so that they no longer had a realistic character.

In the creative conceptualization through digital modeling, the deformation done was to create only the upper half of the shape, with the lower part connected by metal. The relief at the top is broadened from the usual design, no longer using horsehair. This deformation of the *panaluan* single form can also be complemented by placing a flat surface in the middle, serving as a display holder for small souvenirs. Indirectly, this deformation also gives rise to a combination, i.e., a blend of wood material with metal. The fusion of the intricate woodwork with the simple, small, straight vertical metal form. The overall impression is a slender shape at the bottom, giving a dynamic suggestion. In another deformation creation, the single *panaluan* shape is made in a composition of three, arranged like conjoined twins, with a shorter size.

The craft art product being explored still shows its traditional character, as it is developed from the primary form source. The exploration of its deformation results in a new form as an innovation in the craft art of Lake Toba tourism. The social-cultural function of the *panaluan* has certainly disappeared, replaced by its commodification function. Its past aura is also no longer present, but the characteristics embedded in this product will help conserve one of the cultural identities of the Batak people from the past. The conservation of Batak visual culture and the development of Lake Toba tourism products are the objectives of this research.

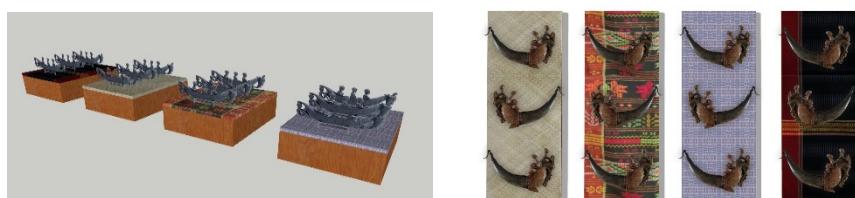


Fig. 3. Model of Concept Development for Craft with a Repetition Approach Through Digital Modeling
(Source: Research Team)

The development of the creative concept, as shown in the image above, is realized through the repetition approach, which involves the repetition of forms in a lined composition. Several products from the traditional Batak visual culture that have been developed include *solu bolon*, *sahan*, and *tunggal panaluan*. In this case, *solu bolon* (large boat) is a traditional Batak transportation tool used on Lake Toba. As the name suggests, it is large in size and was traditionally owned exclusively by certain people, usually of royal descent. Therefore, *solu bolon* has become one of the iconic visual cultural products of the Batak people, representing the social and cultural life of the Lake Toba region. In the development of the creative concept through digital modeling, the form of *solu bolon* is made into three miniatures, arranged side by side in a lined composition. The base is made square with clear lines and fields, and the top surface is covered with various alternative forms of Batak's two-dimensional visual culture, such as *ulos*, sarongs, or *tandok* weavings. This repetitive design strongly reflects the traditional *solu bolon* form.

The next repetitive form is developed from the Batak visual culture of *sahan* or *naga morsarang*, which in the past was used as a container for medicinal concoctions. The uniqueness of this product lies in its creation from buffalo horns, with a wooden cover. Both the horn and wood are intricately carved with traditional Batak decorative patterns. The development of this form includes the use of a background for placing the *sahan*, where repetitions of the *sahan* are placed against this background. Various background alternatives include different *ulos* patterns, sarong patterns, and *tandok* weavings, combined with repetitions of the *sahan*, arranged in sets of three or four, attached to square or rectangular backgrounds.

Relevant to the explanation above is the repetition of the *tunggal panaluan*, developed from the *tunggal panaluan* staff, a symbol of authority carried by a traditional leader or *datu* in Batak society. The alternative development for this form is the repetitive arrangement of the staff, either attached to a background to be mounted on a wall or standing to be placed on the floor. Both groups of digital modeling designs, whether repetition of *sahan* or repetition of *tunggal panaluan*, still strongly reflect the characteristics of Batak craftsmanship. It is inevitable that at times the repetition concept overlaps with the combination concept or even the deformation concept. In this case, what becomes the benchmark is the dominance of the concept. What is clear is that all of these are forms of craft development based on the creative concept through digital modeling.



Fig. 4. Model of Concept Development for Craft with a Combination Approach Through Digital Modeling (Source: Research Team)

The creative concept development through digital modeling, as shown in the figure above, is carried out with a combination approach. The distinctive feature is the explicit combination of several form elements, which together create a new cohesive work. The traditional Batak visual culture explored in this combination concept includes shapes such as *sahan*, *ulos*, *tandok*,

tunggal panaluan, singa-singa, sortali, and small statues. For example, the sahan form is combined with the woven ulos as its background. This combination still shows two characteristics of traditional products that are merged together. A more complex combination is the fusion of tunggal panaluan with small statues, and singa-singa combined with sortali and small statues. The main element of the singa-singa combination is the singa-singa form, which is part of the gorga (Batak decorative motifs) usually placed on the bolon house (traditional Batak house). These two groups of combinations are built on an iron frame, which serves as the structure that unites several form elements and creates a cohesive piece. This complex combination still reflects the characteristics of Batak craftsmanship. In some concepts and digital modeling, the forms of deformation, repetition, and combination sometimes overlap, which is a logical consequence of the creative exploration process being carried out.

4.3 Designing Sustainable Promotion Forms in the Creative Industry

Craftsmen who develop craft arts and manage the creative industry must design the right forms of promotion and marketing, with sustainable activities. This is done so that the creative industry or creative economy that is developed remains relevant amid existing competition. Moreover, nowadays, competition is no longer just between businesses located near each other, but has become a global competition, where consumer-producer relations can be established virtually. In the world of tourism, what cannot be represented by anyone or replaced by any media is the actual visit. In this case, tourists must come and directly enjoy the tourist attractions they like. This is different from purchasing tourism products, especially tangible ones, where people can leave orders or make purchases through reservations. Therefore, tourism product consumers are much broader than those who come to visit. A person who knows about Bali tourism through YouTube media, for example, can also buy and collect Bali tourism products through online orders. Hence, it becomes a particular challenge for the managers of the creative industry, specifically the craftsmen of tourism products in the Lake Toba region, to attract consumers from various places, including global consumers.

The craft industry in the Lake Toba region is still relevant to be called a creative industry or creative economy, which is a region that utilizes creativity to be industrialized or economically leveraged. It can be explained that the creative industry is an industry that utilizes creativity, skills, and individual talents to create welfare and job opportunities through the creation and utilization of individual creative abilities. The creative industry relies on individual creativity to run its economic activities, such as craftsmen (kriyawan), designers, architects, and others. The creative industry depends more on the quality and creativity of its human resources. Therefore, the creative industry mostly emerges from small to medium-sized industries.

Creativity that is industrialized will produce mass-produced products as a characteristic of industrialization, as it aims to meet targets and production volumes while considering production costs and selling prices. Furthermore, the creative industry will support the development of the creative economy. Understanding the creative economy is broader than the creative industry, but with a similar principle, which is how to achieve large profits with small capital.

The creativity of craftsmen in the Lake Toba tourism area is relevant to be developed within the creative industry framework. In the world of art, not all forms of creativity can be industrialized or commercialized because it is related to the creative power that, philosophically, does not depend on things outside of creativity itself, including materialistic incentives. Some

works of visual art and craft art specifically fall into this category. There is a fundamental difference between the nature of artistic creativity and industry, where artistic creativity seeks unique new products, while industry seeks products that can be duplicated and mass-produced. In fact, visual art that is industrialized has already had its creative meaning reduced; what remains is commercial meaning, or commodification. In this regard, it is generally said that visual art that can be industrialized is art that is duplicated in the creation process, repeatedly made in mass production for a broad consumer segment or consumers who are not too selective, with low appreciation levels. Craft art developed in the Lake Toba tourism area falls into this category, making it relevant to be developed within the creative industry framework.

The development of the creative craft industry in the Lake Toba tourism area, to reach a broader and more sustainable consumer target, requires the right promotional and marketing strategies. In line with the times, where now two worlds have emerged: the real world and the virtual world. The real world is the world that humans have experienced since the dawn of humanity, and the virtual world has developed since the Industrial Revolution 4.0 at the end of the 20th century. There is no doubt that all human activities now, including industrial and economic activities, must be based on these two worlds. Therefore, the promotional and marketing strategies for craft products in the Lake Toba tourism area are designed in two forms: offline promotion in the real world and online promotion in the virtual world.

5 Conclusion

The development of Batak craft art through digital modelling presents a promising strategy for preserving traditional visual culture while simultaneously revitalizing it to meet contemporary tourism demands. This study affirms that innovative approaches—such as deformation, repetition, and combination—can enrich the aesthetic diversity of Batak crafts without abandoning their cultural roots. Although the social and ritual aura of traditional Batak artifacts may diminish in this transformation process, their symbolic and visual identities remain preserved and repurposed as cultural assets within the creative economy. The integration of digital modelling not only facilitates design experimentation and documentation but also serves as a catalyst for intellectual property registration and sustainable creative industry development.

Furthermore, this research highlights the importance of grounding innovation in primary cultural references to maintain authenticity and avoid the dilution of cultural identity. The resulting craft prototypes represent a harmonious blend of tradition and modernity, offering tourism products that are both marketable and culturally meaningful. To maximize the impact of these craft developments, a dual strategy in promotion—embracing both offline and online platforms—is essential to ensure visibility and accessibility to local and global consumers alike. Ultimately, this initiative contributes significantly to the creative revitalization of the Lake Toba region and reinforces the role of Batak craft art as a dynamic medium for cultural preservation and economic empowerment.

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References

- [1] D. Zulkifli Sembiring and M. Pasaribu, “Tradisi dalam Modernisasi Seni Lukis Sumatera Utara: Eksplorasi Kreatif Berbasis Etnisitas Batak Toba,” *Jurnal Seni Budaya*, vol. 35, no. 3, pp. 352–359, 2020.
- [2] D. Sembiring, G. Kartono, and A. Ibrahim, “Penciptaan Model Frame Berbahan Kayu dan Dapat Direproduksi dengan Bahan Resin dengan Vitalisasi Motif Ragam Hias Etnik di Sumatera Utara,” Medan, 2015.
- [3] Z. Zulkifli, D. Sembiring, and M. Pasaribu, “Tradisi dalam Modernisasi Seni Lukis Sumatera Utara: Eksplorasi Kreatif Berbasis Etnisitas Batak Toba,” *Jurnal Seni Budaya*, vol. 35, no. 3, pp. 352–359, 2020, [Online]. Available: <https://bfinews.com/re>
- [4] A. V. Reyes, W. Jabi, M. S. Gomaa, A. Chatzivasileiadis, L. Ahmad, and N. M. Wardhana, “Negotiated matter: a robotic exploration of craft-driven innovation,” *Archit Sci Rev*, vol. 62, pp. 398–408, 2019, [Online]. Available: <https://api.semanticscholar.org/CorpusID:199087088>
- [5] Zulkifli and M. Ridwan, “Revitalization of the traditional values lost due to the commodification of art/crafts: a case study of Batak traditional Ulos,” *Asian Ethnicity*, vol. 20, no. 4, pp. 541–554, Oct. 2019, doi: 10.1080/14631369.2019.1608812.
- [6] I. G. Pitana and P. G. Gayatri, *Sosiologi pariwisata : kajian sosiologis terhadap struktur, sistem, dan dampak-dampak pariwisata*. Yogyakarta: CV Andi Offset, 2005.
- [7] E. L. Damanik, “Mencermati Kepariwisataan Sumatera Utara,” *Analisadaily.com*, Medan, Aug. 30, 2014.
- [8] W. T. Atmojo, “Penciptaan Batik Melayu Sumatera Utara,” *Jurnal Seni & Budaya Panggung*, vol. 23, no. 1, pp. 1–108, 2013.
- [9] Zulkifli, “Komodifikasi Seni Kriya Tradisional Batak dalam Perspektif Strukturalisme,” Dissertation, Universitas Airlangga, Surabaya, 2016.
- [10] J. Sumardjo, *Filsafat Seni*. Bandung: ITB, 2000.
- [11] Koentjaraningrat, *Pengantar Ilmu Antropologi*. Jakarta: Rineka Cipta, 2009.
- [12] M. A. Waskito, “Pemanfaatan Teknik Pemodelan Digital untuk Meningkatkan Kualitas Bentuk dan Ergonomi pada shoe last Sepatu,” *Jurnal Rekayasa Hijau*, vol. 5, no. 1, pp. 49–62, Apr. 2021, doi: 10.26760/jrh.v5i1.49-62.
- [13] Y. Rahmanto, R. Dedy Gunawan, J. Z. Pagar Alam No, and L. Ratu Kedaton, “Digitalisasi Artefak pada Museum Lampung Menggunakan Teknik Fotogrametri Jarak Dekat untuk Pemodelan Artefak 3D,” *Jurnal CoreIT*, vol. 7, no. 1, 2021.
- [14] K. S. Indriani, “Teachers’ Confidence in Teaching English Using You*Tube Channel in Early Pandemic Covid-19,” *Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran*, vol. 7, no. 1, p. 1, Mar. 2021, doi: 10.33394/jk.v7i1.3177.
- [15] N. Wayan Sukarini, N. Luh Sutjiati Beratha, and I. Made Rajeg, “Industrialisasi Seni Kriya Di Desa Mas, Gianyar,” *Jurnal Seni Budaya*, vol. 34, no. 1, pp. 45–52.

- [16] S. Gustami, “Seni Kriya Indonesia Dilema Pembinaan dan Pengembangan,” *Jurnal Pengetahuan dan Pencitaan Seni*, vol. 1, no. 3, 1991.
- [17] S. Soedarso, “Seni Kriya: Cabang Seni yang Sedang Gelisah,” *Jurnal Seni (Pengetahuan dan Penciptaan Seni)*. , vol. 9, 1999.
- [18] A. Causey, *Danau Toba: Pertemuan Wisatawan dengan Batak Toba di Pasar Suvenir*. Medan: Bina Media Perintis, 2006.
- [19] S. Niessen, “Penciptaan Batik Melayu Sumatera Utara,” *Koran Batak Pos*, Medan, Apr. 14, 2014.
- [20] I. Damajanti, *Psikologi Seni: Sebuah Pengantar*. Bandung: Kiblat Buku Utama, 2013.