

Revitalization of Sumatra batik motifs from tradition to innovation



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ABSTRACT

Sumatran batik has motifs that have deep meanings adopted from everyday life, and many are already rarely produced. The problem in this study is how the process of revitalizing Sumatran batik will be downstream into the creative industry. The purpose of this study is to create a digital revitalization model for rare Sumatran batik motifs, with a focus on their integration into the local creative industry, which can increase cultural awareness and increase market potential in the creative industry. The method used is descriptive qualitative with a visual language approach. The sample in this study is a digital batik with a sample of the *Tarok-tarok Boraspati* produced by MSMEs. Results show that digitizing batik motifs not only maintains visual authenticity but also enables scalable and market-relevant innovation, contributing to cultural preservation and creative economic growth. The main result is a structured batik composition that maintains the identity of the main motif while enabling wider commercial applications. This approach offers a replicable model for other cultural regions that aim to combine heritage with innovation and increase global cultural visibility through the creative industry.



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1. Introduction

Technological developments in the form of digitization have become a crucial driver of innovation in various industrial sectors, including the batik industry [1]. In the batik industry sector, digitization is generally adopted to change the visual transfer process from a visual form taken from local wisdom ideas to sketches and digital images [2], [3]. However, the adoption of this technology has not been widespread across various batik sectors in Indonesia. Many batik producers still manage production traditionally, including the process of creating batik motifs, which is still done conventionally without the use of digital technology [4]. Batik production, produced by batik artisans, is mostly managed traditionally [5]. This includes batik craftsmanship that is carried out through the transfer of skills that are transmitted and handed down from one generation to another [6], [7]. This is also the case in the creation of batik motifs, which is done conventionally by drawing first without using digital technology. From the research searches, there are still many batik makers who have not used digital technology in the creative process of creating batik motifs [8]. This problem is interesting to observe, considering that batik-making in Indonesia is practiced in almost all regions in Indonesia. Therefore, a strategy is needed to solve this problem. Various initiatives have been taken by local governments, including collaboration with academics. The purpose of this study is to create a digital revitalization model for rare Sumatran batik motifs, with a focus on their integration into the local creative industry, which can increase cultural awareness and increase market potential in the creative industry. The number of motifs produced is 15, and this study focuses on the *Tarok-tarok Boraspati* sample. Some previous studies have been conducted by other researchers. Waridah Wibawanto states that the market segment in the batik field has increased significantly, so batik industry players need to continue to be

able to innovate due to the increasingly intense competition in batik marketing. The reality in the field is that many batiks are still produced manually on a small scale. Only a few batik centers can accommodate large-scale production. Waridah focused her research on increasing the productivity of small and medium batik industries through D'Batik software. This software is considered to be easy to use by ordinary people. D'Batik was developed using the Software Development Life Cycle (SDLC) method with a prototyping model. The software was tested in two villages, namely Batik Bubakan Village, Semarang, and Batik Center located in Batik Malon Village, Gunungpati. An important finding of this research is that D'Batik software can increase productivity by reducing the time of making motifs up to 11.7 times faster [9]. Meanwhile, researchers have researched how to find solutions to making geometric motifs by using algorithmic art generated by computer technology. The method used is an experimental method through a combination of algorithmic art and geometric motif making. Algorithmic art is a type of generative art that is the result of algorithmic processes and is designed by artists, usually using random processes to generate variations based on external inputs. The findings of this study are that geometric motifs can be created with algorithmic art methods and can be applied to fabric surfaces [10][11]. Both studies are different from those conducted by the research team. The difference is in the method used, which is carried out from the exploration of concepts related to the batik motif to be made. Explored from local wisdom, then made in the form of sketches and translated into digital, then implemented in the Batik Center in Pekalongan. Pekalongan was chosen because this center has become a place for a trial production workshop for batik prototypes produced by the research team, and various studies that have been realized into prototypes. This research is important because it is still rare for research results to be implemented directly into the batik industry.

2. Method

The method used is a qualitative descriptive method, which is the collection of data from data in the field [12], [13] with a visual language approach. The data collection technique was carried out in several stages. First, a literature study was conducted to find visual data on rare Sumatran batik. Then, direct observations were made at the batik-making center, and direct interviews were conducted with the owner. To complement the field data, an interview with one of the craftsmen working on Sumatran batik was recorded using an audio recorder. Visual documentation was carried out using a camera. Visual language is a tool for reading images, one of which is an image of batik motifs. Visual analysis using Tabrani's visual language theory states that objects made large are objects made important; the position of the object can be made by shifting or rotating it so that it forms a composition, orientation direction, and has a relationship between motifs, and color elements [14]–[16]. The visual object consists of the main motif, supporting motifs that consider composition, repetition of motifs, and color placement, all of which do not eliminate the philosophical meaning carried by the batik motif. The motif is made simpler than its original form and is called stilation. The sample in this study is digital batik produced by MSMEs. There are five stages in this research. Based on Fig. 1, the first stage is to conduct literature studies from various journals, the aim is to find research data done by previous researchers, and data on batik rarely made by batik makers. The second stage is to conduct field observations in North Sumatra and meet with informants who are also actors in the creative industry of Sumatran batik. He is also a lecturer at the University of Medan. In addition, an open interview was conducted with an actor from the creative industry who has been producing Sumatran batik under the auspices of Batik Seni Pendopo since 2015. To supplement the field data, interviews were also conducted with craftsmen at Batik Seni Pendopo who work based on orders received from the company's owner. The third stage of data collection from literature studies and field data was identified and then sketching was done [17], [18]. The fourth stage is digital sketching, after consulting with Sumatran batik experts, the motif execution process is carried out and then the color is given. The fifth stage is the implementation stage into the creative industry by making a prototype of Sumatera batik with a new form both in terms of the arrangement of motifs and in terms of color of batik cloth.

3. Results and Discussion

3.1. Batik Sumatra

Many Javanese who like to migrate choose to live on islands that are considered to offer new hope in their lives [19]. One of them is Javanese people who have batik skills who migrate and live on the island of Sumatra. Their skills create new hope by applying their skills in a new place so that the batik

tradition originally known in Java Island can spread to Sumatra Island [20], [21]. They shared their skills with local artisans who were interested in this new skill. As a result, North Sumatra Island, which was not known as a batik center before, is now known for its batik in several places. Many of the local motifs, initiated from local wisdom, come from ornaments found in traditional houses or can be derived from fabrics produced by their ancestors, namely *ulos* cloth. Such as *hari hara sundung*, *pani patunda* motifs from the *Simalungun* tribe, Malay motifs such as *pucuk rebung*, ants in a row, *nawalu* village, and *gorga sitompi* from the Toba tribe, and *mataniari* motifs from Mandailing Batak [22]. The number of motifs revitalized in this research is 15 motifs, namely (1) North Sumatra Batik with Water Tower Slope Motif, (2) North Sumatra Batik with Vertical *Sanggat* Ship Motif, (3) North Sumatra Batik with *Gorga Dalihan Natolu* Motif, (4) North Sumatra Batik with *Gorga Dalihan Natolu* Combination Motif, *Sanggat* Ship, Water Tower Background, (5) North Sumatra Batik with Malay *Umbrella Motif*, (6) North Sumatra Batik with Malay *Sirih* Motif, (7) North Sumatra Batik with *Gorga Bulung Ni Andurdur* Motif, (8) North Sumatra Batik with *Na Ualu* Village Motif, (9) North Sumatra Batik with *Gorga Simeol-meol* Motif, (10) North Sumatra Batik with *Na Tolu* Village Motif vertical, (11) North Sumatra Batik with *Sulur-Boraspasi* Motif, (12) North Sumatra Batik with *Tarok-tarok Boraspasi* Motif, (13) North Sumatra Batik with *Gorga Dalihan Natolu* and *Gorga* Motif Vertical Line Lion, (14) North Sumatra Batik with *Gorga Singa-Singa* Motif, (15) North Sumatra Batik with Combination Motif of *Gorga Singa* and *Gorga Natolu*. The ethnic diversity in North Sumatra makes a lot of local wisdom that can be explored as inspiration for batik motifs in North Sumatera. From the visual form of flora or fauna. In the discussion of this study the focus is on *Tarok-tarok* and *Gorga Boraspasi*.

3.2. Tarok tarok

Tarok-tarok is an ornament found in traditional architecture in the *Karo Siwaluh Jabu* Traditional House (derived from the Karo language). *Waluh* means eight, and *jabu* means house [23]. So it can be interpreted that *Siwaluh Jabu* is a house that has eight rooms. *Siwaluh Jabu* is built with wood, bamboo, and palm fiber materials. In the pillars, frame, floor, and walls, *Siwaluh Jabu* uses wood material. The roof and terrace frame are built with bamboo. And the roof of *Siwaluh Jabu* is made of palm fiber, which is resistant to heat and rain. This traditional house is categorized as earthquake-resistant based on the principles of Indonesian vernacular architecture that have proven effective in dealing with seismic activity [23], [24]. In this traditional house, there are ornaments in the form of flower images that take ideas from the form of plants. The visual form is in the form of creeping gourd vines, which have a meaning of fertility and prosperity, and are expected to bring good luck. *Tarok-tarok* can also be found in several woven fabric motifs produced in North Sumatra.

3.3. Gorga Boraspasi



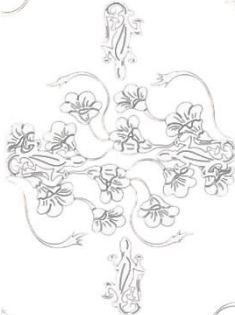


In the Toba Batak ethnicity, *Gorga* ornamentation is known in the form of various carvings, coloring the walls of the house with three basic colors, such as white, red, and black [25]. *Gorga* in Toba Batak ethnic is divided into five patterns, namely (1) cosmos pattern, (2) plant pattern, (3) animal pattern, (4) human pattern, and (5) giant or *hayal* pattern. The cosmos pattern applied to the *Gorga* motif is *Gorga sattung-sattung*. Plant patterns adopt the types of plants that exist in the area itself, namely ferns, pumpkins, and a type of creeping plant applied to *gorga* motifs, namely *Sitompi gorga*, *Dalihan Natolu gorga*, *Simeol-eol gorga*, *Simeol-meol marsialoan gorga*, *Sitagan gorga*, *Silintong gorga*, *Sijonggi gorga*, *Simarogung-ogung gorga*, *Iran-iran gorga*, *Hariara sundung dilangit gorga*, and *Simataniari gorga*. Animal designs used as motifs include buffalo, horses, and lizards, which are used in *gorga*, namely *Boraspasi gorga*, *hoda-hoda gorga*, and *ulu paung gorga*. The pattern of humans adopting breasts is applied to the *gorga* motif, namely the *Adop-adop gorga*, while the *hayal* or giant motif consists of the *Singa-Singa gorga*, the *Dompak Elephant gorga*, and the *Jenggar* or *Jorngom gorga*. So many *gorga* are already known. The idea of *gorga* with animal patterns referring to *Boraspasi* is then combined with climbing plants. *Boraspasi* (Batak language) means lizard, the Name of a nature god. There are three nature gods (*Boraspasi*) who are three friends, namely *Boraspasi ni ruma*, the tutelary god of the house symbolized by the lizard; *Boraspasi ni tano*, the tutelary god of the land (maintaining fertility), symbolized by the ilik (lizard); and *Boraspasi ni huta*, the tutelary god of the village, symbolized by the monitor lizard. These three animals look almost the same, sometimes they cannot be distinguished, and indeed, the form of the *Boraspasi* motif, which will be implemented into the batik motif, has undergone distortion and stylization and represents all three of them [22]. *Gorga Boraspasi* also has three functions according to its placement: house protector, land protector, and village protector.

3.4. Sumatran Batik with the *Tarok Tarok Boraspati* Motif

1) *Revitalization of the Visual Form of Local Wisdom of the Tarok-tarok Boraspati Motif*

Revitalization is a process or way of reviving an object that was previously considered not optimal, so that through a creative process, it can make an object different and important [17], [26]. This research revitalizes existing batik motifs and combines them with different batik motifs from before. The batik motifs identified for revitalization are *tarok-tarok* and *boraspati*. The selection of these two motifs is because they come from local wisdom, even before appearing on the surface of the cloth, they have been used as part of the ornaments of local traditional houses. The revitalization process goes through the following stages in Table 1.

Table 1. Revitalization Process





Visual Form	Stylization	Batik Motifs	Description
			The flower that comes from a pumpkin in the form of a pumpkin vine that grows like a vine, has a philosophical meaning of happiness that is seen from the fertility of the plant that grows more and more, life will be more prosperous and well-off.
			<i>Boraspati</i> is believed to bring good luck to the Batak culture. Its visual form is distilled and implemented into batik motifs combined with tendril flowers from pumpkin plants.

Based on Table 1, the flowers produced from pumpkins have a simpler distillation form. This is to facilitate implementation in the form of a *canting cap* that will be produced. Likewise, *boraspati*, whose visual form is simplified and is a combination of the form of gecko, lizard, and monitor lizard, so that its visual appearance looks different from similar motifs [21]–[23]. This combination is expected to produce innovations that can be utilized by the creative industry.

2) *Implementation into the Creative Industry*

The process of making batik stamp canting is an important part of the batik-making technique that uses a stamp or seal to apply motifs to the fabric. A *canting cap* is a tool used to print batik patterns in a faster and more efficient way compared to the traditional canting technique. The process can be seen in Table 2.

Table 2. Process of Making a *Canting Cap* from Fabric

			
(a)	(b)	(c)	(d)
The process of converting visuals into a canting cap	Visual form of a canting cap	The process of making a batik canting cap	<i>Boraspati Tarok-tarok</i> motif finished with canting cap

The process of making canting cap batik is an important part of the batik-making technique that uses a stamp to apply designs to the fabric. A *canting cap* is a tool used to print batik designs in a faster and more efficient way compared to the traditional canting technique. Table 2(a) shows the visual transfer process from the batik design to the canting cap. First, the batik design is prepared on paper according to the size and shape of the canting cap to be made. The caning maker uses copper metal that can withstand hot wax. The copper is then cut into 2-3 cm wide pieces, and then the copper plate is formed according to the motif to be made by bending the plate according to the curve of the

motif. In the refinement stage, after the canting cap is finished, sharp or uneven parts are sharpened or cleaned so that the resulting motif is good when used. Table 2(b) is a finished canting cap ready for use in the batik process. Table 2(c) shows a batik maker using a canting cap dipped in liquid wax. The process of stamping batik designs on the cloth spread on the table is done by pressing the canting cap on the batik cloth to print the design. After the design is printed, the wax is allowed to dry and harden on the cloth. The wax acts as a barrier so that the color of one dye is not mixed with another dye in a separate area. Table 2(d) shows the result of a batik cloth embossed with the *Taruk-taruk Boraspati* design. The visual form of the Sumatran batik motif *Tarok-tarok Boraspati* that has been given color is shown in Fig. 2.

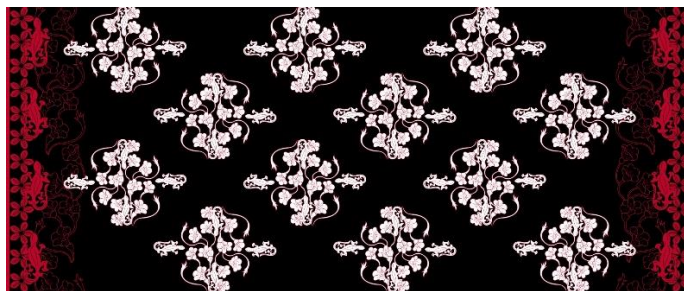


Fig. 1. Visual Form of *Tarok-tarok* Motif, Source: [27]

The *Taruk-Taruk* (*tarok-tarok*) motif visualizes a flower in the form of a pumpkin vine that grows by creeping. The philosophical meaning is that this gourd vine is a symbol of good fortune, which can be seen in the fertility of plants that grow more and more, and life will be more prosperous and abundant. This vine motif is combined with *Boraspati*, which symbolizes good luck. The visualization of flowers in the form of gourd tendrils is the main motif in this batik. These vines are visualized with details that show the growth and movement of the creeping gourd plant. While the *boraspati* motif is placed on top of the flower petals, the *boraspati* adds an element of good luck to this batik design. The composition is organized with a repeating pattern that has a 45-degree slope. This repetition creates a dynamic and fluid visual rhythm. The vine motifs are repeated horizontally to the left and right edges of the fabric, creating a sense of continuity. On the left and right edges of the cloth, the flowers are lined up vertically, giving a vertical touch that contrasts with the horizontal repetition of the vines. The most dominant color is the black batik background, which gives a strong sense of contrast to the white main motif, making the vine details appear clearer and more prominent. The white main motif is the vine and *Boraspati* motif, giving a clean and bright impression on the black background. The red color is used on the *Boraspati*, and some parts of the vines are clustered on the left and right sides of the field, providing a strong and distinctive color accent from North Sumatra. The *Taruk-Taruk-Boraspati* motif as a whole visualizes a harmonious visual narrative of good fortune, fertility, and luck. The use of repetitive patterns with a certain slant and contrasting color combinations gives a dynamic and vibrant impression. This batik is not only aesthetically appealing but also rich in deep symbolic meaning, reflecting a prosperous life full of good wishes.

4. Conclusion

This study found that digitalization can play an important role in revitalizing 15 North Sumatran batik motifs. Traditional cultural assets in the form of batik motifs can be accessed digitally, adapted, and marketed. Digitalization involves processing visual objects, compositions, and patterns, refining color systems, and creating digital motif designs. Digitization not only allows for more efficient archiving but also opens up opportunities for innovation, such as the development of new motifs that remain rooted in tradition but are relevant to current trends. These products are further supported through branding, storytelling, and strategies that appeal to local and global markets. This has a direct positive impact on the local economy, enabling MSMEs and artisans to reach new customers, increase production scalability, and add economic value while maintaining authenticity. Challenges in this process include limited digital literacy among artisans, infrastructure gaps, and a lack of funding for digital devices. These issues can be addressed through capacity-building workshops, public-private partnerships, and government incentives. The results of this study propose the following strategic recommendations: (1) establishing a community-based digital design center; (2) creating an open-access digital archive of Sumatran batik motifs; (3) integrating batik education into vocational

programs; and (4) fostering collaboration between artisans, designers, the government, and technology developers. These efforts will strengthen the sustainability of the creative industry based on local wisdom, positioning it as a contributor to cultural preservation and regional development.

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References

- [1] Y. Yang and R. W. Y. Yee, "The effect of process digitalization initiative on firm performance: A dynamic capability development perspective," *Int. J. Prod. Econ.*, vol. 254, no. March, p. 108654, 2022, doi: [10.1016/j.ijpe.2022.108654](https://doi.org/10.1016/j.ijpe.2022.108654).
- [2] N. Margried, "Batik Fractal Community: Creative Engagement through Technology," *Procedia - Soc. Behav. Sci.*, vol. 184, no. August 2014, pp. 214–222, 2015, doi: [10.1016/j.sbspro.2015.05.082](https://doi.org/10.1016/j.sbspro.2015.05.082).
- [3] D. Chen and P. Cheng, "A method to extract batik fabric pattern and elements," *J. Text. Inst.*, vol. 112, no. 7, pp. 1093–1099, 2021, doi: [10.1080/00405000.2020.1802885](https://doi.org/10.1080/00405000.2020.1802885).
- [4] T. E. Darmayanti, A. Pandawangi, and D. I. Aryani, "The Cultural Narrative as a Digital Promotion Strategy in Selling Batik Tulis Lasem and Its Effect on The Economy in Lasem," in *The 5th International Conference on Business, Economics, Social Sciences, and Humanities 2022*, 2022.
- [5] M. F. A. Rojak, "Jaringan Perdagangan Batik di Pesisir Jawa Tengah 1840-1920 (Batik Trade Network on the Coast of Central Java 1840-1920)," *Hist. Madania J. Ilmu Sej.*, vol. 7, no. 1, pp. 1–16, 2023, doi: [10.15575/hm.v7i1.22869](https://doi.org/10.15575/hm.v7i1.22869).
- [6] A. Pandanwangi, "Transfer of Knowledge : Educational Value in Cold Wax Batik Technique Training," in *Variety of Learning Resolutions in the Covid 19*, A. Rahmat and P. Chaube, Eds. India: Novateur Publication, India, 2020, pp. 51–55.
- [7] T. Hu, Q. Xie, Q. Yuan, J. Lv, and Q. Xiong, "Design of ethnic patterns based on shape grammar and artificial neural network," *Alexandria Eng. J.*, vol. 60, no. 1, pp. 1601–1625, Feb. 2021, doi: [10.1016/j.aej.2020.11.013](https://doi.org/10.1016/j.aej.2020.11.013).
- [8] W. Wibawanto and R. Nugrahani, "Inovasi Pengembangan Motif Batik Digital Bagi IKM Batik Semarang," *Indones. J. Conserv.*, vol. 3, no. 1, pp. 99–110, 2018.
- [9] W. Wibawanto, T. Rohidi, and T. Triyanto, "D-batik: Development of Batik Motifs with Digital Techniques," in *5th International Conference on Science, Education and Technology*, 2020, doi: [10.4108/eai.29-6-2019.2290325](https://doi.org/10.4108/eai.29-6-2019.2290325).
- [10] A. Pandanwangi, A. Prijono, and R. Ratnadewi, "Generative Art sebagai Pembentuk Motif Geometris," *Ideas Publ.*, vol. 8, no. 4, pp. 1199–1209, 2022, doi: [10.32884/ideas.v8i4.959](https://doi.org/10.32884/ideas.v8i4.959).
- [11] R. Ratnadewi, A. Prijono, and A. Pandanwangi, "Geometry Learning Through Batik Reconstruction," *JTAM (Jurnal Teor. dan Apl. Mat.)*, vol. 6, no. 4, pp. 1004–1012, 2022, doi: [10.31764/jtam.v6i4.9964](https://doi.org/10.31764/jtam.v6i4.9964).
- [12] J. W. Creswell, *Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: Sage Publication, 2014.
- [13] J. W. Creswell and V. L. Plano Clark, *Designing and Conducting Mixed Methods Design*, Third Edit. Los Angeles: SAGE Publication Inc, 2018.

-
- [14] P. Tabrani, "Prinsip-Prinsip Bahasa Rupa," *J. Budaya Nusantara*, vol. 1, no. 2, pp. 173–195, Mar. 2018, doi: [10.36456/b.nusantara.vol1.no2.a1579](https://doi.org/10.36456/b.nusantara.vol1.no2.a1579).
- [15] M. Lutfi, T. K. S. Dewi, and G. M. N. Putra, "Visual Narrative as Strategy of Traditional Texts: A Study on Serat Menak Mochtar," *Opción, Año*, vol. 35, no. 24, pp. 713–730, 2019.
- [16] A. Pandanwangi and B. S. Dewi, "Eksperimen Kreatif Dan Bahasa Rupa Dalam Meningkatkan Apresiasi Gambar Anak Di Tingkat Pendidikan Dasar," in *Prosiding SNaPP2014 Sosial, Ekonomi, dan Humaniora*, 2014, vol. 4, no. gambar 1, pp. 445–450.
- [17] A. Marzuki Sulaiman and H. Bastian, *Revitalisasi desain Iluminasi Pada naskah Jawa Kuno Surakarta*, 1st ed. Semarang: Nuraneda Publishing, 2020. doi: [10.33633/andharupa.v5i2.2059](https://doi.org/10.33633/andharupa.v5i2.2059)
- [18] A. Pandanwangi, S. Himatul Alya, I. Budiman, A. Mochtar Apin, and T. Eka Darmayanti, "Art illuminations in 18th–19th centuries manuscripts from Ngayogyakarta Hadiningrat Palace as a creative industry development," *Cogent Arts Humanit.*, vol. 10, no. 2, 2023, doi: [10.1080/23311983.2023.2277070](https://doi.org/10.1080/23311983.2023.2277070).
- [19] E. Setiawan, "Makna Filosofi Wayang Purwa dalam Lakon Dewa Ruci," *Kontemplasi J. Ilmu-Ilmu Ushuluddin*, vol. 5, no. 2, pp. 400–418, 2017, doi: [10.21274/kontem.2017.5.2.399-418](https://doi.org/10.21274/kontem.2017.5.2.399-418).
- [20] Y. P. Muham and M. Misgiya, "Gundala-Gundala Sebagai Dasar Penciptaan Batik Tulis," *Cendikia J. Pendidik. dan Pengajaran*, vol. 2, no. 3, pp. 454–474, 2024.
- [21] W. T. Atmojo, "Penciptaan Batik Melayu Sumatera Utara," *Panggung*, vol. 23, no. 1, pp. 90–97, 2013, doi: [10.26742/panggung.v23i1.89](https://doi.org/10.26742/panggung.v23i1.89).
- [22] D. Sianturi, "Gorga Boraspati Dalam Kebudayaan Batak Toba Sebagai Ide Penciptaan Karya Seni Lukis," *Gestus J. Pencipta. Dan Pengkaj. Seni*, vol. 2, no. 2, p. 62, 2022, doi: [10.24114/gsts.v2i2.40506](https://doi.org/10.24114/gsts.v2i2.40506).
- [23] A. Z. A. Rahma, L. P. Hati, L. Financia, and N. Nurhabsyah, "Rumah Adat Siwaluh Jabu Desa Budaya Lingga Di Kabupaten Karo Sebagai Warisan Budaya Intangible," *Pendidik. Dasar dan Sos. Hum.*, vol. 2, no. 8, pp. 13301–1305, 2023, doi: <https://doi.org/10.53625/jpdsh.v2i9.6211>.
- [24] E. A. Halim, "Studi tata ruang rumah adat "," *Dimensi*, vol. 16, no. 2, pp. 167–174, 2020. doi: [10.25105/dim.v16i2.7057](https://doi.org/10.25105/dim.v16i2.7057)
- [25] "Kamus Batak Online," *kamusbatak.com*, 2024. .
- [26] S. Agustina, "Revitalisasi Motif Batik Truntum Pada Kalangan Pemuda-Pemudi Di Indonesia," *IKONIK J. Seni dan Desain*, vol. 3, no. 2, p. 59, 2021, doi: [10.51804/ijsd.v3i2.999](https://doi.org/10.51804/ijsd.v3i2.999).
- [27] A. Pandanwangi, R. Ratnadewi., and A. Prijono, "Batik Sumatera Utara Motif Sulur-Boraspati," EC00202476894, 2024.
-