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Revitalization of Sumatera Batik Motifs: Digitalization and Development of Creative Industries Based on Local Wisdom

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ABSTRACT (10PT)

This study aims to develop Sumatran batik motifs through a digitalization process and downstream the results into the creative industry. The digitalization process is carried out using the latest technology that allows the preservation of traditional batik motifs as well as design innovations that are relevant to the present. **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 show that the digitalization of rare Sumatran batik motifs can open up new opportunities in the creative industry, increase cultural awareness, and make a significant contribution to the local economy. **The method used** is descriptive qualitative with a visual language approach. **The sample** in this study is a digital batik produced by UMKM. **The results** of the study show that the revitalization of Sumatran batik based on local wisdom is an ongoing effort to continue to increase the potential of the creative industry. The visual form produced by the main motif is maintained, while the composition of the batik is arranged horizontally with the arrangement getting smaller towards the top of the motif.

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1. Introduction

Technological development in the form of digitization is an important driver of innovation in many industrial sectors, one of which is 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. [2], [3]. This process is to facilitate documentation as well as to obtain accurate measurements. The convenience with the help of this technology can optimize the process of realizing the design of batik motifs because the master has been made in advance and the craftsman can transfer the image to the cloth. [4]–[6]. However, this technological advancement with many conveniences has not been widely used by various batik sectors in Indonesia. The interest in batik production in Indonesia has caused batik producers to strive to reach increasingly competitive markets, both domestic and foreign markets. [7]. Batik production produced by batik artisans is mostly managed traditionally [8]. This includes batik craftsmanship that is carried out through the transfer of skills that are transmitted and handed down from one generation to another [9], [10]. 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 [11]. This problem is interesting to observe, considering that batik-making in Indonesia is owned by 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.

Some previous studies have been conducted by other researchers, Waridah (2018) 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 [12]. 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 that geometric motifs can be created with algorithmic art methods and can be applied to fabric surfaces [13][14]. 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 partner of the research team, and various studies 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. The purpose of this research is to digitize rare Sumatran batik motifs and is expected to open up opportunities in the creative industry and make a significant contribution to the local economy.

2. The Proposed Method

The method used is a qualitative descriptive method, which is the collection of data from data in the field [15], [16] with a visual language approach. Visual language is a tool for reading images, one of which is an image of batik motifs. The term visual language used in the analysis is that the motif that is made larger is the motif that is considered important [17]–[19]. The motif is made simpler than its original form and is called stilation. Another discussion in the analysis is related to the discussion of composition, repetition of motifs, and batik colors.

3. Method

The sample in this study is digital batik produced by MSMEs. There are five stages in this research. The stages are:

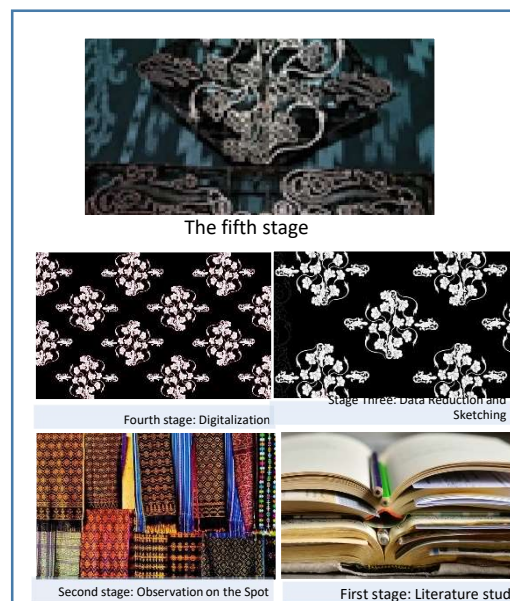


Fig. 1. Stages in Research

Based on Figure 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. **The third stage** of data collection from literature studies and field data was identified and then sketching was done. [20], [21]. **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.

4. Results and Discussion

4.1. Batik Sumatera

Many Javanese who like to migrate choose to live on islands that are considered to offer new hope in their lives. [22]. One of them is Javanese people who have batik skills who migrate and live on the island of Sumatra. Their skilled 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. [23], [24]. 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. [25]. The ethnic diversity in North Sumatra makes a lot of local wisdom that can be explored as inspiration for batik motifs in North Sumatra. From the visual form of flora or fauna.

4.2. 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. [26]. 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, it is 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 included in the category of earthquake-resistant houses. [26], [27]. 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.

4.3. Gorga Boraspati



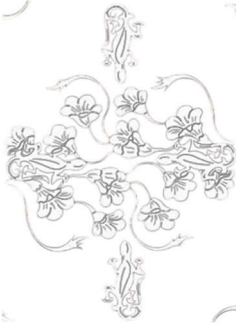


In Toba Batak ethnicity, *Gorga* ornamentation is known in the form of various carvings, coloring the walls of the house with three basic colors such as white, red, and black [28]. *Gorga* in Toba Batak ethnic is divided into five patterns, namely 1. cosmos pattern, 2. plant pattern, 3. animal pattern, 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 Buffaloes, horses, and lizards which are used in *gorga* namely *Boraspati gorga*, *hoda-hoda gorga*, and *ulu paung gorga*. The pattern of human 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 *Dompok Elephant gorga*, the *Jenggar* or *Jorngom gorga*. So many *gorga* is already known. The idea of *gorga* with animal patterns referring to *Boraspati* is then combined with climbing plants. *Boraspati* (Batak language) means a) lizard, b) Name of a nature god. There are three nature gods (*Boraspati*) who are three friends, namely: a). *Boraspati ni ruma*; the tutelary god of the house symbolized by the lizard; b). *Boraspati ni tano*; the tutelary god of the land (maintaining fertility), symbolized by the *ilik* (lizard); and c) *Boraspati 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 *Boraspati* motif which will be implemented into the batik motif has undergone distortion and stylization and represents the three of them. [25]. *Gorga Boraspati* also has three functions according to its placement: house protector, land protector, and village protector.

4.4. Sumatra Batik with Tarok Tarok Boraspati Motif

4.4.1 Revitalization of the Visual Form of Local Wisdom of the Boraspati Tarok-tarok 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. [20], [29]. This research revitalizes existing batik motifs and combines them into 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:

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 Batak culture. Its visual form is distilled and implemented into batik motifs combined with tendrill flowers from pumpkin plants.

Based on Table 1, the flowers produced from pumpkins have a simpler distillation form. This is to facilitate implementation into 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. [24]–[26]. This combination is expected to produce innovations that can be utilized by the creative industry.

4.4.2 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 *Canting Cap* into Fabric

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

Source: Research Team. 2024

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. Figure 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. Figure 2(b) is a finished canting cap ready for use in the batik process. Figure 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. Figure 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 Figure 2.

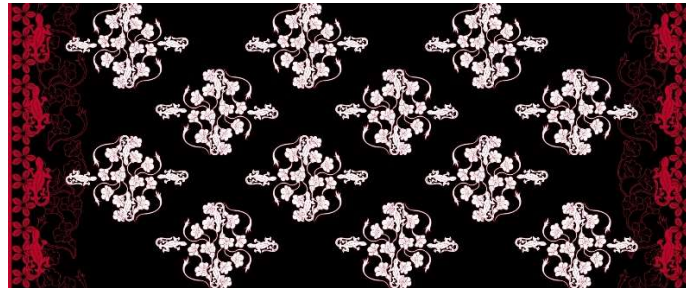


Fig. 2. Visual Form of Tarok-tarok Motif

Source: [30]

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, 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 creeping into 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.

5. Conclusion

One of the strategic steps in developing batik motifs is to take advantage of digitalization technology to revitalize North Sumatra batik motifs. Through the use of digital technology, traditional motifs can be immortalized and introduced to a wider audience, both locally and abroad. 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. The result of revitalizing batik motifs can preserve cultural heritage while promoting economic growth. An important finding of this research is that by integrating the cultural values contained in batik motifs with a modern business approach, it is expected that batik artisans and entrepreneurs can expand their markets and create products with high added value. This approach not only improves the economic welfare of local communities but also strengthens Sumatra's cultural identity in globalization. development of local wisdom-based creative industries.

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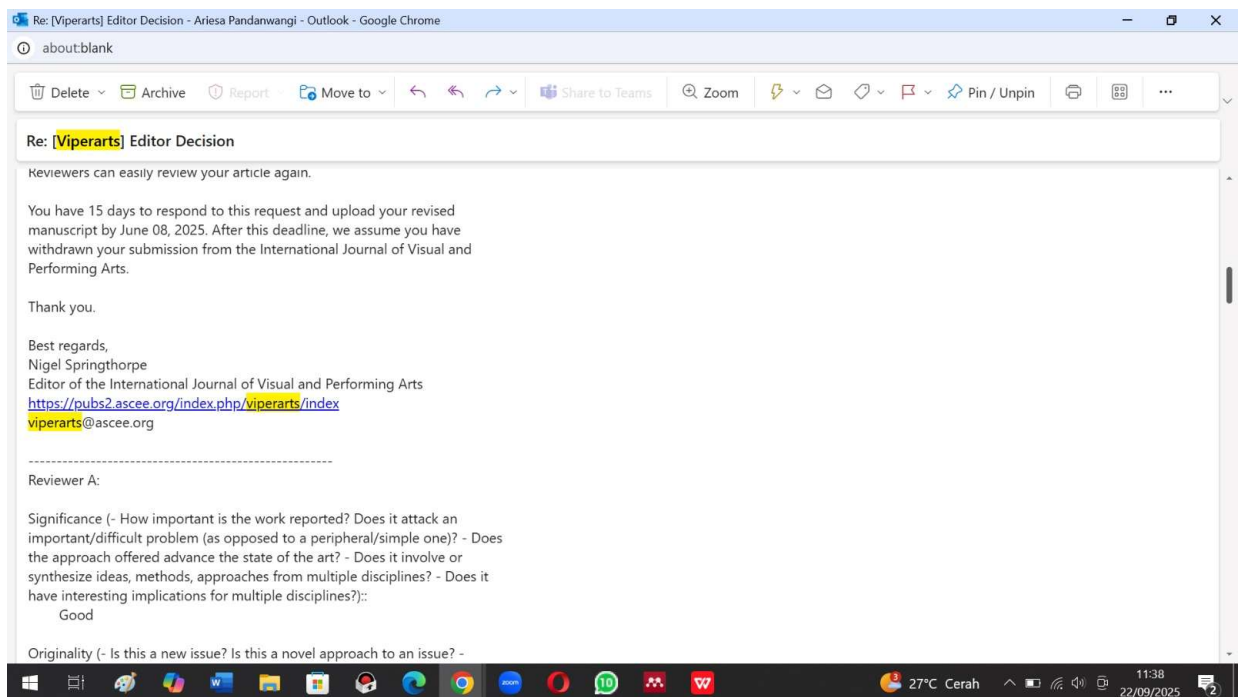
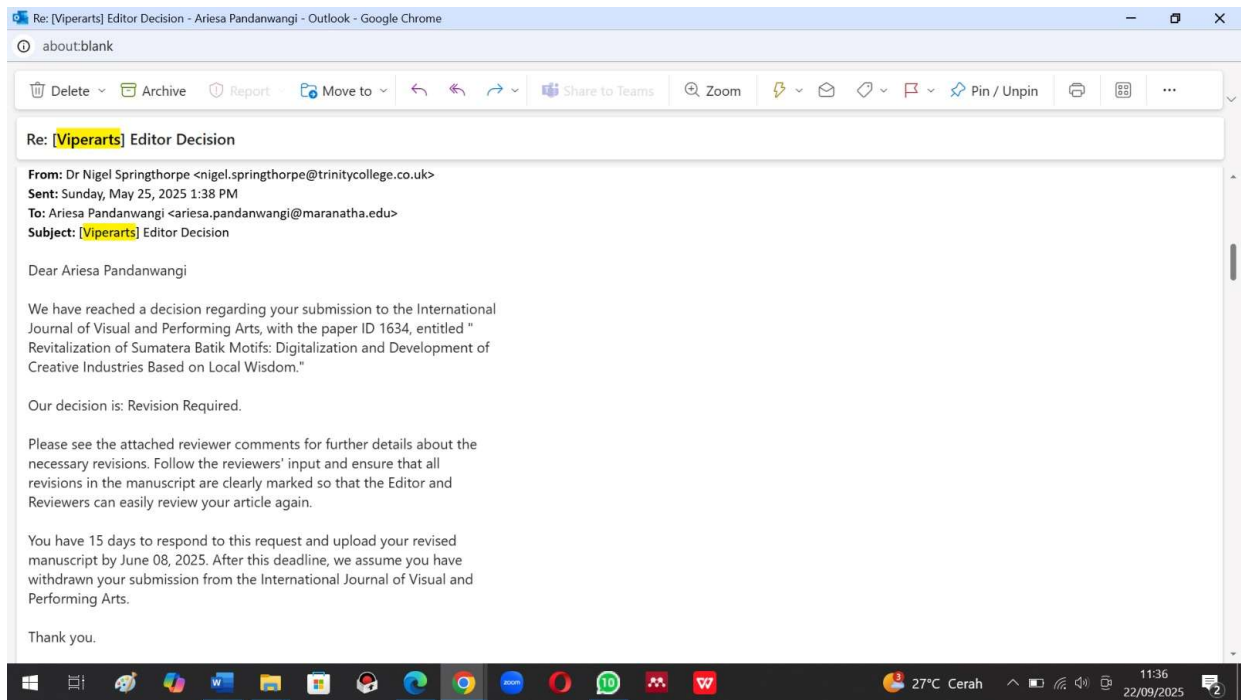
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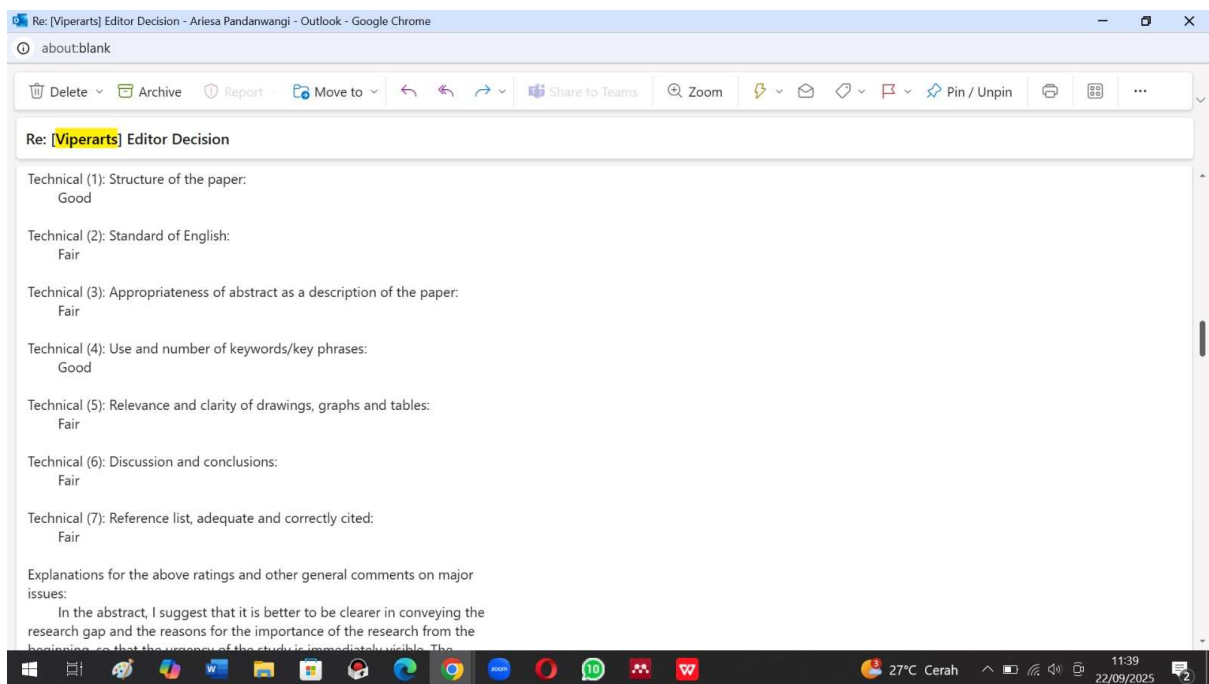
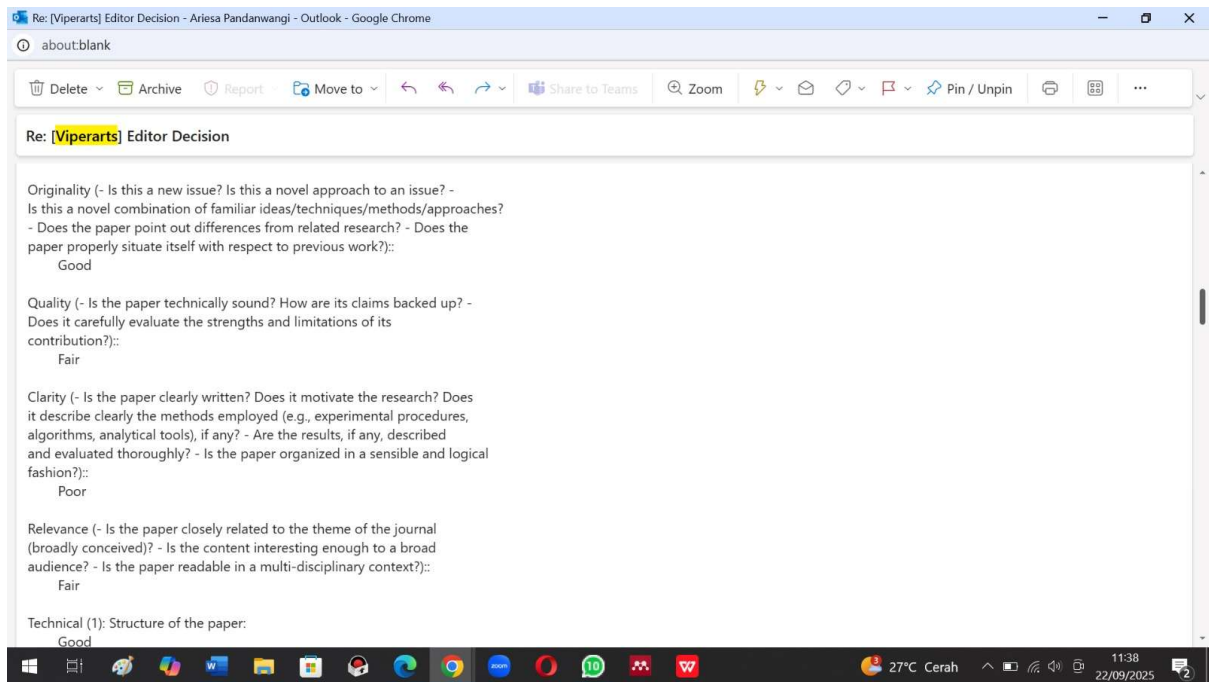
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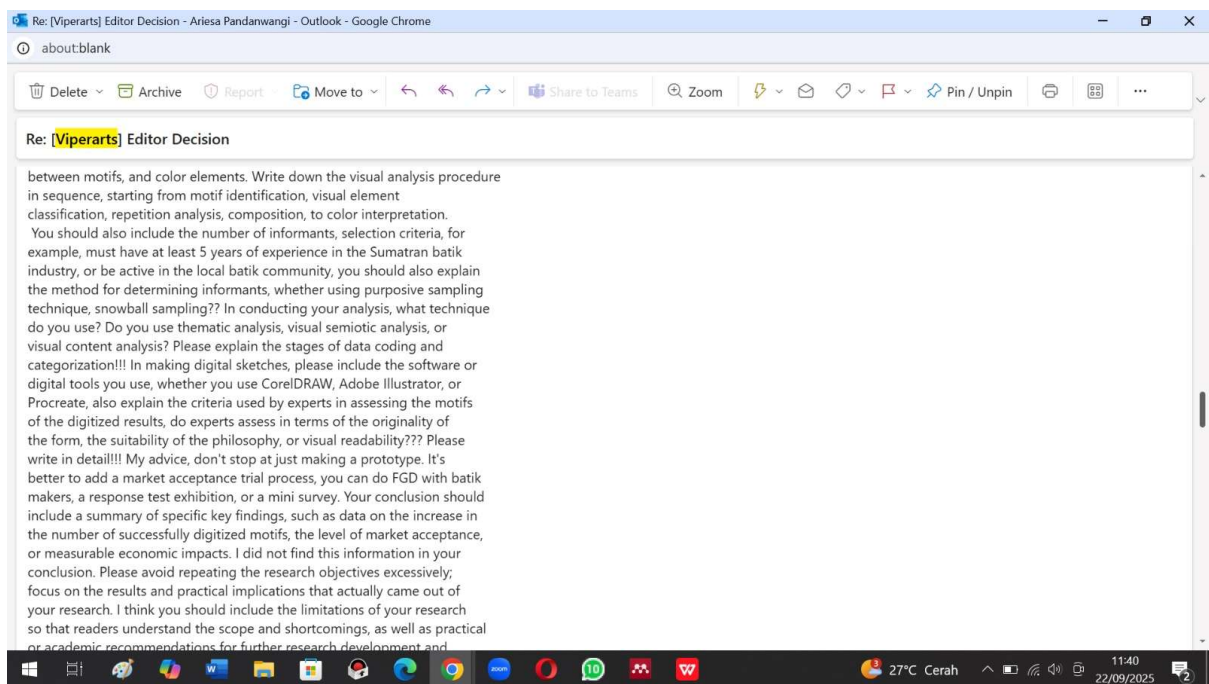
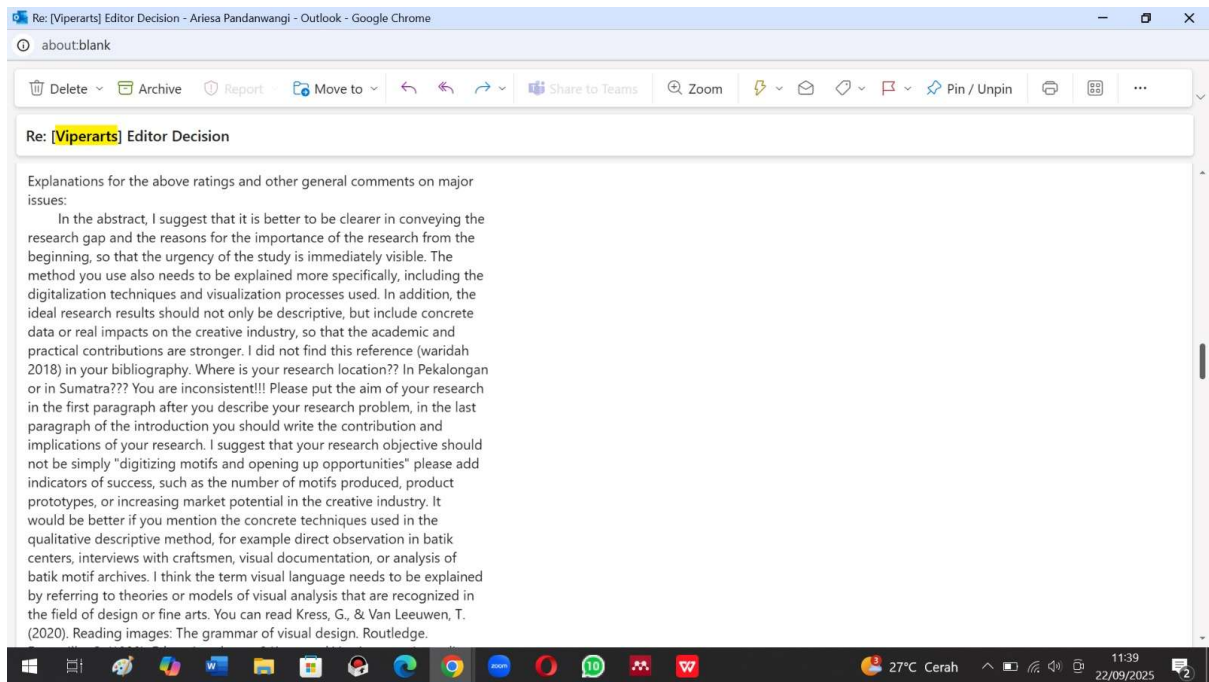
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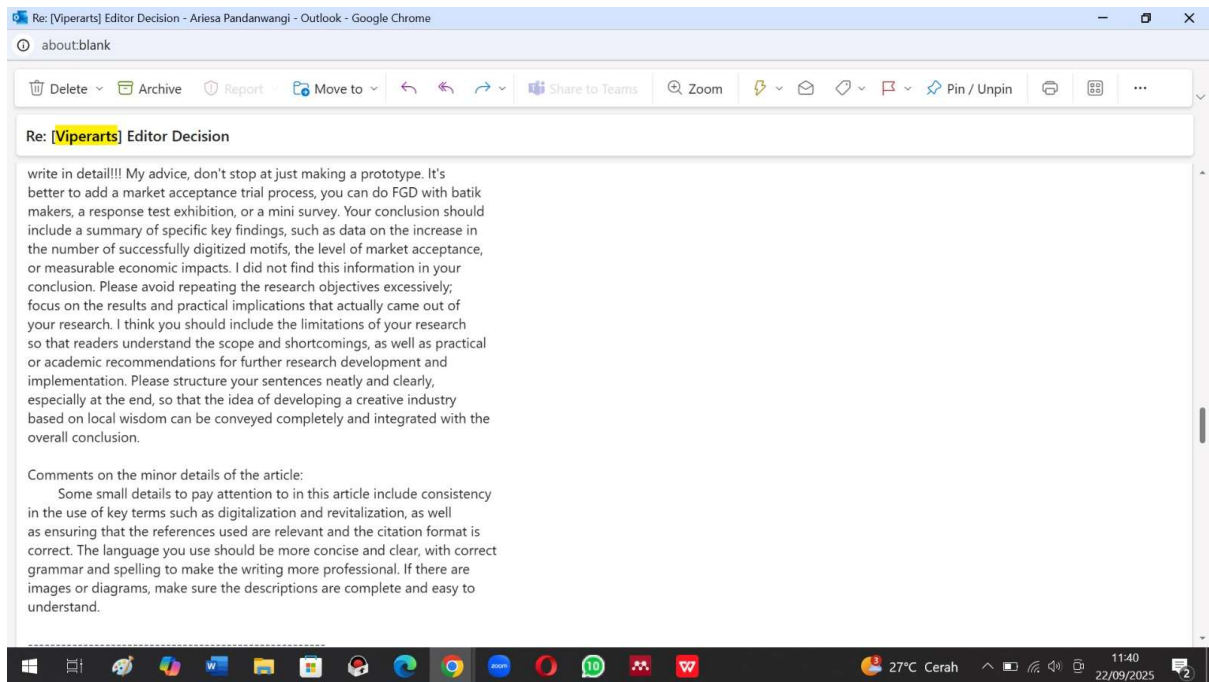
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2. Bukti email dari reviewer (25 Mei 2025)

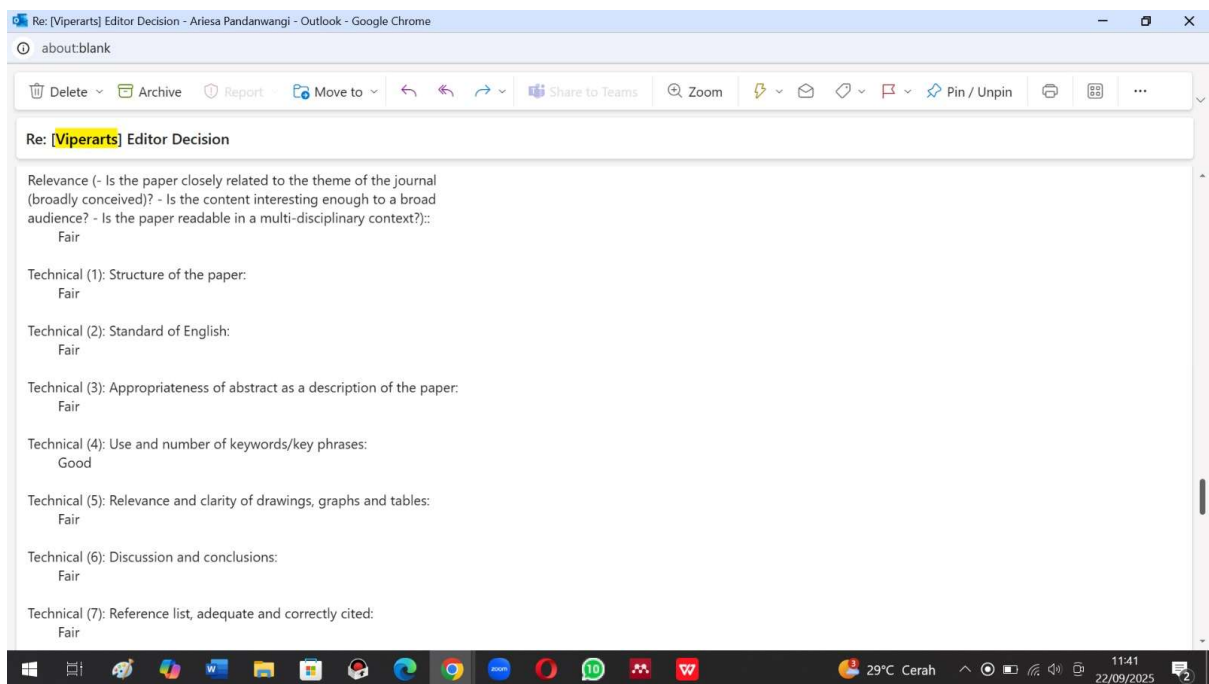
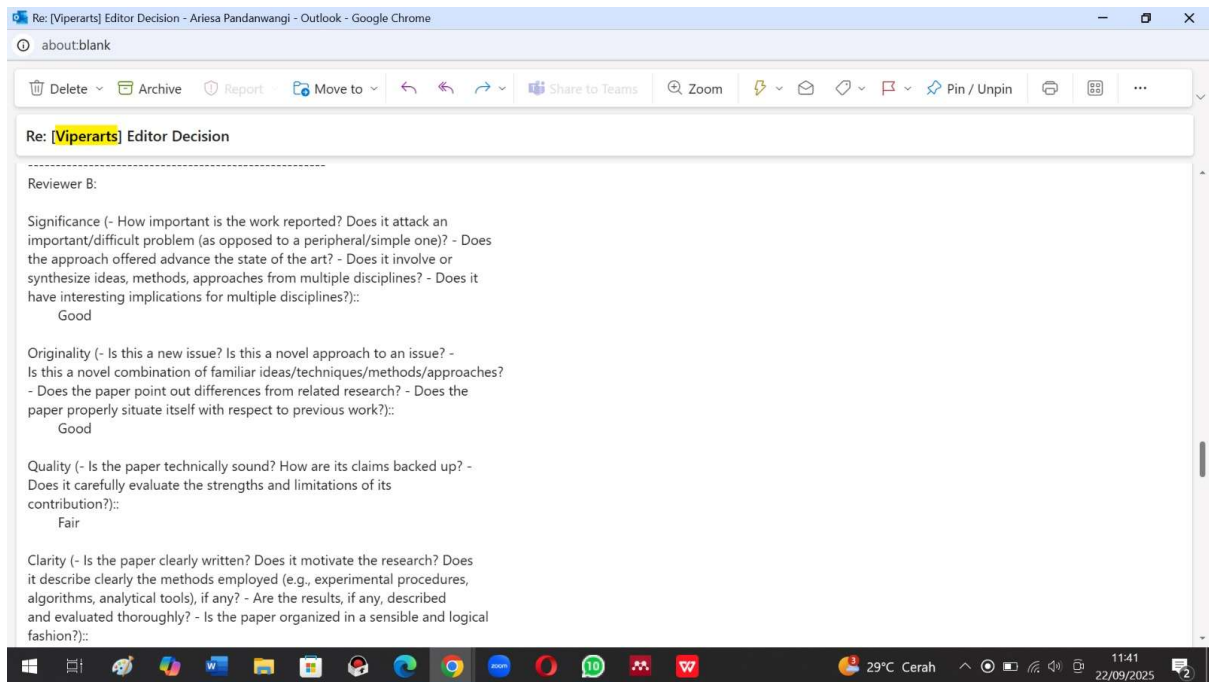


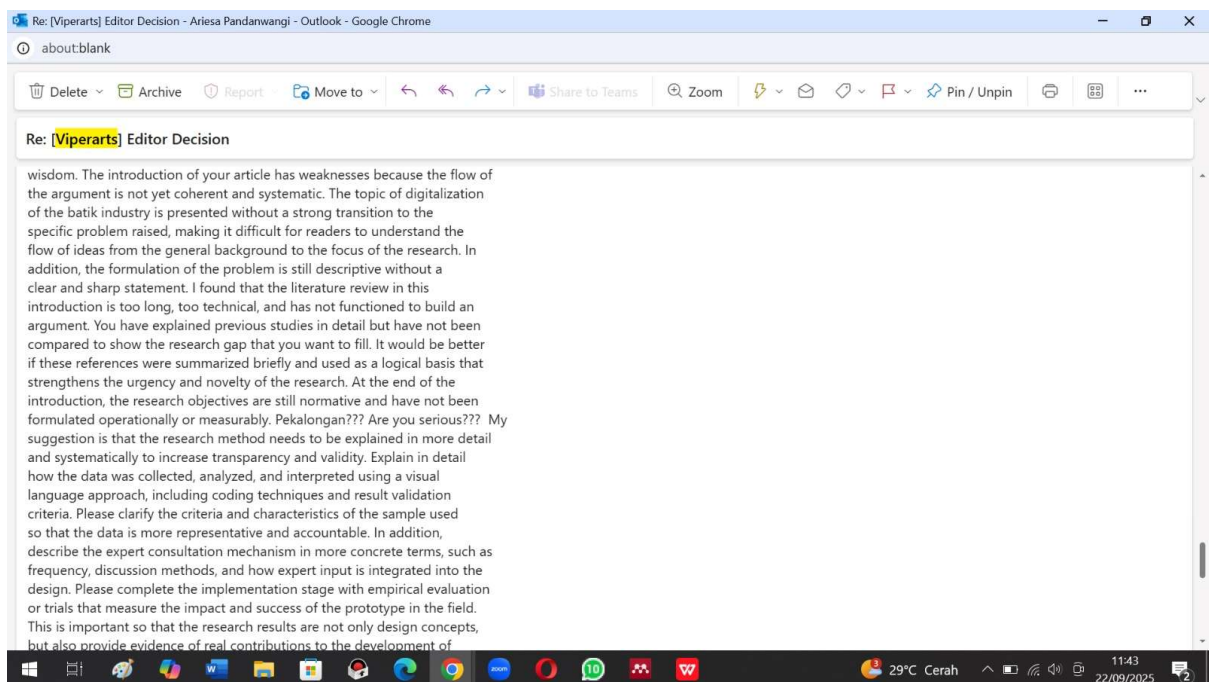
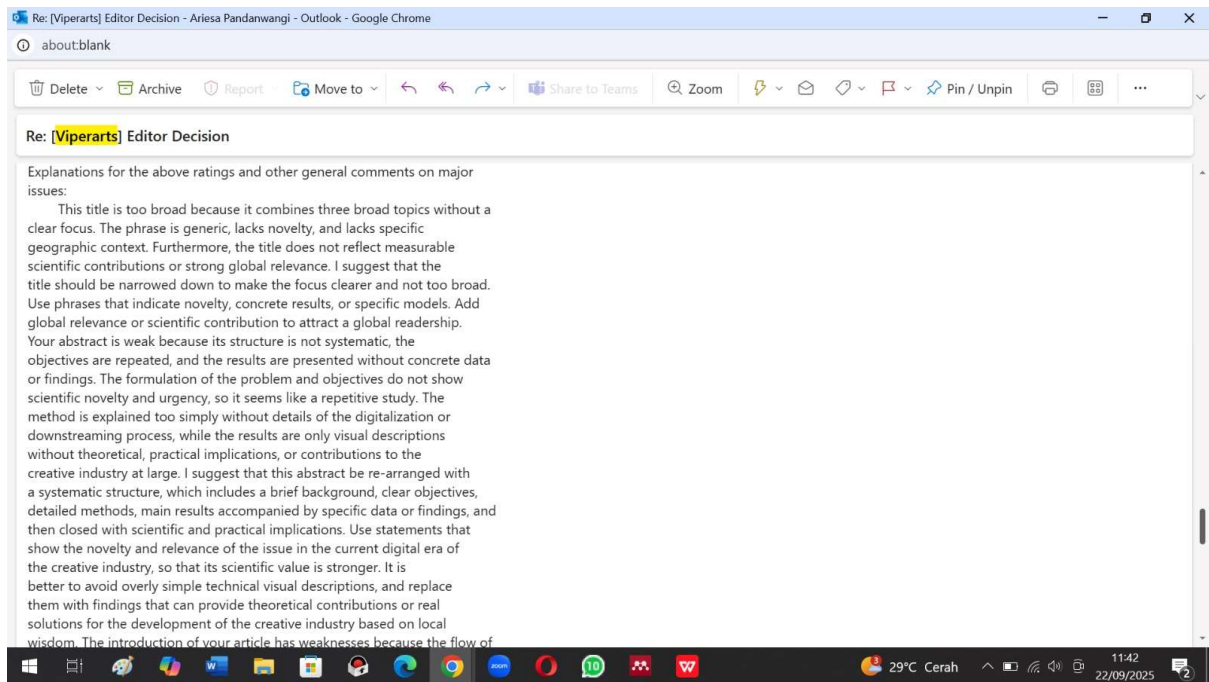


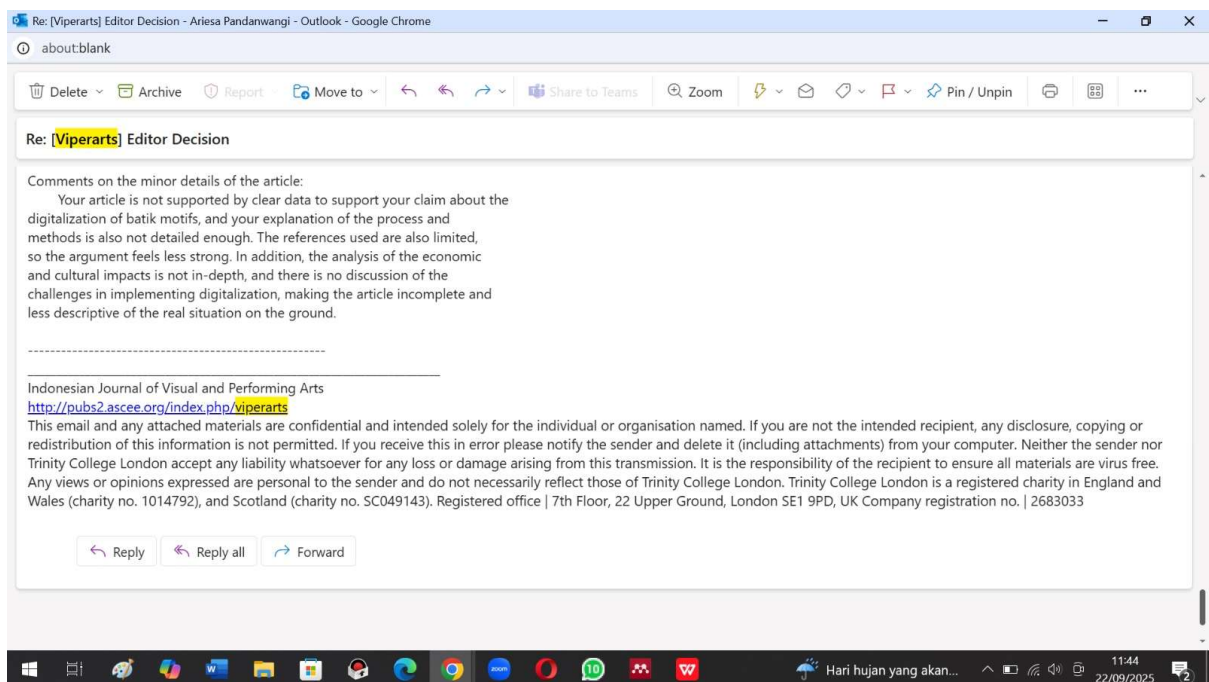
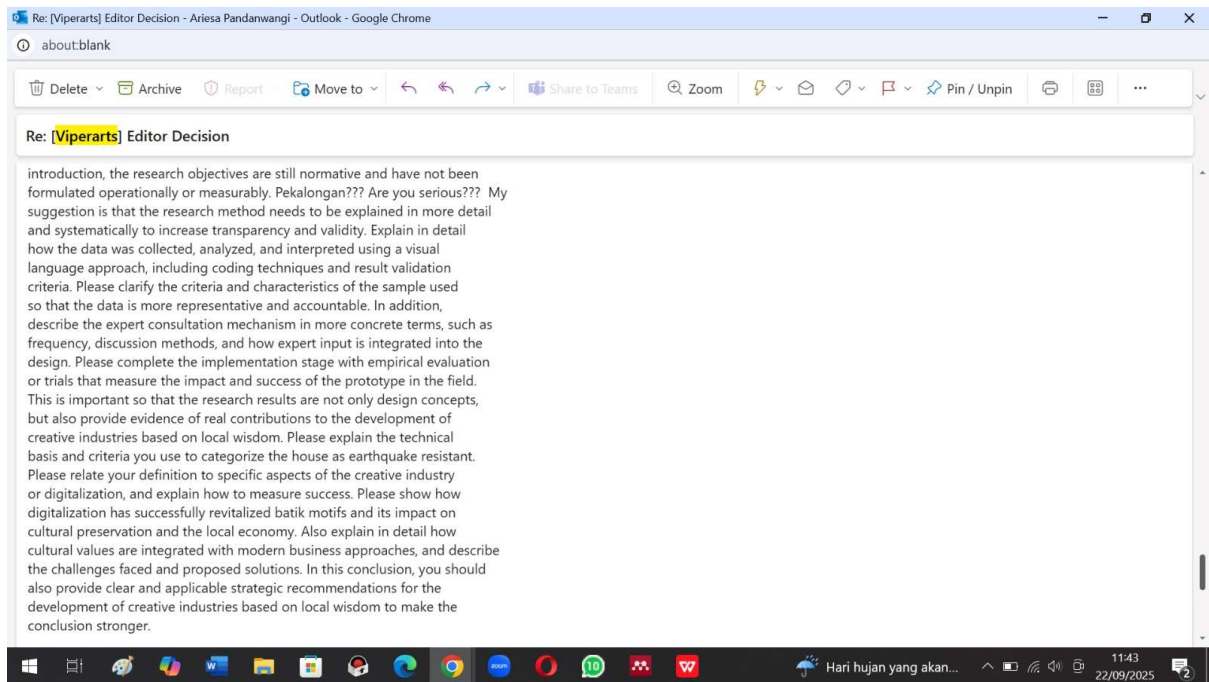




3. Bukti hasil dari reviewer B (25 Mei 2025)







**4. Bukti email submit revisi
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Ariesa Pandanwangi




To:

Sun 6/8/2025 7:52 PM

Dr Nigel Springthorpe <nigel.springthorpe@trinitycollege.co.uk>


Cc:  Ariesa Pandanwangi

 SUBMIT REVISION 08.06.202...
1 MB


Dear Nigel Springthorpe,
I am Ariesa Pandanwangi. I have submitted the revised version of the manuscript, to the International Journal of Visual and Performing Arts, with the paper ID 1634, incorporating the suggestions from Reviewer Rly (marked in blue) and Reviewer Jiv (marked in red).

Could you kindly check whether the revised file has been successfully uploaded to the OJS system? I also sent the revision via this email as a backup. Thank you very much for your assistance.

Sincerely,

 27°C Cerah

11:32
22/09/2025

 2

5. Bukti Submit Revision (8 Juni 2025)

Revitalization of Sumatera Batik Motifs: Digitalization and Development of Creative Industries Based on Local Wisdom

Revitalization of Sumatra Batik Motifs from Tradition to Innovation

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ABSTRACT (10PT)

This study aims to develop Sumatran batik motifs through a digitalization process and downstream the results into the creative industry. 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 show that the digitalization of rare Sumatran batik motifs can open up new opportunities in the creative industry, increase cultural awareness, and make a significant contribution to the local economy. 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. The results of the study show that the revitalization of Sumatran batik based on local wisdom is an ongoing effort to continue to increase the potential of the creative industry. The visual form produced by the main motif is maintained, while the composition of the batik is arranged horizontally with the arrangement getting smaller towards the top of the motif. The 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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Commented [J1]: In the abstract, I suggest that it is better to be clearer in conveying the research gap and the reasons for the importance of the research from the beginning, so that the urgency of the study is immediately visible. The method you use also needs to be explained more specifically, including the digitalization techniques and visualization processes used. In addition, the ideal research results should not only be descriptive, but include concrete data or real impacts on the creative industry, so that the academic and practical contributions are stronger.

Commented [AP2R1]: Thank you, your input is very valuable. Done

1. Introduction

Technological development in the form of digitization is an important driver of innovation in many industrial sectors, one of which is the batik industry. 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. [2], [3]. This process is to facilitate documentation as well as to obtain accurate measurements. The convenience with the help of this technology can optimize the process of realizing the design of batik motifs because the master has been made in advance and the craftsman can transfer the image to the cloth. [4]–[6]. However, this technological advancement with many conveniences has not been widely used by various batik sectors in Indonesia. The interest in batik production in Indonesia has caused batik producers to strive to reach increasingly competitive markets, both domestic and foreign markets. 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. [7]. Batik production produced by batik artisans is mostly managed traditionally [8]. This includes batik craftsmanship that is carried out through the transfer of skills that are transmitted and handed down from one generation to another [9], [10]. 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 [11]. This problem is interesting to observe, considering that batik-making in Indonesia is owned by 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 motifs, and this study focuses on the *Tarok-tarok Boraspati* sample.

Some previous studies have been conducted by other researchers, Waridah Wibawanto (2018) 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 [12]. 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 that geometric motifs can be created with algorithmic art methods and can be applied to fabric surfaces [13][14]. 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 partner of the research team, and various studies have been realized into prototypes. 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. The purpose of this research is to digitize rare Sumatran batik motifs and is expected to open up opportunities in the creative industry and make a significant contribution to the local economy.

2. The Proposed Method

Commented [J3]: I did not find this reference (waridah 2018) in your bibliography.

Commented [AP4R3]: Please check reference No. 12. Thanks for the correction.
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.

Commented [J5]: Where is your research location?? In Pekalongan or in Sumatra??? You are inconsistent!!!

Commented [AP6R5]: The research was conducted in Sumatra, for the original batik prototype our team produced it in Pekalongan. Thank you.

Commented [J7]: Please put the aim of your research in the first paragraph after you describe your research problem, in the last paragraph of the introduction you should write the contribution and implications of your research. I suggest that your research objective should not be simply "digitizing motifs and opening up opportunities" please add indicators of success, such as the number of motifs produced, product prototypes, or increasing market potential in the creative industry.

Commented [AP8R7]: Thanks for the suggestion. Done.
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 20 motifs, and this study focuses on the *Boraspati Tarok-tarok* sample.

The method used is a qualitative descriptive method, which is the collection of data from data in the field [15], [16] 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. The term visual language used in the analysis is that the motif that is made larger is the motif that is considered important. 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. [17]–[19]. 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 stilisation. Another discussion in the analysis is related to the discussion of composition, repetition of motifs, and batik colors.

3. Method

The sample in this study is digital batik produced by MSMEs. There are five stages in this research. The stages are:

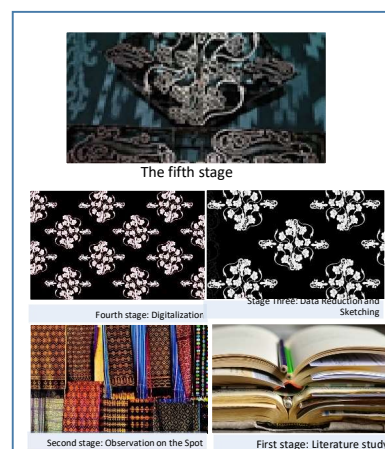


Fig. 1. Stages in Research

Based on Figure 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

Commented [J9]: It would be better if you mention the concrete techniques used in the qualitative descriptive method, for example direct observation in batik centers, interviews with craftsmen, visual documentation, or analysis of batik motif archives. I think the term visual language needs to be explained by referring to theories or models of visual analysis that are recognized in the field of design or fine arts. You can read Kress, G., & Van Leeuwen, T. (2020). Reading images: The grammar of visual design. Routledge. Forceville, C. (1999). Educating the eye? Kress and Van Leeuwen's reading images: The grammar of visual design (1996). Language and Literature, 8(2), 163-178. Erwig, M., Smeltzer, K., & Wang, X. (2017). What is a visual language?. Journal of Visual Languages & Computing, 38, 9-17. Chang, S. K. (1986, May). Visual languages: A tutorial and survey. In Interdisciplinary Workshop on Informatics and Psychology (pp. 1-23). Berlin, Heidelberg: Springer Berlin Heidelberg. Next, in this method section, you should not only measure the size of the motif as an indicator of its importance, but also include other aspects such as the position of the motif, the direction of orientation, the relationship between motifs, and color elements. Write down the visual analysis procedure in sequence, starting from motif identification, visual element classification, repetition analysis, composition, to color interpretation.

Commented [AP10R9]: Thank you for your suggestion. Allow me to use the theory of visual language from Primadi Tabrani.

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. [20], [21]. 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.

4. Results and Discussion

4.1. Batik Sumatera

Many Javanese who like to migrate choose to live on islands that are considered to offer new hope in their lives. [22]. One of them is Javanese people who have batik skills who migrate and live on the island of Sumatra. Their skilled 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. [23], [24]. 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. [25]. 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*. 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.

4.2. 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. [26]. 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, it is 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 included in the category of earthquake-resistant houses. 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. [26], [27]. 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.

Commented [J11]: You should also include the number of informants, selection criteria, for example, must have at least 5 years of experience in the Sumatran batik industry, or be active in the local batik community, you should also explain the method for determining informants, whether using purposive sampling technique, snowball sampling?? In conducting your analysis, what technique do you use? Do you use thematic analysis, visual semiotic analysis, or visual content analysis? Please explain the stages of data coding and categorization!!! In making digital sketches, please include the software or digital tools you use, whether you use CorelDRAW, Adobe Illustrator, or Procreate, also explain the criteria used by experts in assessing the motifs of the digitized results, do experts assess in terms of the originality of the form, the suitability of the philosophy, or visual readability??? Please write in detail!!! My advice, don't stop at just making a prototype. It's better to add a market acceptance trial process, you can do FGD with batik makers, a response test exhibition, or a mini survey.

Commented [AP12R11]: Thank you for your suggestion. The result of this research is a prototype which has not yet been tested in the market.

We recently participated in a national competition called MORP IT, which showcases research results with global marketing potential, and we won first place. For your information, the 15 prototype motifs have been copyrighted and are now products ready for marketing. This information is not discussed in this article.

4.3. Gorga Boraspati







In 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 [28]. *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 Buffaloes, horses, and lizards which are used in *Gorga* namely *Boraspati gorga*, *hoda-hoda gorga*, and *ulu paung gorga*. The pattern of human 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 Dompok Elephant *Gorga*, the *Jenggar* or *Jorngom gorga*. So many *Gorga* are already known. The idea of *Gorga* with animal patterns referring to *Boraspati* is then combined with climbing plants. *Boraspati* (Batak language) means a) lizard, b) Name of a nature god. There are three nature gods (*Boraspati*) who are three friends, namely: a). *Boraspati ni ruma*; the tutelary god of the house symbolized by the lizard; b). *Boraspati ni tano*; the tutelary god of the land (maintaining fertility), symbolized by the ilik (lizard); and c) *Boraspati 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 *Boraspati* motif which will be implemented into the batik motif has undergone distortion and stylization and represents the three of them. [25]. *Gorga Boraspati* also has three functions according to its placement: house protector, land protector, and village protector.

4.4. Sumatran Batik with the Tarok Tarok Boraspati Motif

4.4.1 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. [20], [29]. This research revitalizes existing batik motifs and combines them into 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:

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 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 into the form of a *canting cap* that will be produced. Likewise, *boraspasi*, 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. [24]–[26]. This combination is expected to produce innovations that can be utilized by the creative industry.

4.4.2 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 *Canting Cap* into Fabric

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

Source: Research Team. 2024

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. Figure 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. Figure 2(b) is a finished canting cap ready for use in the batik process. Figure 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. Figure 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 Figure 2.

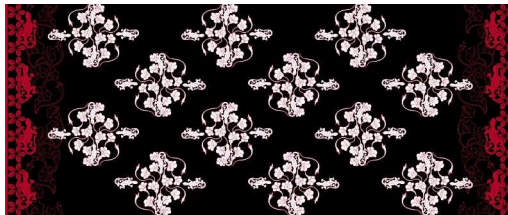


Fig. 2. Visual Form of Tarok-tarok Motif

Source: [30]

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, 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 creeping into 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.

5. Conclusion

One of the strategic steps in developing batik motifs is to take advantage of digitalization technology to revitalize North Sumatra batik motifs. Through the use of digital technology, traditional motifs can be immortalized and introduced to a wider audience, both locally and abroad. 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. The result of revitalizing batik motifs can preserve cultural heritage while promoting economic growth. An important finding of this research is that by integrating the cultural values contained in batik motifs with a modern business approach, it is expected that batik artisans and entrepreneurs can expand their markets and create products with high added value. This approach not only improves the economic welfare of local communities but also strengthens Sumatra's cultural identity in globalization. Development of local wisdom based creative industries. These products are further supported through branding, storytelling, and strategies that appeal to local and global markets. This has a direct positive impact

Commented [J13]: Your conclusion should include a summary of specific key findings, such as data on the increase in the number of successfully digitized motifs, the level of market acceptance, or measurable economic impacts. I did not find this information in your conclusion. Please avoid repeating the research objectives excessively; focus on the results and practical implications that actually came out of your research. I think you should include the limitations of your research so that readers understand the scope and shortcomings, as well as practical or academic recommendations for further research development and implementation. Please structure your sentences neatly and clearly, especially at the end, so that the idea of developing a creative industry based on local wisdom can be conveyed completely and integrated with the overall conclusion.

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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 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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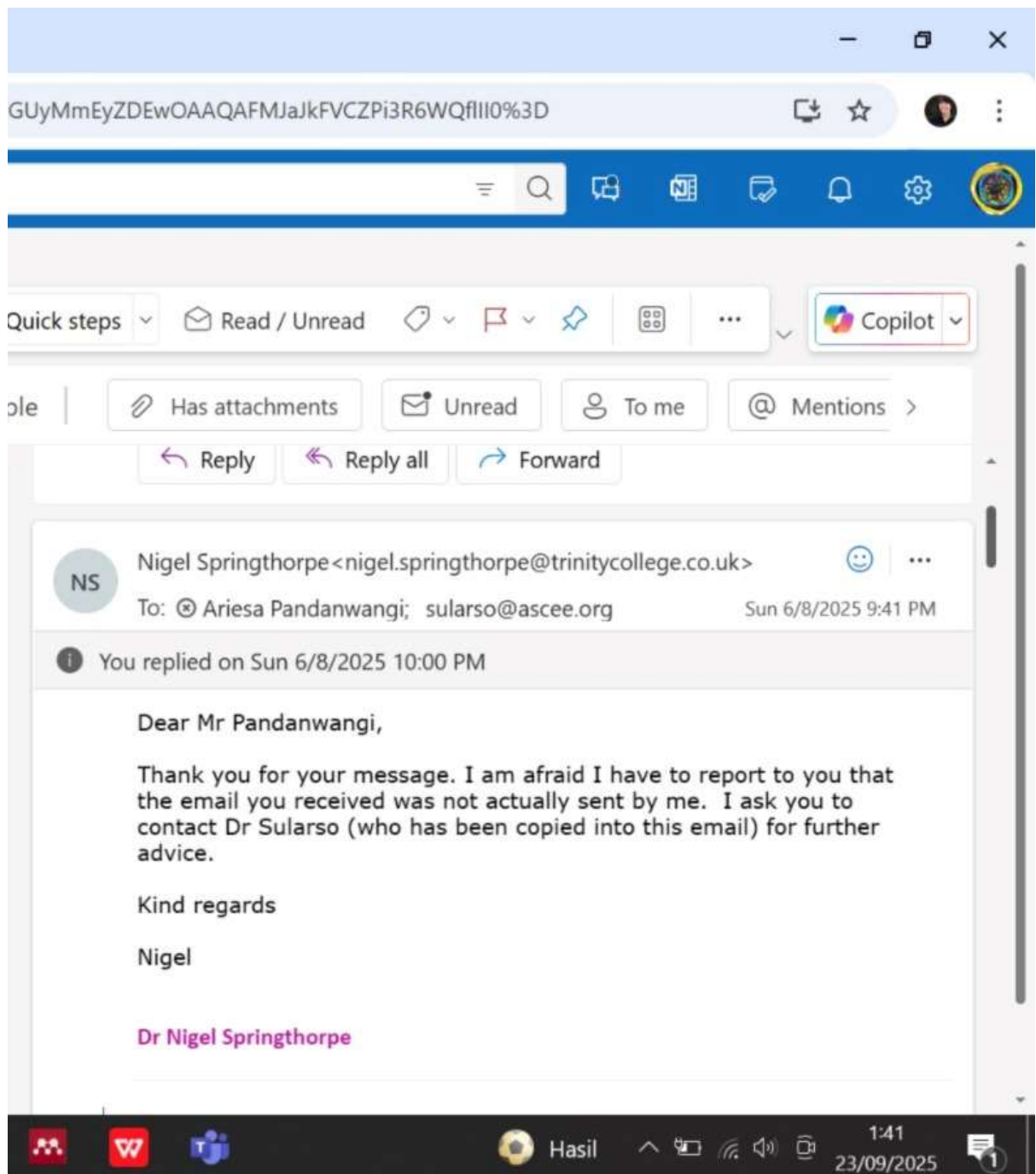
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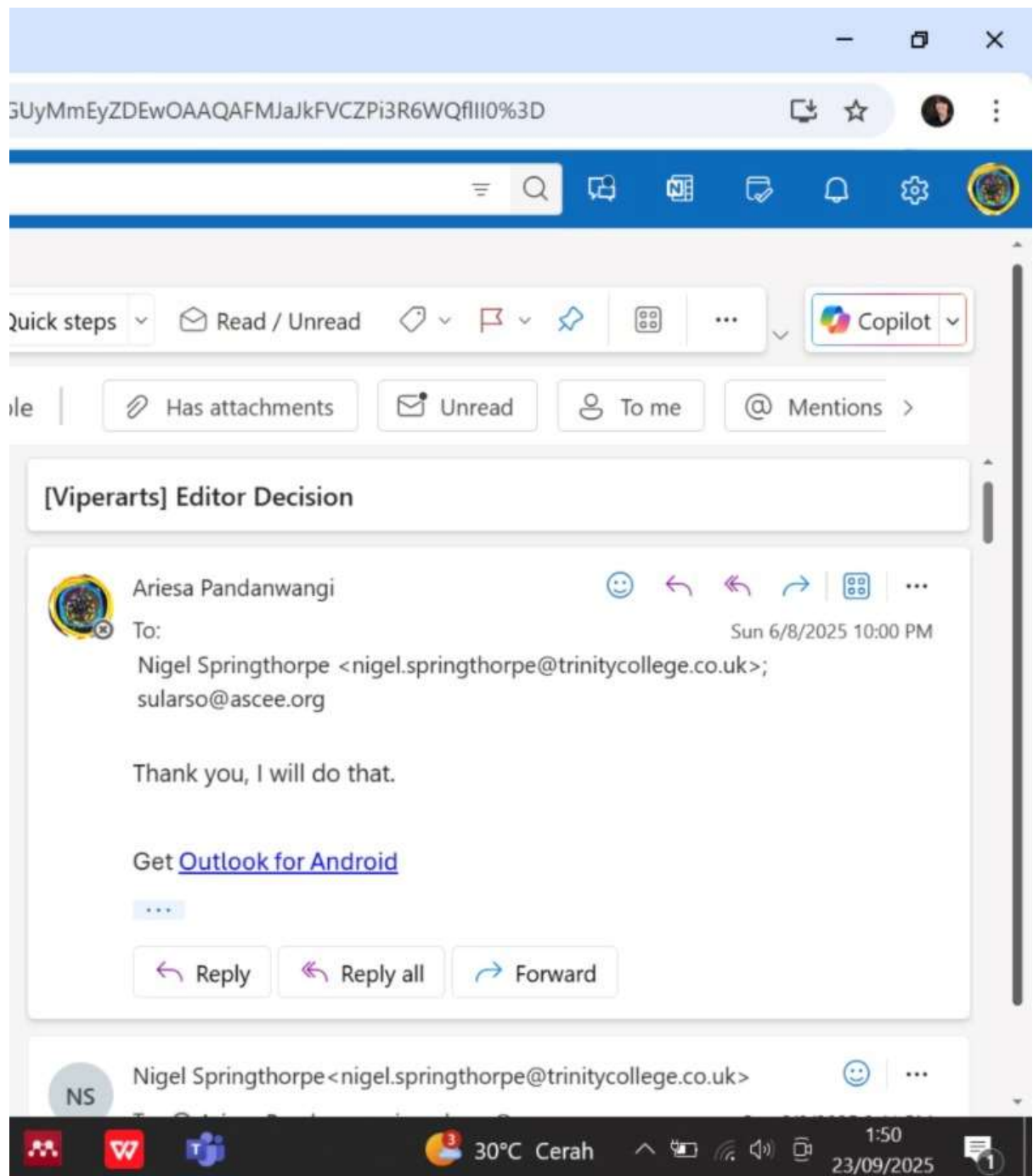
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**6. Bukti tanggapan dari hasil
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**7. Bukti tanggapan dari
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(8 Juni 2025)**



8. Bukti Manuskrip Accepted (9 Juni 2025)

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Dear Ariesa Pandanwangi, Ratnadewi Ratnadewi, Agus Prijono

We are pleased to inform you that your submission to the International Journal of Visual and Performing Arts (ISSN Online: 2684-9259) titled "Revitalization of Sumatra Batik Motifs from Tradition to Innovation" with Paper ID 1634, has been ACCEPTED for publication.

Your article will be published in Volume 7, Number 1 June 2025.

Congratulations on accepting your article, and thank you for choosing our publication.

Sincerely

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23/09/2025

**9. Bukti publikasi manuskrip
dengan judul Revitalization
of Sumatra Batik Motifs
from Tradition to
Innovation**

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



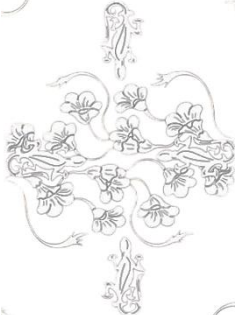


In the Toba Batak ethnicity, *Gorga* ornamentation is known in the form of various carvings, coloring the walls of the house with three basic colors, such as white, red, and black [25]. *Gorga* in Toba Batak ethnic is divided into five patterns, namely (1) cosmos pattern, (2) plant pattern, (3) animal 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.

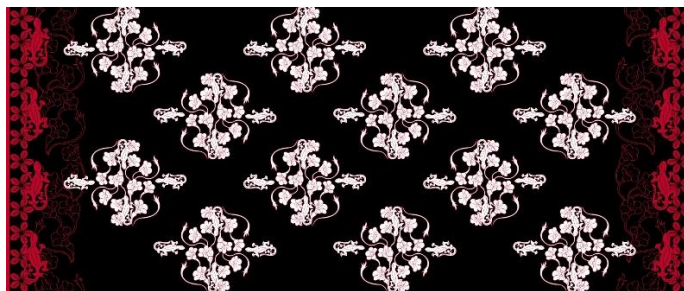


Fig. 1. Visual Form of *Tarok-tarok* Motif, Source: [27]

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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