

Bridging Tradition and Innovation: Exploring Design Thinking for Lasem Batik Tulis Motif Creation

Vera Jenny Basiroen^{1*}, Mita Purbasari Wahidiat², Fanny Marcelinna Suhendra³, and Donna Carolina⁴

^{1,2} Graphic Design & New Media Program, Visual Communication Design Department, School of Computing and Creative Arts, Bina Nusantara University, Jakarta, Indonesia 11480

³ Hawthorn Campus, School of Design and Architecture, Swinburne University of Technology, Swinburne College, Australia

⁴ Visual Communication Design Department, Bina Nusantara Malang, Malang, Indonesia

Abstract. This article addresses the declining prestige of Lasem handmade batik and the impact of the COVID-19 pandemic on the decline of Lasem batik businesses in Rembang Regency. The author initiated a project to encourage the younger generation to participate in developing new, modern motifs that appeal to different market segments while preserving Indonesia's cultural heritage. The project involved 26 design students who used the design thinking method to develop a collection of motifs in five categories: flora, fauna, Lasem daily life activities, historical stories, and Javanese and Chinese acculturation. This project resulted in the development of a new contemporary motif involving the young generation for Lasem batik, overcoming the decline in prestige, and contributing to preserving Indonesia's cultural heritage. The research also aims to increase the knowledge of Lasem batik artisans on the potential of creating a tourism community based on local cultural assets. The success of this project will be measured through the commercialization of new contemporary Batik designs and the positive impact on Indonesia's cultural heritage. Feedback from Batik industry stakeholders and Batik Lasem artisans will be used to measure and evaluate further research.

1 Introduction

Indonesia has a rich cultural heritage; batik is one of its most famous cultural symbols. Batik is an art form and an essential source of income for many Indonesians. The declaration of the Sustainable Development Goals, on October 21, 2015, by the United Nations (UN) has positioned batik as an economic resource for the Indonesian people [1]. The process of creating contemporary motif designs for Lasem batik is oriented towards 4 (four) of the 17 goals of the Sustainability Development Goals. The relevance of the sustainable design goals of Lasem batik is found in Sustainable Development Goals (SDG) numbers 1, 4, 8, and 11. The four goals are (1) Poverty Alleviation (No Poverty at no. 1), (2) Quality Education at no. 4, (3) Decent Work and Economic Growth at no. 8, and (4) Sustainable Cities and Communities at no. 11).

Lasem handmade batik is one of Indonesia's most well-known and distinctive styles. It is a traditional hand-drawn batik that originated in the Lasem district of Central Java and has been produced for centuries. Lasem batik is known for its unique red color, *getih pithik*, and motifs that combine Javanese and Chinese elements [2].

However, the prestige of Lasem handmade batik has declined in recent years due to the need for more innovation in creating new motifs [3]. This situation is also aggravated by the impact of the COVID-19 pandemic on the decline of Lasem batik businesses in Rembang

Regency [4]. The COVID-19 pandemic has also affected the decline in Lasem batik businesses in Rembang Regency. The lack of information about the meaning of motifs makes the younger generation not understand the significance of these motifs and less appreciative of hand-written batik as a cultural heritage [5]. If the old motifs continue to be used without any changes, the cultural heritage of Lasem handmade batik could be threatened. Figure 1 illustrates the structural outline of challenges within the realm of Batik Lasem.

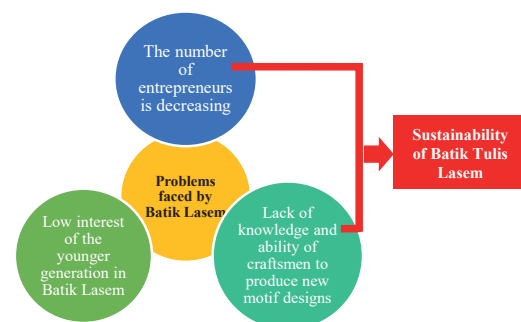


Fig. 1. The framework of Batik Lasem problems.

To address this issue, the author initiated a project aimed at encouraging the younger generation to participate in developing new, modern motifs that appeal to different market segments while preserving Indonesia's cultural heritage. The research question is how design

* Corresponding author: nonjane@binus.edu

students can develop new, contemporary batik designs that appeal to different market segments while preserving Indonesia's cultural heritage. The theoretical approach used in this study is design thinking from IDEO and Riverdale Country School in New York, which developed a design concept called Design Thinking for Educators. Design thinking emphasizes empathy, collaboration, and experimentation to develop innovative solutions [6].

The project involved 26 design students who used the design thinking method to create a collection of motifs in five categories: flora and fauna, Lasem daily life activities, historical stories, and Javanese and Chinese acculturation. The research question of this project is how to encourage the younger generation to participate in developing new, modern motifs that appeal to different market segments while preserving Indonesia's cultural heritage. The project uses the design thinking method, widely recognized as a practical approach to problem-solving in various fields, including design and innovation [6] [7].

This project contributes to developing Lasem handmade batik motifs to be sustainable while strengthening and developing local heritage. The research also aims to increase the knowledge of Lasem batik artisans on the potential of creating a tourism community based on local cultural assets [13]. While this research project successfully developed new contemporary motifs for Lasem handmade batik and contributed to preserving Indonesia's cultural heritage, it is essential to acknowledge some limitations. Firstly, the project focused on the involvement of design students, and the generalizability of the findings to other populations or contexts may be limited. Additionally, the research was conducted within a specific timeframe and with a limited number of participants, which may restrict the generalizability of the results. Furthermore, the project's success was evaluated based on the commercialization of new motifs and the positive impact on cultural heritage. Still, long-term sustainability and impact on the batik industry and community require further investigation. Future research should consider expanding the sample size, involving diverse stakeholders, and conducting long-term evaluations to gain a more comprehensive understanding of the potential limitations and implications of the research findings.

2 Theoretical Review

Based on the data above, the research focuses on developing new motifs for Lasem handmade batik to address the declining prestige of this traditional Indonesian art form. To achieve this goal, the research uses design thinking as a theoretical approach to encourage the younger generation to participate in developing new, contemporary batik designs that appeal to different market segments while preserving Indonesia's cultural heritage. Design thinking is an iterative problem-solving approach emphasizing empathy, collaboration, experimentation, and user-centeredness [8]. Details of the design process are shown in Figure 2. This approach has been used in various fields, including design and

innovation. It has been recognized as an effective method for solving complex problems [6] [7] heritage of Lasem handmade batik could be threatened.



Fig. 2. The Design Thinking Process by Vogel.

Previous studies have highlighted the need for innovative approaches to preserve and promote traditional Indonesian art forms while adapting to changing market demands [9]. This research's use of design thinking aligns with previous studies emphasizing the importance of a user-centered approach in developing innovative solutions for traditional Indonesian crafts [10]. The emphasis on empathy, collaboration, and experimentation in the design thinking process also aligns with participatory design principles, which have been used successfully in various cultural heritage preservation projects [11].

Additionally, previous studies have recognized the potential of traditional Indonesian crafts, including batik, in promoting tourism and community development [12]. Therefore, the research on developing new motifs for Lasem handmade batik aims to strengthen and develop local heritage and contributes to the growth of the local tourism industry.

In comparison with similar studies, this research is unique in its emphasis on encouraging design students to participate in developing new motifs for Lasem handmade batik. The author gave a project brief to 26 design students in the Visual Communication Design class to develop new contemporary Batik designs that appeal to different market segments while preserving Indonesia's cultural heritage. This approach adds a new dimension to the research by involving young designers in developing innovative solutions to address the declining prestige of Lasem handmade batik.

In this study, the declining prestige of Lasem handmade batik is addressed by developing new motifs through design thinking, a problem-solving approach that emphasizes empathy, collaboration, experimentation, and user-centeredness. The study aligns with previous research highlighting the need for innovative approaches to preserve traditional Indonesian art forms while adapting to changing market demands. The involvement of design students in developing new motifs is a unique aspect of this study that sets it apart from similar research. The study contributes to preserving and promoting traditional Indonesian crafts while also considering the changing market demands and potential for community development. The involvement of young designers in developing innovative solutions adds a new dimension to the research. In conclusion, this study showcases the potential of design thinking to promote innovation in traditional crafts and highlights the importance of involving the younger generation in preserving cultural heritage.

3 Method

The design process of developing contemporary motifs of Lasem Batik made by students is based on the approach of design thinking for educators developed by Tim Brown and his team at IDEO. This human-centered design approach emphasizes empathy, collaboration, experimentation, and user-centeredness [8]. The design thinking process involves five stages: research and discovery, analysis and interpretation, ideating, prototype, and implementation.

The first stage, research and discovery, involves understanding the needs and experiences of users, in this case, Lasem Batiks consumers and producers. The author explains in detail to students about the background of previous research. Visual object thinking became the creative inspiration, such as combining Lasem's distinctive Chinese and Javanese motifs. The second stage, analysis, and interpretation, involves synthesizing the insights gained from the empathy stage and defining the problem to be solved. In this case, the problem is the declining prestige of Lasem's handmade batik due to the need for more innovation in creating new motifs. The author also explains what motifs consumers and producers need to sustain Lasem batik motifs. The third stage, idea generation, involves many ideas to address the problem identified in the define stage. At this stage, the design students used various brainstorming techniques to generate new and innovative ideas for contemporary motifs for Lasem Batik. The fourth exploration stage, experimentation, involves physically representing the selected ideas. At this stage, the students created prototypes based on visual communication design, applying design principles and elements. The final test is the implementation stage involves refining the designed motif sketches, either through illustration software or manually, and designing the overall motif composition. The result is a picture of the main motif composited on a long cloth (*jarik*) measuring 1x2 meters.

In conclusion, the approach, instruments, and ways of analysis from design thinking for educators by Vogel and Tim Brown provided a framework for the design process of developing contemporary motifs of Lasem batik made by 27 students. The emphasis on empathy, collaboration, experimentation, and user-centeredness in the design thinking process facilitated the creation of innovative and culturally significant designs. The use of design briefs, brainstorming techniques, and design critiques supported the design thinking process. In contrast, the iterative process of testing and refining ensured that the final designs met the users' needs.

4 Result and discussion

The design process of developing contemporary motifs of Lasem Batik made by students is based on the approach of design thinking for educators developed by Tim Brown and his team at IDEO. This human-centered design approach emphasizes empathy, collaboration, experimentation, and user-centeredness [8]. The design thinking process involves five stages: research and

discovery, analysis and interpretation, ideating, prototype, and implementation.

Field observation was conducted in Lasem, Rembang, to gather basic information regarding the town and its culture. The observation involved immersion in the people's lives, mainly the batik artisans, and multiple trips were made to observe them creating Lasem batik. Literary studies were also conducted to obtain additional information on the town's history. Lasem is known for its unique cultural characteristics, being a melting pot of Javanese and Chinese culture, and being considered one of eleven Chinese settlements in the area. The town is also known for preserving its old buildings with distinctive Peranakan-style architecture.

Moreover, it was considered one of the six biggest batik industries during the Dutch colonial era and is known for producing the red color essential in creating '*batik tiga negeri*.' Historical evidence suggests that Bi Nang Un, one of the vassals of Chinese admiral Cheng Ho, established the Chinese settlement in the area now known as Lasem. Lasem is also known for its unique motifs that combine Javanese and Chinese elements. The flora and fauna of the area are often depicted in the motifs, showcasing the region's natural beauty. In addition, Lasem community daily life activities, such as traditional dances and ceremonies, are also commonly depicted in the batik designs. These motifs reflect the local community's way of life and provide a window into their cultural practices. The Javanese and Chinese acculturation can also be seen in the motifs, with traditional Chinese symbols and designs blended with Javanese motifs. This fusion of cultural elements reflects the unique history of Lasem as a melting pot of Javanese and Chinese cultures. Overall, these motifs and designs are a testament to the rich cultural heritage and creativity of Lasem.

The first stage is analysis and interpretation. The data and information obtained from the previous phase are analysed in the following stage. The author succeeded in identifying and analysing four common motifs found in Lasem batik and examining the meanings behind each motif, which were influenced by the social and geographical aspects of Lasem. These four motifs include flora and fauna, Lasem daily life activities, historical stories, and Javanese and Chinese acculturation. The second is ideation. The author collaborated with the design students and provided detailed explanations. Together, they explored and created numerous sketches to generate as many ideas as possible. The third stage is experimentation, namely the creation of new motifs for Lasem batik is done through (1) selecting the visual form of objects that inspire the motifs, including the four categories of motifs; (2) sketching from the source of inspiration by simplifying the lines in the drawing form to produce a basic illustration of the motif. The final stage is implementation. Following the research and discovery, analysis and interpretation, ideation, and experimentation stages, the students improved the form from the previous stage using manual and graphic software methods.

The following are the results of the student's work, which includes an explanation of the motifs they created. This includes selecting the four motif categories (flora and

fauna, Lasem daily life activities, historical stories, and Javanese and Chinese acculturation), sketching ideas, and refining the motifs into long fabric drawings at a scale of one to two sizes.

4.1 Lasem flora and fauna

The flora-fauna motifs are inspired by the animals and plants that coexist harmoniously with the environment of the Lasem community.

4.1.1 The Kawis fruits



Fig. 3. The sketch features Kawis fruit.

Figure 3 shows the main motif in the flora category, featuring the Kawis fruit. The Kawis fruit, a local specialty that grows only in the Lasem and surrounding regions, is highly valued for its delicious taste. The locals create a syrup from the fruit, which has become a popular specialty souvenir of Lasem. It is highly prized for its sweet and juicy flavor, and locals often use it to make a popular syrup.



Fig. 4. The final composition of koi fish, lanterns and clouds.

In Figure 4, the composition of the pagi-sore fabric design, the *Kawis* fruit is arranged in a diagonal composition. Diagonal composition is a technique in which design elements are arranged diagonally on the canvas, creating a sense of movement and visual interest. This technique can help create a dynamic and engaging visual experience for the viewer. The use of natural colors in the design helps to create a sense of calm and natural beauty. Overall, combining the *Kawis* fruit and the diagonal composition in the design helps create a striking and meaningful visual representation of Lasem's heritage and culture.

4.1.2 The Koi fish



Fig. 5. The sketch features koi fish, lanterns, and clouds.

Figure 5 features the koi carp sketches as the main motif in the fauna category, renowned for its striking beauty and often considered a symbol of prosperity and abundance. This fish's significance and distinctive shape have drawn the attention of the Lasem community, making it a popular choice for use as a motif in their artwork.



Fig. 6. The final composition of koi fish, lanterns and clouds.

In Figure 6, the ultimate composition is displayed, wherein the Koi fish symbolizes prosperity and affluence, holding significant reverence in feng shui beliefs. On the other hand, the lantern represents the act of shedding the old self and embracing the new self. The sketches are designed to be natural, intending that the crafters will incorporate them as the main motifs in their batik cloth.

4.2 Lasem daily life activities

4.2.1 Pertolo and ronde

During the interview, the crafters were inspired by various life activities in Lasem, including traditional food such as *pertolo* and *ronde*. The sketches can be seen in Figure 7.

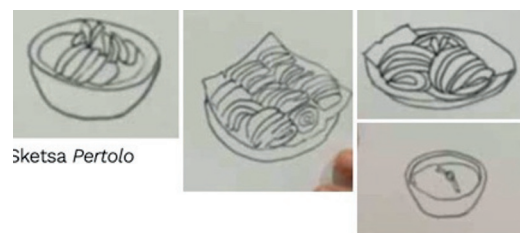


Fig. 7. The sketches of *pertolo* and *ronde*.



Fig. 8. The final composition.

Figure 8 shows the final composition of *pertolo* and *ronde*. This traditional food known for its thick, creamy gravy and made from rice flour and sticky rice. This food is still a beloved snack in Rembang, and its vibrant colors and aromatic coconut milk sauce flavored with *pandan* leaves make it an attractive and flavorful addition to any meal. Meanwhile, *ronde* is a popular traditional dessert from Central Java made from flour dough shaped into round balls and boiled using ginger water and brown sugar.

4.3 Lasem historical stories

4.3.1 Potehi puppet and phoenix



Fig. 9. The sketches of *Potehi* puppet and the phoenix.

Potehi comes from the words *pou* (cloth), *te* (pouch), and *hi* (puppet). *Potehi* puppets are puppets made of cloth. The puppeteers put their hands inside the cloth and play them like any other puppet. This art form is about 3,000 years old and originated in China. Figure 9 shows the sketches of the puppets and phoenix.

The phoenix, a mythological bird in Chinese culture symbolizing luck, success, and happiness, is depicted using dominant colors of blue, red, and yellow (gold), each with significant cultural meanings, such as blue representing purity and wisdom, red representing good luck and prosperity, and gold representing prosperity and luxury in Chinese culture.

Figure 10 is the final layout of both phoenix and *potehi* puppets. The fusion of cultures is evident in the motif designs featuring the phoenix and the bright colors of Lasem batik (the phoenix cloth). During the Chinese New Year and Cap Go Meh celebrations at the Cu An Kiong temple in Lasem, a *potehi* puppet performance (The *Potehi* puppet cloth), using puppets to convey classical and mythological stories in Chinese culture. These puppets are often incorporated into decorative arts and textiles, symbolizing local wisdom and cultural heritage.

To complement the Chinese puppet motif, I included a flower motif in the design, as the light brown color in Chinese culture is associated with the beauty of nature.

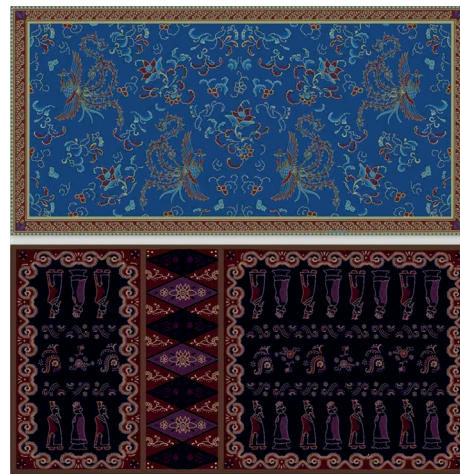


Fig. 10. The final composition of the phoenixes and Chinese *Potehi* puppet.

4.4 Javanese and Chinese acculturation

The harmonious coexistence of the Javanese and Chinese cultures in Lasem is reflected in the community's daily life, including their shared participation in religious and family rituals. The motif designs showcase this acculturation, highlighting elements such as the lion dance, temples, Champa ceramics, dragons, phoenixes, *shio*, Little China, and *potehi* puppets.

4.4.1 Dragon, phoenix, and Chinese ornament

The sketch in Figure 11, is a contemporary batik design inspired by traditional Indonesian techniques featuring the dragon and phoenix, powerful creatures often associated with power, wisdom, and rebirth that in Chinese mythology represent complementary forces of masculine and feminine energy, symbolizing the balance of opposing forces and duality in nature and existence.

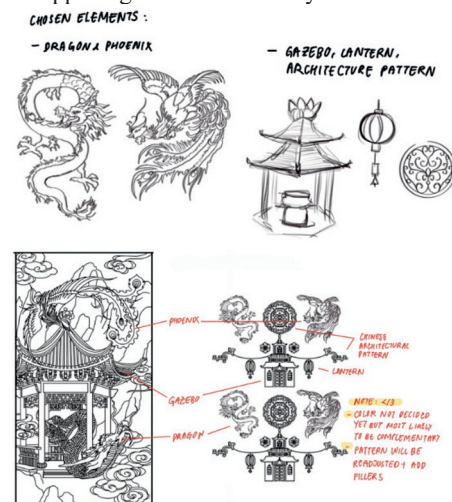


Fig. 11. The dragon, phoenix, and Chinese ornament sketches.

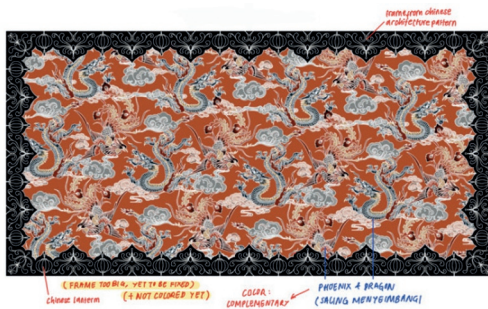


Fig. 12. The final composition of the dragon, phoenix, and Chinese ornament.

The common thread within Figure 12 lies in the utilization of complementary colors, architectural patterns, and motifs that symbolize good fortune and cultural heritage. In both cases, color schemes are chosen to convey specific meanings, such as the symbolism of opposing forces in the mythology of the dragon and phoenix, and architectural patterns and motifs are chosen to enhance the cultural significance of the design further.

4.4.2 The Chinese zodiac

There are 12 types of *Shio* animals in the following order: rat, buffalo, tiger, rabbit, dragon, snake, horse, goat, monkey, chicken, dog, and pig. The animals are pictured using a simplistic outline, in Figure 13.

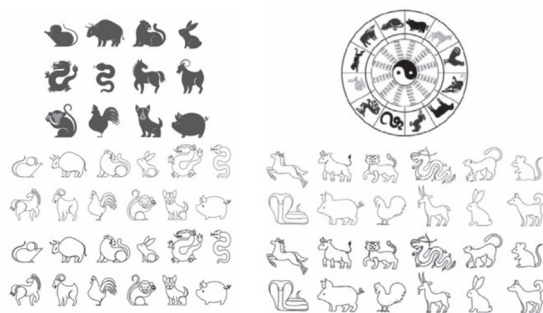


Fig. 13. The sketch above is the zodiac sketch.

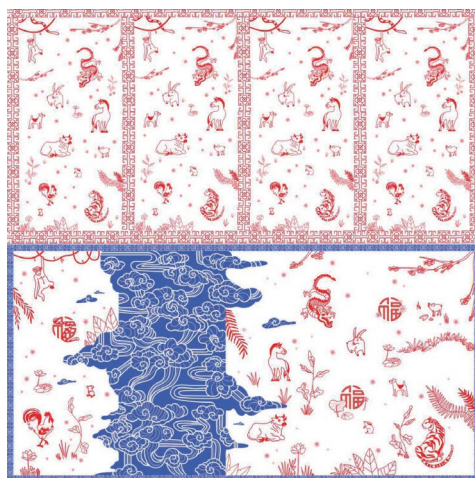


Fig. 14. The cloth composition of 12 zodiacs.

In Figure 14, the zodiacs are arranged in a random pattern within the fabric composition. *Shio* is a form of cultural acculturation that becomes a life guide and a source of knowledge about human character according to each *shio*. Interested in the narrative, the student converted the 12 *shios* into fabric motifs, experimenting with streamlining their outlines.

The second cloth in Figure 14 showcases a stunning variation of a blue *tumpal*, which elegantly captures the shape of a cloud. This unique combination of elements is anticipated to be an innovative new motif that will captivate the eyes of those who appreciate Lasem batik tulis. The gentle blue hue imbues the fabric with a calming sense of purity and stability, while the cloud's shape adds a touch of whimsy and freedom to the design. With its delicate balance of tradition and innovation, this new motif represents the enduring beauty and creativity of Lasem's batik-making tradition.

5 Conclusion

In conclusion, this research discusses the fascinating journey of creating contemporary batik motifs inspired by traditional Indonesian batik techniques with a modern twist. The designs were created with Lasem's cultural heritage and essential themes and motifs in the community in mind. The motifs reflect the harmony and balance of life in Lasem by incorporating Javanese and Chinese cultural elements and flora and fauna motifs. The color palette chosen for each design symbolizes different aspects of Chinese culture and uses architectural patterns and lanterns to add an extra layer of symbolism. Overall, these contemporary batik motifs celebrate the richness and diversity of Lasem's culture while preserving its heritage and traditional techniques.

This research highlights the significant impact of design thinking in creating new contemporary motifs for Lasem batik tulis. By simplifying sketch shapes by applying various design elements, such as dots, lines, and shapes, new motifs were developed, successfully commercialized, and positively impacted Indonesia's cultural heritage. The involvement of design students has brought fresh perspectives and ideas, catering to different market segments while preserving the traditional Indonesian art form. The project's success offers potential for future collaborations with young designers, ensuring the sustainability of Lasem batik tulis. The practical design thinking approach has demonstrated its potential in problem-solving within the traditional Indonesian crafts context.

References

1. I. Raharja, *Desain, Seni, dan Budaya dalam Pembangunan Berkelanjutan*, Senada Seminar Nasional Desain & Arsitektur, pp. 14-23 (2018)
2. I. Istiqomah, *Revitalizing the culture of batik Lasem through creative industries in Rembang Regency*, Int J Soc Sci Humanit, **5**, 2, pp. 18-26 (2021)

3. S. Sujatno, S. *Designing innovative batik motif based on local wisdom to enhance the competitiveness of SMEs*, Int J Soc Sci, **3**, 2, pp. 145-157 (2020)
4. P. Wardhani, *The impact of COVID-19 on the Indonesian batik industry*, Asian J Bus Res, **11**, 1, pp. 30-40 (2021)
5. E. Mufliah, *Introducing Indonesian batik to young generation*, J Soc Sci Res, **5**, 3, pp. 691-696 (2019)
6. T. Brown, *Change by design: How design thinking transforms organizations and inspires innovation*. HarperCollins Publishers (2009)
7. H. Plattner, C. Meinel, and L. Leifer, *Design thinking: Understand – Improve – Apply*. Springer (2012)
8. C. M. Vogel, *Design thinking for educators*, Harv Educ Rev, **84**, 4, pp. 662-665 (2014)
9. W. Nuryanti, *Traditional arts in Indonesia: Their decline and revitalization*, in Art, Community and Environment, Routledge, pp. 37-57 (2017)
10. W. Nuryanti, *A craftsman's path to innovation: A study of batik small businesses in central Java, Indonesia*, J Res Bus Manag (2017)
11. C. Barbieri, E. Mencarini, C. Pasquinelli, and E. Tassoni, *Design for Heritage, a Participatory Approach for the Preservation of Intangible Cultural Heritage*, in Advances in Design for Inclusion, Springer, pp. 237-249 (2019)
12. Dinas Pariwisata dan Kebudayaan Rancangan strategi pariwisata Kabupaten Rembang Tahun 2018-2022. Dinas Pariwisata dan Kebudayaan Kabupaten Rembang (2018)
13. C. Barbieri, D. Buhalis, and R. Egger, *Co-creating value in cultural tourism experiences: the role of Augmented Reality (AR)*, Curr Issues Tourism, **22**, 16, pp. 1876-1897 (2019)