

## Recycling Plastic Waste For The Development of Souvenir Products Special For Surakarta City

Adam Wahida<sup>1</sup>, Figur Rahman Fuad<sup>2</sup>

<sup>1,2</sup> Pendidikan Seni Rupa, FKIP, Universitas Sebelas Maret, Jl. Ir. Sutami 36 A Surakarta 57126, Indonesia

*adamwahida@staff.uns.ac.id<sup>1</sup>*

This study aims to describe the development of souvenir products characteristic of the city of Surakarta using recycled plastic waste materials to support the Eco-Cultural City movement. Through this movement, the local government of Surakarta involves community participation to make Surakarta a cultural city with environmental insight that is creative economically, socially, and culturally. The programs that have been implemented include mobilizing the community by establishing a Waste Bank. Public awareness and participation in managing waste are integrated with the development of creative industries that are environmentally sound through the creative and innovative use of waste recycling into souvenir products typical of the city of Surakarta. This study uses development research methods with the following steps: 1) data collection, 2) initial product development, 3) initial product testing, and 4) major product improvement. The results of this study were: 1) identified the types of waste used as materials for making souvenir products, 2) the creation of various souvenir products with the basic idea of Canthik Rajamala form using recycled plastic waste materials. The conclusions of this study are: 1) plastic waste has great potential to be managed as materials for making souvenir products. 2) the resulting souvenir products have the characteristics of the city of Surakarta. Thus, the results of this study are expected to have an impact, including 1) growing public awareness in protecting the natural environment and local culture, 2) developing creative industries with character and environmental insight, 3) increasing the image of a cultural city that is creative and environmentally friendly.

*Keywords: recycling, plastic waste, souvenirs, creative industry*

### ***Daur Ulang Sampah Plastik Untuk Pengembangan Produk Souvenir Khusus Kota Surakarta***

Penelitian ini bertujuan mendeskripsikan pengembangan produk souvenir ciri khas Kota Surakarta menggunakan bahan daur ulang sampah plastik guna mendukung gerakan *Eco Cultural City*. Melalui gerakan tersebut, Pemerintah Daerah Surakarta melibatkan partisipasi masyarakat untuk menjadikan Surakarta sebagai kota budaya berwawasan lingkungan yang kreatif secara ekonomi, sosial dan budaya. Program yang telah dijalankan diantaranya menggerakkan masyarakat dengan mendirikan Bank Sampah. Kesadaran dan partisipasi masyarakat dalam mengelola sampah, diintegrasikan dengan pembangunan industri kreatif yang berwawasan lingkungan melalui pemanfaatan daur ulang sampah secara kreatif dan inovatif menjadi produk souvenir khas Kota Surakarta. Penelitian ini menggunakan metode penelitian pengembangan dengan langkah-langkah: 1) pengumpulan data, 2) pengembangan bentuk produk awal, 3) pengujian produk awal, dan 4) perbaikan produk utama. Adapun hasil penelitian ini adalah: 1) teridentifikasi jenis-jenis sampah yang digunakan sebagai bahan pembuatan produk souvenir, 2) terciptanya berbagai produk souvenir dengan ide dasar bentuk *Canthik Rajamala* menggunakan bahan daur ulang sampah plastik. Simpulan penelitian ini adalah: 1) sampah plastik memiliki potensi yang besar untuk dikelola menjadi bahan/material pembuatan produk souvenir. 2) produk-produk souvenir yang dihasilkan memiliki ciri khas kota Surakarta. Dengan demikian, hasil penelitian ini diharapkan dapat memberikan dampak, antara lain: 1) tumbuhnya kesadaran masyarakat dalam menjaga lingkungan alam dan budaya lokal, 2) berkembangnya industri kreatif yang berkarakter dan berwawasan lingkungan, 3) meningkatnya citra kota budaya yang kreatif dan berwawasan lingkungan.

*Kata kunci : daur ulang, sampah plastik, souvenir, industri kreatif*

*Received: November 4, 2021; Accepted March 29, 2022; Published June 20, 2022*

*<https://doi.org/10.31091/mudra.v37i3.1805>*

*© 2022 The Author(s). Published by Pusat Penerbitan LP2MPP Institut Seni Indonesia Denpasar.*

*This is an open-access article under the CC BY-NC-SA license*

## INTRODUCTION

To realize the vision and mission of Surakarta as a cultural city, independent, advanced and prosperous, the Regional Government launched the Eco-Cultural City concept such a cultural city with an environmental perspective that is creative economically, socially, and culturally, by prioritizing citizen participation. Through the City Tourism Development Master Plan (2016-2026), the Surakarta Regional Government has established "a City as a Strategic Tourism Area." One of the directions of its development is an educative urban natural tourism attraction, creative traditional arts and culture, and environmentally friendly creative industries.

Programs to support this policy include encouraging the community to establish a Waste Bank in every village. Through this program, it is hoped that the community will be aware of waste management in their homes so that they can provide economic, social, and ecological benefits. However, until now waste management has not been maximized because the knowledge and skills of the community in recycling waste are still lacking, especially in creating products that have economic value ([Prihatin, 2020](#)).

Community participation in managing waste is a potential that must be integrated with the development of environmentally friendly creative industries. Creative and innovative waste management can encourage the development of creative industries and tourism in Surakarta. Especially if the creative industry products that are produced display the image and identity of Surakarta as a City of Culture with Environmental Insight. Through the use of an integrated waste management system with community involvement and the use of recycling technology, it is possible to overcome the waste problem and at the same time grow the creative industry in Surakarta. Thus, it can improve the welfare of the community and at the same time realize Surakarta as an Eco-Cultural City.

Eco-Tourism is to protect cultural heritage and the environment by encouraging community participation to have an economic impact and preserve the environment ([Chantavong, 2019](#)). The Surakarta City Government needs to encourage the innovation of souvenir products by carrying spirit values that do not only rely on one product. So far, there has been a homogenization of batik as a typical city souvenir, thus ignoring the potential of other products ([Aditya, 2017](#)). Creative industries based on renewable resources have the potential to support

the economy and improve people's welfare ([Dewi, 2017](#)). Integrated waste management, appropriate technology, and recycling methods can produce environmentally sound products ([Sianipar, 1999](#)). Creative industries that combine art, business, and technology will bring new economic values. Waste exploration can support environmental conservation, improve welfare, and educate the community ([Handayani, 2008](#)). Tourist attraction consists of natural amenities (objects in nature), hand-made supply (crafts), way of life (customs), culture (culture) ([Pendit, 1999](#)). As an applied art product, souvenirs have aesthetic value with a technical embodiment ([Supriyatmono, 2009](#)). The presence of packaging design can improve the image of an area by highlighting various distinctive identities that become tourist attractions. Thus, this identity can function as a differentiator (differentiation) between one region and another ([Sari, 2018](#)).

Based on the above background, exploration through waste recycling for souvenir products typical of the City of Surakarta is a form of developing an environmentally friendly creative industry that supports the Eco-Cultural City program and sustainable tourism (Eco-Tourism). The urgency of this research is an effort to the Surakarta Regional Government program in realizing a creative industry that is environmentally by developing the potential for recycling waste for the creation of city-specific souvenir products.

## METHOD

This study uses a qualitative approach that emphasizes aspects of research and development of souvenir products typical Surakarta, using recycled waste materials. The steps of this research include 1) information collecting; identifying the types of waste that have the potential to be used as material for the creation of souvenir products; identifying the icon that characterizes the city of Surakarta; identifying forms of souvenir products on the market, 2) development of initial product forms; determine the type of waste for raw materials for the creation of souvenir products; developing alternative ideas for souvenir shapes into sketches/drawings, 3) testing the initial product form; realizing a sketch/drawing design in the form of a souvenir prototype using recycled waste materials; Souvenir prototypes are produced, criticized and validated by experts including crafters, designers, artists, and art academics. 4) revise the main product based on expert advice, especially the aesthetic and artistic aspects of the form by the development concept.

## DATA ANALYSIS AND INTERPRETATION

### Identification of Waste Types and Processing Techniques

Waste can be classified into organic and inorganic. Organic waste comes from dry plants and dead animals in nature or agriculture, plantation, animal husbandry, and fishery waste. Organic waste is easy to decompose naturally. In contrast to inorganic waste originating from industry, some inorganic substances cannot be decomposed naturally, and some can only be decomposed in a very long time. Inorganic waste such as bottles, bags, and plastic cans cannot be decomposed naturally by nature. However, inorganic waste can be processed through proper recycling methods into other products, such as handicrafts, household appliances, and art materials.

Recycling is the process of converting used materials into new materials to prevent useful waste, reduce the use of new raw materials, reduce energy use, reduce pollution, land degradation, and greenhouse gas emissions. Recycling is a waste management strategy that consists of sorting, collecting, processing, distributing, and manufacturing new products.

There are several stages in processing inorganic waste, including; 1) sorting the types of inorganic waste from the source, 2) reusing used products for other functions, 3) recycling waste to make crafts or other products.

Plastic waste is a type that can recycle with the same function or different. For example, plastic buckets can be recycled into the same product or made into other products such as spoons, trash cans, or flower pots. Recycling uses the smelting technique into plastic pellets as a material for new products. Plastic waste can recycle into crafts such as bags, wallets, bags, sandals, umbrellas, children's toys, decorative flowers, lamp cups, pots, photo frames, tablecloths, wall hangings, or other decorations. The technique of making souvenirs from plastic waste includes sewing, assembling, casting, or mixing with other materials.

### Types of Souvenirs and Icons of the Surakarta City

Souvenirs are an integral part of the identity of a city. Surakarta City is known to have various types of souvenirs such as batik and handicrafts that uses as tourism souvenirs. Handicrafts such as piggy banks, puppets, kris, gamelan miniatures, and antique bicycles are souvenirs found around Surakarta, both in traditional markets and souvenir shops. However,

these souvenirs specifically do not show the city's unique characteristics because often in other places, such as Yogyakarta, Pekalongan, and Semarang. Supposedly to support tourism, souvenirs sold in Surakarta highlight the icon so that they can become memorable and original souvenirs of the Surakarta.

Based on the above conditions, the authors identify the iconic forms of the city of Surakarta as a source of inspiration for making souvenir products. From the identification results, it was found that the icon is unique, distinctive, and not owned by other regions, namely Canthik Rajamala, which is specifically part of history and can show the character of Surakarta as the City of Javanese Culture.



Figure 1. Canthik Rajamala at the Radya Pustaka Surakarta Museum

During the reign of KGPA Hamengkunagara III, while serving as Adipati Anom, he wanted to build a ship called Kyai Rajamala adapted to the headdress of the puppet Raden Rajamala. The Canthik of Kyai Rajamala's ship from teak wood that grows in the Danalaya Wonogiri forest. The size is 115 feet, the size of the Tukup (roof) from front to back is 109 feet over nine dim. Inside the boat, there are rooms, bedrooms, bathrooms decorated with hanging flowers so that it looks like a Sanasewaka (meeting place). Sanasewaka (meeting place). The doors (Gebyog) take from the Andrawina (banquet hall), a long room in the palace as a place for big parties. Kyai Rajamala's ship was made beautiful and complete, looked majestic. It is said that every time Kyai Rajamala's boat crosses the Bengawan Solo river, the people along with the river cheer with joy because they are amazed by the ship made by the king.

According to the *Babad Sangkala*, the construction of the Kyai Rajamala Ship was motivated by Paku Buwono IV to his son KGPA Hamengkunagara III to build a large and long Ship. Paku Buwono IV's because he disliked the ship gift (Radjaputri Ship) given by the Dutch Colonial Government. On Pahing Sunday, the 10th of Sawal 1730 or 19 November 1809 AD, Paku Buwono IV received a

gift from Governor-General Herman Willem Daendels in the form of a ship with a beautiful statue of a woman (Reca Nyonya). The Radjaputri Ship was then on the Kedhung Penganten River. KGPA Hamengkunagara III agreed to Paku Buwono IV's request, then he ordered Abdidalem Wadana Kalang Kadipaten to build a nice large ship frame. KGPA Hamengkunagara III also ordered Abdidalem Undhagi Kadipaten, who used to make carvings, to make a beautiful twin decoration in the head of the puppet Raden Arya Radjamala.

The Kyai Radjamala ship was finished to coincide on Friday the 27th of Jumadilakir in 1738 or July 19, 1811 AD. The Kyai Radjamala ship was placed side by side with the Radjaputri ship on the Kedhung Penganten River. Abdidalem Mantri Pabel who was entrusted with guarding the ship was Ngabei Gadamanggala and his friends. After the Kyai Radjamala ship was juxtaposed with the Radjaputri ship, Paku Buwono IV married the two ships like a bride, with a party on the banks of the Bengawan Solo river.

The story in the Babad Sangkala shows the greatness of Pakubuwana IV to the Dutch government. The Kyai Rajamala ship, which is more majestic than the Rajaputri ship, shows that the existence of the Surakarta Sunanate is maintained. However, to keep the stability of the government, Paku Buwana IV still accepted the Dutch government's gift by marrying the Kyai Rajamala ship to the Radjaputri ship.

### **Development Process of Souvenir Product from Waste Recycling**

#### ***Information collecting***

After getting various data such as types of waste, souvenirs, and stories about Canthik Rajamala is a hallmark of the city of Surakarta, the next step is to collect information related to the development of souvenir products. This data collection is through interviews, observations, and focus group discussions involving crafters, environmental NGOs, and art academics. The following are some points of data collected, including:

- 1) Waste processing in Surakarta is still limited to organizing household waste from residents of each village and sorting waste to make it easier for officers to pick up the waste. So far, the potential waste management has not been carried out as an added value to the community's economy (interview with Astin Endah Cahyani, Environmental Facilitator).

- 2) Most SMEs that recycle plastic waste only use plaiting techniques that product designs are not varied and seem monotonous. Therefore, alternative design development is needed so that the quality of the plastic waste recycling product has a high aesthetic value. The process is also easy to implement by the residents of the Waste Bank community (interview with Andri Wahyu, Craftsman at Best Life Studio).
- 3) So far, there are no souvenirs that show the characteristics of Surakarta city. Souvenir products sold are still the same as the surrounding cities (interview with Hamid, souvenir trader at Triwindu Market, Surakarta)
- 4) The selection of the object Canthik Rajamala can show the character and characteristics of Surakarta city. So far, there has been no exploration of designs related to these objects to souvenirs. Therefore, the idea needs to be realized (interview with Hendra Himawan, Fine Arts Lecturer, ISI Surakarta)
- 5) The management of plastic waste recycling through the Waste Bank needs to be supported and developed. So far, there is no proper mechanism for managing plastic waste due to limited facilities and community capacities. Related to plastic recycling as souvenir material, it can also support Green City and Environmentally Friendly Cities (Interview with Environmental Observer)

In general, awareness to protect the environment from the dangers of plastic waste has grown in the people of Surakarta. The idea of souvenirs from recycled waste can be developed through environmental awareness and plastic waste recycling programs by the Waste Bank in each village. Regarding the increase in the potential for inorganic waste, the community needs to innovate creative product designs to show the characteristics of Surakarta city.

The idea of Canthik Rajamala as the icon of Surakarta City is quite appropriate because it is a distinctive 'historical object' and able to represent the traditional character. The original Canthik Rajamala is currently still stored in the Radyapustaka Museum and is a major tourist destination.

#### ***Develop a preliminary form of product***

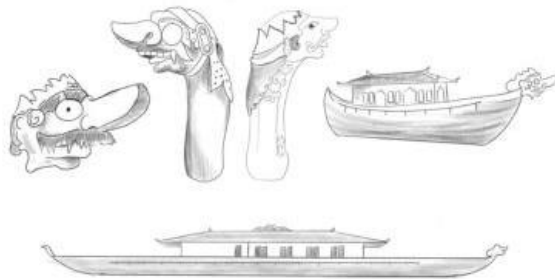
Based on the findings of data and information obtained in the previous stage, the process of developing the initial product form with the following steps;

- 1) Determination of waste processing materials and techniques.

The waste material used in souvenirs is inorganic waste sorted and collected by the Waste Bank in Surakarta. The processing technique is sorting the type of plastic and recycling it through smelting and mixing resin techniques.

- 2) Develop product design ideas.

The idea stage is the first step in the creation process. The idea stage begins with the idea discovery stage in the form of a concept as a reference in creating art (Sari, 2018). The development of ideas by determining the various types of souvenirs based on reference sources from media. Variations in souvenirs will affect design innovation and the use of materials and technical embodiments. The next, idea is embodied in a sketch that depicts Canthik Rajamala in various forms.



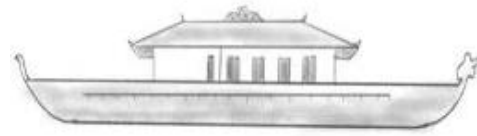
**Figure 2.** Alternative sketches of Canthik and Rajamala Ship

### **Preliminary Product Testing**

Through alternative sketches, then further testing the preliminary form of the product to find the possibility of success and the development of others. This testing by making miniature products of Rajamala Ship and Canthik.

- 1) Making Miniature of Rajamala Ship

This Rajamala ship miniature product uses plastic waste mixed with resin. The steps include the preparation of sketches as a reference and developing 3D forms, making models using clay, making molds with a silicon material, doing the casting process with plastic and resin materials, releasing the results casting.



**Figure 3.** Sketch Rajamala ship as a guide for modeling

**Modeling.** Modeling is the first step in realizing the 3D form of the Rajamala Ship product design. The material used to make this model is clay. The visual is made directly by shaping or adding clay by hand using a Butsir (a tool for scraping clay) to reduce or create details in certain parts. During the modeling process, corrections to get the desired results.



**Figure 4.** Model of the Rajamala Ship from clay

**Silicone molding.** The making mold uses Polytek silicon material because the silicon mold does not require a release agent when casting resin. Polytek silicon used is platinum-cured category; no shrinkage or cured rubber has a long shelf life. In addition, it can print resins, plastics, and some low-melting metals.



**Figure 5.** Making mold using silicon

**The Casting uses plastic and resin.** Casting by inserting plastic into a mold and mixing a synthetic resin liquid that can harden. This method is especially suitable for small-scale production of industrial prototypes, children's toys, figures, and souvenir products. This casting technique is gravity casting integrating small pieces of plastic with liquid resin, then poured into a mold and rolled all over by

gravity. When mixing plastic and resin, air bubbles tend to enter, can remove the resin liquid in a vacuum. Casters can also use a vacuum (when the mold is open) to extract air bubbles. Pressure can also push the resin fluid throughout the mold details. In addition, vibrating the mold can also release bubbles.



**Figure 6.** Checking and releasing plastic and resin castings



**Figure 7.** The final result of the Rajamala Ship Miniature

## 2) Making of Canthik Rajamala Miniatures

The steps for making Canthik Rajamala miniatures are the same as the Rajamala ship miniatures above. Including making models, making molds, and casting plastic and resin pieces. For more details, specifically in the photos and descriptions in Table 1.

From the testing results realizing the design sketch into a prototype, the next step is to test the prototype with experts to get validation. The test criteria conclude on visual aesthetics, artistic form, and conformity to the idea of creation.

From testing by experts, several suggestions were obtained regarding the possibility of developing alternative forms further. Including (1) in the prototype of the Rajamala Ship, the shape is in accordance with the character of the souvenir but it is necessary to add an alternative finishing to make

it more elegant (2) in the prototype of Canthik Rajamala, the shape is can be developed into functional souvenirs such as decorative lamps, key chains, or children's toys.

### *Revision and Development of Main Products*











Revise and develop product forms to be more varied and have distinctive visual character values according to the concept of creation. The results of the revised prototype of the Rajamala Ship and Canthik and alternative product developments are listed in Table 2.

Based on the results of the revision and development of the prototype above. There is an opportunity to create a souvenir product design with an applied functional or aesthetic function as a decoration. Therefore, further product development exploration can still produce more diverse aesthetic forms. Thus the innovation of souvenir products will develop according to the needs of the times.

Table 1. The process of making Canthik Rajamala miniatures

<b>Forming Steps</b>	
	
1. Model making using clay	2. Mold making with silicon
	
3. Making casing molds using gypsum	4. Separation of the mold into two parts
	
5. Filling the mold with a mixture of plastic waste and resin	6. Open the mold to see the results
	
7. Smooth the prints on the details using sandpaper.	8. The final result of Canthik Rajamala

Table 2. Revision and development of main products

Prototypes	Main Products Development	Explanation
		The product of Rajamala ship is brick red to give a classic and natural feel.
		Develop the Canthik Rajamala prototype into a sitting lamp product. Put the Canthik position at the bottom as a support for the lamp post.
		Develop the prototype of Canthik Rajamala into a Congklak toy product. Placing the Canthik position at both ends of the Congklak shape for aesthetics
		Develop the prototype of Canthik Rajamala into cutting boards and knife handles.
		Develop the prototype of Canthik Rajamala into a keychain product design. The shape is simplified, the size to the needs of the keychain function.



## CONCLUSION

Based on the discussion of the results above, it can be concluded that: 1) plastic waste has great potential to be managed into materials/materials for making souvenir products. 2) the shape of the resulting souvenir product has the characteristics of the city of Surakarta because the idea of its creation is extracted from sources that have distinctive values or local characters. Thus, this research is expected to have an impact, including 1) growing public awareness of protecting the natural environment and local culture, 2) developing creative industries with character and environmental insight, 3) increasing the image of a cultural city that is creative and environmentally sound.

## ACKNOWLEDGMENTS

We would like to thank RKAT PTNBH Universitas Sebelas Maret funded this research through the scheme Penelitian, Penciptaan, dan Penyajian Seni in 2021.

## REFERENCES

- Aditya, Alfonsus. (2017). Bimbingan Teknis (Bimtek) Sinkronisasi Promosi Pariwisata Pasar Asia Tenggara (Asteng). Sunan Hotel, Solo, Jawa Tengah 31 Mei – 1 Juni 2017. <https://www.republika.co.id/berita/gayahidup/pesona%20indonesia/17/06/02/oqwt38368-forumsolo-roya-akan-kembangkan-pariwisata-di-solo>, diakses pada tanggal 24 Oktober 2021.
- Chanthavong, X., Wanto, & Sudardi, B. (2019). 'Ecotourism Development in Balekambang City Park, Surakarta, Central Java Indonesia'. *International Journal of Multicultural and Multireligious Understanding*, 6(4), 225-232. <http://dx.doi.org/10.18415/ijmmu.v6i4.992>
- Dewi, R.P. (2017). 'Perancangan Sistem Pengelolaan Sampah Untuk Mendukung Perkembangan Industri Kreatif di Daerah Pariwisata'. *Prosiding, Seminar Nasional Multi Disiplin Ilmu & Call For Papers Unisbank Ke-3 (Sendi\_U 3)*, ISBN: 9-789-7936-499-93.
- Dinna, R., Awatara, I.G.P.D., & Riyadi, J. S. (2018). 'Pembuatan Handycraft Dari Bambu Untuk Peningkatan Komoditas Kerajinan Bambu Pada Karang Taruna Di Kelurahan Jebres Kecamatan Jebres Kota Surakarta'. *WASANA NYATA Jurnal Pengabdian Pada Masyarakat*, 2(2), 130-135. <https://doi.org/10.36587/wasananyata.v2i2.368>
- Dinas Kebersihan Kota Surakarta. (2018). *Daftar Bank Sampah di Kota Surakarta*. Surakarta: Dinas Kebersihan Kota Surakarta.
- Handayani, R. D. (2008). *Pengelolaan Sampah Rumah Tangga Perkotaan Berbasis Masyarakat di Banjarsari Jakarta Selatan*. Central Library Institute Technology Bandung.
- Hermantoro, H. (2011). *Creative-Based Tourism: Dari Wisata Kreatif Menjadi Wisata Kreatif*. Depok: Aditri.
- Sari, N. L. D. I. D., & Sarjani, N. K. P. (2018). Inovasi Desain Kemasan Ayam Betutu Sebagai Ikon Oleh-Oleh Khas Bali di Kota Denpasar. *Mudra Jurnal Seni Budaya*, 33(1), 17-25. <https://doi.org/10.31091/mudra.v33i1>
- Indratmo, E., Gozali, A. (2019). *Pemanfaatan Limbah Spanduk (Cetak Digital MMT) Sebagai Medium Perancangan Model Souvenir Dengan Muatan Lokal Wayang Beber Gaya Pacitan Guna Menunjang Destinasi Wisata Di Pacitan Jawa Timur*. Laporan Penelitian Terapan. ISI Surakarta.
- Kusuma, P., Dharsono, D., Mariantio, D., & Guntur, G. (2020). Maskot Kota Yogyakarta. *Mudra Jurnal Seni Budaya*, 35(2), 250-255. <https://doi.org/10.31091/mudra.v35i2>
- Meidyana, R., Darwoto & Sarwono. (2019). Perancangan Backpack Dengan Motif Ikon Kota Surakarta Sebagai Salah Satu Souvenir Wisata. *Jurnal Ornamen*, 16(2), 93-100. <https://doi.org/10.33153/ornamen.v16i2.2925>
- Miles, M.B., Huberman, A.M. (1984), 'Drawing Valid Meaning from Qualitative Data: Toward a Shared Craft'. *SAGE Journal*. 13(5), 20-30. <https://doi.org/10.3102/0013189X013005020>
- Noviana, Z., R. (2018), 'Pengembangan Ekowisata Gunung Beruk dan Pembuatan Souvenir Dari Potensi Alam Sekitar Berbasis Pemberdayaan Masyarakat'. *Proceeding Seminar Nasional dan Call For Paper III: Menakar Potensi Zakat Nasional Untuk Kesejahteraan Bangsa*. Ponorogo: Universitas Muhammadiyah Ponorogo.
- Pendit, N.S. (1999). *Ilmu Pariwisata-Sebuah Pengantar Perdana*. Jakarta: PT. Pradnya Paramita.
- Prihatin, R. B. (2020). 'Pengelolaan Sampah di Kota Bertipe Sedang: Studi Kasus di Kota Cirebon dan Kota Surakarta'. *Aspirasi: Jurnal Masalah -*

*Masalah Sosial*, 11(1),1-16.  
<https://doi.org/10.46807/aspirasi.v11i1.1505>

Rencana Induk Pembangunan Kepariwisata Kota Surakarta (2016-2026).

Rosramadhana, Harahap, A.R. (2014). Pemanfaatan Batok Kelapa menjadi Souvenir sebagai Alternatif Penanggulangan Kemiskinan. *JUPIIS: Jurnal Pendidikan Ilmu-Ilmu Sosial*, 6(2), 90-98.  
<https://doi.org/10.24114/jupiis.v6i2.2288>

Sianipar, P. (1999). *Kajian Pemanfaatan Sampah Terpadu dalam Penanganan Sampah di Surabaya*. Bandung, Institut Teknologi Bandung.

Supriyatmono. (2009). Kerajinan Limbah Kaca Sebagai Souvenir Di Kota Madya Surakarta. *Anzdoc*, IX(1), 21-28.

Winarni, I.M.Y. (2020). Pemberdayaan Ekonomi Masyarakat Berbasis Kearifan Lokal: Studi Pada Pemanfaatan Limbah Cangkang Kerang di Desa Kandang Semangkon Kecamatan Paciran Kabupaten Lamongan. *Jurnal Respon Publik*, 14(3), 58-68.

Wahida, A., Handayani, E.E, & Supriyadi, S. (2020). The Philosophical Values of Kawung Batik Motif in Contemporary Painting. *MUDRA Jurnal Seni Budaya*, 35(1), 76–82.  
<https://doi.org/10.31091/mudra.v35i1.1001>

Wiyancoko, D., Djati, I. D., Riyadi, S., & Jelantik, B. (2018). Desain Kemasan Buah Pasca Panen Dengan Fungsi Higroskopis Melalui Pemanfaatan Komposit Limbah Kayu. *Mudra Jurnal Seni Budaya*, 33(1), 144–153.  
<https://doi.org/10.31091/mudra.v33i1.317>

Zarkasi, M.,S. (2013). Kerajinan Souvenir, Karya Seni Rupa Wayang Beber Berbahan Kertas Koran Bekas. *Jurnal Brikolage*, 5(2), 1-82.  
<http://repository.isi-ska.ac.id/id/eprint/2648>

Zulkifli, Z., Sembiring, D., & Pasaribu, M. (2020). Tradisi dalam Modernisasi Seni Lukis Sumatera Utara: Eksplorasi Kreatif Berbasis Etnisitas Batak Toba. *MUDRA Jurnal Seni Budaya*, 35(3), 352-359.  
<https://doi.org/10.31091/mudra.v35i3.878>