



8th International Conference
on Sustainable Agriculture
and Environment
(ICSAE-8)

Online Conference
24-25 August, 2021 | Surakarta, Indonesia

Batik stamp canting from waste paper material as a frugal innovation in batik

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Introduction

Innovations which occur in batik world in Java Island have found the main equipment that must be used in batik production, i.e. canting. Based on the standard of batik products issued by the government of Indonesia, in SNI (Indonesian National Standard) number 0239:2014, a product can be categorized as batik if canting is used in the production process. Canting is a tool used to apply hot wax on the surface of the cloth. Wax (local term: *malam*) is the material used as color barrier to form batik ornaments. There are two types of canting, hand-drawn canting and stamp canting. The type of canting equipment used in the production process determines the type of batik produced.

Stamp canting is a tool for producing stamped batik, which is generally made of wood and metal (copper) which is cut into a ribbon shape and arranged in such a way as a kind of batik motif stamp which is used to apply wax to the cloth. The application of hot wax to the surface of the cloth using this stamp tool is identified as stamping method. Stamp canting started to appear in the mid-19th century when batik developed into an industry. Furthermore, in the mid-1840s there was an innovation in batik production process to increase the efficiency and productivity, i.e. by using a stamp canting made of copper plates tethered to a base and given a handle.

Batik stamp canting has undergone a bunch of innovations, both in terms of material and manufacturing methods. Of those various innovations, stamp canting made of copper, wood, and paper are the results of innovations which are widely used in batik industry. In addition, the application of other canting innovation results was not found in batik industry in Java.

Since the beginning of the development of batik stamp canting until now, this stamp canting continues to innovate. The innovation of stamp canting tool using waste paper material which occurred in batik world in Java, Indonesia, is an interesting and important phenomenon to study. The stamp canting tool considered capable of producing the best quality stamped batik products until now is stamp canting made of copper. In fact, stamp canting made of waste paper are still not able to surpass the quality of batik clothes produced by stamp canting from copper. Nevertheless, stamp canting made of waste paper continues to grow and is widely used in the process of stamped batik production until today. This study discusses the problems associated with the innovation of batik stamp canting tool made of waste paper. The first problem discussed in this research is the emergence and background of the innovation of batik stamp canting using waste paper material. Moreover, the second problem discusses the concept of innovation in the development of batik stamp canting made of waste paper material.

Method

The research method applied to discuss this problem was qualitative research with a case study approach. Case study research is a comprehensive research strategy which explores real life, contemporary [13], and with specific time and place limitation. This study focused on the innovation of batik stamp canting equipment existing in batik world in Java, Indonesia. The case occurred at the end of the 2nd decade of the XXI century, i.e. from 2016 to now. Considering that this case is a unique phenomenon, this research can be categorized as an intrinsic case study.

Source of data was obtained through observation on events and artifacts, interviews and reviews about various documents and literature. Observations were conducted on batik industry MSMEs (Micro, Small, and Medium Enterprises, local term: UMKM) in several batik centers in Java, such as in Pekalongan, Surakarta, and Yogyakarta. The MSMEs used as the objects of observation were those applying stamp canting made of paper in their production. In addition, interviews were carried out with key informants who were directly related to process of making batik and used stamp canting made of paper. The informants selected as the data sources included: Nurohmad from Omah Kreatif Dongaji Yogyakarta, Abdul Ghofar from Batik Preketek Pekalongan, Subekhi from Omahe Canting Pekalongan, and Langgeng from Langgam Batik Boyolali Surakarta. Moreover, document and library data were obtained from several research reports and journal articles related to this study case. Then, the data collected were analyzed interactively to gain solid conclusions.

Results and Discussion

Subekhi has a significant role in the innovation of stamp canting made of waste paper as the inventor and developer so that the tool can be realized and used in batik industry. The paper stamp canting created by Subekhi is a successful form of innovation. Innovation is a series of activities supported by the power of creativity to produce something new, useful, and used by the community. Besides, innovation must have a positive impact on human life contextually. The novelty of the paper stamp canting created by Subekhi lies in the application of materials that have never been used before for making stamp canting. In addition, the stamp canting has been proven to be useful, i.e. it can be used to produce stamped batik and has a positive impact in reducing production costs. Stamp canting made of paper have also been used widely by the community, both by batik producers and students in the study of stamped batik development.

Nurohmad and Abdul Gofar own an essential role in the diffusion of innovation results through social media publications and training. Creating knowledge about new products will have a positive impact on the result of innovation. Moreover, knowledge creation is a potential strategy for generating growing market expectations aimed at achieving competitive advantage. This is due to the creation of knowledge which is mostly done by Nurohmad and Abdul Ghofar, stamp canting made of paper are increasingly used. Sometimes this innovation even can replace the role of copper stamp canting which has been popularly known to be the best quality. Innovators in the innovation and creators of knowledge on the result of innovation play an equally important role for the innovation itself to succeed. The innovation actor plays as a resource integrator, and diffusion as an important part of the recursive innovation process.

The background of the invention or innovation and the use of stamp canting made of waste paper is the high price of stamp canting which are commonly used in the process of batik production, i.e. stamp canting made of copper plate material. Subekhi found stamp canting made of paper material starting from his desire to create stamp canting with lower production costs than that of conventional stamp canting (using copper material) but with standard capabilities. Nurohmad used stamp canting made of paper for the first time because he wanted to reduce the production costs. Langgeng furthermore used this type of stamp canting because he at first didn't own much primary capital to procure conventional stamp canting equipment commonly used in batik industry.

Although the end quality of the prints produced with stamp canting made of paper is not able to comprise the quality of stamp canting made of copper, these innovations are still used in the production of stamped batik because they can significantly reduce the costs of batik production. The innovation that produces stamp canting made of waste paper cannot replace conventional stamp canting in the context of quality, but it can replace conventional canting in saving production costs context. Although the prints are not as good as canting stamps made of copper, batik products produced with using stamp canting made of waste paper remain standard (have the same quality as using copper stamp canting) and are able to meet the consumers' needs. Innovation that produces stamp canting from waste paper is a form of frugal innovation, i.e. the elaboration of a very cheap ecological process, product or service, concentrated only on the core of functionality with an optimized level of performance or in simple words it is a process of making something new at a lower or cheaper price [24]. Frugal innovation involves a combination of frugal thinking, frugal processes, and frugal results. This combination is very solid in the innovation of stamp canting made of waste paper.



Batik stamp canting made from packaging cardboard paper waste material



Stamped batik products from production process using stamp canting made of cardboard paper waste material

Conclusion

Based on the analysis of the data previously collected and presented, it can be concluded that the innovation of stamp canting made of paper material has occurred since 2014 which was carried out by Subekhi in Pekalongan, Central Java Province. The results of these innovations began to be widely used in the process of batik production in 2016 due to the diffusion of innovation results through training activities and publications on social media. The background for the innovation of stamp canting from waste paper is triggered by the high price of stamp canting made of copper which is commonly used in the production process of stamped batik. The concept applied in the development of this stamp canting is frugal innovation, which is to create production equipment at the lowest cost but can function well and manufacture the products ordered. The value of knowledge gained from this study is that innovation is not always carried out to improve the quality of processes or products; instead, innovation is more essentially required to solve problems according to the context.