Implication of Technology in Traditional Sculpture Production in Batubulan Village Sukawati Bali

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Abstract. The study aims to determine the productivity of Balinese traditional sculptures, the emerged economic impacts, the present sculptor's skills, and the circumstances of the sculptor's environment. Balinese traditional sculptures are works of art mostly created in Batubulan Village, Sukawati, Gianyar, Bali, using solid stone materials. At the beginning of its creation, the traditional sculptures were manually performed by the sculptor using sculpting techniques. Along with the technological advances, traditional sculptures are no longer manually made, instead, printing techniques and solid waste stone are used. With the printing technique, solid stone waste no longer polluting the environment; however, it can be well-utilized, hence clean environment**.** This study brought to light the issues of traditional sculpture productivity, the economic impact, the sculptor's skills, and the present circumstances of the sculptor's environment. The method applied in this research was a descriptive qualitative method and the data were collected through the following techniques: observation, interview, and documentation. The invention of printing techniques causes the production of traditional sculptures significantly to increase, the creativity and skills of the sculptors to decline, the economic capabilities to increase, and no environmental pollution to make.

Keywords: Implications of Technology, Traditional Sculpture, Productivity of Sculptors, Environmental Impact.

1 Introduction

Batubulan is a village that is a center for the creation of traditional statues based on *padas* stone material. The statues are created manually with skilled hands. The process of creating a statue is quite long, and the demand for statues by the Balinese people is increasing. The statues are used to fulfill sacred and profane needs by the Balinese. After the introduction of technology, production problems began to be solved because the sculptors used technology in their work processes. This a very appropriate step, because science and technology are characteristics of the progress of civilization, which is implemented in the development and creation of an object including the creation of works of art, namely statues [1].

The problem that is very urgent in this research is the implications of technology for the production of traditional statues in the village of Batubulan, Sukawati, Bali. At the

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beginning of the creation of traditional statues, the sculptors used original padas stone dug from a river bank in the vicinity of Batubulan Village. However, continuous padas stone excavation causes environmental damage, and cliffs are prone to landslides. In addition, there was quite a lot of padas stone waste from the creation of the statue on the lands around it which caused a decrease in soil fertility. With the advent of technology, the creation of traditional statues began to be carried out using recycling technology, namely a casting technique by utilizing padas stone waste from the remains of statues making process. With the existence of casting technique technology, the production of traditional statues has increased quite rapidly which indirectly also increases the sculptor's economy. The increase in production, environmental damage, and pollution after the existence of recycling technology, is a very important issue to be studied in depth so that the implications of technology can be known for the lives of sculptors and the preservation of the surrounding environment because the environmental crisis is a very complicated problem and has a bad impact on public life in general. [2].

The creation of statues using casting techniques has caused the shapes and types of statues to become monotonous, and less varied. What about the creations and skills of the sculptors after the casting technique was established, did the sculptors remain creative and innovative to create new models of statues that were more unique and artistic. To answer this problem, it is necessary to further study the sculptors, in order to know the implications of technology for the sculptors' creativity in their work.

There are various research results that have examined *padas* stone crafts by raising various issues such as: Putu Adi Suprapto, et al, in his research titled "Empowering the of *Padas* Stone Carving Crafts UKM (Medium and Small Enterprises) in Silakarang Hamlet, Bali" (2016) explained as follows: There are several obstacles faced by sculptors such as limited production aids, marketing, and the absence of financial management by artisans, which has an impact on slow production and weak management [3].

NW Suniti, et al in their research titled "Improvement of the *Padas* Statue Production Process Using Leftover Materials from Making *Padas* Statues Through Composite Cast" (2019) explained as follows: *Padas* statue is a mainstay craft product and makes a very large contribution to people's income, and thus it has encouraged more intensive *padas* stone excavation, resulting in negative impacts on environmental sustainability such as landslides and floods. Meanwhile, *padas* stone waste is not used and thrown away so it does not take up space. Based on this, an idea arose to utilize this waste through technological innovation, namely mixing waste with cement with the technique of casting molds according to the needs of artisans [4].

The results of the research and dedication above have not comprehensively discussed the role of technology, especially casting techniques in producing traditional statues which affects the increase in the economic value of the sculptor, its impact on the environmental damage and pollution as well as the sculptor's creativity to create new forms of the statue that will be used as masters for casting. This problem needs to be studied holistically in order to find out the development of traditional statues in Batubulan, Sukawati, Bali and the implications for sculptors and society.

2 Method

The method used in this study is an interpretive qualitative method, that is, the data are considered part of the totality as a whole. Qualitative research does not merely describe, but what is more important is to find the meaning contained in it. There is no research that is not done through interpretation [5]. Data interpretation is an attempt to obtain deeper and broader meaning and significance of the results of the research conducted [6]. Data collection techniques were carried out through observation, interviews, and documentation techniques. Data analysis includes various stages: First data identification, second data classification. Third, is data selection, and the fourth stage is conducting data analysis according to the established theory, using interpretive qualitative analysis.

3 Results and Discussion

3.1 Presentation of Results

Balinese society is a religious society, there is no day without Hindu religious ceremonial activities [7]. Hinduism is the spirit of Balinese culture as the main source of cultural values that animate Balinese culture. Every result of Balinese cultural creativity, including art, cannot be separated from the ties of noble Balinese cultural values, especially aesthetic values originating from Hinduism [8].

Artwork is an integral part of Hinduism which is carried out using the *ngayah*, that is, a form of activity based on awareness as a creation that is given superiority by God [9]. Hinduism has holy places such as *Pura*, and *Merajan* with various forms that have different functions and meanings. The building of the holy place is in the form of Balinese architecture which was built based on *Ashta Bhumi*, that is, areas that are above the ground (earth) or zonation on the ground with measurements made in *depa* [10].

One of the materials used in the construction of sacred places is *padas* stone which is the main identity of Balinese architecture. *Padas* stone has a distinctive color and is very harmonious when combined with red bricks. *Padas* stone is a material that is very easy to obtain in Bali and the processing is also relatively easy because it is soft. *Padas* stone is used in the manufacture of temples and the walls of a building and is usually used for making decorations in the form of two and three-dimensional works such as making reliefs and statues. A statue is a three-dimensional work of art widely used in sacred places, some of which are attached to a corner of a building or stand loosely placed in a certain place. Various forms of statues were created such as statues of gods in Hinduism, animal statues, giant statues, angel statues, and other forms of human statues. Centers for making traditional reliefs and statues in Bali can only be found in Batubulan Village and its surroundings. All Balinese people who are building a holy place or a house to live in, always look for *padas* stone decorations in Batubulan Village.

Requests for traditional statues keep coming, both for sacred and profane needs, while the production of statues is very slow because the number of sculptors is still very

minimal, and they are done manually using sculptural techniques. To answer this phenomenon, sculptors must be able to keep up with technological developments to speed up production. With the emergence of technology, the creation of traditional statues can be done with recycling technology, namely casting techniques, so that more than one statue model can be made. A good traditional statue is mastered and a mold is made using fiberglass. Making statues, as in general, requires quite high production costs, so recycled material will be a solution to replace materials for making statues in general [10]. With the technique of casting, statues can be reproduced by utilizing *padas* stone waste that is no longer useful and then mixed with cement, and creating traditional statues with artificial sand materials.

The production of traditional statues using casting techniques has a positive impact on the sculptors and the surrounding environment. The *padas* stone waste from the results of making statues can be put to good use so that there is no longer an accumulation of waste which causes a reduction in soil fertility. Statue production is increasing, excavation of original *padas* stone on riverbanks can be minimized, environmental damage to riverbanks can be avoided and floods and landslides no longer occur. Waste recycling technology is one of the most effective ways to reduce waste accumulation and avoid environmental pollution [11].

Casting techniques cause the shape and type of statues to be monotonous because the shape is the same. To avoid monotonous forms of statues, creative and skilled sculptors innovate to create new, more artistic statues to be made masters (mold models). Cast statues are relatively cheaper and can be reached by Balinese people from all walks of life. With prices that are affordable, the marketing of statues has increased quite significantly, and indirectly the sculptor's economy has become more established. Even though cast traditional statues are widely sold in several places, there are still many people who want traditional statues using original *padas* stone and done manually, because they have strong *taksu.* The original statue is usually a new model and quite large in size. For statues that are large in size, the material is from a mold, but the shape is done by the sculptor manually (Fig.1).

Source: I Wayan Suardana, 2022

Fig. 1. The process of casting statues and the results

3.2 Discussion

Recycling technology using casting techniques has positive implications for statue production as it is experiencing a significant increase. However, one thing to ponder and need to be discussed is how the creativity of the sculptor in generating ideas to create new models and types of statues based on strong traditions. It is a challenge that needs to be answered so that the statues are more varied but still in accordance with the existing standard so that the characteristics and *taksu* (soul) of the embodied figures are maintained. In addition, what also needs serious attention is the skill of the sculptor in creating works. With the casting technique, it is hoped that the skill of the sculptor will not decrease, it is hoped that the sculptors would even switch to pursuing casting techniques in order to get more results. This needs to be maintained because skill is the basic capital for maintaining a noble traditional art that has developed for a long time. In addition, there are also many people who want original traditional statues because their value is very different from molded statues. In this case what also needs to be considered is the transfer of generations so that it can run well, namely by providing training to children from an early age, so that the skills of making statues are not interrupted and remain sustainable.

An important step that must be taken to maintain the creativity and skill of the sculptor is to give proper credit to the new work that the sculptor creates. The new work one creates should not only be valued physically, but also in terms of ideas and expression in the work process, so that the sculptor will continue to have the enthusiasm to work and give birth to new, more artistic ideas. Awards should not only be related to financial value, but also in terms of respect for a sculptor who really loves his/her profession, and plays an active role in maintaining and preserving cultural arts that have existed for a long time. The sculptor will have his/her own pride because he/she is respected and the work he/she creates is highly appreciated by the community. The sculptor will then feel satisfied because his/her works, even though they are mostly cast in big numbers, are liked by the general public.

4 Conclusion

Technology has enormous implications for the production of traditional statues in Batubulan. Recycling technology with casting techniques has caused the production of the statues to be increasing, and thus the needs of the community can be served. Traditional statues made from molds are relatively cheap because the material is artificial *padas* stone and the production costs are also cheaper. Prices for traditional statues that are affordable to the general public encourage people to take advantage of various forms and types of statues used to decorate holy places and their homes. A large number of requests for traditional statues indirectly improves the sculptor's economy for the better. Another positive value of recycling technology is that the excavation of original *padas* stone on river banks can be minimized, and *padas* stone waste from the statues made can also be put to good use so that environmental damage and pollution can be minimized. The creativity and skill of the sculptor have also increased to create new models of statues while still being based on existing traditional statues.

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