Sunan Pandanaran Technology and Equipment in Javanese Culture

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Abstract. This article aims to describe the structure of the equipment and technology system at the Tomb of Sunan Pandanaran. This research method is descriptive qualitative. The research location is in the tomb of Sunan Pandanaran, Paseban Village, Bayat District, Klaten Regency. The data in this study are living equipment and technology available in the manuscript, the caretaker's speech, and the burial place of Sunan Pandanaran. The data collection technique used in this study is the content analysis method. The results of the discussion show that the system and technology equipment found in the Sunan Pandanaran tomb area are productive tools in the form of *kentongan* and *bedug*. The container equipment is in the form of a barrel called the sinaga barrel, the clothing equipment is in the form of *beskap* and Mataraman Javanese *Jarit*, and the technology for shelters is in the form of mosques and pavilions.

Keywords: antropology, culture, tools, Pandanaran

1 Introduction

Society and culture cannot be separated from one another. Through culture, human actions and behavior can be understood by other members of society. The growing diversity of cultures exhibits features that often appear to be different but share a common hierarchy. Culture is a manifestation of people's lives in Indonesia, especially on Java Island. culture, language, and religion are related to one another.

The figure of Sunan Pandanaran became a religious tourism destination that was quite well-known among pilgrims because he was one of the guardians who spread Islam in the Tembayat area during the Demak Kingdom era. He is also a student of Sunan Kalijaga. Although not as famous as the figures who are part of Walisongo, Sunan Pandanaran Bayat is one of the most highly respected propagators of Islam in Java. There is a belief that anyone who carries out ritual practices in this place will make everything they expect come true. It is this belief that makes many people visit Sunan Pandanaran's funeral. Even for some circles, they believe that the blessings of Sunan Pandanaran Bayat can increase the degree. Because of that, not infrequently, those who come there are people from the official class. Furthermore, for the pilgrims, by

praying at his tomb through his wasilah, whatever they wish will be granted. This reality is related to belief and culture.

Culture was defined [15] as the entirety of information, belief, art, morals, law, norms, and all other skills and habits that a person picks up while growing up in a particular society. According [7], culture is "the overall interaction of general qualities that impact how groups react to their environment." Koentjaraningrat [8] defined culture as a whole system of thoughts, deeds, and human labor within the context of social life that is uniquely human through learning. According to the aforementioned viewpoint, it may be said that culture is the outcome of life experiences that are directly tied to values perceptions and their environment, which give rise to meanings and outlooks on life that will affect attitudes and conduct.

Meanwhile, by studying several cultural formulas submitted by experts, Culture can be viewed from several levels. Referring [11], culture consists of three levels, namely basic assumptions, values, and cultural objects. The basic assumption is placed at the lowest level, and cultural objects artifacts occupy the highest level. The lower the cultural level, the more difficult it is to observe, and the higher the cultural level, the easier it is to observe. Some aspects of culture can be observed, and others are difficult to observe and are not recognized.

Artifacts are visible, and their existence is acknowledged by humans, whereas basic assumptions are frequently difficult to notice and perhaps unconscious. Clothes, artwork, monuments, pamphlets, and other items are readily recognized as cultural artifacts. However, it is more challenging for us to notice cultural values and fundamental presumptions using merely routine observations. Artifacts are expressions of cultural values, and cultural values are impacted by a culture's fundamental beliefs. The deepest or lowest level of culture is associated with cultural change and has more established cultural elements than the higher level. The top level of culture, however, has a tendency to shift quickly. Consequently, culture is a set of socially transmitted behavioral norms that serve to unite people. Therefore, culture is a set of socially inherited behavioral patterns that aims to link human societies with their natural surroundings. This "way of life community" encompasses sedentary behaviors, forms of social grouping and political structure, technology, economic organization, religious activities, and more. It is impossible to ignore technological advancements in culture.

Technological developments cannot be denied in culture. In Javanese culture, there is the concept of "Panca Darma," concerning the basis of independence, national origins, the basis of humanity, the basis of culture, and nature [2]. Humans use technology because they have a reason. With reason, humans want to get out of trouble, live better, be safer, and so on. Technological developments occur because someone uses his mind to solve every problem he faces. Technological advances cannot be avoided in this life because they are inextricably linked to scientific advances. Every innovation is created to provide positive benefits for human life.

Technology is more than just equipment from a sociological perspective. A new method of doing human tasks is also made possible by technology, along with many other comforts. The numerous advantages that the technical advancements made over the past ten years have benefited humans as well. The mastery of technology is a mark of status and a measure of a nation's advancement in the current era of globalization. When a country has a high level of technological expertise, it is said to be advanced, and when a country is unable to keep up with technological advancements, it is sometimes referred to as "failed." On the one hand, the

advancement of science and technology is so incredible and has in fact greatly aided the development of human civilisation. Work types that once required strong physical capabilities can now be mostly replaced by automated machine tools. Similar to this, new computer capacity formulations appear to have the potential to change how the human brain functions in a variety of scientific and human endeavors. The relationship between society and technology as seen from the perspective of sociology of society was revealed [5]. This study was successful in demonstrating the close relationship between humans and technology, particularly as it relates to how society views and employs technology.

Humans were initially unfamiliar with the concept of technology. Early humans solely used technology as a tool for locating food, assisting in hunting, and digesting food during the prehistoric era. They employ very basic tools that are manufactured from materials that are readily available in nature, such as bamboo, wood, stone, and other simple materials. Technology can also be seen as knowledge of how to manufacture things or perform tasks in the sense of having the capacity to carry out tasks that have high value, both in terms of their advantages and their intrinsic worth. It is possible to say that science, as a body of knowledge, and technology, as an art form, have meaning relating to the production process; specifically, how different resources, ideologies, and abilities are combined to achieve production goals.

Ethnotechnology, also called sociotechnology, is an approach to using technology based on humanity [18]. This ethnotechnology is generated and developed by the community or social group itself and passed down from generation to generation over a relatively long period of time. In this context, ethnoscience and ethnotechnology are systems of knowledge and technology owned by a particular society, ethnic group, or social group that generally have certain special characteristics that distinguish them from knowledge and technology systems in other societies. By using the ethnotechnology paradigm, two important things can be achieved, all of which are manifestations of the development and empowerment of culture as a way of life and a tool of knowledge, namely the development of science and technology from a cultural perspective and the empowerment of ethnic or local knowledge and technology.

In addition, [8] explains cultural forms as the complexity of ideas, ideas, values, norms, regulations, etc. forming patterned human social activities that make culture complex, and human artefacts define the existence of culture. In a society, there are eight types of equipment and technology system culture, namely, (1) means of production, (2) weapons, (3) tools for starting a fire, (4) food, drink, arousal, and herbal medicine. (5) clothing and resting places; (6) shelters and houses; (7) means of transportation; and (8) receptacles. Based on this preliminary explanation, the researcher determines that the formulation of the research problem is how the technological ideology is contained in the tomb of Sunan Pandanaran. The purpose of this study is to describe the structure or form of technology found in the tomb of Sunan Pandanaran. The benefits can be used as cultural reference material to add insight and knowledge. The ethnotechnology of the Javanese indigenous people, especially the teachings of Sunan Pandanaran, can be used as an example of maintaining, nurturing, and implementing local ecological cultural wisdom values that are relevant to today's modern society to support Indonesia's cultural resilience and sustainability.

2 Research Methods

The form of research used is qualitative descriptions. Qualitative research has a broad definition because it generates descriptive data in both written and spoken form [16]. The research design in this study uses a case study focused on one selected phenomenon. The research location is in the tomb of Sunan Pandanaran, Paseban Village, Bayat District, Klaten Regency. The data in this study are the living equipment and technology contained in the manuscript, the caretaker's speech, and the burial place of Sunan Pandanaran. The data collection technique used in this study is the content analysis method used to analyze the historical text of Sunan Pandanaran. triangulation of data sources by examining evidence from sources and using it for coherent justification with the expected research [3]. The interactive analysis technique uses the Miles and Huberman model [9] by way of activities in data analysis carried out interactively and continuously.

3 Result and Discussion

Various systems of equipment and technological elements of physical culture can be interpreted at the tomb of Sunan Pandanaran. In ancient times, simple tools were used for jobs. The types of productive tools can be divided based on their raw materials, namely those made of stone, wood, metal, bamboo, and animal bones. Based on the manufacturing technique, productive tools are distinguished based on percussion flaking techniques, pressure flaking techniques, chipping techniques, and grinding techniques.

3.1 Productive Tool

The tool at Sunan Pandanaran's tomb is a *kentongan*, a tool used to summon the local community for urgent matters or just to make announcements. The tool also indicates when it is tapped according to the hours listed. *Kentongan* can also be used to patrol the area. Sunan Pandanaran's kentongan is made of iron and shaped like a box and an oval. In ancient times, the kentongan was used as a sign of danger when something happened and could be used as a time marker by hitting it according to the local time. *Tongtong* is a communication tool and a danger marker, a tool to make noise to wake up living things, both humans and pets, during a lunar eclipse [1].

The second tool is located at the Bayat Cemetery mosque, namely the *bedug*. One of the original drums outside the mosque is well preserved. In ancient times, the drum was used to indicate that prayer time had arrived. This tool makes it easier to remind people to fulfill their obligations while doing their daily activities. Almost all mosques in Indonesia have a *bedug*, usually used just before the call to prayer to remind prayer times and invite Muslims to pray in congregation at the mosque. Some contend that Admiral Cheng Ho, who also happened to be a Muslim, introduced the drum, which is strongly tied to Chinese culture, into the mosques of the Archipelago [14].

This can be interpreted by Sunan Pandanaran when he was active in social life, thus creating technologies that could be used for the common good. Until now this technology is still used like the drum, and the clappers are still neatly attached to the iron pillars next to the mosque. The use of science and its derivatives in the form of technology is increasingly comprehensive, not only in meeting human needs but extends in efforts to eradicate poverty, eliminate excessive

working hours, create opportunities to live longer by improving the quality of human health, assisting efforts to reduce crime, improving the quality of education, and so on, even science and technology can be used to support its development [17].

3.2 Weapon

As a productive tool, weapons are used to defend themselves or carry out economic activities such as farming and hunting. However, as a productive tool, weapons are also used for war. Types of weapons can be differentiated according to materials such as wood, iron, and metal. Based on interviews with the caretaker of the tomb, Sunan Pandanaran or local residents believe that, as a student of Sunan Kalijaga, he secludes himself and makes himself an ordinary person. The plains of Paseban village are cool, as proven today by the many rice fields around the tomb of Sunan Pandanaran. This is based on the story of the people about Sunan Pandanaran, who was tested by Sunan Kalijaga by hoeing the ground, which eventually yielded a lot of gold. This indicates that Sunan Pandanaran had the means to carry out economic activities during his lifetime.

Sunan Pandanaran's thoughts can be interpreted as meaning that one must try to live in the world. Even though he was a son of the regent at that time and eventually had a position in the kingdom, when he was alone, he did not hesitate to work. This can still be proven today by the large number of people selling sickles or agricultural equipment around the tomb. According [4], it is a society based on small rural communities without cities, with the main livelihood being farming, often supplemented by hunting animals or fishing and gathering plants.

3.3 Receptacle

Containers are tools for storing, hoarding, and loading goods. Living tools in the form of containers were widely used in prehistoric times when humans began to take advantage of nature to meet their needs. The container contained in Sunan Pandanaran's tomb is "Gentong Sinaga." According to the caretaker of the tomb and the observations of researchers, there are two barrels in front of the gate before entering the main tomb. The barrel on the left is a relic of Sunan Pandanaran and was used during his lifetime for ablution. Now the barrel is still used as a place to store water that can be taken by pilgrims. This water, which can be drunk directly or taken home, is thought to provide healing or aid in the achievement of one's goals. The pot during Sunan Pandanaran's life was used to collect ablution water; until now, the production of barrels in this area is still preserved using a different manufacturing method, namely, the method of making pottery that is made obliquely. Traditional equipment is generally seen as something that is considered obsolete and not up with the times. This general view is partly true because part of modern culture demands a change from the previous culture to comply with the principle of harmonious social relations. However, some people consider things related to tradition to be a form that is unique and should be preserved. This explicit knowledge emerged a long time ago and was developed with local people, traditions, and the environment based on what has been experienced as local knowledge [12].

3.4 Clothes

A society has clothing that seems to be part of the tradition or customs so that each country or ethnic group has its traditional clothing or greatness. In Indonesia's very diverse society, each ethnic group has its traditional clothes which function as certain cultural symbols that represent ethnic customs and values. According to residents around Sunan Pandanaran, they still have a lineage of descent from the Mataram kingdom, so the clothes used are *beskap*, a type of official shirt in the Javanese Mataraman tradition. The *beskap* is in the form of a thick shirt, without a folded collar, dark or plain in color.

This outfit is always combined with *jarik* long cloth wrapped around to cover the legs. These clothes are still used by all caretakers who are on duty and resting in the pavilion. This has been a tradition from generation to generation; previously, a person or pilgrim who wanted to go up to the main tomb had to walk squatting. But now, it can run normally but must have politeness and manners. In the beginning, clothing functioned more as a protector of the human body from the heat of the day and the cold of the night, even protecting the body from all dirt. But as human civilization increases, the function of clothing is not only a human need but also a social function. In other words, clothing can also be referred to as an expression of human culture [10].

3.5 Shelter and Home

A house or shelter is a form of culture that contains elements of technology. Humans make their homes as comfortable as possible and adapted to the surrounding natural environment. In Javanese society, houses with large window architecture are made because the air temperature is tropical and humid. During the Sunan Pandanaran era, there were already mosques and pavilions. The mosque was originally located above the valley, the choice of this place was due to the sound of the call to prayer so that it could be heard up to the royal area and echoed very far away. Because the mobility up to the valley was very heavy for the local community, the mosque was lowered closer to the residential area. The mosque also functions as a center for all activities of Muslims to unite themselves in a universal brotherhood of love. In addition, a mosque is also a place of worship prayers, remembrance, consultation, and communication on various issues including economic, social, cultural, educational, and social assistance. There are no specific criteria concerning the shape of the mosque. However, some ancient mosques in Indonesia have characteristics such as a rectangular plan, a terraced roof, are supported by four pillars, and have a mihrab and pulpit. Some also have minarets and sundials to determine prayer times. Regardless of the shape of the mosque, it still has its historical value that can be studied by the public to find out about Islamic civilization in Indonesia [13].

The pavilion in the tomb has existed since Sunan Pandanaran's lifetime. In ancient times, pavilions and mosques were made using perfectly arranged wood and the roof was only bamboo covered with fibers (coir) neatly arranged to cover the roof. The pavilion is made without any partitions and windows so that the air can rotate properly so that the people inside the pavilion feel comfortable and calm. From these two things, the religious life of Sunan Pandanaran can be interpreted. Making the mosque above the valley makes it easier for the call to prayer or the announcement to be heard far away. The pavilion is used as a place to gather/meet with family, receive guests and hold traditional parties. The concept of pendopo fundamentally contains a special function and meaning, and this is shared not only by certain groups but also by most

people.That the arrangement of traditional Javanese houses village and the palaces of Javanese kings is the same [6].

4 Conclusion

Cultural awareness is the main mode of achieving a harmonious, peace, and prosperous life during the rapid flow of globalization and all its good and bad manifestations towards humanity. The system of equipment and technology found in the tomb area of Sunan Pandanaran is productive tools in the form of *kentongan* and *bedug*. Kentongan is a tool used to summon local people for urgent matters or just announcements. The *kentongan* left by Sunan Pandanaran is made of square and oval iron. Weapons in the form of sickles were used during the Sunan Pandanarang. Residents believe Sunan Pandanaran is a chosen person who is alone and makes himself an ordinary citizen. The container found in the burial area of Sunan Pandanaran is a barrel called the sinaga barrel which is still used today as a place to store water that pilgrims can take. This water can be drunk directly or taken home and is believed to provide healing or what is desired can be achieved. Sunan Pandanaran's clothing is in the form of a *beskap* in the form of a thick shirt, without a folded collar, dark or plain in color. This outfit is always combined with *jarik* long cloth wrapped around to cover the legs. These clothes are still used by all caretakers who are on duty and resting in the pavilion. Finally, the shelters for pavilions and mosques in ancient times were made using perfectly arranged wood and the roof was only bamboo covered with coconut coir arranged neatly so that it covered the roof.

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