THE USE OF HEARTH IN TENGGER SOCIETY OF EAST JAVA

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Abstract—
The use of hearth in Tengger society was investigated, aiming to identify the main function, time efficiency and culture of using the hearth. Methods used were qualitative and quantitative assessments. The data was carried out by means of hierarchy and classification of houses. The results revealed that the activity segmentation around the hearth divided into room for cooking and room for receiving guests. In addition, the use of hearth influenced by time factor and the existing social structure.

Keywords: hearth, segmentation, time factor, social structure factor

INTRODUCTION

Hearth is basically a brick or a stone lined fireplace, which is generally used for cooking and heating. It is mostly considered to be a most important part of the home. Lined hearths are mostly identifiable due to the presence of fire cracked rock. It is mostly created when the heat from the fires within the hearths chemically distorted and broken the stone. Regularly here are bitty fish and animal bones, carbonized shell, charcoal, ash, and other waste products. These waste products are all put together in a series of soil that has been deposited atop the fireplace.

Nowadays, the role of hearth has become smaller, even disappeared. However, the phenomenon in Tengger showed another fact. The amount of hearth in Tengger is very various, from one to four in one house. Lot of hearths separate the use which is supposed to become the trigger of activity segmentation in Tengger’s house. Space or activity segmentation as affected by the use of fire will be discussed in this paper. It is base on Kent’s theory of the use of space [1, 2]. which explains that the more complex the society, the more segmented the architecture.

To understand more thoroughly about space use, social interaction was also discussed in the context of culture and period of time related to the experience in the space. Subsequently, the theory from socio cultural, Giddens’ theory [3], about time, space, and regionalization and Yi-Fu Tuan [4] about time in the experience of space was also used in this research.

In the context of sociology, structuration theory by Giddens [3], was used to construct a conceptual sketch which could be used to interpret specific empirical cases. Giddens also paid attention to Hagerstrand’s opinion about the connection of time geographically in structuration theory. Geographic time had emphasis to the establishment of daily life routine. ‘Old’ point of view of Giddens, which could still be applied is:

“Social practice was something which gave structure to the act of human being routinely done to produce an ‘institution’, an activity which has been institutionalized by a culture, which gave characters to the society. The situation given was as an act, in the continuum of time-space. Furthermore, social practice was understood as something produced by time” [5].

Moreover, Giddens [3] offered a concept of ‘regionalization’. This should be understood not only as a localization in a space, but also refered to the zone of space-time in the connection with social routine practice. Regionalization in contemporary society house could be distinguished to the floor, hall, or room.

The issues above also considered the variety of space in the house that usually could be distinguished between time and space. For example a part of a house can be used as a place for afternoon activity, but at night can be used for taking a rest.

The discussion about time and space, was supported by the point of views discussed by Tuan [4] below. Tuan explained that most of space and time experience were in the subconscious. The sense of space existed because it could transport and due to time factor. In modern society life, Tuan affirmed about the needs of time and space consciousness as a separated dimension. Moreover, space and time was also used as a measurement tool which easily changed in the same experience. Space and time consciousness was also different from each individual.
According to Kent [2] the complexity of society determines the space organization, especially regarding the separation of space. The more complex the society, the more segmented the culture, environment, the use of space, local material (related to the culture), and the architecture; they are explained as follows:

1. In category I, several cases showed the domestic architecture and its use has not been divided consistently. The residence (camp) had a small and limited function compared to the area for multipurpose activity. The resident was not or did not have partition yet (multipurpose room).

2. The resident in this category (Category II) did not have partition physically, but has already divided the resident into two conceptually. The resident could be divided into area for men and for women; sacred and profane area; rest and fire area. In several cases, the area which was specifically based on gender could emerge, but sometimes not.

3. In this category (Category III), the space has already divided into several different rooms. The amount of room division was bigger, which showed the welfare of the occupant was also raising. In some cases, the division of room which became hearth room and bedroom was based on gender (male and female). Other cases also showed that the nearest room to the hearth room was usually made as sacred area. The leader or Shaman usually had bigger house than other people.

4. Space use in Category IV was usually divided into function and age or gender of the occupant. The difference of function could also be organized in a separated structure of resident. Total occupants could be higher which caused addition of total hearth, thus there were separation of cooking activity done by mother, father, and daughter.

5. In Category V, the resident could be separated into house, shop, hospital, education facility, government facility, and religion. In a house, space in the resident was divided more (monofunctional loci or monofunctional room). Besides hearth room, bedroom, sacred area, and storage room, there were also other rooms. In this category, hearth room was mostly for cooking. Gathering activity between each occupant or welcoming a guest which was in the hearth room, has already separated to another room.

From the grouping of society into Category I–V, the role of organizing space use could be known. The division of residence or architecture could be done conceptually, physically, or both. The more divided a group of society socially and politically (complex), the more divided the space and the architecture. Society with low complexity showed that their residences only consisted of one room with various activities (multipurpose room). The higher hierarchy of the society showed the more total room in their residence than others (single functional room).

**RESEARCH METHODS**

Qualitative and quantitative research method applies in this research. Within Tengger’s society the phenomenon of hearth is comprehended and delivered to the objective interpretation. To answer the research challenge, the combination method between of qualitative and quantitative research of Brannen [6] is applied.

The above method was applied in data collecting, in order to get house sample. This is for the purpose of viewing the duration (hours) of using hearth and total hearth used. The interview with related informant and the interpretation will be done in order to know about the phenomenon or other things behind the structured observation.

**Background of the Selection of Research Location**

Ngadisari, one of Tengger’s villages is the location of research. The related villagers still maintained many local traditions, such as by doing village rituals (continuously) or individual rituals (which could be managed at any time). Hearth, that has been used for long time in Tengger, was known as pawon. It had a rectangular shape with a construction similar to table which had top and side holes. Moreover, pawon was still believed as the place of the ancestor spirit. For this reason pawon became important part of their performed rituals.

The dominant and various use of pawon in houses and Tengger’s social life, especially in Ngadisari, made this village became a perfect choice for the research object location (Figure1).
Data Collection

Data collection was done in the first step of this research to obtain house sample. The hierarchy of social structure in Tengger became consideration in selecting house sample. According to Sulistyaningsih [7] and Anwar [8], the structure of Ngadisari villagers could be distinguished based on the position or the authority, such as Shaman (known as ritual leader) and the assistant, the officials of the village, and common people.

Furthermore, the house sample was used to give a general illustration about house in Tengger, especially to gain data about the amount of pawon and its location in the house. The amount of data needed was adjusted from the existing total households, they are 10% from total households of dusun (=sub village).

Table 1 shows the total house sample in Wanasari was 10% from 74, that is 7,4 or 8 houses. This is represented common people and village’s officials. Total house sample in Ngadisari was 10% from 169, that is 16,9 or 17 houses represented common people, village’s officials and the leader. Total house sample in Cemara Lawang was 10% from 198, that is 19,8 or 20 houses represented the existing society. In total the sample of Ngadisari Village is 45.
Table 1: Total House Sample based on total householder and society structure in dusun.

<table>
<thead>
<tr>
<th>Dusun (Sub Village)</th>
<th>Total Householder</th>
<th>Total House Sample</th>
<th>House Sample</th>
<th>Social Structure</th>
<th>Total Pawon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wanasari</td>
<td>74 KK</td>
<td>8 sample</td>
<td>1 sample</td>
<td>Common People</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 sample</td>
<td>Common People</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Common People</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Village Official</td>
<td>3</td>
</tr>
<tr>
<td>Ngadisari</td>
<td>169 KK</td>
<td>17 sample</td>
<td>4 sample</td>
<td>Common People</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 sample</td>
<td>Common People</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>2 sample</td>
<td>Village Official</td>
<td>2</td>
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<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Shaman</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 sample</td>
<td>Common People</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Shaman</td>
<td>4</td>
</tr>
<tr>
<td>Cemara Lawang</td>
<td>198 KK</td>
<td>20 sample</td>
<td>5 sample</td>
<td>Common People</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Shaman</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>10 sample</td>
<td>Common People</td>
<td>2</td>
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<td>2 sample</td>
<td>Village Official</td>
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<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Common People</td>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td>1 sample</td>
<td>Shaman</td>
<td>3</td>
</tr>
</tbody>
</table>

On the second stage, data collection was done to obtain more complete data, especially about the use of pawon inside the house. From functional (typology and morphology) point of view, Johnston and Gonlin approach [9] was used in order to get house sample representation. Typology approach was focused on the similarity of total pawon inside the house. Morphological approach was accomplished by considering the status (social hierarchy).

To obtain the representation of house sample, the initial data, 45 house samples were prepared in a classification and hierarchy. Following Darjosanjoto [10] in classifying and hierarchically ordered Surabaya coastal housing, this step was done to get more representative respondent (case object).

Classification and hierarchy to respondent was accomplished based on several considerations through the book study or review to the latest research and supported by data of visit to the field in the initial research. The considerations were:

a). Pawon, according to the classification to the respondent, was used by a household (Tengger's society).
b). Tengger's pawon usually located in certain spaces inside the house. From the initial survey, it was known that total pawons in Tengger’s house was between 1 (one) to 4 (four).

c). Classically and hierarchically, the selection of respondent was also based on the existing social structure (common people, village apparatus, and the leaders). It was expected that there was a representation from each social structure to know the effect of social structure in the use of pawon.

Figure 2 explained about classification and hierarchy of house sample, in order to get representative sample based on total pawons including social structure of the related owner.
As shown in Figure 2: 9 (nine) varieties of pawon room in a house represented each social structure in Ngadisari. After selecting representative object case, the next stage was accomplishing structured observations. Following Johnston and Gonlin [9] in reading architecture phenomenon was done by observing space use. In this stage, data collecting and observation were done structurally for 3 (three) days minimum to 9 (nine) cases. The observation was done all day in different time both in daily activity and traditional ceremony.

The use of pawon could be understood from two point view: first, daily activity, which includes every activity done in the house all day, especially the activity done in pawon room. Second, ceremony or Rituals which includes several activities, like monthly traditional ceremony done by the villagers (Pujan ceremony), wedding rituals, or in celebrating Death day, and rituals for Karo Day. The structured observation for 3 (three) days to case object was done in Karo Day, considering that Karo Day was celebrated for seven days by all villagers. In this research, the presentation of data takes the form of sketch, completing by matrix and graphic which takes the form of a table.

RESULTS AND DISCUSSION

As explained before, time factor could affect the use of pawon in the house. In Tengger, the use of pawon from physical element was known as a tool to cook and warm the body (gegeni). Cooking activity was done by using the top hole of pawon, as for gegeni was done by using its side hole.
The structured observation for 3 (three) days, in daily life and in Karo Day, was used to collect the data of *pawon* use from physical element. The average use (duration) was three days, presented in a matrix in appendix 2. In appendix 2, the use duration was showed by lightning a fire in *pawon*. *Pawon* use based on time could be distinguished by the different hour or in observation (common day or Karo Day), as explained below:

- Based on *pawon* use, a day (hour) could be divided into 3 (three) periods: effective hours in the morning, passive hours (afternoon), and effective hours in the evening until midnight.
- Based on the observation, a year could be divided into 2 (two): common days and Karo Day.

The explanation about *pawon* type (appendix 2) based on the use showed the difference between hours and duration in lightning the fire in *pawon* and total he *pawon* lit. As the explanation below:

### The Duration of the Use of Pawon

The duration of *pawon* use could be known from total hours when *pawon* was lit.

#### a. Common Day
- Effective hours in the morning (05.00-09.00)
  
  In the morning, *pawon* could be used between 05.00 – 09.00. Most cases showed the most effective hour was between 05.00 – 06.00 or between 2-5 hours. This was because most of Tengger’s villagers has already gone to the field at 7 a.m. The *pawon* used was located in the *dhapur* (=kitchen) except in case-7 case which used gas stove for cooking.

- Effective hour in the evening until night (14.00-21.00)
  
  The effective hours to light the *pawon* was from 14.00 to 21.00. The duration of *pawon* use in the evening, especially for the house which used more than one *pawon*, showed various duration between *pawon* in the *dhapur* and in *pedhayohan* (=guest room). The duration of *pawon* use in the *dhapur* was between 5-8 hours and in *pedhayohan* was between 0-6 hours.

- Passive hours (09.00-13.00)
  
  Period (specific hours) in a day in common days where *pawon* was not used was at 09.00-13.00. Based on the observation and interview, this happened because the room temperature was not cold anymore, therefore people did not need any *pawon* to warm themselves. Besides, most of the activities done by the villagers from morning to evening was outside the house (in the field or any other working place).

#### b. Karo Day
- Effective hours in the morning (05.00-09.00)
  
  In the morning, the duration of *pawon* use was very various. Based on the observation, this was affected by family activity and total guests arrived. The most effective hours to light the *pawon* was between 5-6 o’clock in the morning. The duration of *pawon* use in the *dhapur* every morning was between 2-5 hours, while the duration in *pedhayohan* was between 0-5 hours.

- Effective hours in the evening until night (14.00-21.00)
  
  In the evening, the *pawon* began to be lit from 14.00 until 21.00, although there were 2 cases (PA-7a and PA-8a) which lit *pawon* to cook in the *dhapur* all day. The duration in the *dhapur* was between 6-8 hours, while in *pedhayohan* was between 6-7 hours.

- Passive hours
  
  The period in the afternoon when *pawon* was not used although family activity was focused inside the house showed influence of other factors. The warmth in the room made the *pawon* turned off, except for special cases. Based on the observation in PA-7a and PA-8a cases, the *pawon* was used all day. This was because many guests arrived all day, thus the *pawon* was lit in order to honor and entertain them.

The explanation above was described clearer by graphic 1. The graphic showed the duration of *pawon* use (hours) was influenced by time factor and social structure, as explained below:

1. **Time Factor**
   - From the daily cycle, it was known that the duration of *pawon* use in the evening was longer than in the morning. This applied for *pawon* located in the *dhapur* or in *pedhayohan*, both on common days or on Karo Day.
   - The annual cycle showed the duration of *pawon* use on Karo Day was longer than on common days. This applied for *pawon* in the *dhapur* as well as in *pedhayohan*.

2. **Social Structure Factor**
- From the graphic, it was showed that the duration of pawon use tended to be longer in a specific society, both in the dhapur and in pedhayohan on common days or on Karo Day.
- On common days, the group of the Indigenous Leader had the longest duration (hours) of pawon use in the dhapur, followed by the group of village apparatus and common people, on common days and on Karo Day. But this was not happened for the duration of pawon use in the dhapur in the afternoon on Karo Day, when the group of Leaders had longer duration compared to common people and village apparatus. This phenomenon could be explained from the activity (cooking and having guests) of each person on Karo Day which was more various than in common days.
- The duration of pawon use in pedhayohan in the morning on common days and on Karo Day had a lot of varieties. The duration in pedhayohan in the evening on common days and on Karo Day showed that the group of village apparatus had the longest duration. This showed that the bigger role the person had to serve the society (the group of village apparatus), the longer the duration he had to use pawon in pedhayohan, compared to the group of the Leaders and common people.

![Graph 1. The relation between the duration (hours) for the use of pawon and social structure.](image)

The different duration of using pawon in the morning until night was related to the temperature in the room and the activity in the house. As done in the previous research about the temperature measurement in several houses in Ngadisari [11], it was showed that the lowest temperature in the house could happen at 05.00, for about 10°C (in Cemoro Lawang) and 20°C (in Wanasari). After that, the room temperature tended to raise up and got the climax at 13.00 before decreasing.

Besides of temperature difference in specific hours, the activity of each person also affected pawon use in the house. Morning activity was usually dominated by working activity from cooking for breakfast preparation in the field to planting. As for gegeni and having guests, it was usually done in the evening.

**Total Pawon Lit**

Besides the duration of using pawon, also showed the difference between total pawon used on common days and Karo Day, which were:

a. Common Days
   - Effective hours in the morning (05.00-09.00)
     
     From the observation, it showed that on common days the nine cases only used one pawon, which was located in the dhapur.
b. Karo Day
  - Effective hours in the evening until night (14.00-21.00)
    Pawon used in the evening and night on Karo Day was by lightning all pawons owned, except the unused pawon.

The explanation above was described clearly from graphic 2. From the graphic, it was showed that the pawon used was influenced by time factor and social structure:

1. Time Factor
   - From the annual cycle, it was known that pawon use in each society group is different between common days and Karo Day, except for pawon located in the dhapur. It was because only one pawon was used for cooking (in the dhapur) in each house. This was different with the needs of pawon to welcome the guests (in pedhayohan) which is very various.
   - The tendency to use pawon (in pedhayohan) was more on Karo Day than on common days, using all pawon owned except for those which could not be functioned anymore. This was because more activities inside the house (having guests) caused more needs than on common days.

2. Social Structure Factor
   - Pawon use on common days, especially in the morning, demonstrated the similarity of total pawon used in all society group (hierarchy). This was influenced by similar activity from society, which was the preparation to the field. That made the needs of pawon was relatively same, to warm the body due to cold weather in the morning and to cook (for having breakfast in the field).
   - Total pawon used in the evening between society group based on the hierarchy was not same. The observation showed pawon use in pedhayohan was more than one by the villagers who had certain role in the society. As village apparatus, the householder must serve the villagers at their house and this usually happened in the evening or night (after working in the field). So did with the role of Shaman leader (one from the group of Indigenous Leader). Not only served the villagers, but they also had to welcome the guests from other villages.

![Graphic 2. The relation between total pawon used and Social Structure.](image-url)
The explanation above showed the use of pawon in pedhayohan in the evening is more than in the morning. The use of total pawon on common days and on Karo Day is related to the role of the householder in the society. The more pawon in pedhayohan used, the higher the role of the householder in serving society.

CONCLUSION
This research showed the activity segmentation around the hearth (pawon) divided into room for cooking (dhapur) and room for welcoming guests (pedhayohan). The use of pawon showed from activity segmentation in Tengger’s house was extremely influenced by time factor and the existing social structure. It was proved from the same group of society (Ngadisari village in Tengger), the role of the householder in society was influenced by the duration (hours) and total pawon used. The higher role from the householder in society (serving the villagers), the longer the duration of using pawon and the more pawon (located in pedhayohan) used.

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