

# Effect of the Livelihood System on the Use of Space on Settlement House Village

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**Abstract:** *Different livelihood systems become a characteristic of villagers located on the seafront and most of them in the land area. The characteristics of livelihood as fishermen and farmers become the majority of livelihood besides others livelihood. This difference in livelihood systems distinguishes the pattern of space the house and village settlements. This is important to examine because there are changes in the pattern of home and settlement space usage with the existence of various livelihood systems. Site factors that influence the pattern of space the house and village settlement. The focus of the problem of this research is how the linkage of livelihood background influences the pattern of space the house and settlement. The objectives of this research are: 1) to examine the pattern of space the house village community activities with different livelihood backgrounds; 2) to examine the relationship of site factors and livelihood factors affecting the pattern of village settlements. This research is qualitative research supported by questionnaire and interview besides field observation. The results of this study indicate that livelihood factors greatly affect the pattern of home space use activities and this distinguishes the pattern of the use of community home space with different livelihood backgrounds. The pattern of settlements is more influenced by natural factors and develops along with the development of the village as a tourist destination*

**Keywords:** livelihood, pattern, use, space, village

## 1. Introduction

The use of space in the house depends on the activities carried out by the residents of everyday homes. This daily activity will result in the concentration of use of certain spaces that are often / always used / skipped, rarely used / skipped or never used / skipped [1]. Economic background, which is viewed from livelihood activities conducted in the home and (or) home page also affect the pattern of home space usage. The development of the economic and social aspects of rural communities influences the development of home and settlement spatial patterns. The development of economic and social aspects is due to the development of the village into a tourist destination and infrastructure development [2]. The use of shared space between activities space for family activities and activity space for economic activities. The use of space for livelihood activities can also be done in different spaces. Comparison of the use of space between space for home activities and space for business activities is determined by the type of business, the activities undertaken, the space required. With a clear comparison it will be known the needs of space activities in the house [3]. In the Swanendri (2000) study, the Balinese home context based on customary and religious norms can accept the presence of a business-based home. Home-based businesses can increase the value of homes and residents so that the existence and sustainability of a house is always maintained [4].

Cultural backgrounds can also affect the pattern of home and settlement space usage. This condition usually occurs in a group of people who still adhere to the customs and traditions of local cultural values. But with the development of this condition gradually lost due to many things that affect. A study by Michiano and Asano (2016) on the influence of

socio-economic and cultural backgrounds on the physical changes of Banjar traditional houses in appearance, use of materials and spatial patterns [5]. While Altijer and Nojumi (2016) examined the effect of behavior patterns on the privacy space in traditional and modern houses analyzed in spatial configuration using the concept of space syntax [6]. This study further explains the effect of behavior on space. Mehr et al. (2015) examines the existence of architectural space in traditional homes in meeting the physical and spiritual needs of human beings. This research is more emphasized on the existence of space to meet domestic and religious needs [7]. Tan and Chai (2017) examined the effect of two ethnic minority groups and the majority in the behavior of space and time use in the context of Chinese society [8]. This study further explains the behavior of space use by two minority groups and the majority

Location and topographic conditions of the site will form a settlement pattern. This pattern of settlements can also occur due to the economic and cultural background of the local community who have the values believed. However, the pattern of these settlements may also change due to natural disasters, increase in number of houses, infrastructure development or regional development. Torregiani and Tassinari (2012), examined the transformation of traditional agricultural villages into industrial villages affecting changes in farm buildings, design approach and agricultural land use [9]. This research will observe and study the influence of economic background of the village community on the pattern of spatial arrangement of houses and yard. This research was conducted on a village in South Jember region that has different economic characteristics of society. In this case the economic background is reviewed in the livelihood system. The problem in this research is how is the difference of spatial arrangement pattern of house and village settlement

based on different livelihood system ?. The purpose of this study is to examine the pattern of spatial arrangement of homes and village settlements backed by different livelihood systems

## 2. Theoretical

### 2.1 Settlement

According to Rapoport (1983), settlements can be seen as a landscape of cultures, especially traditional settlements whose physical form is very much related to culture. Human backgrounds such as the views of life, beliefs held, values and norms held will determine the behavior of a person, among others, reflected in the way of life and the role he chooses in the community. In a community group, the same livelihood factors do not affect the shape of the house that must be the same because it has a different way of life and outlook [10]. This is a way of expressing the form of visualization of their respective homes. This can be interpreted from the statement Rapoport (1969), in general, people with the same economy with different moral systems and views, then the home is the expression of the view of life [11]. While Doxiadis (1976) in Ekistic, revealed that the settlement environment is a system consisting of 5 (five) elements) namely: 1. Nature (natural element), 2. Man (human), 3. Society (community), 4. Shells, places or shelter, 5. Networks, both natural and artificial that facilitate the functioning of a settlement (eg, roads, water and electricity) [12].

The environment consists of a set of behaviors that overlap with others. This condition consists of two main components, a pattern of behavior and the environment. The environment is a physical structure composed of surfaces that are linked to each other in specific patterns such as buildings, landscaping, space and furniture. The surface is made up of differences in substance, texture, and coloration. Everything is explained in different ways. An arrangement gives everything and nothing else to potential users. This ability is divided into two, directly and indirectly. Direct consists of something like the ability to indulge, whereas indirectly like the meaning of a symbol that depends on a group of patterns with a hint and on the utility of the pattern for additional finances.

### 2.2 House

According to Newmark (1977), home is a complex human response to the environment and social conditions. It is part of the collective experience of the society and reflects on their beliefs and values. House and home are embedded in social settings that belong to the institution (family, religion, and social tools such as a society). The house also reflects the level of society in technology in obtaining food and buildings [13]. According to Altman (1984), home is a pervujan of environmental factors, technological factors and cultural factors. Environmental factors including climate, temperature and land; Technological factors are resources and technological expertise. While cultural factors are insight, environmental cognition and perception, privacy, religion and values, social culture and family structure [14].

The home can be interpreted as a response in the part of the human relationship between the individual and society with contextuality on the place and place. This relationship is by no means simple. This relationship is generated and acquired over a long period of time through everyday experience [13]. This relationship consists of seven affiliates that include family, group, government, education, developer, religion and recreation. Together these affiliates explain and complement each other as tasks and claims, truths and bonds and the social status and role of a person. They underlie themselves as self-, social-, place- identity (Duncan, 1981) [15]. According Wiryomantoro (2014), that the initial idea of the *Rumah* is the roof as cover or protection. *Rumah* are designed from the idea of preparing structures within territorial boundaries. The idea of a home comes from the term *uma*, *omah*, *humah*, hint of capacity and virtue, speaks as in connotative [16]. Including in the home gives the community an idea of habitat with a sense of kinship. *Rumah* in the context of Indonesian culture are always clustered with representations of married family institutions. The importance of a home is developed from the human ability in their social life learning.

### 2.3 Space

Rapoport (1983), argued that home change in the context of cultural change is not spontaneously and thoroughly dependent upon the changing position of the elements in the cultural system as a whole. Rapoport divides that element into: 1) Core element that is difficult to change, is fixed or can not be eliminated and become the identity of the owner of the architecture; 2) The peripheral element is a less important and volatile part; 3) Additional elements (new element) is the additional elements that become new section. The expression of change in a physical environment and the built environment is influenced by various aspects [10]. According Harbraken (1978), there are three aspects that can be used as benchmarks to see changes in the physical environment of settlements that form a unified system that is: 1) spatial system (spatial system) that is various aspects of yardstick related to space organization or spatial. This system includes space, space orientation and spatial relations patterns (spatial patterns of space); 2) physical system (physical system) that is various aspects of benchmarks relating to the construction and use of materials used in realizing a physical building. This system covers matters relating to structures, construction, roofs, walls and floors; 3) system model (stylistic system) that is various aspects of the benchmark associated with the model [17].

Harbraken (1983) says that in relation to the space-forming elements in a site, there are three foundations that can be said to indicate a change: 1) Addition: addition of an element in a site resulting in a change. For example, adding a partition in a space so that created space increases. Adding facade elements (doors, windows or other facade elements) to specific scoping areas and so on; 2) Reduction / elimination: is the reduction of an element in a site so that there is a change. For example, dismantling one of the walls of a room with the intention of extending the space or uniting the two rooms together, removing windows on the facade and replacing the model of the window also includes changes due

to the reduction of elements in one part of the room; 3) Movement / movement (movement): is the displacement or shifting element of space on a site. For example, moving or shifting the position of the wall in a room to another place or moving the position of the ladder, moving the position of the door from one side to the other side of the facade or other space spaces also includes the movement causing a physical building is said to change [18].

Kent (1997), states that people share or separate their domestic architecture and use more space than others. It is speculation to increase the differences in architecture and the use of space in cross-cultures along with cultural influences and their development. The human relationship with is unavoidable. How basic needs and cultural backgrounds protect / encompass the physical space and equality of how the boundaries of changes in living community and behavior are the subject of a qualitative voice and quantitative research [19].

#### 2.4 Lifestyle and Activity System

In Rapoport (2005), the built environment is an equivalent unit, while the culture is still too abstract. So that approach is used through social culture. These components include world view, values, norms, lifestyles, and activity systems. Lifestyle and system of human activities greatly affect the built environment in addition to norms and images and schemata [20]. According to Rapoport (2005), the built environment consists of four component-forming organization of space, system settings, cultural landscape, fixed elements, semi-fixed elements and non-fixed elements. Fixed elements are structured elements that become unified with buildings such as floors, walls and roofs. The semi-fixed element is the furniture that can change. While the element is not fixed is the element that has the free nature is the result of changes that are closely related to humans as a place dweller, the relationship of space movement, position and posture [20].

According to Newmark and Thompson (1977), lifestyle is described as a way of life that is followed by a group of people and encompasses social roles and describes the characteristics that determine the relationship of the role of behavior to take place. The most important factors in determining a lifestyle are age, occupation, marital status, education, and income influencing social roles. A family way of life will reflect the role of their parent's work, education, income, single income or income combination, since these factors play a role to shape their activities and interests [14]. The system of community activity reflects the motivation, attitude, and knowledge of the world with emphasis on income, competence and cultural norms [21]. The concept of behavior setting and activity system involves achieving aspects of all design goals and providing the basis for environmental and design analysis in response to human needs [15].

According to Lang (1987), lifestyle can be understood as an indication of the role of society and the setting of the behavior they occupy. Basically, the design of the house, the place of the house where activity often occurs, the interaction between the community, the level of the activity center and

the family organization is an aspect that seems important in the design development picture [15]. Culturally different societies will have a place to live different behavior settings due to different activity systems [15]. Rapoport (1969), states that the five main identification of cultural aspects that reflect home organization are: main activity, family structure, gender role, privacy attitude, and social relations process [11].

### 3. Research Methodology

This research is conducted in South Jember region precisely in Sumberejo Village. Villages with varied livelihood system backgrounds. The livelihood system of the population of the agricultural system and the livelihoods system of marine income. This research uses qualitative method with case study. Data collection is supported by field observations, questionnaires and interviews. Interviews and open questionnaires with varying livelihoods. However, in this case, the interviews will only be selected respondents who are looking for livelihood as fishermen, include processing of seafood and farmers only. While the farmers are also divided into tobacco farmers and farmers or crops palawija only. From the results of data obtained from this field will be observed patterns of use of space in the house and (or) outside the home used for activities related to livelihood systems.

### 4. Result and Discussion

Sumberejo Village is a village located 35 km to the south of Jember City. The village is bordered to the south by the southern Indian Ocean sea. This village consists of eight (8) hamlets Krajan Lor, Krajan Kidul, Curah Rejo, Kedungkaji, Brego, Sidomulyo, Watu Ulo, Pahyangan. Of the eight (8) hamlets, Dusun Watu Ulo and Pahyangan are villages where the majority of residents are livelihoods as fishermen and processing sea food. These two hamlets are located south of Sumberejo Village, which borders the sea. While six (6) other sub-villages are livelihoods as farmers, both as tobacco farmers of Na-Oogst and palawija as well as farmers only. Of the six hamlets who are farmers are farmers Krajan Lor and Krajan Kidul. So these four hamlets will become field observation sites because they have significant characteristics in economic aspects

The pattern of Sumberejo Village settlements is divided between rice fields and housing areas. The area of rice field covers the residential area of the population in the west and east of the resident's housing. People's homes converged into one group stretching from north to south (Figure 1). But there are some separate housing such as Sidomulyo Hamlet. The background of this community is Christian Jawi Wetan. Historically, the beginning of the formation of settlements in this village because there were once some priests (romo) from the Dutch who spread the Christian religion. Until now this Hamlet Sidomulyo become a village that all residents are Christian Jawi. While the livelihood is mostly farmers and civil servants and teachers.

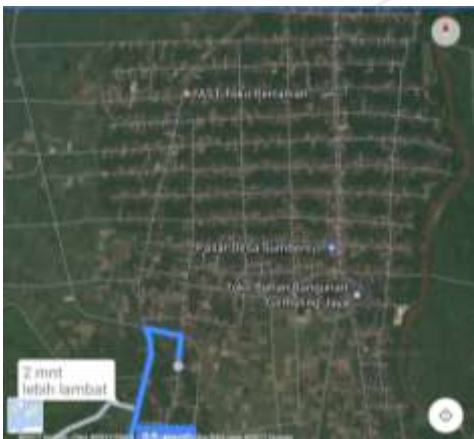
In the pattern of settlements Watu Ulo and Pahyangan hamlets tend to follow the shoreline as seen in Figures 3 and

4. While the pattern of settlements Krajan Lor and Krajan Kidul Hamlet shaped grid and arranged. The west and east of the housing is a group of rice fields (Figure 2).



Source: google maps

**Figure 1:** Settlement pattern of Sumberejo Village



Source: google maps

**Figure 2:** Pattern of Krajan Lor settlement



Source: google maps

**Figure 3:** Settlement Pattern of Watu Ulo Hamlet



Source: google maps

**Figure 4:** The settlement pattern of Pahyangan hamlet

In fishermen houses located in Pahyangan and Watu Ulo hamlets have a courtyard only (Figure 5). Similarly in the back and sides of the page, there is no page limit with neighboring houses. In some homes that have vacant land adjacent to the house or back of the house, it is used as a boat parking (Figure 6). In the houses of pindang fish entrepreneurs, trasi and salted fish, empty page located at the back of the house and beside the house. In addition to being used as a place to process the catch into the sea pindang, salted fish and trasi. Processing of marine products for pindang fish, trasi and salted fish has increased since this village became one of the tourist destination of Watu Ulo beach, Tanjung Papuma and also there is Bay Love tourism which became known by the general public. Currently empty land is used by locals for parking lots and food stalls. So the livelihood of Pahyangan and Watu Ulo residents is also growing. Currently many residents are opening food stalls and parking lots for tourists (Figure 7).



Source: Survey, 2016

**Figure 5:** Fishing houses



Source: Survey, 2016

**Figure 6:** Boat parking lot



Source: Survey, 2016

**Figure 7:** Parking lot and food stalls

This condition is very different from the farmers' houses in the Krajan Lor and Krajan kidul hamlets. The residents' houses have a large yard at the front of the house and back of the house. This page is used as a place to dry rice or corn (Figure 8). In addition to the backyard is usually used as a cattle pen, kitchen (outer pawon) or yard grown vegetables

and tubers and also a wide terrace that is also used to dry rice and corn in the harvest season (Figure 9,10). In the homes of cultivators and tobacco farmers there is a large terrace used for drying rice and corn. While at the back of the house is a tobacco warehouse used for the processing and storage of harvested and smoked tobacco (Figure 11). This tobacco store only works during the tobacco harvest season (Figure 12,13). Types of tobacco plants located in Sumberejo Village is Na-Oogst Tobacco which has been known by the people of Jember since 1850. This tobacco plant greatly affect the economic development of local communities because this type of tobacco is tobacco for cigars for export products.

This condition has been running since the time when NO tobacco was introduced by the Dutch to the people of Jember. Female labor as a sorting force, binding of tobacco leaves, while at night the process of fumigation is done by male laborers. The condition of the tobacco warehouse and work in the NO tobacco warehouse owned by the old Dutch businessman can be seen in figures 14, 15, 16.



Source: Survey, 2016  
**Figure 8: House of rice farmers and crops**



Source: Survey, 2016  
**Figure 9: Warehouse and cattle pens**



Source: Survey, 2016  
**Figure 10: Outside Pawon**



Source: Survey, 2016  
**Figure 11: House of Cultivators and tobacco**



Source: Survey, 2016  
**Figure 12: Tobacco Warehouse**



Source: Survey, 2016  
**Figure 13: Space in tobacco warehouse**



Source: Djember Tempo Doeloe  
**Figure 14: Tobacco warehouse By Dutch entrepreneurs**



Source: Djember Tempo Doeloe  
**Figure 15: The role of women as labor**



Source: Djember Tempo Doeloe  
**Figure 16: Tobacco curing process**



Source: Survey, 2016  
**Figure 17: Terrace for sunning is placed in the backyard of the house**



Source: Survey, 2016  
**Figure 18: Terrace for sunning is placed in front of the house**

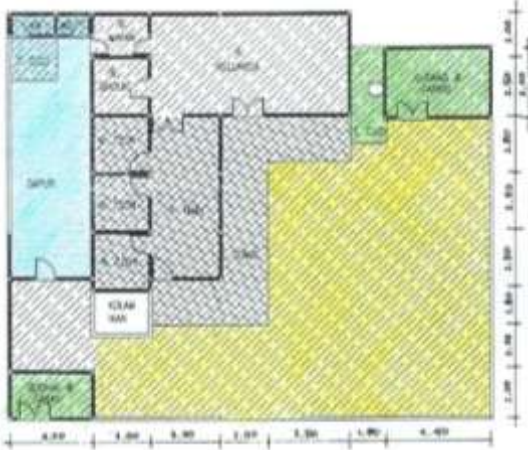
In the home of both cultivators and tobacco farmers, there is a large terrace used for drying rice and corn. In the rice harvest season or broad corn terrace is useful for drying the rice and corn. However during NO tobacco harvest season, this wide terrace is unused. In NO tobacco harvest season, this tobacco warehouse is used to sort, bloat and bind tobacco leaf. NO tobacco warehouse was built behind the house. While the wide terrace for hanging rice or corn is placed in front of the home page or behind the house (pictures 17 & 18).

In livelihood communities as farmers and marine producers (pindang fish, trasi and salted fish) there is a sun-dry terrace used for drying salt and salted fish and dried rice and corn during harvest season (Figure 19 & 20). In the home of pindang fish entrepreneurs, backyard or side is usually used for the processing of fish pengindangan. However, this place is still borrowed by the neighboring land so the pindang fish processing place is temporary (Figure 21,22,23)



Source: survey, 2016

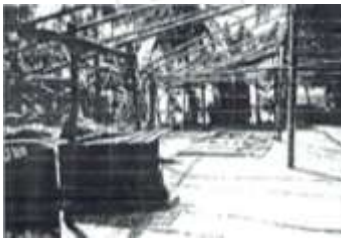
**Figure 19:** House of palawija farmers and shrimp paste entrepreneurs



Source: survey, 2016

**Figure 20:** Floor plan of the cultivators and the shrimp farmers

In the home of pindang fish entrepreneurs, backyard or side is usually used for the processing of fish pengindangan. However, this place is still borrowed by the neighboring land so the pindang fish processing place is temporary (Figure 21,22,23). In a community with large land, it can utilize the land for permanent cultivation and drying.



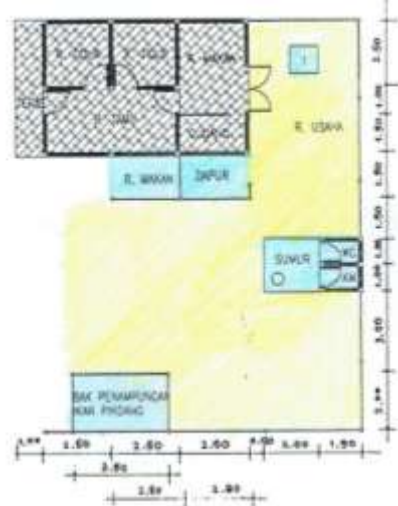
Source: Survey, 2016

**Figure 21:** Home of pindang fish Entrepreneurs



Source: Survey, 2016

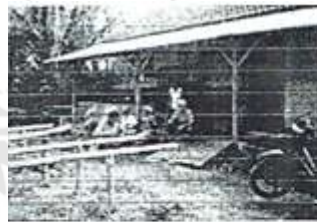
**Figure 22:** Space for making pindang fish on the side lawn house



Source: Survey, 2016

**Figure 23:** Floor plan of pindang fish Entrepreneurs

Residents who have large land can use the land behind their homes to dry salted fish and trasi Besides having wide space for the activities of seafood processing good fish memsang, marinate fish and make trasi. This condition usually occurs in the people who have succeeded their business (figure 24, 25).



Source: Survey, 2016

**Figure 24:** Yard where to dry salt fish and shrimp paste



Source: Survey, 2016

**Figure 25:** Processing room shrimp paste and salted fish for pindang fish



Source: survey, 2016

**Figure 26:** Floor plan of pindang fish salted fish, and shrimp paste

Various patterns of spatial arrangement of Sumberejo Village community house with mixed livelihood background as farmers and fishermen as well as processing of seafood (Figure 27,28, 29)



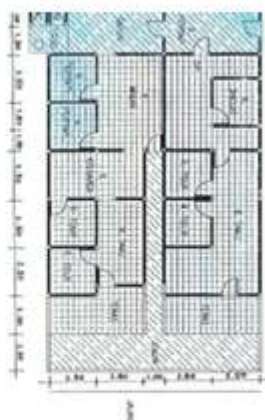
Source: Survey, 2016

Figure 27: Floor plan shrimp paste entrepreneur



Source: Survey, 2016

Figure 28: Floor plan of cultivator and shrimp paste entrepreneur



Source: Survey, 2016

Figure 29: Floor plan of shrimp paste and salted fish entrepreneur

## 5. Conclusion

From this research can be concluded that the livelihood system is very influential on the pattern of space the house and settlement. Each type of livelihood has a difference in the use of space within the home and the yard. This livelihood activity space plays an important role in the meaning of the house for Sumberejo Village community in general and for the four sub-villages in particular. Houses of people who have the same livelihood do not determine the similarity in the pattern of spatial arrangement. It depends on the will and ability of the community. But in this case there is a

correlation between the increase of income or improvement of community effort toward improvement of house quality either from wide aspect of house, house model or house material. In communities with multiple sources of livelihood will affect the size of the house. This is because it will require a more diverse activity space. For example, in a farming community with NO crops and tobacco, it will have two work activities at its rumah. Processing of varied seafood such as pindang fish processor, salted fish processor or trasi will affect the pattern of spatial arrangement that is more diverse and requires a wider space as well.

These livelihood activity spaces can be HBS in a community house that owns a fish processing business. But for farmers and fishermen, the house can not be said to be HBS. In NO tobacco farmer's house, the house can be regarded as HBS. This is because there is considerable use of energy, especially during the harvest season that many use of women. This condition has been running since the time when NO tobacco was introduced by the Dutch to the people of Jember. Female labor as a sorting force, binding of tobacco leaves, while at night the process of fumigation is done by male laborers.

## 6. Acknowledment

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