Spatial adaptation as the Madurese migrant resilience form at urban informal sector workers settlement: a case study of Kotalama settlement - Malang

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Abstract. Migration is the movement of the population that will bring the change of society’s behavior because of the adjustments occurring at the destination of migrant area. The availability of houses in urban area is not a proportional comparison to the increasing of limited housing space, thus it encourages urban migrants to adapt to the existing conditions. Adaptation will be closely linked to the resilience of migrants in the process of interacting with their environment. The theory of urban settlement architecture continues to grow constantly, so the used paradigm should be interdisciplinary. Thereby, the understanding of adaptation, which is used will concern to various aspects of physical and non-physical environment, and it is viewed as a process and product of human interactions with the environment holistically. Malang city is one of the migration destinations of Madurese people since 1930s, and Kotalama Malang settlement is the settlement that holds the largest Madurese migrant working in informal sector, which has been developed since 1950s. This study was conducted to determine the spatial adaptation of Madurese migrants in urban settlement area as a resilience form towards their settlement environment. The qualitative descriptive method with the discourse analysis approach of searching the data through the observation and the in-depth interview of key person were used to know the adaptation process that happened. The study result indicated that spatial adaptation as a process and product on meso and micro scale conducted by Madurese migrants was the form of resilience towards their settlement environment.

Keywords: Spatial adaptation, the resilience of Madurese migrants, urban informal sector worker settlement, Kotalama settlements, Malang

1. Introduction

Migration is a movement that involves a complete change and re-alignment of the society affiliation of its individual itself. There is the change in community behavior because of the adjustments that occur at the migrant destination. Generally, it is said that migration is an important occurrence in culture. Thereby, the processes of change occurring in sociology refers to the cultural assimilation [1].

Besides food and clothing needs, housing or home is one of basic human needs. Once the basic human needs are fulfilled, the house is not only just a shelter but also a place to protect themselves from natural conditions that are not always unpredictable and as the self-actualization of its inhabitant. The existence of houses will greatly determine the quality of society and the environment in the future.
Instinctively, every person will strive to improve his own quality of life, and it will encourage people to improve the quality of their residence regarding to the value in which they believe. The efforts for improving the quality of their residences will be closely related to the process of human interactions with their environment as well as the resilience or the ability to adapt and remain strong in difficult situations.

Adaptation is a social process and a human strategy for being able to face the life, so people need to adapt to their surroundings. Adaptation has the different functions in different cultures at different times, and has the multiple definitions as the products and the processes [2]. Adaptation refers to a relatively stable change that takes place within an individual or a group in response for external demands [3]. The concept of change and adaptation is an important concept in the life, both the changes in human expectations and environmental adaptation towards the human change [4] as it affects human interaction with their environment. Adaptation in the context of human dimension of global changes usually refers to processes, actions or outcomes in the system (households, societies, groups, sectors, regions, countries) in order in order to make betterment of a system, in managing and adapting to some changing conditions, stress, danger, risk or opportunity. The human adaptation capacity both individual and group will affect the vulnerability in the adaptation process [5,6]. The theory of urban settlement architecture continues to grow perpetually, so the paradigm used should be interdisciplinary. Therefore, the understanding of adaptation which is used should pay attention to various aspects of physical and non-physical environments, and be viewed as a process and product of humans’ interaction with their environment holistically.

Humans are a part of nature, but recently by the growth and development of population and the high levels of urbanization, humans are closer to the artificial environment rather than the natural environment which affects their ways of thinking, behaving and acting [7]. There is always a process of finding balance between people and their environment. As a result of this process, there is always changes of space [8] or in other words, the dynamics space.

The space dynamics is an environmental order (individual / family / group / community) that always seeks to adapt their needs to their environment potential. To accomplish that, it should endure through a process that is 'flexible' and 'dynamic', because the balance of environment is constantly shifting. The space dynamics process occurs in several stages: privatism process, clustering process, inclusion-exclusion process, categorization process, classification process, labeling process, bordering process, mediating power process, marking process / identity expression process, polarization process, quartering process, and environmental change process.

Malang is a city located in East Java Province-Indonesia, 90 km south of Surabaya. The city is the second largest city in East Java after Surabaya and one of the largest cities in Indonesia based on the population data. In addition, Malang is also the second largest city in the southern part of Java Island after Bandung. Malang is located in the plateau having relatively cool weather, and the whole area is bordered by Malang Regency. The total area of Malang is 252.10 km2 (Wikipedia, accessed 13 December, 2015).

The Kota lama settlement is The Madurese migrant residence of informal sector workers in Malang City which has been developed since 1950s, and it is one of the points of Madurese migrant agglomeration in Malang City [9]. The space dynamics that occurs in the environment and architecture itself becomes the interesting thing to be observed, considering the process of finding a balance between humans and environment that causes the changes or the space dynamics in the settlement has been going on relatively long time. By knowing the dynamics of architectural space that occurs, it will be able to provide the understanding of spatial adaptation done by Madurese migrants on the settlement architecture space formation of Madura migration in the urban environment.

2. Method

This study was conducted to determine the spatial adaptation of Madurese migrants in the urban settlement environment. The qualitative descriptive method with discourse analysis approach by
searching data through the observation and the in-depth interview of key person were used to know the adaptation process that happened. The object observations on the meso scale included the environmental roads that were used to do social activities both individual and group activities. While the observation object for the micro scale was the residential Madurese migrants in the form of a single space and the house which consists of several spaces at the beginning of the inhabited

3. Discussion

Living together with forming a community according to the origin culture is one of adaptation forms by migrants in urban settlements [10–12]. The process of settling in the mass settlements is done gradually starting from the sharing of space and doubling the function of the space which does not need the high privacy requirement to the modification of forms including the expansion of buildings, the addition of amount space (the addition of partitions) and the re-organization of space based on the private and public zones [13].

The Kota Lama settlement is an urban village where currently informal workers settling around are nearly 90\% of Madurese migrants (Figure 1). This migrant settlement was established by five families who migrated from Sampang - Madura in the 1950s. The settlement location which is near to the city center, and the presence of these Madurese migrants has become a pull factor for other migrants from Madura Island. These conditions lead to privatism process namely the process of joining individuals with a certain groups and changing their personal identity into a group identity [14]. Furthermore, due to many similarities in the community groups in this region (ethnicity, occupation, and origin) there was the clustering process in which the process is undertaken by a community group that has many similarities to choose the environment as a habitable place with the special qualities in accordance with their characters, and it becomes a 'settlement sac' [15,16]. From both the adaptation processes (privatism and clustering process) toward the environment of Madurese migrants, nowadays Kotalama is known as the largest residential area of Madurese migrant in Malang City.

![Figure 1. The settlement area of Kota Lama Malang](http://peta.bpn.go.id/)

The efforts done migrants to adapt or adjust to their spatial needs to the living resources in their settlement will contribute to the process of finding balance between humans and their environment. The process always causes the changes in the space or dynamics space, which are 'flexible' and 'dynamic' [8]. The spatial adaptation of Madurese migrants at the site of this study was reviewed on the meso scale and micro scale.
3.1. The meso-Scale Adaptation

The spatial adaptation of Madurese migrants in Kota Lama Malang settlement began with the phase of dynamics space in the meso or environmental scale. After the stage of privatism process and clustering process in this settlement area, it continued to the next stage of space dynamics process in the meso scale, namely inclusion - exclusion process (I-EP) stage. At this stage, there was a 'boundary' that emphasized the 'social identity' and as a result of this it was divided into the society’s groups 'territory' having the same characteristics or homogeneity and the groups having different characteristics or diversity. This condition caused one group to feel more powerful than the others and moreover, having the power can suppress the other groups [17]. This can be seen in the utilization of roads and corridors, in the stable settings the functional changes of space considers to the user’s interest and importance. The roads become the exclusive space for the certain groups living near that road environment as a result of their social relationships, and it indirectly changes the road function as a sharing space. Thereby, the forming of space territory within the control group is based on the space and time required, and one group will feel more powerful than the others and feel that they the power to suppress the other groups [18]. In this case, the society group surrounding their road neighborhood will feel more having the sense of belonging to control the road compared to the other societies who do not live near the road.

In the activity of road utilization for various societies’ interest and importance, there is the categorization process called the process of spatial classification, where the informal order does not need to be stable, it can be the term of temporary classification, and it is not bound by the formal regulation. There is also the classification process underlying the group of human to join in a certain group and chooses the order that is appropriate with their space and environment [19]. The process is seen with the existence of space classification in their environment in certain activities such as weddings and interaction in the spaces in which they agreed (the part / intersection of roads, the public facilities, and the utilization of each dwelling’s terrace). The societies choose the particular order according to their space and environment and utilize the environmental roads in different ways regarding to the time of their activities. Figure 2 shows the use of road in front of the house as the place to sell, with the different sequence between morning and afternoon.

![Figure 2. The utilization of roads as a business space in the morning and afternoon](source: field survey, 2017)

Similarly, if there is a wedding event as shown in Figure 3, the street around the event would be used as a place to hold the event.
The space dynamics on the meso scale that occurs in this settlement shows the adaptation of Madurese migrants in Kotalama settlements as the attempt to obtain the resilience in the neighborhoods. The process of space dynamics includes privatism process - clustering process - inclusion - exclusion process - categorization process - classification process which occurs to show the adaptation as a process, while the spaces formed in accordance with the function, activity and time based on society’s needs including: roads, business areas and social activity space, are the form of adaptation as a product.

3.2. The Micro-Scale Adaptation

On the micro scale, the spatial adaptation by Madurese migrants in the study site was observed through the dynamics of residential spaces as the study object. The dwelling used as the object of study was represented by occupants whom at the first time they inhabited in the form of single space called the mubeng kandhang form [11] and the houses which was occupied and have several rooms at the first time. The occupancy of mubeng kandhang form is the result of labeling process i.e. the giving of names in the environment that they have chosen for their dwelling [19].

After the space was formed, because of it was still a single space, the inhabitants determined the type of orders that helped them to easily remember the function of each part in a single space which was formed at the first time by the stage of categorization process and classification process. Moreover, as the effort to improve their life order, the inhabitants tried to present the physical boundaries of space within their dwellings through bordering process, the creating of boundaries for one space to others for making it easier to clarify their spatial functions [17,18], forming three main functions of dwelling in the term of emper (living room) – kamar (room) – pawon (kitchen) is shown in figure 4.
Occupants who were from the beginning occupied the house that consisted of several spaces, did the spatial adaptation with the categorization process stage, as the effort to utilize the existing space with all its limitations adjusted with the time of activities, without changing the physical occupancy itself. Because the bordering process did not longer to be done on the occupancy which has the physical bordering of space based on its function, the improvement of order and the quality of life of residents were done through the marking / identity expression process which is the personalization process and creating 'sign' to the space / place to assert that someone has mastered the space [16].

In this process, the mastery or territory towards the space becomes larger than others. This can be seen in the mastery of space outside the dwelling which is utilized based on the needs, as shown in Figure 5. The road in front of the residence becomes the territory of house owner which is used as the space of personal activity.
Adaptation as the migration adjustment process on the micro scale is seen in the occurring spatial dynamics stages. There are the differences of spatial adaptation performed by inhabitants, due to the differences in the early conditions of their dwelling. The process of space dynamics that describes adaptation as a process is: categorization process - classification process - labeling process - bordering process - marking / identity expression process. Meanwhile the adaptation as a product seen in the form are the spaces in the dwelling in accordance with the activities that are accommodated and the space outside the dwelling territory to expand occupant mastery of the environment.

4. Conclusion
The results of study showed that the resilience of Madurese migrants in the study location was achieved through the spatial adaptation in the term of space dynamics in meso and micro scales. The stages of dynamics showed that adaptation is the process associated with the resilience of Madurese migrants to live in the site of study settlements, and the adaptation as a product is demonstrated through the spatial forms for the activities as the result of dynamics space phase. Privatism process - clustering process – inclusion - exclusion process - categorization process - classification process are the meso scale dynamic space while privatism process - categorization process - process labeling - bordering process - marking/identity expression process - environmental change process are the stage of the micro scale dynamic space. The adaptation as a product is shown on the meso scale in the form of road utilization as the flexible activity space based on society’s needs. While on the micro scale, the adaptation as a product is shown through the spaces within their residential units, either in the term of single space or occupancy consisting of emper (living room), kamar (room), and pawon (kitchen).

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