

The Level Of Place Attachment At The Community In Disaster Prone Areas In Tallo Sub-District, Makassar

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ABSTRACT

The attachment of a community to its residence can be catalyst or barrier to their ability to adapt and face threats due to disaster. By conducting a study of 323 households living in urban-village that were affected by recurrent floods in Tallo Sub-district, Makassar City, this research aims to measure the level of community's place attachment, and aspects that affecting the form of their bonding based on respondents' response. Descriptive statistics using the SPSS application were applied as a measurement method. The results of this study indicate that the level of place attachment at the community in Tallo Sub-district is in the high category. The societal aspect is the most powerful factor that influences the forms of high level of place attachment at the community in that place.

Keywords ; Disaster; community; population

1. INTRODUCTION

Cities and urban areas are put at high risk when associated with disaster, due to their continually growing population and concentrated economic activities. Asian Development Bank reported that in the last four decades there has been an increase in the incidence of natural disasters-especially climate related in cities, from the 1,300 incidents in the period 1975-1984; it almost tripled to 3,900 incidents in 2005-2014 [1].

Urban communities, especially those who live in disaster prone areas that affected with recurrent incidents, are one of the main targets in the efforts to increase urban resilience in facing with disaster, and the existence of place attachment in that community is one of the

characteristics of a community that is important in pursuing resilience [2], [3]. Knowing how emotion and cognition of a person or group towards their place/ residence can give an understanding of behaviors that appear related to disaster, including pro environmental behavior and disaster risk perceptions [4]. The high or low level of place attachment in a community has the impact on their ability to recognize risks, adapt and recover before, during and after disaster. This has been empirically proven in several studies with communities of varying scales and different potential threats [5]–[7].

Most of the communities living in the urban village area in the Tallo Sub-district, Makassar City, have mostly lived and settled for generations. The rapid growth of Makassar City

has had an impact on the development of this area, which was originally only a residential area, developed into an industrial area, especially for the shipbuilding industry. This is also the reason for the large number of newcomers to that location, who live side by side with the indigenous population. Apart from being a residential and industrial location, Tallo Sub-district is also known as a tourist destination, with the site of the Tomb of the Kings of Gowa. The UN Habitat study [8] shows that Tallo Sub-district is one of the areas in Makassar City which has the highest vulnerability to climate-related disasters (floods, high tides, high winds) due to its geographical position.

The area affected by the flood in Tallo Sub district is 51,431 m², with a water level of up to 50 cm [9]. Despite of recurrent events that hit their residence, that community living in the Tallo Sub-district has refused to relocate or moved to safer location. This study aims to measure the level of place attachment at the community with such possible threats. Respondents' responses to the questions on the questionnaire will show which aspects have the most influence on the high or low level of attachment at the community in Tallo Sub-district, Makassar City.

Place attachment, a concept within the scope of environmental psychology, describes bonding as a form of affection in a person /group towards a place or environmental setting [10]. Experience of interactions and associations in a place creates a bond in humans whose intensity is influenced by the value or meaning given by humans to that place.

In the Tripartite Model of place attachment, Scannell & Gifford [4] described 3 dimensions of place attachment, namely the human dimension (the bound subject), the process dimension (the

process of forming bonds), and the place dimension (the object to which humans are bound). Humans can be attached to a place as individuals (caused by experiences, awareness, or memorable events that occurred in a place), or groups (driven by the similarity of values held by fellow group members). A bond that arises from a sense of affection, knowledge /cognition, or a person's /group's behavior towards a place is a process that describes how attachment to place is formed. Meanwhile, the dimension of place as an environmental setting is not only limited to physical elements, but also to symbols, history, and even social conditions in a place [11]. The methods should be described in detail, including modification and shall be indicated by reference.

A. The aspects of place attachment

Aspects that influence the formation of attachment between humans and places are personal aspects, social aspects, physical aspects of the place, and aspects of cultural values. Some of those aspects are strong and consistent predictors of forming attachment to places, while others show inconsistent results.

The personal aspect is inherent in the individual and is related to a person's socio-economic condition. The amount of time someone spends in a place (length of stay) is a strong personal aspect as well as the most consistent predictor to determine the levels of place attachment [11]–[13]. Apart from the length of stay, the ownership status of the residence and the level of education are also personal aspects of the place attachment. Particularly for the level of education, this aspect is a negative predictor of place attachments because of its association with a person's mobility. The higher a person's education level, the higher their mobility in pursuing these interests, which results in weaker ties to their place of residence [12]. Personally, an individual who has feelings of rootedness or

belonging to a group (feeling as insider) can form a bond with his place/ environment [10], [12].

The social aspect is often referred to as the community aspect because it is related to the social ties that exist within the community, which eventually forms the ties toward the place [14]. Social ties often arise as a result of meaningful interactions between community members [15] which create a feeling of security and provide comfort in the community. In the context of community residing in the middle to lower class areas, this aspect is even more significant if compared to the physical aspects of the place /environment in which they live [10].

Physical aspects of the place/ environment can generate sense of satisfaction leads to form a bond between people and their place [16]. However, because it is more of a preference, it is difficult to measure it objectively. The physical aspect that is often used as a predictor of place attachment is the

sense of security [11]. In addition to a sense of security, the feeling of comfort associated with occupancy conditions also affects one's attachment to a place [10]. The behavior of protecting the environment in which they live is something that is seen in someone who has attachment to place; therefore it is also used as a predictor of place attachment.

The cultural aspect of place attachment is related to the presence of cultural values in a place, which has a connection with the community /ethnicity that resides in that place. Sharing the same cultural values can attach a person to their place and community, often holding cultural-themed events with meaningful rituals is done as an effort to keep individuals or groups together in the community.

B. Place attachment and resilience to disaster

Place attachment is closely related to the risk perception and the behaviour of a person/ group in responding to and adapting to

disasters. Several studies have shown that place attachment can increase community engagement on environmental issues [17]. Disaster risk perceptions are proven to be influenced by the presence of attachment to places, and can increase the community's ability to adapt to disaster [7]. However, high level of place attachment can cause psychological and emotional effects in the form of dependence and a feeling of not wanting to be separated from the place they love. This social psychological phenomenon can also be easily observed in community groups who refuse to move from disaster-prone locations, despite the high risk [18]. Theory is developed from the background of the paper, and should include only the relevant theory to the topic of the paper.

2. METODOLOGY

This research applied a quantitative approach as the methods. The variable to be measured is the place attachment, using 9 indicators consisting of feelings of rootedness, social bonds (familiarity), social bonds (mutual assistance), social interaction, home quality perception, sense of security, environmental responsible behaviour, cultural characteristics, and cultural similarity. These indicators are obtained from an analysis of the aspects that predict place attachments at community.

The study was conducted in communities in Tallo Sub-district, Makassar City, particularly at 4 neighbourhoods, namely RW. A, B, C, and D. Residents in this area have repeatedly experienced floods, which are not only caused by high rainfall during the rainy season, but also by sea level rise. This area is geographically located on the coast, with various socio-economic conditions, but tends to be in the middle-lower category.

Data were collected by questionnaire from 323 respondents representing household units. Respondents' age is limited to the range of 15-65 years old (productive age range) who are considered capable of providing answers/responses to questions on the questionnaire. The data collection process was carried out for 5 consecutive days (day and night), which was conducted by the researcher, assisted by 3 enumerators. The questions in the questionnaire were not self-administered, instead they were asked directly to respondents by the enumerators, taking into account the respondents' level of literacy, which tended to be low. The questionnaire contains 18 closed questions with 4 answer options which are weighted with scores of 1-4. Apart from the survey method, the observations within the research location were also made, to obtain objective data regarding the physical and socio-economic conditions, especially the adaptation behavior to disaster risk carried out by the community in that place. To determine the level of attachment to the place, the data from the collected questionnaires were analysed using descriptive statistics, utilized the SPSS version 22 application. Before being implemented in a wider range of respondents, the questions on the questionnaire were tested on 30 respondents to determine their validity and reliability. The Pearson Product Moment correlation analysis was applied to test the instrument's validity, while the reliability test used the Cronbach's alpha formula. The results of the validity test showed that each item of the questions in the instrument has calculated r value $> r$ table, with a Cronbach's alpha value of $0.785 > 0.600$. Thus, the research instrument has met the classical assumption test and can be used in this research.

3. RESULT AND DISCUSSION

3.1 Respondents characteristics

Respondents representing household units were dominated by women (53.6%) with an age range of 30-49 years old (63.47%). Most of the family heads in the community (52.3%) work in the informal sector as independent workers (farmers, fishermen, mobile traders, drivers, and casual labourers). This is inseparable from the low level of education of the household heads (only 35% of family heads have a senior high school education). Most of the communities in the study sites had been living for more than 15 years (57.9%). As many as 94.7% of respondents claimed that the ownership status of the property is legal and private to theirs own. The ratio of the number of productive family members who bear non-productive family members in each household is on average $<46\%$.

4.2 Respondents' response frequency

Based on the respondents' answers in questionnaire, the highest response was given to the question "Do you know people in this neighbourhood well?" (Score 3.8 out of 4). That question represents a social aspect, specifically an indicator of familiarity. It reflects the conditions of place attachment at the Tallo Sub-district, which influenced the most by social bonds within the community. In a society with middle-to-lower socio-economic conditions, the social aspect (community attachment) has a greater influence than the physical attributes of the place/environment [10]. The most dominant social interaction in the community in Tallo Sub-district is a form of non-formal interaction

(gathering to just mingle around and have chats) as seen from the observations.

Conversely, the lowest response was given by respondents to the question "Are there religious celebrations / cultural rituals held regularly in this environment?" (Score 2.04 out of 4), which is an indicator of the cultural similarity in cultural aspects. The low response rate indicates that the cultural aspect is not considered important in forming community ties to the place. Attachment to cultural aspects can be caused by a relationship between the place and the history/culture of the local community [12]. In the research site, elements of modernization and acculturation between local communities and immigrants may obscure the cultural identity held by previous generations.

3.2 The level of place attachment

To categorize and determine the criteria of place attachment's level, this study was using hypothetical statistics. Mean (M), standard deviation (SD), maximum score (Xmax), and minimum score (Xmin) should be calculated in this method. Maximum score is the ideal score when the respondent gets the highest score (4) for each question item, in the contrary the minimum score is the score where the respondent gets the lowest score (1) for each question item. Thus the value of each can be seen; $X_{max} = 4 \times 9 = 36$, and $X_{min} = 1 \times 9 = 9$. Range is the difference in value between Xmax and Xmin, which is $36 - 9 = 27$. The mean or average value is always in the center of the curve whose values are normally distributed. So to determine the mean value is $(X_{max} + X_{min}) \div 2 = (36 + 9) \div 2 = 22.5$. The standard deviation is count by dividing the range into 6 (a normal curve always consists of 6 standard deviations), that is $R \div 6 = 27 \div 6 = 4.5$. Using psychological scale by Azwar, the measurement data was divided into 5 categories (as seen in table 1), while the results of the analysis of distribution frequency using SPSS can be seen in

table 3.

From the analysis of the frequency distribution in table 2, it can be seen that most of the respondents in the community of Tallo Sub-district are in a high (59%) and very high (21%) level of attachment. The high level of place attachment at the community can be predicted by looking at the average time association with the place (length of stay). About 76.2% of respondents have lived in the area for 10 years or more. This phenomenon confirms the findings of previous studies stated that length of stay is the most consistent predictor of place attachment [11]. In addition, property ownership is also a predictor that affects the high level of attachment to a person /group [12], [19]. In the community of Tallo Sub-district, 94.7% of respondents claimed that the status of the land and homes they occupy is their own property; some of them even inherited their occupancies from several previous generations.

Observing the community's behaviours in adapting to recurrent flood showed that the mechanism is done by reinforcing or replacing the structure of their residential buildings, which were originally made of wood and zinc sheets, into more permanent structures of stone and cement. Most of these efforts are carried out independently or in groups with fellow community members. The high level of place attachment can lead to place dependence, which makes it hard for the community to separate from their place [20]. In the community of Tallo Sub-district, the action to repair and strengthen their homes against recurrent floods can be seen as an adaptation mechanism as well as dependency to their place.

4. CONCLUSIONS

Based on the findings from this study, it can be concluded that the level of attachment

at the communities that inhabit recurrent flood-prone areas in Tallo Sub-district, Makassar City is in the high category. This high level of attachment can be predicted by looking at the average length of stay of the population (10 years or more) and the tenure status of the dwelling (mostly self-owned).

The frequency of respondents' responses shows that the condition of place attachment to the community of Tallo Sub-district is influenced mostly by the existence of social interactions that create familiarity between members of the community. This provides a feeling of security living amidst people who are considered to be like one's own family.

The high level of place attachment at the community of Tallo Sub-district has created adapting behaviour to flood that have repeatedly occurred in their environment, by independently or in groups reinforcing their residential structures to make them more resilient to flood risks. However, place dependence as a result of the high level of place attachment can be a barrier to community's resilience in facing threats of disaster. For this reason, further research can comprehensively investigate the effect of place attachment on community resilience in the disaster prone areas.

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