Defining place attachment in community base development program for urban settlement – a theoretical review

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Abstract. Explanation toward community characteristics is required to improve the community empowerment for urban settlement improvement. The aimed characteristic is relation between community and the living space as ‘place attachment’. This paper defines theoretical definition of place attachment in the context of empowerment program. It is a basic perspective of analytical framework of community’s engagement. This paper conducts content analysis technique in building the interrelation among the expert’s argumentations about related matters. As the results there is a hypothesis: place attachment refers to people’s individual perception toward their living-place, leads to their basic motivation of community attachment, and improve their participation.

1. Introduction
This research is initiated by a theory of place attachment, whose one of the definitions proposed by [1] is the experience of long-term ties to a certain geographical region and create an emotional attachment to the place. A person who lives in a certain area for a long time will grow a feeling of affection and a sense of belonging or make the region as part of their identity [2]. Space as self-identity signifies the importance of the physical environment, that shape one's self-identity [3].

2. Place Attachment
Most authors are aware of an emotional sense in the concept of space attachment, but that aspect is elusive [4]. One of the definitions of the spatial attachment conveyed by Giuliani and Feldmen, is that in space attachment there is a long-term bonding experience to a particular geographical area that has meaning to the region [1].

A person who lives in a certain area for a long time will grow a feeling of affection and a sense of belonging or make the region as part of their identity [2]. Space as self-identity signifies the importance of the physical environment, that shape one's self-identity [3]. Initially the theory of place attachment is considered static, but over time the theory is considered more dynamic and constantly changes [2].

For years, the constituent elements of the place attachment have become the attention of researchers. The opinion of Gustafson is used in determining the element of the formation of place attachment consisting of three aspects: from within a person, interaction of a person with others, and interaction with nature [5].
There are three variables with 3 dimensions on place attachment, i.e., [6]:

1. Place attachment in personal context embodies place identity and place dependence [7], [8], [9], [10]. Place identity is an emotional sense for using a place and symbolic relationship toward a place, that makes an identity place a self-identity [3], [10], [11]. Whilst, place dependence is a functional aspect of place that helps in achieving a goal or a need gratification [3], [10], [11].

2. Place Attachment in community context, which can be interpreted as community attachment, means that there is connectivity between the place of residence and the community in it and there is close relation of the individual relationships with social networks in the environment [12]. Perkins and Long (2002) state that social bonding is the relationship between individuals and social network environment [13]. Social bonding can also be interpreted as a sense of belonging to a group or community such as friends, kinship, interests, or sharing the same passion [12], [2], [13], [14], [15], [16], [17].

3. Place Attachment in environment context (Nature Ties) refers to the relationship or bond of the individual with nature (nature bonding). Individual bond with nature has been defined variously some of which are as an environmental identity, emotional affinity to nature, and connectedness with nature.

![Diagram of three variables of Place Attachment](image-url)

**Figure 1.** Three variables of Place Attachment

*Source: [18], [19], [20]*

The variable that builds the place attachment has been the attention on environmental psychology and environmental management in the last two decades, which is then further studied by scientists to acquire the concept of place attachment from both branches of environmental science [18], [19], [20]. Trentelman (2009) suggests that place attachment consists of socio-culture dimension in a place such as community attachment, biophysical dimension that emphasize place arrangement, and integrational dimension of socio-culture dan nature [20].

The researcher is interested in place biophysical dimension that then emphasize that the dimension embodies place identity and place dependence [10]. Place identity refers to self-dimensions, such as the combination of the sense of specific place physical arrangement, and giving symbols on the place that reveals the identity of the individuals or local community [3]. Place dependence refers to a functional aspect of a place usage, for instance, how far a physical arrangement supports the place usage desired by individuals or community [21]. The validity and the dependability of this two-dimensional model are supported by the previous studies in the US [7], [22], [23], [11], [24], [25].
Place identity and place dependence have important relevance to the place variable of nature and the social environment, which is related to the personal place attachment. Gustafson (2001) provides a theoretical framework for personal, other, and environmental variables to highlight the differences of each variable [5]. Personal variables indicate the existence of the place attachment associated with a very personal meaning such as the way of life, emotion, activity, and self-identity. Other variables show the characteristics of the population (population demographics) that affect place attachment. Environmental variables reflect the role of the physical environment in developing place attachment.

Recent empirical studies support the theory. The constantly evolving science is used to measure the extent to which individual relationships with nature (the physical environment) defined as the extent to which one's identity can be reflected from the surrounding physical environment [26], as well as defined as an affinity to nature [27] or connection with nature [28], [29], [30].

The researcher states that in social attachment there are social and geographical aspects that need to get special attention to the theory of place attachment such as sense of belonging and attachment with neighbor ([31], [2], [14], [16].

Brehm, Eisenhauer, and Krannich (2006) examine the two-dimensional relationship of community attachment which are social attachment and attachment to the natural environment. These two dimensions are different and separate from the concept of place attachment, but are closely related to aspects of environmental concern [32].

Scannell and Gifford (2010) developed the theory of place attachment consisting of attachment to nature representing physical aspect and community attachment representing social aspect [19]. These two aspects are clearly linked to the place attachment, but ignore how the physical and social aspects of place attachment can be related to the personal variables of place identity and place dependence [10], [11].

Researchers are now beginning to develop a new model that attempt to integrate the interaction between place as a social site and nature and how supporting activities within that place can help in the formation of one's self-identity [33], [17]. The researcher also tried to relate the aspects of nature and social attachment to place attachment, thus form a place identity [6].

3. Community Attachment

Community attachment is defined as the emotional connection to the place of residence. Community attachments based on social relationships can create emotional feelings for their homes as a result of a shared journey of life [34]. It is also defined that community attachment refers to one's commitment to the place of residence [35]. This commitment can be affective (emotional) or shown by the behavior [36]. Affective dimension (emotional) functions as a glue that connects people to their community [37]. Community attachment in effective (value) consists of 4 forms [38]:

1. Having a sense of belonging to the community
2. Having confidence that a person can impact on the community
3. Having confidence that the community can meet and give satisfaction to the personal needs of each member
4. Having expressions of the reflection of feelings towards the community and among members within the community.

The affective (emotional) and behavioral attachments have almost identical forms, though Beggs, Hurblert, & Haines, Gerson et al (1996) suggest that there is a difference between the two [39]. Some researchers limit the definition of community attachment to behavior in the form of one's participation in the community, which then becomes a benchmark in the community's attachment of value to something [40], [12], [41]. The community attachment of values is also spelled out in the form of a person's feelings toward his or her surroundings, a person's knowledge of the activities occurring in his or her living environment, and the feelings of a person to remain or move out of his or her place of residence [42].

Another dimension contained in the concept of community attachment is the attachment to the environment. Stedman, Beckley, and Brehm (2002) emphasized the importance of the environment in
shaping community attachment [43]. Hummon (1990) argues that community attachment is based on relationships or local social networks that are influenced by elements of the natural environment [34].

There are two models of community attachment based on various literatures ([37]:

1. Linear model, in this model there is an assumption that the increase in population and population density will cause the weakening of social ties
2. The Alternative Model presented by Kasarda and Janowitz (1974) suggests that those who control the community are friendship, kinship, and social networking [12].

Previous studies on community attachment provides an overview of factors that can improve the bonding of one's feelings with the place of residence: (1) duration of residence and life experiences, (2) social conditions, including friendship, kinship, organizational relationships and daily expenditure patterns, (3) the quality of occupancy and ownership, (4) a sense of security that affects on the satisfaction of the physical quality of the environment [44].

Community attachment is different for each individual, where those with high regional sense can certainly form emotional feelings with their place of residence, but community attachment can be said to be weak if associated with residence in urban formal housing [44].

Eventually, the individual attachment to the community is complex, influenced by ecology, the size and type of society, social class in society and local environmental quality and population perceptions of the quality of the environment [44]. Community attachment is also a social integration of human beings with their places of residence, such as the duration of residence, and life cycle stages.

4. Community Attachment Measurement Method: Social Network Analysis (SNA)

One of the place attachment variables is the social variable that is attachment between community members (community attachment). Social networking is one of the parameters of social capital. The dynamic infrastructure of social capital is the network of interpersonal cooperation, the network facilitates communication and interaction, enabling the growth of trust and strengthening cooperation. A healthy society tends to have strong social networks. People know and meet other people. They then built strong inter-relationships, both formal and informal argues that close social networks will strengthen the feelings of the cooperation of its members and the benefits of its participation. Social networks contain at least the element of compactness or density, the frequency of meeting in the concept of discussion at the level of participation (rate of participation), as well as the span of control and the stages of relationship (centrality).

SNA is defined as the mapping and measurement of relationships and interactions within a unified local entity involving people, community groups, information, and various social services within it. Social networks are the study of social entities (e.g.: the role of a person in an organization) and the interactions and relationships among entities [45].

Wasserman and Faust, define social networks as social relations perspective of society which includes theory, model, and application expressed in relational concept [45]. That is, social networks are defined by the relationship between units within a basic component of a network with four SNA principles as follows:

1. Actors and their actions are seen as interdependent relationships and are not independent. Action performed by respondents in a network is considered as interpersonal relationships among respondents who will impact one another.
2. Relational relationship between actors is a network to transfer resources (both material and non-material). Connection networks are social capital, and networks that are rich and well structured can provide a high level of social capital for the actors within them.
3. Network capital focuses on individuals who see the structural network environment, thus provide opportunities for various problems on actions that occur in each individual.
4. Social networking capital describes social structures (social, economic, political, etc.) as a pattern formed from relationships between actors.

From the SNA analysis, it is assumed that everyone is interdependent, without overriding attributes and individual roles. SNA also includes relational data or network (data that contains the existence of
ties and relationships). SNA has an advantage in assessing a situation in depth. Most of the existing policy reviews consider one's actions, thoughts, and feelings to be independent of other actors. Such conventional approaches as stakeholder analysis only list the actors involved, write down attributes (self-attached information) and list the roles of each actor. The most common mistakes in conventional analysis are less precise in determining the most influential actors in a given situation.

In this study, social network is measured by social network analysis method, which is divided into 3 analyzes [45]:

1. **Density**

   Density analysis is conducted to determine the density of public relations. According to Wasserman & Faust, the value of density in an interpersonal relationship can be interpreted as the average number of activities occurring by each pair of actors. Density values can also be used to see how large the proportion of respondents who share membership in each institution. The density value is in the range 0-1. The closer to 1 the density value, the better the public relations density is.

2. **Rate of Participation**

   The rate of participation analysis is conducted to determine the level of community participation. To illustrate more clearly, the value of the participation rate is classified into three classes: low, medium, and high, using the statistic formula of range, class, and length of intervals.

3. **Centrality**

   This analysis is used to determine the keyperson or the individual who play the most role in the community, and is used as the recommendation of the most influential community leaders who can bridge the information of local communities with outsiders, both government and private or other community groups.

   Centrality analysis is done through 3 stages: degree centrality (knowing the central figure based on the number of networks to the respondent), betweenness centrality (knowing the central figure bridging interaction between respondents) and closeness centrality (knowing central figure based on the closest relationship among respondents).

   1. **Degree centrality**

      To measure the level of centrality that can be compared across networks of different data sizes. Degree centrality shows the central figure most widely known by the public.

   2. **Closeness centrality**

      Average distance between nodes with all other nodes on the network. This measure depicts the proximity of one node to another. The shorter the distance of the node, the closer the relationship of respondents to other respondents.

   3. **Betweenness centrality**

      This measure identifies boundary spanners, i.e. respondents or nodes that act as connectors (bridges) between communities/community groups. Betweenness centrality is a node calculated by summing all shortest paths containing the node.
5. Conclusion and recommendations
The concept of place attachment and community attachment sometimes becomes confusing when viewed only from the external surface only, but if examined through the elaboration of existing theories the distinction is clear. Community attachment is one of the constituent elements of the place attachment, where the attachment of place occurs from the experience of life experienced by a person in the long term toward a particular region so that the region has special meaning for each individual. Life experience consists of various elements of interaction, one of which is the attachment of society. Community attachment is a deeper social condition that occurs among individuals residing in the region, thus creating an emotional feeling for each individual. Measuring the attachment of the community can be indicated by looking at the closeness between individuals depicted through the social network formed by SNA analysis, which then from the closeness of the individual it can be seen from the similarity of public perception to their settled areas. The similarity of emotional thinking and feelings arising from community attachment can reflect the local wisdom or identity of the region, so that the living space becomes more meaningful. It is a manifestation of their attachment to space as a place to live.

6. References
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