Social Capital and Public Participation on Planning in Coastal Area Development

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Abstract. Indonesia is one country to the world that rich with natural resources, especially on marine and coastal resources. But, the condition of rural inhabitants in coastal area still low in economic condition and public facilities and others not suitable for good living environment. The goal of this paper is to integrate the concept of social capital and public participation in the community activities. Social capital, which is interpreted with the term of the trust, networks and norm as governing human behavior is significant to motivate and coordinate collective action towards collaboration. Collective action or collaboration among people in the communities could solve the problem together. In the Grootaert research, with the title “Social Capital, Household Welfare and Poverty in Indonesia” (1999) found that active participation in decision making and memberships in heterogeneous organizations further reduce the likelihood to be poor. In this research, we found the same from Grootaert finding, that social capital (trust) has positive impact to community activities (path point 0.56) in this research location.

1. Introduction

Indonesia is one country in the world that rich with natural resources, thus putting the country in third place as a country that has high bio diversity (mega bio diversity). It’s potency can be viewed from a wider variety of marine life, including a variety of fish and various types of mammals and marine animals. Indonesia also has potency in coral reefs. It is consist of various types, and dominated by corals. Coral reefs approximately 42,000 Km2 or 17% of the world's coral reefs and ranked as the second largest coral reef in the world after Australia. It is generally served as a spawning (spawning ground), foraging (feeding ground), care (nursery grounds) fish and other marine life, retaining abrasion, and can be made object / nautical tourism.

Likewise, coastal area has many potencies too. It’s known as the marine ecosystem enormous resource potential and an opportunity for an increase in productive economic activity. One of the examples of the coastal region is Banyuanyar village, Sampang Regency, East Jawa province.

As a coastal region, the Banyuanyar Village has a variety of potential natural and human resources. Banyuanyar village is one of the largest fish producer in Sampang regency. The most of the inhabitants work as fishermen and processing the fish. The residents of a fishing village able to process fish into products that market oriented and has high resale value. The natural resource potential is also supported by the human resource, where the population has had a high work ethic and the spirit of togetherness (high level of social capital).
High activity inhabitants in the public or community activities, actually shows a high level of social capital. High levels of social capital will facilitate the community to solve problems together. In accordance with the concept of social capital are:

“Social capital, which is interpreted with the term of the trust, norms, networks and identity as governing human behavior is significant to motivate and coordinate collective action towards collaboration. Social capital such as trust, norms, and networks that can improve the efficiency of society by facilitating coordination action (Bourdieu, 1983; Coleman, 1994) in Kobayashi et.al., (2012).

Grootaert in his research, with the title “Social Capital, Household Welfare and Poverty in Indonesia” (1999) found that active participation in decision making and memberships in heterogeneous organizations further reduce the likelihood to be poor. As the literature on social capital has often argued, for local associations to be effective, members must participate actively. Grootaert results suggest that this is not achieved per se by attending meetings (which in Indonesia is often obligatory) but by participating actively in the decision making process. Households that active in community meeting are presumably better able to reap the benefits from the associations.

Based on the above understanding, the aim of this paper is to empirically prove the effect of “trust” as social capital construct on activity’s respondent in the community activities. So, we develop a hypothesis: higher level of social capital could improve inhabitants activity in the community activities. This research tries to measure the relation between social capital and community participation in the community activities using the concept of ‘network’. It is a concept explained by different factors, some of which are observable, while others are unobservable to the researcher. Observable factors are data from the survey related to the demographic characteristics (income, and education); while for unobservable factors we create data from questions in the questionnaire survey. We measured this relation with the answers of questions in questionnaire survey about the respondent network to their living environment/village, their neighbor's and how their norms.

2.Methods

2.1 The study area
The study area lies in Kampung Nelayan, Banyuanyar village administration, in the District Sampang, of Sampang Regency. Size of Banyuanyar Village (Kampung Nelayan) is ± 34.39 hectares (Figure 1).

2.2 Sample selection

2.2.1 Sample selection. Sampling technique used in this research is purposive sampling (Hamidi, 2008).

2.2.2 The numbers of the sample. We choose total amount of the samples are 89 inhabitants. The criteria for the sample are representative of the people who work as fishermen, fish merchants
and processors of fishery products. This sample used as a representative of the number of fishing communities in the Kampung Nelayan.

2.3 Method
We used descriptive and evaluative analysis to answer the problem identification, based on the data in the study area to assess the physical and non-physical condition. Besides, we also used PRA (participatory rural appraisal), a participatory method to assess the potential and problems of public participation in the terms of the study area.

To measure the level of social capital and the relation with community activities in this research area we use structural equation model that we run on Mplus software.

3. Social Capital Concept
Social capital, which is interpreted with the term of the trust, norms, networks and identity as governing human behavior is significant to motivate and coordinate collective action towards collaboration. Social capital such as trust, norms, and networks that can improve the efficiency of society by facilitating coordination action (Bourdieu, 1983; Coleman, 1994) in Kobayashi et.al., (2012). Social capital improves participants’ monitoring, reduces free-riders, thus mutual bonds of trust.

Communities with high levels of social capital are more effective at exercising social control over deviant and uncivil behaviors (Subramanian et al. 2002; Sampson et al. 1997). Similarly, weaker social ties directly increase vulnerability to crime by decreasing the likelihood of receiving deterrence, help or information from neighbors and limiting connections to and thus help from police and other institutions (Bellair 1997; Kennedy et al. 1998), although this effect may vary by type of community or, in the present study, cross-culturally between countries (Mihaylov and Perkins, in press).

At the individual level, Perkins and Long (2002) proposed a two-by-two social capital framework: one dimension distinguishes intrapsychic (cognitive/affective) from behavioral responses; the other contrasts informal/spontaneous versus formally organized responses. This yields four components of psycho-behavioral, social capital: the informal, affective component is social bonding (or sense of community); the informal behavior is neighboring; the organized, cognitive component is collective efficacy (or empowerment); the organized behavior is citizen participation.

People gain access to social capital through membership in interpersonal networks and social institutions and then convert it into other forms of capital to improve or maintain their position in society (Coleman 1988). As example: Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants to one another through relations of kinship, friendship, and shared community origin. Network connections increase the likelihood of international migration because they lower the costs and risks of movement and increase the expected net returns to migration. Having a tie to someone who has migrated yields social capital that people can draw upon to gain access to an important kind of financial capital, that is, high foreign wages, which offer the possibility of accumulating savings abroad and sending remittances home (Pauline et al., 2001).

Based on Grootaert research, in his study on “Social Capital, Household Welfare and Poverty in Indonesia” (1999) found that active participation in decision making and memberships in heterogeneous organizations further reduce the likelihood to be poor. The memberships in associations that bring together people from different neighborhoods and kin groups also reduce the probability to be poor.

As the literature on social capital has often argued, for local associations to be effective, members must participate actively. Our results suggest that this is not achieved per se by attending meetings (which in Indonesia is often obligatory) but by participating actively in the decision making process. Households that active in community meeting are presumably better able to reap the benefits from the associations.
4. Characteristic of the Research Area

4.1 The physical characteristic

4.1.1 General physical characteristic. The topography of Kampung Nelayan Village Banyuanyar is a lowland area has a slope of 0-6% (flat), at the height of the space between 0-2 meters above sea level. Kampung Nelayan Village Banyuanyar traversed by the river Kemuning used as transport infrastructure and a source of irrigation ponds.

4.1.2 Land use. The land use in Kampung Nelayan Village Banyuanyar can be seen in Table 1.

Table 1. Land Use

| No | Land Use          | Size (Ha) | Percentage (%) |
|----|-------------------|-----------|----------------|
| 1  | Settlement        | 21.60     | 62.81%         |
| 2  | Fishpond          | 6.70      | 19.48%         |
| 3  | Port              | 1.45      | 4.22%          |
| 4  | Trade and services| 0.63      | 1.83%          |
| 5  | Education building| 0.60      | 1.74%          |
| 6  | Office buildings  | 0.15      | 0.44%          |
| 7  | Industrial /      | 1.29      | 3.75%          |
|    | warehousing       |           |                |
| 8  | Open Space/Fields | 1.97      | 5.73%          |
|    | **Jumlah**        | **34.39** | **100**        |

The most dominating functions in Kampung Nelayan are a comprehensive settlement in 21.6 ha or by 62.81% of the total area.

Figure 2. Land Use Map

4.2 Nonphysical characteristic

4.2.1 Population. Banyuanyar village size is 34.39 hectares, with the total population of 1,344 inhabitants divided in 448 households. Composition of population by sex are 696 male and 648 females. According to the Profile of Banyuanyar village from the total inhabitants 1,344 people (448 families), 1,241 inhabitants (413 families) are poor. Poverty is due to the majority of residents livelihood in Banyuanyar village are fishermen who do not have a steady income. The largest number of inhabitants is working as a fisherman (821 inhabitants) or 91.43%. The second type is the greatest
work of civil servants by 21 inhabitants or 2.34%. The lowest is the number of private teachers (4 people) or 0.45%. The result from fishing in Kampung Nelayan Banyuanyar are fluctuations, unpredictable, and decline each year. Here is a marine fish production (Table 2).

**Table 2. Marine Fish Production**

| NO | Fish Species | Production (days) | Price/Kg (RP) |
|----|--------------|------------------|---------------|
| 1  | Peperek      | 1-2 Ton          | 1.000-2.500   |
| 2  | Ekor Kuning  | 1 Ton            | 2.000         |
| 3  | Selar        | 1 Ton            | 3.000         |
| 4  | Lemuru       | 2-6 Ton          | 1.000-1.400   |
| 5  | Kembung      | 1-2 Ton          | 4.000         |
| 6  | Tongkol      | 2-3 Ton          | 3.000-5.000   |
| 7  | Udang dan lainnya | 1 ton | 15.000       |

There is also a group home industry fish processing in the fishing village, the majority industry is boiled fish (34), bloater (18) drying fish (5), fish paste (6), shrimp paste (3) fish refrigeration (7), with the number of production (ton):

**Table 3. The Numbers of Production**

| No | Type of Fish Product | Total (Ton/production) |
|----|----------------------|------------------------|
| 1  | Boiled fish          | 49.8                   |
| 2  | Bloater              | 17.8                   |
| 3  | Drying Fish          | 12.2                   |
| 4  | Fish Paste           | 0.4                    |
| 5  | Shrimp Paste         | 0.2                    |
| 6  | Cool box             | 35.2                   |

The data show that the home processing industry is able to absorb the existing workforce in the Kampung Nelayan village. The number of workers absorbed by each business unit depends on its business scale, which is the majority of workers in the fishing village home industry are women.

5. Community Activities and Social Capital

There are a number of dimensions to social capital and to measure its level. Standardization in measuring social capital is still far away (Lin, 2001). There has been an abundance of ad-hoc measures, often derived from data not specifically designed to measure it but that happened to be available readily for analysis. This has made a thorough and specific testing of social capital theory difficult for structural comparison.

Latent variables were used to define the concept social capital. We have designed some questions in the questionnaire survey to measure the use of three components of social capital. They are: (1) norms; (2) networks; (3) and trust. We sought response on trust, network and trus (10 questions) and participation in community activities using 5 questions.

5.1. Community activities

The participation on community activities could measure from the technical stage of settlement planning and poverty reduction. The level of community participation in the five community activities
are:
- The readiness of the community meeting (ACT1),
- Focus Group Discussion (FGD) as (ACT2),
- Participatory Rural Appraisal (PRA) as (ACT 3),
- Participatory Planning (metaplan) as (ACT4) and
- Preparation and submission of the proposed activities (ACT 5).

5.1.1 The readiness of the community meeting
Indicators Meeting Community Preparedness have four benchmarks, namely (1) the public present at the meeting (min 75% attendance); (2) the community actively discussing (the suggestions / advice) in a meeting, (3) people involved in the discussion of preparedness or unpreparedness of society to carry out participation planning; and (4) community involved in the selection of the public cadres. Here are the results of the calculation of each of its benchmarks.

Table 4. Community Preparedness Meeting

| Indicators                                                                 | Attend (person) | Total Sample | Percentage | Total |
|----------------------------------------------------------------------------|-----------------|--------------|------------|-------|
| The community attend at the meeting (min attends 75%)                      | ≥75%            | 19           | 89         | 21.3% | 100% |
|                                                                             | < 75%           | 70           |            | 78.7% |      |
| Active in discussion                                                       | Active          | 11           | 89         | 12.4% | 100% |
|                                                                             | Not Active      | 78           |            | 87.6% |      |
| Involve in every decision making regarding to the planning that will implement | Involve         | 19           | 89         | 21.3% | 100% |
|                                                                             | Not involve     | 70           |            | 78.7% |      |
| Involved in the selection of the public cadres                             | Yes             | 19           | 89         | 21.3% | 100% |
|                                                                             | No              | 70           |            | 78.7% |      |

There are 19 participants or 21.3% of 89 attend the community preparedness of the Meeting and around 70 other people generally do not attend. This is caused by the activities did in working hour/labor time and the rest not attend because they have not got information about the activity.

In the discussion stage, participants who actively provide suggestions or advice are 11 people or 12.4%. They like to give a suggestion regarding to economic, physical and social form, whereas suggestions from the public is that the aid target.

Furthermore, in the dealing for readiness to implement participatory rural planning activities there are 19 people or 21.3% expressed their readiness. The next activities is to select community cadres. Participants involved in the selection of cadres are 19 people or 21.3% from the total samples.

5.1.2 Focus group discussion (FGD)
Focus Group Discussion (FGD) in this research study held to coincide with the implementation of the Village Council Development Plan (Musrembangkel). This activity attended by 22 participants comprising representatives of each block.

We use focus group discussion (FGD) to collect data regarding to (i) public meeting, (ii) active in the discussion and (iii) community involve in the decision of FGD result about poverty and environmental management. Here are the results of the calculation of each of its indicators.
Focus Group Discussion (FGD) attended by 22 participants or 32.8% who want to involve in the decision of FGD result about poverty and environmental management. There are many inhabitants did not attend because the discussion in the working time and some people did not receive information about the activity.

In the discussion stage, participants who actively provide suggestions or advice as many as 18 people or 20.2%. Proposed discussion given which are the causes of poverty and the potential of a fishing village. Participants also provide many physical development activities proposed docks at the supporting port because it is considered very important for the advancement of the economy of the fishing village.

Furthermore, in the FGD decision, there are 22 people or 32.8% agree. The total inhabitants who involved in the selection of cadres total 19 respondents or 21.3% of the total samples taken.

### 5.1.3 Participatory rural appraisal (PRA)

We measure Participatory Rural Appraisal (PRA) with 5 indicators, namely: (i) attend at the meeting (min 75%), (ii) Active in the PRA activities, (iii) Involve to coincide map and the potency of social and economic, (iv) the society engaged to coincide map and problem identification of ecological, environment than physical; and (v) involve to coincide PRA. Here are the results of the calculation of each of its indicators.

### Table 5. Indicators of Focus Group Discussion (FGD)

| Indicators | Attend (person) | Total Sample | Percentage | Total |
|------------|----------------|--------------|------------|-------|
| The community attend at the meeting (min attends 75%) | ≥75% | 22 | 89 | 32.8% | 100% |
| | < 75% | 67 | | 67.2% | |
| Active in the discussion | Active | 18 | 89 | 20.2% | 100% |
| | Not Active | 71 | | 79.8% | |
| Involve in the decision of FGD result about poverty and environmental management | Involve | 22 | 89 | 32.8% | 100% |
| | Not involve | 67 | | 67.2% | |

### Table 6. Indicators for Participatory Rural Appraisal (PRA)

| Indicators | Attend (person) | Total Sample | Percentage | Total |
|------------|----------------|--------------|------------|-------|
| Attend at the meeting (min 75%) | ≥75% | 26 | 89 | 29.2% | 100% |
| | < 75% | 63 | | 70.8% | |
| Active in the PRA activities, | Active | 20 | 89 | 22.5% | 100% |
| | Not Active | 69 | | 77.5% | |
| Involve to coincide map and the potency of social and economic | Involve | 26 | 89 | 29.2% | 100% |
| | Not involve | 63 | | 70.8% | |
| The society engaged to coincide map and problem, identification of ecological, environmental and physics | Involve | 26 | 89 | 29.2% | 100% |
| | Not involve | 63 | | 70.8% | |
| Involve to PRA agreement | Involve | 26 | 89 | 29.2% | 100% |
| | Not involve | 63 | | 70.8% | |
The implementation of the PRA attended by 26 participants or 29.2% of the samples. In the discussion stage, participants who actively provide suggestions or advice are 20 people or 22.5%. Information given them the range of economic conditions, physical and social and cultural fishing village.

The map for the project location should be discuss first to get an information regarding to the issues. The issues are economic potention, social, and cultural.

5.1.4 Metaplan

Metaplan has four indicators, namely (i) the public present at the meeting held (min 75% attendance), (ii) the community actively discussing (the suggestions / advice) in a meeting, (iii) people involved in agreement about potential and problems of the region, (iv) the people involved in the agreement about priority programs and projects.

| Table 7. Metaplan Indicators |
|-----------------------------|
| Indicators                  | Attend (person) | Total Sample | Percentage | Total |
| The community attends       | ≥75%            | 19           | 89         | 21.3% | 100% |
| at the meeting (min         |                |              |            |       |      |
| attends 75%)                | < 75%           | 70           | 89         | 78.7% | 100% |
| Active in discussion        | Active          | 11           | 89         | 12.4% | 100% |
|                             | Not Active      | 78           | 89         | 87.6% | 100% |
| Involve in agreement        | Involve         | 16           | 89         | 18%   |      |
| about potential and         | Not involve     | 73           | 89         | 82%   | 100% |
| problems of the region      | Involve         | 20           | 89         | 22.5% |      |
| The people involved in      | Not involve     | 69           | 89         | 77.5% |      |
| the agreement about         |                |              |            |       |      |
| priority programs and       |                |              |            |       |      |
| projects.                   |                |              |            |       |      |

The first indicator attending to community meeting there are 19 respondents or 21.3% respondent involved. All indicators for metaplan, the majority of the respondents answered not active nor not involved.

5.1.5 The preparation and submission of proposed activities

Preparation and Submission of Proposed Activities carried out concurrently with the metaplan, because this activity is a follow up to the selection of priority programs and projects that will be proposed.

There are two indicators to formulation and preparation the proposed activities in the community. (1). The community decided by themselves physical project that will implement; (2) The community makes the budged for the project by themselves. Here are the results of the calculation of each of its indicators.

| Table 8. Indicators The Preparation and Submission of Proposed Activities |
|-----------------------------|
| Indicators                  | Attend (person) | Total Sample | Percentage | Total |
| The community decided by    | Yes             | 26           | 89         | 29.2% | 100% |
| themselves physical project | No              | 63           | 89         | 70.8% |      |
| The community makes the      | Yes             | 6            | 89         | 6.7%  |      |
| budged for the project by    | No              | 83           | 89         | 93.3% | 100% |
| themselves                 |                |              |            |       |      |
The table shows that in the preparation and submission of proposed activities, communities involved in the small numbers (only 29.2%). It means that the participation of the respondent is very low. Look the same for the second activities (the community makes the budget for the project by themselves), it's more difficult so less people involved.

5.2. Social Capital

We design latent variable to measure social capital level by 10 (ten) questioner related to:

| Table 9 Variable to measure social capital |
|-------------------------------------------|
| Variable            | Sub-variable                  |
| Trust               | Honesty                       |
|                    | Help each others              |
|                    | Trust to relatives            |
|                    | Trust to neighbors            |
|                    | Trust to government           |
| Social Capital      | Network each members          |
|                    | Network individu with group   |
|                    | Network individu with communities |
| Norms              | Attitudes towards norms       |
|                    | Attitudes towards sanctions   |

Sources: Various references and ideas of the author

6. The Model

This study proposes more than one latent variable (i.e., norm, network and trust) that explains the causal relationship among observed variables based on structural equation and applies structural equation model (SEM). The level of social capital interprets from the relationship between norm, network and trust.

6.1. Estimation of the model

The next stage of the analysis involves running structural equation model (SEM) with Mplus analysis software. Structural equation modeling (sometimes called path analysis) employed to gain additional insight into causal models and explore the interaction effects and pathways between variables. This analysis (SEM) gives us more rigorously test whether our data supports our hypotheses.

Models were tested using SEM goodness of fit tests to determine if the pattern of variances and covariances in the data is consistent with structural (path) models theoretically specified. We conducted an SEM analysis on the correlation between independent variables to understand the indirect effects. SEM is multivariate regression in which the response variable in the regression equation may become predictor in another equation (Schumacker and Lomax, 2010). This allows us to account for correlations and to distinguish direct and indirect effects of our exogenous and latent variables social capital formation. For estimation where the dependent variable is a dichotomous outcome (binary discrete choice model), we use the robust (mean- and variance adjusted) method of Weighted Least Square (WLS) also known as WLSMV (Muthén and Muthén, 2012). In general this method is preferable to Maximum Likelihood (ML) estimation when the data are severely non-normal distributed (Olsson et al, 2000).

We test several different model specifications, and we chose the model with goodness of fit higher than 2 (RMSEA, CFI and TLI). For the individual and regional attributes and community activities variables, we designed a path based on the goodness of fit of each model. We finally selected variables and model structure with the highest estimation accuracy.
Our final model with the best model fit are $\text{CMIN/DF} = 1.332$, $\text{CFI} = 0.989$, $\text{TLI} = 0.986$ and $\text{RMSE} = 0.041$). In general $\text{CFI}>0.95$, $\text{TLI}>0.95$, $\text{RMSEA}<0.05$ and $\text{WRMR}<1$ can be indications of good models (Yu, 2002). $\text{CFI} =$ Comparative Fit Index; $\text{TLI} =$ Tucker-Lewis Index; $\text{RMSEA} =$ Root-Mean-Square Error of Approximation; $\text{WRMR} =$ Weighted Root Mean square Residual (WRMR is suitable to evaluate models with non-normally distributed outcomes). The structure of this model is further illustrated in Figure 3.

![Figure 3. The Model](image)

Furthermore, there are significant paths for activities in the communities from the latent variable “trust”. Norms and networks has significant value to “trust”. Trust are constructed by the two variables (T1 and T2) suggested by the PCA which all are found significant though the importance of the exogenous variables varies. Income has direct path to trust, and education giving impact on norm. The relation among social capital construct shows that norm has direct paths to network and trust, and network has direct path to t. This result confirms our chosen construct name, i.e. the trust is the central theme for this construct.

Figure 3 demonstrate that the respondents who have higher trust each other have significant impact to active in community activities. The estimated value from trust to community activities is 0.95 and the t value (C.R) is more than 1.96 (5.292). It means that if the trust increase, then it will have a significant effect to involve/active in community activities.
7. Conclusion

7.1 Physical characteristic
The land use is dominated by settlements. It means that all conditions are fulfilled, but there is still a shortage of public health facilities. The infrastructure for housing like water infrastructure services is still not evenly distributed, and they still need for toilet and TPA / TPS.

7.2 Social capital and community activities
In this paper, we measure the relationship between social capital and community activities for coastal area development. We use the concepts of norm, network and trust to measure the relationship of social capital and community activities. The aim of this study is to investigate the relationship between social capital and community activities. The analysis is based on a survey of community activities in Banyuanyar village which is typical of coastal area in Indonesia. Section 3 first describes the concept of social capital and analyses it based on previous studies on norm, network and trust. Here we find the possibility of forming social capital from the concept of norm, network and trust, and how the participation on community activities. In Section 4, we present the characteristics of research area. Section 5 explained the respondent participation on the community activities; and the component of social capital. Last in the Section 6 we present the structural equation model to measured the relationship between latent variables and observe variables. From the structure of the model, we could estimate the relation between social capital and community activities.

Our study shows that trust positively has a significant impact to active in community activities. We have confirmed our hypothesis that households with higher social capital is will active in the community activities. Our current model so far could explain the relation between social capital and community activities, but we need to do the next the research to calculate the policy implication on it’s.

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