Analysis of Construction Contract Project Comparison with PNPM Based Projects in Construction Projects (PPIP Project Implementation Study In Tuban District)

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Abstract: The implementation of construction projects generally carried out in construction contracts results in community apathy because they are not actively involved in the planning, implementation and maintenance operations of construction projects. The government launched the National Community Empowerment Program (PNPM). One of the PNPM programs initiated was the Rural Infrastructure Development Program (PPIP). Election Implementation of a construction project using a construction contract or community empowerment by considering several criteria and sub criteria so that the implementation of construction projects can be carried out effectively and efficiently. The measures discussed in implementing construction projects are time, cost, quality, community participation, administration, and independence. The Analytical Hierarchy Process (AHP) method is used to analyze the results of the questionnaire so that the criteria and sub criteria weighted as a consideration for the selection of construction projects. Based on the results of the analysis, we obtained the weights of the construction project implementation criteria, namely: time with a load of 0.198, costs with a capacity of 0.203, quality with an amount of 0.178, community participation with an amount of 0.118, administration with a weight of 0.139 and independence with a weight of 0.139. Then it is known that the construction contract weight is 1.045 and the influence of community empowerment is 0.955. Furthermore, the calculation of alternative weights carried out so that the criteria obtained: time, quality and administration took into account in the construction contract. Considerations: costs, community participation, and independence are taken into consideration by the project in community empowerment. Based on the results of the analysis shows that the implementation of construction projects is better done using a construction contract because it explicitly incorporated in its accountability. The cost criteria are the most significant factor and sub-criteria the accuracy of the start schedule of implementation occupies the highest score in the selection of the application of the construction contract.

Keywords: construction contract, community empowerment, Analytical Hierarchy Process (AHP) method

1. Introduction

In general, the development that has carried out so far is top-down. The role of government institutions from the initial idea stage to project implementation and maintenance is very dominant. The aspirations of the community in the development process have not been adequately accommodated, resulting in apathy from the city. In development, especially construction projects that are top-down, the role of the population is only as the recipient of...
decisions or the results of a program without knowing the course of the program. The city sees a lot of physical development around it, but the social aspects of their lives are less touched, causing apathy and a sense of lack of development results, especially physical construction. Creative ideas in society cannot fully be implemented in the development process. To foster enthusiasm and increase active participation and community participation, the government launched a national participatory community program called the National Community Empowerment Project (PNPM). One of the PNPM programs that have been launched is the Rural Infrastructure Development Program (PPIP). The program began in 2007 and came entirely from the aspirations and creative ideas of the community from the stage of identification, implementation, utilization to maintenance. In its implementation, the community empowerment project must follow the rules and guidelines issued by the government. This empowerment program is one of the government's efforts to alleviate poverty in rural areas. The BLM financing comes from the State Budget, whose implementation adjusted to the principles, intentions, and objectives of the program. The policies of empowerment projects, especially PPIP, are the selection of activities carried out through village deliberations and accepted by the community at large (Acceptable). Organizing activities are carried out openly so that all elements of society are known (Transparent), activities carried out by the community can be accountable. Activities carried out can be beneficial in a sustainable manner (Sustainable).

1.1. Formulation of the problem
Based on the description above, problems will arise:
1. How to analyze the selection of construction project implementation between construction contracts or community empowerment?
2. What factors (criteria and sub criteria) are most influential in the selection of construction projects?
3. How is the effectiveness of construction contract projects compared to community empowerment projects?

1.2. Research objectives
Research objectives are as follows:
1. Analyzing the selection of construction project implementation by construction contract or community empowerment.
2. Determine the weight of the factors (criteria and sub criteria) that are most influential in the selection of the construction project implementation.
3. Choose the implementation of the contractual project with a community empowerment project.

2. Literature Review
2.1. Previous Research
In the Scientific Journal entitled Comparison of Community Self-Management Systems and Contracting Systems for Handling Communal Building Infrastructure in Settlements in Batu City revealed that in the framework of carrying out communal infrastructure construction, the Batu City Government had implemented a project with a construction contract system that is carried out by the Construction Service Business Entity or with a self-management system by the community [1][2]. The implementation of public development in the work of Wastewater Treatment Plant (WWTP), paving the road, environmental drainage in Batu City has been carried out, both in self-management and in construction contracts. Taking into account these conditions, it is necessary to study more deeply about the comparison of self-management
systems with the contract system regarding human resources, funds, quality, implementation time and maintenance operations. From the above background can be formulated namely the stages - the implementation of the project and choose the pattern of handling the application of communal settlement infrastructure work between the self-management system and the construction contract system. The research objective is to find out the comparison between the stages of project implementation and choose the appropriate handling pattern. The Analytic Hierarchy Process (AHP) method is used in this study to determine the criteria and sub-criteria for determining decisions for multi-criteria cases that combine qualitative and quantitative factors in the overall evaluation of available alternatives. In decision making, it generally found that the problem of determining the weight of each activity according to the level of importance. In determining the valuation between alternatives under specific criteria, pairwise comparisons used[3][4].

In the International Journal of International Engineering Science and Technology Research Vol. 1, No. 7, June 2013, PP: 98-109, ISSN: 2326-3113, entitled Application of AHP Method for selecting the best environmental reduce strategy, demage caused by a non metallic mining Case study in Gunungkidul Regency, Yogakarta, Indonesia, Kholil and Rahma Oktaviani using the AHP method is used to analyze strategies to control the impact of environmental damage due to mining/mineral excavation class C in Gunung Kidul Regency, Yogyakarta. In this study, the steps of the AHP method used: criteria factor decomposition, making pairwise comparison matrix, calculating priority weights and calculating consistency ratios. The criteria analyzed are availability of employment opportunities, increase in local revenue (PAD), smallest risk, technology, most significant economic income, policy, and infrastructure support, support from local communities.

2.2. Basic Theory
Construction is the activity of building facilities and infrastructure in the field of architecture (building construction) and civil engineering. Development can also be defined as the overall object of a building consisting of parts of the structure [5]. As an activity, the development includes of some different events. In one construction activity, it is possible to have a sub-qualification from the field of work carried out. Before implementation, construction activities begin with integrated planning to determine the number of costs required, engineering, the need for OSH supporting equipment and equipment when construction work is carried out. A good planning schedule will determine the success of a development related to funding, environmental impact, availability of equipment, availability of building materials, logistical public inconvenience related to construction work, preparation of documents and tenders, and so on.

2.2.1. Definition of Construction Projects
Construction Project is an activity that has a certain period with the limited allocation of resources, to carry out a specified construction development objective. According to [6][7][8], the project is a combination of various resources, which are collected in a temporary organization to achieve a particular goal. Activities or tasks carried out in the project are in the form of construction/repair of facilities (buildings, roads, bridges, dams and so on) or can also be in the way of research activities, development. Project activity is a temporary activity that takes place in a limited period, with the allocation of specific resources and intended [9][10][11].
2.2.2. Definition of Community Empowerment

The description of community empowerment refers to the word Empowerment, which is an effort to actualize the potential that exists by the community. An approach to community empowerment in community development efforts that are concerned with the emphasis on the importance of independent local communities as a system in organizing themselves. Such a community empowerment approach will give a role to individuals who are not objects, but as community actors or actors in determining their own lives. [12][13] said that empowerment is seen to help clients by generating energy in making decisions and determining actions that they will do throughout life, including reducing the effects or consequences of symptoms on the community or individuals to train so that the power grows by increasing self-confidence capacity, among others through the transfer of power from the environment.

2.2.3. Analytical Hierarchy Process (AHP) Method

This AHP method is a support model developed by Thomas L. Saaty which is a decision support model to describe complex multi-factor or multi-criteria problems into one hierarchy, whereas according to [14][15] hierarchy is defined as a presentation of a complex issue from a multi-level structure, starting from the goal level, factor level, criteria, sub criteria and so on to the lowest level or alternative level. So that from a very complex problem will be broken down based on the groups that arranged in the form of a hierarchy so that the issue will be a form of structured and systematic issues.

The AHP method is often used in a problem solving compared to other purposes; this is because:

1. The hierarchical structure is a consequence of the criteria chosen to the most in-depth sub criteria.
2. The AHP method takes into account validity up to the tolerance limit of various criteria and alternatives chosen as decision making.
3. The AHP method can take into account the durability of the sensitivity analysis output decision-making.

3. Data Analysis and Discussion

3.1 Research Object

The object of this research is the community empowerment-based construction project (PPIP) from 2015 to 2016 and the construction contract project located in Tuban Regency.

3.2 Decompotition

Decomposition is breaking down a problem into its elements. At this stage, identification of construction project factors from community empowerment (PNPM) and construction contracts was carried out, then a hierarchy of factors for the implementation of construction projects was carried out. Process hierarchy analysis is intended to analyze essential factors that influence the evaluation process in the implementation of construction projects at the research location. As a tool to measure it, AHP (Analytical Hierarchy Process) questionnaires used. AHP (Analytical Hierarchy Process) variable is arranged based on the level that is the Goal or goal is the implementation of the construction project and then the AHP model criteria consist of time, cost, quality, community participation, administration and independence which later divided into several sub criteria based on the factors influential in Criteria.
Table 1. Criteria Factors and Sub Criteria of AHP Model for Construction Projects

| Criteria          | Sub Criteria                                                                 | Kode |
|-------------------|-------------------------------------------------------------------------------|------|
| Time (W)          | The precision of the schedule start implementation                           | W1   |
|                   | The accuracy of the completion of the work                                     | W2   |
|                   | Completion of the work precedes the implementation time                        | W3   |
| Cost (B)          | Compliance funds used                                                          | B1   |
|                   | The transparency of funds                                                      | B2   |
|                   | The existence of the Fund holder organization                                  | B3   |
|                   | Responsibility reporting use of funds                                          | B4   |
|                   | Details of the use of funds                                                    | B5   |
| Quality (M)       | The ability to perform the job                                                 | M1   |
|                   | Work experience (personnel)                                                    | M2   |
|                   | The equipment used                                                             | M3   |
|                   | Implementation of the method applied                                           | M4   |
|                   | The data work being carried out                                                | M5   |
| Community         | Community involvement in planning                                             | P1   |
| Participation (P) | The active role of the community in the activities of the                     | P2   |
|                   | Smooth execution of activities                                                 | P3   |
|                   | the supervision by the people                                                  | P4   |
| Administration (A)| Administrative details                                                         | A1   |
|                   | Supporting data administration                                                 | A2   |
|                   | The orderly administration                                                     | A3   |
| Independence (D)  | Sharing a communal Fund                                                        | D1   |
|                   | The Fund sponsors                                                             | D2   |
|                   | Power/mutual                                                                  | D3   |

Source: Observation and interview

Figure 1. AHP model
Table 2. The weight of criteria for implementation of construction projects

| Criteria                  | Code | Value | Rank |
|---------------------------|------|-------|------|
| Time                      | W    | 0.198 | 2    |
| Cost                      | B    | 0.203 | 1    |
| Quality                   | M    | 0.178 | 3    |
| Society Partisipation     | P    | 0.118 | 6    |
| Administration            | A    | 0.164 | 4    |
| Independence              | D    | 0.139 | 5    |

Source: Results of the analysis

From the description of the respondents above, the respondents thought that the implementation of construction projects in a construction contract better carried out because the results of the work were more maximal and accountable and with a short process. Respondents were of the opinion that the contractual construction of the construction project would have an orderly schedule, directed and had strict supervision. The plan for the implementation of construction projects in community empowerment tends not to realize due to the social culture of the local community, among others, the public's trust in the existence of good days and the life of prayer together before the start of work. Although the implementation of construction projects in a contractual and community empowerment manner both do contract signing, contractual more clear and statutory responsibilities.

4. Conclusion

Based on the data analysis and discussion carried out, it can be concluded:

1. The Analythical Hierarchy Process (AHP) method is used to analyze the selection of construction project implementation. The AHP method is used to choose whether the construction project is carried out with a construction contract or community empowerment by considering the factors that influence the implementation of the construction project. Quantitative research is carried out with a pairwise comparison matrix and qualitative research with interviews/interviews with respondents.

2. In the selection of construction project implementation between construction contract and community empowerment, the criteria used based on a survey, interview and combined with KPIs Project Management (Key Performance Indicators) are time criteria, cost criteria, quality criteria, community participation criteria, regulatory criteria, and criteria independence. Cost criteria are the main factors for the selection of construction projects with a weight of 0.203, then the requirements for time with a weight of 0.198, quality criteria with a weight of 0.178, administrative criteria with a weight of 0.164, independence criteria with a weight of 0.139 and community participation criteria with a weight of 0.118. Sub criteria for the accuracy of the start schedule for implementation in the time criteria occupy the highest score of 23 (twenty three) sub criteria with a score of 0.102.

3. The results of the analysis of the implementation of the community empowerment and contractual construction projects of 40 (forty) respondents thought that the implementation of the construction project was better carried out in a construction contract. Based on the results of the validation, the criteria analysis using the Analytical Hierarchy Process (AHP) method in choosing a more active construction project is a construction contract. Respondents were of the opinion that the implementation of
Construction projects in a construction contract was more optimal when compared with the application of construction by community empowerment. In empowering the community, the planned schedule tends to be unrealized because of the social culture of the local community, including the public's trust in the existence of a good day and the presence of joint prayer before the commencement of work. Construction contract projects have more value because of the life of a transparent legal entity and accountability.

The suggestions that can give are:
1. Based on the factor analysis of the construction implementation selection taking into account the various existing criteria and experience, the construction project should be carried out with a construction contract with strict supervision.
2. The author's suggestion in the next research is to add criteria and more detail in dividing the standards with sub-criteria again. In this study, sub criteria can be divided into more sub-criteria.

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