

Analysis of Factors Obstacling Construction Work in the Tojo Una-Una Islands Region

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Abstract:- The implementation of construction activities in the island region of Tojo Una-Una Regency tends to be very vulnerable to the risk of delays, even failure, due to obstacles experienced by implementing parties in the field. The aim of this research is to find out the factors that hinder construction work in the island region of Tojo Una-Una Regency and to find out the efforts made by implementing parties to overcome these obstacles. This factor is the biggest factor hampering construction work in the island region of Tojo Una-Una Regency compared to other factors. Efforts made to overcome these obstacles include implementing human resource management for construction workers properly, building a collaborative network with a number of construction material suppliers, acting decisively against owners who are late in making payments, improving the coordination system between contractors and owners, carrying out modernization and regular maintenance of equipment. construction, establishing good communication with the environment around the project, conducting in-depth studies and handling soil stability problems at the project site, and scheduling visits and sending resources to the project site appropriately.

Keywords:- Construction; Project; Workers; Building; Owners.

I. INTRODUCTION

The Tojo Una - Una Regency Government is trying to make various efforts to focus development in the island region as an effort to equalize development in the region for the sake of the problems of the people of the island region in Tojo Una - Una Regency. In line with the rapid development action, this was followed by an increase in project work activities construction in several island areas in Tojo Una - Una Regency which involves companies providing construction services to handle infrastructure development projects in the island area. However, the implementation of construction activities in island areas tends to be very vulnerable to the risk of delays, even failure, due to obstacles experienced by implementing parties in the field. For example, there is a risk of disciplinary behavior by workers due to weak supervision by supervising consultants, many project workers are less skilled as a result of mistakes by contractors in recruiting project workers, and communication problems often occur between contractors and project owners.[1]

The aim of this research is to find out the factors that hinder construction work in the island region of Tojo Una-Una Regency and to find out the efforts made by implementing parties to overcome these obstacles.

II. LITERATURE REVIEW

Several concepts and literature studies that are related to and support the research object are as follows:

A. Construction Projects

A construction project has a set of activities related to the development of infrastructure which includes several works in the field of civil engineering, one type of which is building construction.[2] Development ventures can be isolated into two sorts of building bunches, to be specific buildings and respectful buildings. These two bunches of buildings really cover, but are by and large arranged and executed by diverse arranging and actualizing disciplines.

B. Project Management

Venture administration could be a handle of arranging, organizing, coordinating and controlling company assets with short-term targets to attain particular objectives.[3] In venture administration, things that have to be considered are distinguishing different issues which will emerge when the extend is actualized so that the venture yield is in understanding with the arranged objectives and destinations. Extend administration uses company individuals to be situated in certain errands and have particular objective duties within the extend. All arranging, control, usage and coordination of a extend from the starting to the conclusion of the venture is carried out to guarantee the venture is carried out on fetched, on quality and on time.

C. Overview of Infrastructure

Infrastructure is also related to regional development because this is a characteristic of the rate of economic growth and community welfare.[4] If a region has a better complete infrastructure system, it will have a better rate of economic growth and community welfare and vice versa. This can mean that infrastructure is very important in a country because infrastructure is one of the driving wheels of economic growth.

Foundation may be a holder to back exercises in one space. The accessibility of foundation gives individuals with simple get to assets so that they can increment proficiency and efficiency in carrying out social and financial exercises .[5] Expanding productivity naturally by implication increments financial improvement in a locale. So the part of foundation in financial advancement gets to be exceptionally critical.

D. Overview of the Island

There are several things that must be considered in determining an island if you look at these provisions, it can be said that it is an island if the land already has two elements, the first must be land and the second must always be above the highest tide line when the sea is high. install. Little islands have awesome advancement potential since they are bolstered by their vital area from financial, defense and security viewpoints as well as the nearness of ordinary tropical environments with tall organic efficiency, specifically coral reefs , seagrass beds and mangrove woodlands. These three ecosystems interact with each other both physically and in the form of dissolved organic matter, particulate organic matter, fauna migration and human activities. Separated from renewable potential, little islands moreover have non-renewable potential such as mining and marine vitality as well as natural administrations with tall financial esteem, to be specific as ranges for tourism exercises, communication media, diversion regions, preservation and other sorts of utilize.[6]

E. Factors Inhibiting the Implementation of Construction Work in the Islands Region of Tojo Una-Una Regency

In a project, obstacles are not a strange thing in the implementation of construction projects, there are many obstacles that hinder the implementation of the project which results in its implementation not being optimal.[7] In project management, one of the most important things is identifying the activity so that it is not delayed, if an activity is critical. If it is postponed, this will result in a delay in a project. The occurrence of obstacles in construction projects is caused by:

➤ Labor Factors

The lack of availability of labor is a factor that causes delays in construction projects.[8] The number of laborers required at each arrange of venture execution shifts, depending on the estimate and sort of work. Arranging that does not suit field needs can cause issues since labor may be an asset that's not simple to get and is exceptionally costly. Need of specialist abilities and ability can result in moo labor efficiency coming about in a long time required to total the extend.

➤ Material Factors

Delays in the delivery of materials/materials are one of the factors that cause delays in construction projects.[9] Delays in the delivery of materials/materials can occur because traffic to the project location is a busy area and is prone to congestion. The limited availability of materials on the market is an obstacle to construction implementation.

➤ Equipment Factors

One of the factors that supports direct project implementation is the availability of equipment and materials to be used.[10] Delays in giving apparatuses for ventures can be due to delays in provider conveyances, challenges in getting them, and deficiencies of the hardware itself. Giving instruments that don't coordinate the requirements and arranged time will cause specialist efficiency to diminish due to the huge number of sit still hours, in this way hampering the pace of work.

➤ Financial Factors

Projects can stop and experience delays due to insufficient funds from the project owner.[11] The circulation of cash streams, both inflows and surges, must be well arranged, so as not to cause troubles for the venture itself. Financing challenges for temporary workers, particularly those related to installment commitments to fabric providers and installment of labor compensation. This will cause delays in existing asset back and make work usage hampered.

➤ Place Characteristic Factors

The event of unforeseen things such as surges, storms, seismic tremors, avalanches, fires, terrible climate. Climate enormously influences laborer efficiency. Terrible climate causes a diminish in workers' stamina, which suggests a diminish in efficiency. Moo specialist efficiency and not being as arranged will result in extend plans being pushed back. Seismic tremors, surges, avalanches, fires can cause ventures to halt incidentally and require more time.

Socio-political viewpoints such as riots, war, terrible social conditions can result in impediments in venture usage since repairing work due to harm that happens requires extra time which can amplify the generally venture plan.

The response from the community around the project was different, some supported it and some rejected it.[12] The negative reaction from the encompassing community caused exhibits which brought about in a transitory cessation of venture exercises, which implied the extend usage plan was delayed.

➤ Managerial Factors

Communication between the contractor and owner is a factor that causes delays in construction projects. Communication between the contractor and the owner can be a problem if communication between the two is lacking, this causes frequent misunderstandings between the owner's wishes and the results of the work carried out by the contractor. Poor supervision and poor labor selection can also be obstacles to project completion.

III. RESEARCH METHODE

The inquire about strategy is one of a arrangement of investigate carried out, which can depict the investigate methods or methods that will be utilized to compile the inquire about.

A. Types of Research

This inquire about is graphic inquire about with a quantitative approach. Graphic inquire about is investigate that's utilized to depict and reply the issues of a phenomenon or occasion that's happening as of now, both in single factors and relationships .[13] or comparison. The inquire about approach that analysts utilize is quantitative strategies, which are investigate. Quantitative inquire about strategies are a sort of investigate whose determinations are efficient, arranged and clearly organized from the begin until the creation of the inquire about plan.

B. Data Collection Techniques

Data collection techniques in this research use 2 data management methods, namely:

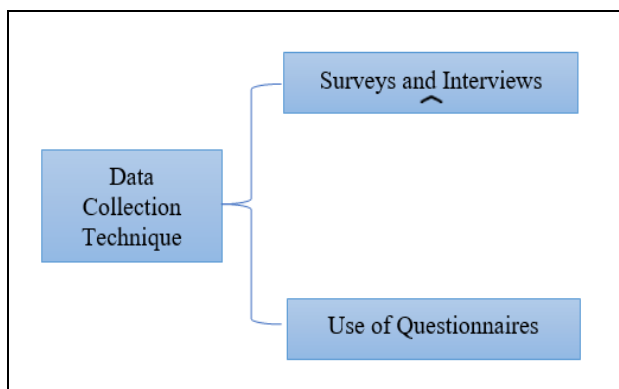


Fig 1: Data Collection Techniques

C. Research Instrument

The instrument used in this research is in the form of a questionnaire.[14] The information gathered in the research work is used to answer the questions that have been formulated and used as a basis for decision making. The purpose of the questionnaire used in this study is to find out a person's opinion about something that is prepared with an open-ended statement so that the respondent can get an answer. The use of research tools is therefore the search for complete information about a problem, natural or social phenomenon. The instrument used in this study is designed to obtain accurate information, i.e., a Likert scale that measures the attitudes, opinions and perceptions of a person or a group of people about a social phenomenon. In the following, we explain the 5-point Likert scale, namely:

Table 1: Qustionnaire Ansewer Criteria

No	Criteria Evaluation	Likert Scale
1	Very Influential (SB)	5
2	Influential (B)	4
3	Doubtful (RR)	3
4	No Effect (TB)	2
5	Very Unaffected (STB)	1

D. Data Analysis

Deep data analysis study This use technique analysis statistics quantitative with using *Statistical Product And Service Solution (SPSS)* software , namely analysis factor.

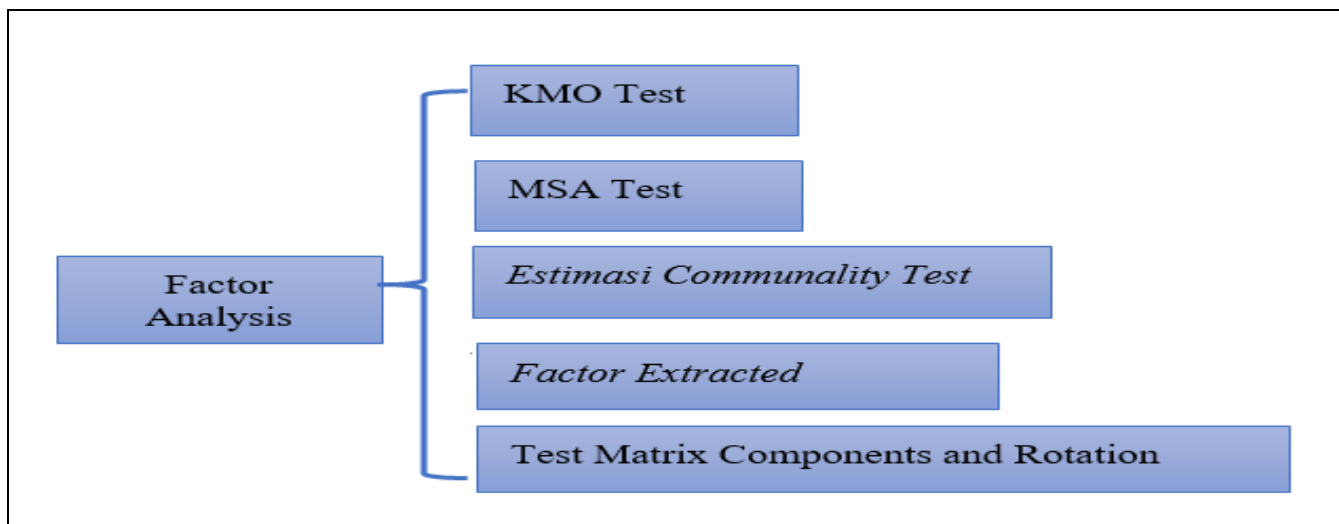


Fig 2: Factor Analysis

IV. RESULT AND DISCUSSION

A. General

In this study, those chosen as research objects by the researcher were all parties involved in construction projects in the island region of Tojo Una-Una Regency. Researchers chose these three parties so that they could clearly understand the factors that hamper construction work in the island region of Tojo Una-Una Regency. In this research, respondents were asked to fill out a questionnaire containing questions related to the problem being studied.

Apart from that, respondents were also asked to answer personal data, which will be needed in this research.

B. Descriptive Statistics

Section contains the results of the questionnaire distributed along with a description and simple analysis of existing trends including the educational background and work experience of the respondents. The discussion will discuss each question assisted by *statistical analysis* and graphs.

➤ Respondents Based on Age

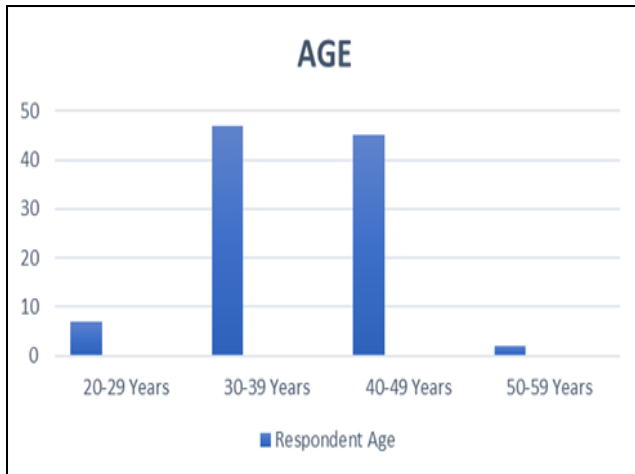


Fig 3: Respondents by Age

The graph above shows that from the data obtained the majority of respondents were aged 30-39 years, namely 28 people (47%), followed by respondents aged 40-49 years as many as 27 people (45%). Meanwhile, there were only 4 respondents aged 20-29 years (7%), followed by only 1 respondent aged 50-59 years (2%). These results show that the respondents in this research are those aged 30-49 years, they are people who are experienced in handling this kind of project, so it is very important for this research to involve people of productive age in handling maintenance projects and of course have experience in handling the project.

➤ Respondents Based on Education Level

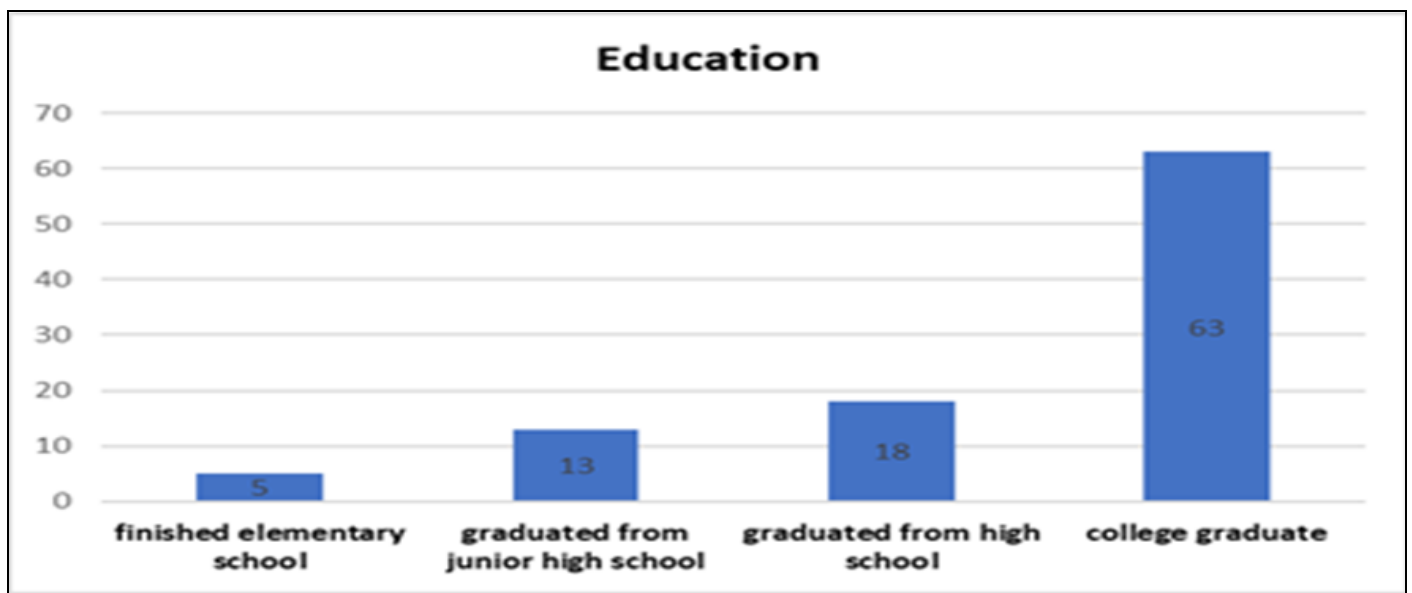


Fig 5: Respondents According to Last Level of Education

It can be seen that the majority of respondents in terms of their final level of education are in tertiary institutions which dominate, namely 38 respondents (63%), followed by respondents with a high school/equivalent education level of 11 respondents (18%), then respondents

➤ Respondents According to Gender

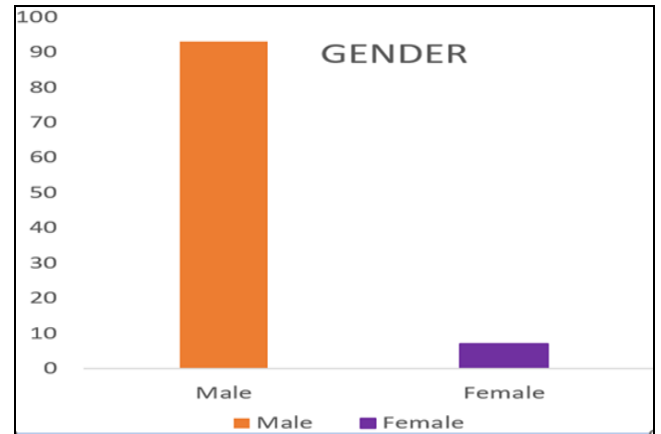


Fig 4: Respondents by Gender

From the graph above, it can be seen that the number of respondents from this study was 60 respondents, 56 male respondents (93%) while 4 female respondents (7%). So it can be concluded that those most involved in maintenance activities are men. This is because project activities are field activities that require personnel who are physically fit, and indeed the majority of those employed in the construction company handling this project are men, while the female respondents in this study are those from the apparatus. Department of Public Works, Spatial Planning, Housing, Settlement Areas and Land (PUPRPKPP) Tojo Una-Una Regency.

with There were 8 respondents (13%) with junior high school/equivalent education levels. Meanwhile, the remainder were respondents who had at least elementary school education with a total of 3 respondents (5%).

➤ *Characteristics of Respondents Based on Work Experience*



Fig 6: Respondents According to their Work Experience

Based on the graph above, it can be seen that the majority of respondents are workers with work experience between 5-10 years with a total of 33 respondents (55%), then the second largest are respondents with work experience of 16-20 years with a total of 10 people (17%), the third most respondents were respondents with work experience of less than 5 years and 11-15 years with 8 people each (13%), then there was only 1 respondent (2%) with work experience of more than 20 years . This statistical data shows that the respondents involved in this research are those who have a lot of experience in handling construction projects, and of course really understand the obstacles experienced in carrying out construction project activities in the field, especially in island areas.

C. *Validation Test Results*

A validity test measures whether a study is valid or not. A survey can be considered valid if the questionnaire

can reveal something that the survey is measuring. The level of validity can be measured by comparing the calculated r-value (single correlation, the total correlation is greater than the r-table according to the rule-of-thumb research model. The significance value (2-tailed) can also be used) $< \alpha = 0.05$ In this validity test, the researcher who tested the results of the answers of 50 respondents using a 95% confidence level or significance level (α) = 0.05, with an r table of 0.254.

From the validation test using SPSS, it can be concluded that all question items are valid with r calculated $> r$ table, which means the correlation index is high so that the data on each indicator can be analyzed further.

D. *Reliability Test Results*

The reliability test results for each variable question item in this research can be seen in Table 3.

Table 2: Realibity Test Results

No	Variable	Cronbach' Alpha	Information
1	Power factor Work	0.786	Reliable
2	Material factors	0.787	Reliable
3	Equipment Factors	0.771	Reliable
4	Financial factors	0.815	Reliable
5	Characteristic factors place	0.767	Reliable
6	Managerial factors	0.709	Reliable

Looking at the reliability test results presented in the table above, it is known that the *Cronbach Alpha value* for each variable is greater than 0.60. So it can be said that all statement items on each factor are declared reliable so that data from the questionnaire results can be processed further.

E. *Factor Analysis*

The stages of the factor analysis process are selecting appropriate indicators for factor analysis by carrying out the KMO and Bartlett's Test, MSA Test, then determining the number of factors by extracting indicators and rotating factors and finally naming the factors.

➤ *Kaiser Meyer Olkin (KMO) Calculations and Bartlett's Test*

KMO or measure of sampling adequacy is an index comparing the magnitude of the observed correlation coefficient to the magnitude of the partial correlation coefficient. Where if the sum of the squares of the partial correlation coefficients between variables is smaller than the sum of the squares of the correlation coefficients, then the KMO size will be close to 1. A small KMO value indicates that the correlation between variables cannot be explained by other variables so that the use of factor analysis is not very good.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.753
Bartlett's Test of Sphericity	Approx. Chi-Square	783,290
	df	325
	Sig.	0,000

From the above table, it can be seen that Bartlett's test of sphericity has a value of 783.290 and a significant value of 0.000, which means that the correlation matrix between the manifest variables is not an identity matrix (correlation matrix in the form of identity). the matrix cannot be calculated by factor analysis). Therefore, this research material is suitable for use with the factor analysis method

Table 4: Measure of Sampling Adequasy (MSA)

	MSA value	Criteria	Information
X1.1	.798a	> 0.5	MSA Eligible
X1.2	.692a	> 0.5	MSA Eligible
X1.3	.717a	> 0.5	MSA Eligible
X1.4	.790a	> 0.5	MSA Eligible
X1.5	.878a	> 0.5	MSA Eligible
X2.1	.761a	> 0.5	MSA Eligible
X2.2	.877a	> 0.5	MSA Eligible
X2.3	.857a	> 0.5	MSA Eligible
X2.4	.912a	> 0.5	MSA Eligible
X2.5	.783a	> 0.5	MSA Eligible
X2.6	.733a	> 0.5	MSA Eligible
X3.1	.722a	> 0.5	MSA Eligible
X3.2	.698a	> 0.5	MSA Eligible
X3.3	.553a	> 0.5	MSA Eligible
X3.4	.834a	> 0.5	MSA Eligible
X3.5	.850a	> 0.5	MSA Eligible
X4.1	.602a	> 0.5	MSA Eligible
X4.2	.769a	> 0.5	MSA Eligible
X4.3	.849a	> 0.5	MSA Eligible
X5.1	.543a	> 0.5	MSA Eligible
X5.1	.768a	> 0.5	MSA Eligible
X5.3	.597a	> 0.5	MSA Eligible
X5.4	.695a	> 0.5	MSA Eligible
X6.1	.622a	> 0.5	MSA Eligible
X6.2	.671a	> 0.5	MSA Eligible
X6.3	.550a	> 0.5	MSA Eligible

The Measure of Sampling Adequacy (MSA) analysis process was carried out, no factors were found that were below standard, meaning that the 26 factor These have an MSA value above 0.50 so that data from these 26 indicators can be processed further.

➤ *Factor Extraction (Factor Extruded)*

The purpose of factor extraction is to determine the number of factors used in presenting data and how much contribution each factor has to the research phenomenon. The factor extraction method used in this research is *Principal Component Analysis* . The result of this process is a matrix that shows the percentage contribution of each factor to the total number of factors. The *exploratory* method is used if initial limits in the estimated number of factors to be extracted are not determined in advance. Meanwhile, if factor analysis is used to test hypotheses related to the grouping of variables or the number of factors, the confirmatory method *is* used.

The final result of this extraction process is *Total Variance Explained* , where of the 26 indicators included in the factor analysis each has a variance of 1, this can be interpreted as meaning that the total variance is $26 \times 1 = 26$. If the 26 indicators are summarized as 1 factor, then the variance that can be explained by that one factor is:

$$\frac{7.859}{26} \times 100 = 30.226$$

➤ *If 26 Indicators are Extracted into 7 Factors, Then:*

- The variance of the first factor is 30.226 %
- The variance of the second factor is 9.854%
- The variance of the third factor is 8.222%
- The variance of the fourth factor is 7.136%
- The variance of the fifth factor is 5.667%
- the sixth factor is 4.641%
- seventh factor is 4.005%

So a total of seven factors will be able to explain:

$$30,226 + 9,854 + 8,222 + 7,136 + 5,667 + 4,641 + 4,005 = 69.751\%$$

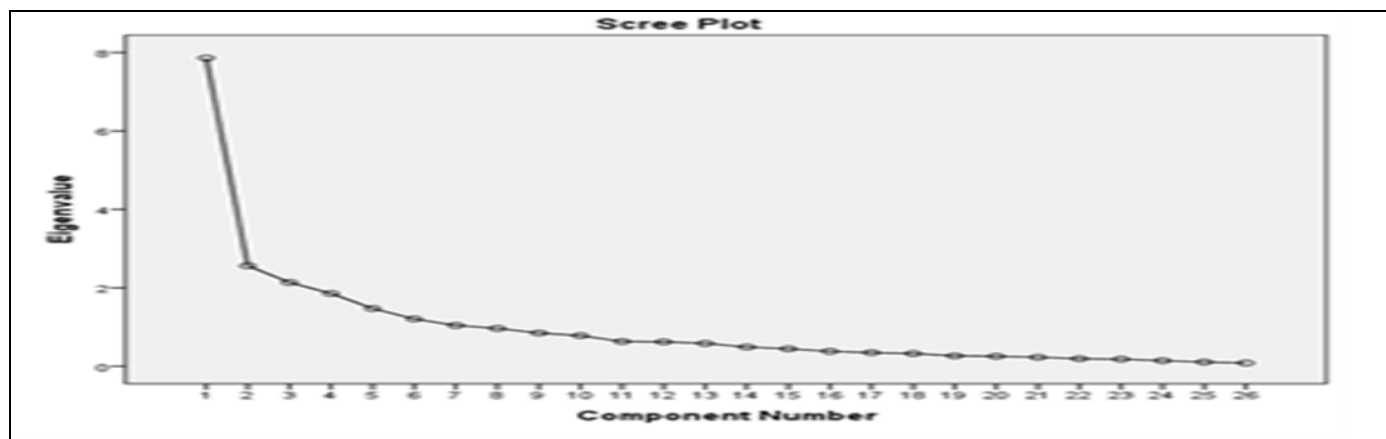


Fig 7: Scree Plot

F. Efforts Made by the Implementing Party to Overcome These Obstacles

After identifying several factors that hamper construction work in the island area of Tojo Una-Una Regency, there are several efforts made by implementing parties to overcome these obstacles, including the following:

➤ **Carry out HR Management for Construction Workers Properly**

In overcoming the problem of availability and quality of human resources on construction projects, the effort made is to implement correct HR management. This effort is made to regulate the availability of human resources and also improve the quality of these human resources.



Fig 8: Discussion with Workers Regarding Implementing HR Management Correctly

➤ **Building a Collaborative Network with a Number of Construction Material Suppliers**

In order to overcome the problem of availability and scarcity of construction materials, construction companies are trying to build a collaborative network with a number of material providers or often called construction material suppliers for construction project needs, especially in island areas, even if necessary, service providers need to access material markets from outside the region. For the sake of availability of material stock, so that the availability of material for construction project work in the island region of Tojo Una-Una Regency can be fulfilled.



Fig 9: Provision of Materials and Work Tools at the Project Location

➤ **Take Firm Action Against Owners who are Late in Making Payments**

Continuous efforts to collect payments from the owner are an absolute thing that must be done by the contractor, because the contractor has no other choice so that the project can proceed according to plan. Contractors must collect payments continuously to avoid late payments. This requires contractors to collect payments continuously to avoid fatal impacts on the project due to late payments.



Fig 10: Discussion with the Owner regarding Payments to the Contactor

➤ **Improving the Coordination System between the Contractor and the Owner**

To improve the coordination system between the contractor and the owner, the steps taken are to maximize communication through various good communication media. If communication using cellular telecommunications networks experiences problems then the use of radio also needs to be taken into consideration, apart from that, reports in the form of project documentation along with project progress data. It also needs to be done periodically so that coordination can continue to be maintained. The data and information is conveyed accurately, is easy to understand, and of course it is necessary to check the data submitted against actual conditions in the field, so that there is no confusion in the planning or implementation.



Fig 11: Discussion between the Owner and Contractor

➤ *Carrying out Modernization and Periodic Maintenance of Construction Equipment*

Regular maintenance is carried out by paying attention to the performance of the equipment so that it has a long life. Construction technology is not only visible from the various materials used. But also from the various tools used to make construction products which are currently increasingly developing. Previously, the various tools used to make various construction buildings were still simple, so the process took longer. But nowadays, there are many various carpentry tools that use advanced technology, so they can simplify and speed up the building construction process.



Fig 12: Checking Modernization and Periodic Maintenance of Construction Equipment

➤ *Establish Good Communication with the Environment Around the Project*

Of course, this kind of problem cannot be avoided, so efforts are needed from the contractor to establish good communication with the environment around the project, so that there are no misunderstandings between the implementer and the people in the environment around the project, even the implementer also needs to take into account costs and allocate a portion of the budget. costs for the *Corporate Social Responsibility (CSR)* program as a form of social responsibility on the part of the company for the impacts arising from the construction activities they carry out in the community environment, where this program is clearly aimed at the community around the project, so that the existence of construction work activities This project does not receive opposition from the environment around the project because it can provide benefits to the surrounding community.

➤ *Carrying Out In-Depth Studies and Handling Soil Stability Problems at the Project Site*

For this reason, before implementing the project, an in-depth study is needed regarding handling the possibility of flooding and landslides at the project location, such as testing slope stability at the project location, and efforts to strengthen slopes in various ways, starting from dredging or repairing slopes first to installing geonets as expected. able to overcome the problem of slope instability at the project

location. Apart from that, another effort is to use the *vacuum consolidation method* as an alternative for improving water-saturated soft clay soil, where the vacuum pump will suck water and air in the soil that has been given an airtight sheet on top, thereby reducing consolidation in the soil. occurs in a faster time than the previous method (without vacuum).



Fig 13: Dredging or Slope Repair

➤ *Schedule Visits and Delivery of Resources to Project Locations Appropriately*

To get around this problem, it is necessary to schedule visits and delivery of resources to the project location appropriately, meaning that the visit and delivery of project resources must be carried out when conditions allow, such as good weather so that the trip can be carried out according to schedule, in addition to For land access on the island, you must use transportation that is compatible with the track or road conditions to the project location.



Fig 14: Departure of Resources to the Project Location

V. CONCLUSION

The factors that hinder construction work in the Tojo Una-Una Regency archipelago are the performance of field workers, construction material problems, and coordination between the owner and the contractor, less productive equipment, financial problems, rain., and response in the project environment, ordering materials at the wrong time and inadequate equipment, unfavorable project site conditions and weak supervision, problems with discipline and the number of field workers, problems with damage and delivery of equipment, and errors in hiring personnel who is incompetent. Then the efforts made by the implementing party to overcome these obstacles are implementing management for construction workers correctly, building a cooperation network with a number of construction material suppliers, acting firmly against owners who are late in making payments, improving the coordination system between contractors and owners, implementing modernization and regular maintenance of construction equipment, establishing good communication with the environment around the project, conducting in-depth studies and handling soil stability problems at the project site, scheduling visits and sending resources to the project site appropriately.

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