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Analysis Of Factors Causes Of Delay In Implementation Of Building Construction Projects In Banggai, Indonesia

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ABSTRACT
This study aims to analyze the factors causing the delay in the implementation of a building construction project in Banggai, Indonesia, and to determine the most dominant factor in the delay in the implementation of a building construction project in Banggai, Indonesia. This type of research used in this research is descriptive research, using a quantitative approach, the sampling technique in this study is total sampling. To obtain the data that is considered, the authors use questionnaires and documentation distribution techniques. In this research, data analysis was carried out by using factor analysis method. The results of the factor analysis show that there are six factors that cause delays in the implementation of building construction projects in Banggai, Indonesia, these six factors include planning and stakeholder behavior, human resource capacity and conflicts between workers, inadequate resources in project implementation, management. and poor coordination, inaccurate land investigations, and improvement of work results. Planning factors and stakeholder behavior are the most dominant factors in influencing the delay in the implementation of building construction projects in Banggai, Indonesia.

KEYWORDS: *Factor analysis, Delays, Building Construction Projects.*

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I. INTRODUCTION

Banggai, Indonesia is one of the regions in Indonesia where up to now a lot of infrastructure development including buildings, roads, and facilities to support community activities has been carried out in this area. Currently, a significant development is taking place in the constructionsector, especially government-owned building infrastructure. However, in its implementation, the implementation of a number of building construction projects in this area has not run without obstacles, where currently there are seven projects that have been delayed from the planned schedule, and there are even several projects that crossed the year, which projects should have been completed in Year 2019 can only be completed in 2020 so that changes in work are made and a time gap for the implementation of the project is made. This is inseparable from the existence of several factors such as a less disciplined workforce, a poorly structured / integrated work order plan, a lot of work that must be repaired / repeated due to defects / incorrectness, and besides that bad weather is also an obstacle. workers in working on the project, which resulted in delays in completing several building construction projects in the area from the planned schedule.

Thus, based on the aforementioned problems, the authors are interested in conducting research with the title "Analysis of Factors Causing Delays in Implementation of Building Construction Projects in Banggai, Indonesia". Analysis of the factors - factors that cause this delay is important that service providers and parties involved in the service of construction can take the right steps and solutions to address the problem of delay in execution of frequently recurring jobs and result in increased costs. In this study, there are several objectives in the research location, namely:

1. Analyzing the factors - factors causing delays in the implementation of building construction projects in the district of Banggai.
2. To determine f actor most dominant of delays in the implementation of building construction projects in the district of Banggai.

II. LITERATURE REVIEW

Overview of the Project

Explains that a project is a temporary effort to produce a unique product or service. In general, a project involves several people whose activities are interconnected and the main sponsor of the project is usually interested in the effective use of resources to complete the project in an efficient and timely manner [1],[2] Explains that a project can be defined as an effort or activity organized to achieve important goals,

objectives and expectations by using budget funds and available resources, which must be completed within a certain period of time. Furthermore [3],[4] states that a project is a series of activities that are carried out only once and generally have a short period of time in which there is a process that processes project resources into a result of activities in the form of a building. Meanwhile[5][6], Argues that a project is a temporary activity that takes place in a limited period of time, with the allocation of certain resources and is intended to carry out tasks whose objectives have been clearly defined.[7][8][9]

Construction Project

A construction project is a project related to the development of an infrastructure building, which generally includes main works in the fields of civil engineering and architecture. These buildings cover a very wide range of aspects of the interests of society since in the form of housing for residence, apartments and multi-story office buildings, factories and industrial buildings, bridges, highways including flyovers, railways, nuclear power plants, dams and hydropower tunnels, irrigation channels, sanitation and drainage systems, airports and aircraft hangars, seaports and offshore buildings, electricity and telecommunications networks, oil refineries and plumbing networks, and so on [2][10]

A construction project is a series of activities that are carried out only once and generally have a short period of time. In this series of activities, there is a process that processes project resources into a result of activities in the form of buildings. The process that occurs in a series of activities certainly involves related parties, either directly or indirectly. According to Gould in [2][4], a Construction project is defined as an activity that aims to build a building that requires resources, both costs, labor, materials and equipment. Construction projects are carried out in detail and not repeated.[4][11][12]

Project Delay

The definition of delay (*delay*) is a portion of the implementation time that cannot be utilized according to plan, causing some of the activities that follow to be delayed or cannot be completed exactly according to the planned schedule [13]. Project delays can be caused by the contractor, owner, or caused by natural and environmental conditions beyond human capacity or known as *force majeure*. The active role of management is one of the main keys to successful project management. Assessment of the project schedule is required to determine.[14]

Delays in project implementation is generally always lead to adverse consequences both owners and contractors for the impact of the delay causes of conflict and debate about what and who is the cause, as well as the demands of the time, and the added cost [10]. a construction project delay means an increase in the time for the completion of a project that has been planned and is stated in the contract document. Completion of work not on schedule or on time is a lack of productivity and of course all of this will result in waste in project financing, either in the form of direct or indirect financing spent on Government projects, or in the form of investment swelling and losses. losses on private projects.[2][14]

III. RESEARCH METHODS

Type of Research

The type of research used in this research is descriptive research, using a quantitative approach.

Location and Time of Research

This research is located in Banggai, Indonesia. The location selection is based on the required data and information relevant to the research problem, namely there are still delays in the completion of building construction projects in the area, where the objects in this study are 4 building projects in Banggai, Indonesia. As for the time of research , the research plan will be carried out from the time the research permit is issued.

Research variable

In this study, the delay factors described, [10],[13],[14],[15],[16] and grouped into eleven factors, namely: From the description above, it can be seen that there are 10 factors that come from various references as references, which of these factors will find the most appropriate or most influential factors in the delay in the implementation of building construction projects in Banggai, Indonesia.

Types and sources of data

The types and sources of data collected in this study are divided into two, namely:

1. Primary Data Sources

Primary data is obtained by dealing directly with the object which will be carried out by means of field surveys on projects in Banggai, Indonesia and distributing questionnaires directly. The questions used are presented in

the form of a questionnaire by the researcher with the answer choices that have been determined so that the respondent just needs to choose one of the answers.

2. Secondary Data Sources

Secondary Data, this data is needed to support maximum analysis and discussion. Secondary data is also needed related to the disclosure of social phenomena in this study. Secondary data, among others, literature (*Library Research*), documents and materials from the internet.

Data collection technique

Techniques in data collection, the authors use several ways, including:

a. Distribution of Questionnaires

Data collection methods to be collected are primary and secondary data. Primary data is data obtained through a questionnaire survey consisting of several questions addressed to respondents.

b. Documentation

Even though in this study most of the data were obtained from human sources through questionnaires, but this was not complete enough, it was necessary to strengthen or add data from other sources, namely documentation. Documentation is done by reading, studying, identifying and analyzing literature, research reports, written documents and other reading sources that are relevant to this research.

Research Instruments

In accordance with this opinion, the authors conclude that the instrument in this study is a questionnaire. The scale used in the preparation of the questionnaire is the interval from 1-5. The frequency of occurrence of these factors:

1. Very Uncertain = STM
2. Not Specifying = TM
3. Neutral / Don't Know = N / TT
4. Determine = M
5. Very Decisive = BC

Research Instrument Test

Validity test

An instrument can be said to be valid if it can measure what it should be measured. In other words, the validity test is intended to determine the level of accuracy of the measuring instrument (instrument) used in measuring the variable to be measured. In this study, the variables measured were work discipline and apparatus performance. The instrument validity test in this study used a *confident interval* of 95% or a *level of significance* ($\propto$) = 0.05.

Reliability Test

Reliability is a tool for measuring a questionnaire which is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if a person's answer to a statement is consistent or stable over time [9]

With the *Cronbach Alpha* method , the measured coefficients will vary from 0 to 1. The coefficient value that is less than 0.6 indicates that the internal consistency reliability is not reliable [13]

Data analysis technique

In this study, data analysis was carried out using the factor analysis method, with the following procedures:

1. Determination of the variables to be analyzed.
2. Calculating the correlation matrix using the *Bartlett test of spermicity method* and measuring the MSA (*Measure of Sampling*).
3. Extraction process or *Factoring* , using *Principal Component Analysis* (PCA).
4. Determine the number of factors that have the most influence by looking at the eigen value> 1.
5. Rotating factors to clarify the position of a variable using the *varimax* method.
6. Interpreting the factors.

IV. RESULTS AND DISCUSSION

Identification of Causes of Project Delay

The identification of the causes of delay comes from observations made by researchers on existing data on building construction projects in Banggai, Indonesia. Starting from the variables that caused the delay which originated from the results of these observations, the researcher traced the data what were the factors that caused the delay in each of the delay variables , and besides that in identifying this the researcher also studied several

previous studies, so that it could support the researcher. in compiling or formulating several factors that cause delays in building construction projects in Bangga Regency

Table 1. Results of the Identification of Delay Factors

No.	Variable	Sub Variable
1	Labor Factor	1. Lack of workforce experience. 2. Labor indiscipline 3. The low work motivation of the workforce 4. Inadequate number of workers. 5. Communication between workers and the head craftsman / foreman is often a problem.
2	Material Factor	6. Late delivery of goods 7. Lack of construction materials 8. Damage to materials in storage 9. Scarcity due to the specificity of the material 10. Inaccurate time for ordering materials
3	Equipment Factor	11. Delays in delivery or provision of equipment. 12. Equipment malfunction. 13. Unavailability of adequate or appropriate equipment. 14. Low productivity of equipment 15. The low ability of the foreman or operator
4	Financial Factors	16. There is no incentive money for contractors 17. Material prices 18. Funding difficulties in contractors 19. Payment difficulty by owner
5	Situation Factor	20. Is the intensity of rainfall at the project site 21. Unexpected things such as fires, floods, very bad weather, storms / winds, earthquakes and landslides.
6	Factors of Change	22. There is a design change by the *owner*. 23. Design mistakes made by planners 24. Mistakes in ground investigations
7	Scope Factors and Contracts / Work Documents	25. Wrong or incomplete planning (drawings / specifications). 26. There is a change in the scope of work at the time of implementation. 27. *Owner* delay in making decisions. 28. The amount of additional work. 29. Disagreements regarding the making of working drawings between planners and contractors.
8	Planning and Scheduling Factors (*planning and scheduling*)	30. Incomplete identification of the type of work. 31. Poorly structured / integrated work sequence plan. 32. Inaccurate determination of the duration of work time. 33. *Owner* work plan that changes frequently. 34. Improper construction / work execution methods.
9	Inspection System Factors	35. Unscheduled submission of sample materials by contractors 36. The *owner* takes a long time to approve the sample of materials. 37. Delays in the process of checking and testing materials 38. The number of works that must be repaired or redone due to defects or improper work. 39. The process and procedures for evaluating the progress of work that took a long time and passed the agreed schedule.
1 0	Managerial Factors	40. Lack of field manager experience 41. Communication between the *owner's* representative and the contractor is often problematic. 42. Lack of supervision carried out by the *owner* and contractors.

Validity Test Results

To find out the results of the validity test of each statement on the research questionnaire, it can be seen in the following table:

Table 2. Validity Test Results

Factor	R Count	R Table
1. Lack of workforce experience.	0.844	0.266
2. Labor indiscipline	0.598	0.266
3. The low work motivation of the workforce	0.806	0.266
4. Inadequate number of workers.	0.877	0.266
5. Communication between workers and the head craftsman / foreman is often a problem.	0.828	0.266
6. Late delivery of goods	0.612	0.266
7. Lack of construction materials	0.577	0.266
8. Damage to materials in storage	0.546	0.266
9. Scarcity due to the specificity of the material	0.515	0.266
10. Inaccurate time for ordering materials	0.765	0.266
11. Delays in delivery or provision of equipment.	0.898	0.266
12. Equipment malfunction.	0.858	0.266
13. Unavailability of adequate or appropriate equipment.	0.876	0.266
14. Low productivity of equipment	0.695	0.266

15. The low ability of the foreman or operator	0.717	0.266
16. There is no incentive money for contractors	0.784	0.266
17. Material prices	0.83	0.266
18. Funding difficulties in contractors	0.726	0.266
19. Payment difficulty by owner	0.742	0.266
20. Is the intensity of rainfall at the project site	0.848	0.266
21. Unexpected things such as fires, floods, very bad weather, storms / winds, earthquakes and landslides.	0.83	0.266
22. There is a design change by the owner.	0.769	0.266
23. Design mistakes made by planners	0.616	0.266
24. Mistakes in ground investigations	0.676	0.266
25. Wrong or incomplete planning (drawings / specifications).	0.518	0.266
26. There is a change in the scope of work at the time of implementation.	0.68	0.266
27. Owner delay in making decisions.	0.639	0.266
28. The amount of additional work.	0.661	0.266
29. Disagreements regarding the making of working drawings between planners and contractors.	0.651	0.266
30. Incomplete identification of the type of work.	0.734	0.266
31. Poorly structured / integrated work sequence plan.	0.67	0.266
32. Inaccurate determination of the duration of work time.	0.664	0.266
33. Owner work plan that changes frequently.	0.642	0.266
34. Improper construction / work execution methods.	0.741	0.266
35. Unscheduled submission of sample materials by contractors	0.702	0.266
36. The owner takes a long time to approve the sample of materials.	0.793	0.266
37. Delays in the process of checking and testing materials	0.695	0.266
38. The number of works that must be repaired or redone due to defects or improper work.	0.651	0.266
39. The process and procedures for evaluating the progress of work that took a long time and passed the agreed schedule.	0.588	0.266
40. Lack of field manager experience	0.771	0.266
41. Communication between the owner's representative and the contractor is often problematic.	0.892	0.266
42. Lack of supervision carried out by the owner and contractors.	0.827	0.266

Based on the results of the validity test of the statement items above , it is known that all statements from the two groups of respondents are declared valid because they have a calculated r value greater than the value of r table, each statement item on this variable is still used in further research.

Reliability Test Results

Reliability testing is carried out on statement items that are included in the valid category. Reliability testing is done by testing the instrument just once. then analyzed using the *Alpha Cronbach* method. The questionnaire is said to be reliable if the reliability coefficient is positive and is greater than 0.6. The calculation is carried out with the help of the SPSS program computer. The reliability for each indicator, the results are presented in the following table:

Table 3. Reliability Test Results

Variable	*Cronbach Alpha (a)*	*Alpha* Required
Labor	0.805	> 0.6
Material	0.669	> 0.6
Equipment	0.808	> 0.6
Finance	0.806	> 0.6
Situation	0.858	> 0.6
Change	0.765	> 0.6
Scope Factors and Contracts / Work Documents	0.748	> 0.6
Planning and Scheduling Factors	0.768	> 0.6
Inspection System Factors	0.760	> 0.6
Managerial Factors	0.839	> 0.6

Based on table 4, the reliability test was carried out on the question items that were declared valid. A variable or indicator is said to be reliable or reliable if the answers to the questions are always consistent. So it turns out the results of the reliability coefficient of each variable has a value of " *Alpha Cronbach* " is greater than 0.600, which means that the instrument is declared reliab e l or meet the requirements.

Factor Analysis Results

KMO Test and *Bartlett's Test*

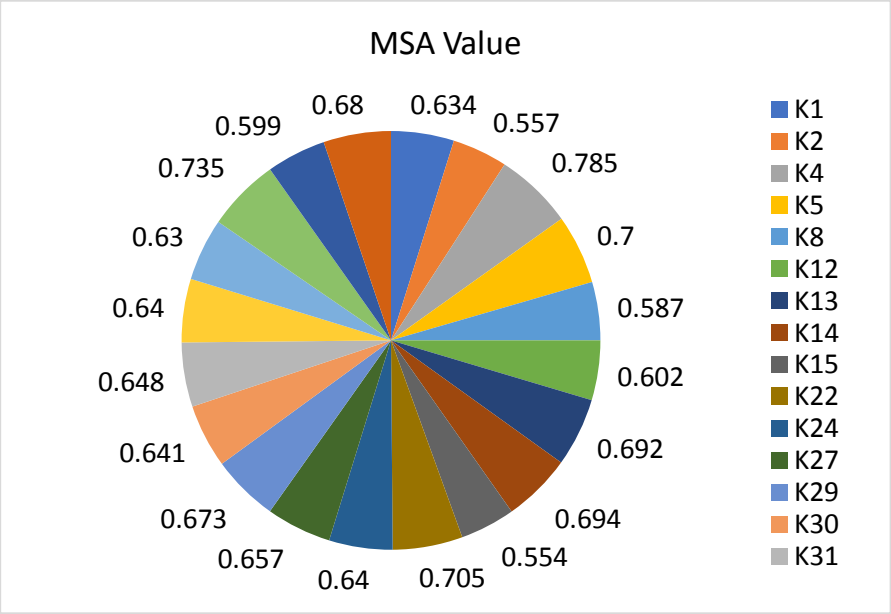
From the retest results above, it can be seen that the results of the MSA variable K19 have a value of 0.353 , or below 0.5, and the variable must be removed from the matrix and retested , so that all variables have the appropriate MSA value, while the result of the third stage retest is as follows: the following.

Table 4. Test Results Re-KMO and *Bartlett's Test* Phase 3

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.654
Bartlett's Test of Sphericity	Approx. Chi-Square	535,916
	Df	190
	Sig.	.000

From the results of the re-testing of stage 3 , it can be seen that the KMO and *Barlett's Test* numbers are 0.6 54 with a significance far below 0.05 (0.00 <0.05), then the existing variables can still be analyzed further, then here are the results of retesting the MSA (*Measures of Sampling) Adequacy*) :



Picture 1. Results of the MSA Testing Phase 2

Having done the analysis stage three times, then there are as many as 20 factors that meet the criteria from the previous total of 42 factors, the results above show all MSA above 0 , 5 and can be analyzed further.

Determination of the Number of Factors

Factor analysis always tries to produce factors that are less in number than the number of processed variables. The approach used to determine the number of factors obtained in this study is based on the eigenvalues, the presentation of variance and the scree plot. Factors will be formed from components that have an *eigenvalue* with the criteria for *eigenvalue* > 1. The order of *eigenvalue is* always ordered from largest to smallest. To find out the number of factors formed from the extraction results can be seen in the following table.

Table 5.Factor Extraction Results

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of *Variance*	Cumulative%	Total	% of *Variance*	Cumulative%	Total	% of *Variance*	Cumulative%
1	4,778	23,891	23,891	4,778	23,891	23,891	3,247	16,234	16,234
2	3,227	16,137	40,028	3,227	16,137	40,028	3,189	15,947	32,181
3	2,114	10,572	50,600	2,114	10,572	50,600	2,655	13,274	45,455
4	1,748	8,741	59,342	1,748	8,741	59,342	2,553	12,763	58,218
5	1,369	6,847	66,188	1,369	6,847	66,188	1,430	7,148	65,367
6	1,113	5,567	71,755	1,113	5,567	71,755	1,278	6,388	71,755
7	0.909	4,544	76,299						
8	0.786	3,929	80,228						

Extraction Method: Principal Component Analysis.

In *the Total Variance Explained table* above, it shows that there are 6 factors that are formed from the 2 0 variables entered. Each factor eigenvalues > 1. Factor 1 eigenvalue of 4.778 with Variance (23 , 891 %), Factor 2 eigenvalue of 3 , 227 with Variance (16.1 37%), Factor 3 eigenvalue of 2 , 114 with Variance (10 , 572 %) , factor 4 eigenvalue amounted to 1 , 748 with Variance (8 , 741 %) , factor 5 was obtained eigenvalue amounted to 1 , 369 with Variance (6 , 847 %) , and factor 6 is obtained eigenvalue amounted to 1 , 113 with Variance (5 , 567 %). The eigenvalue value describes the relative importance of each factor in calculating the variance of the 20 variables analyzed. When all the variables add up, the value is 20 (equal to the number of variables).

4,778 / 2 0 x 100% = 23 , 891 %
3 , 227 / 2 0 x 100% = 16 , 137 %
2 , 114 / 2 0 x 100% = 10 , 572 %
1 , 748 / 2 0 x 100% = 8 , 741 %
1 , 369 /20 x 100% = 6 , 847 %
1 , 113 /20 x 100% = 5 , 567 %

The total variance when extracted from the 20 variables into 6 factors is:
23 , 891 % + 16 , 137 % + 10 , 572 % + 8 , 741 % + 6 , 847 % + 5 , 567 % = 71 , 755 %
The amount of *variance* that is able to be explained by a new form factor is 71.755 % while the remaining 28 , 245 % is explained by other factors not examined.

Rotation Factor

After it is known that the factors formed are 6 , the previous table *Component Matrix* after rotation shows the distribution of 20 variables to the 6 formed factors. The results of the rotation can be seen in Table 6 *Component Matrix* as follows:

Table 6. *Component Matrix* S fter Rotation

Rotated Component Matrix [a]

	Component					
	1	2	3	4	5	6
K1	0.132	**0813**	0.024	0.075	0.259	0.015
K2	**0.506**	0.447	0.147	0.313	-0.111	-0.049
K4	0.141	**0.771**	-0.108	0.315	0.116	0.160
K5	0.042	**0894**	-0.089	-0.009	0.107	-0.038
K8	-0.306	-0.100	0.107	**0.612**	-0.137	-0.148
K12	-0.023	-0.123	**0880**	-0.022	0.037	0.239
K13	-0.100	-0.125	**0.818**	-0.218	0.212	0.076
K14	-0.342	-0.002	**0.642**	0.092	0.004	-0.417
K15	-0.153	-0.011	**0.715**	0.102	-0.139	-0.052
K22	0.127	**0.396**	-0.272	0.234	0.245	-0.524
K24	0.063	0.190	0.036	0.069	**0.875**	-0.077
K27	0.016	**0.688**	-0.183	0.011	-0,427	0.012
K29	**0.799**	0.316	-0.005	-0.081	-0.175	-0.120
K30	**0.856**	-0.010	-0.140	0.079	0.124	0.098
K31	**0.809**	-0.039	-0,219	-0.147	-0.059	0.037
K32	**0.743**	0.115	-0.171	-0.085	0.211	0.015
K38	0.048	0.177	0.021	0.290	-0.005	**0.789**
K40	0.158	0.199	0.009	**0.723**	-0.141	0.041
K41	0.054	0.076	-0.170	**0828**	0.216	0.142
K42	-0.279	0.188	0.017	**0.717**	0.269	0.188

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The *loading* value identifies the correlation between variables and the factors that are formed. The higher the loading value, the stronger the relationship between the variables and the factors. From t abel above group rotation factor results show all the variables forming a factor based on the *loading* greatest. The results of the rotation on the *Component Matrix* show that all variables have a factor group, K4 , which was previously unclear at what factor, after rotating the K4 variable it is in the factor group 1 which has the largest *loading* value, namely (0.506).

From the results of the table above, it can be explained that the distribution of the existing factors is as follows:

1. Factor 1

This factor t erdiri top five determining factors, among others k etidakdisiplinan workforce with the value of *the loading* of (0 , 506), k etidaksepahaman related working drawings between planners and contractors with a value of *loading* of (0 , 799), t idak full identification of the type jobs with *loading* values (0 , 856), work

order plans that are not well structured / integrated with the *loading* value (0 , 809), and the determination of the working time duration is not accurate with the *loading* value (0 , 743).

2. Factor 2

Consisting of five factors that make up , among other things , m inimnya experience of labor with a value of *loading* (0 , 813), j umlah workers were inadequate to the value of *loading* (0 , 771), k omunikasi between labor and foreman / supervisor There are often problems with the *loading* value (0 , 894), the *owner's* design changes (0 , 396), and the *owner's* delay in making decisions (0 , 688).

3. Factor 3

Consisting of four factors that shape , these four factors , namely k of damage of equipment with a value of *loading* (0 , 880), t idak availability of adequate equipment or according to the needs of the value of *loading* (0 , 818), r endahnya productivity of equipment with a value of *loading* (0 , 642), and the low ability of the foreman or operator has a *loading* value (0 , 715)

4. Factor 4

Consisting of four factors that form , which among other things is k of damage materials in a storage area that has a value of *loading* (0 , 612), m inimnya experience field managers with a value of *loading* (0.273), k omunikasi between representatives of *the owner* and the contractor are often problematic to have *loading* value (0.828), and the minimum supervision carried out by the *owner* and contractor has a loading value (0.717).

5. Factor 5

For factor 5, there is only one forming factor, namely the error in soil investigation with a *loading* value (0.875).

6. Factor 6

With a factor of 5, factor 6 also has only one forming factor, namely the number of work results that must be repaired or repeated due to defects or incorrectly with a *loading* value (0.789).

Interpretation of the Formed Factors

After the fact that the factors are formed, each of which consists of the variables under study, then the factors are named based on the characteristics that are in accordance with the members. The naming of factors is done by looking at the underlying factors and sufficiently representing the characteristics of the initial variables that are accumulated in one factor. Steps that can be taken are to apply generalizations to these initial variables.

Table 7. Variable Interpretation Results

Variable	Code	Formed Factors	Loading Factor	*Variance* (%)
Labor indiscipline	K2	Planning and *takeholder* S behavior	0.506	23.89
Disagreements regarding the making of working drawings between planners and contractors.	K29		0.799	
Incomplete identification of the type of work.	K30		0.856	
Poorly structured / integrated work sequence plan.	K31		0.809	
Inaccurate determination of the duration of work time.	K32		0.743	
Lack of workforce experience.	K1	Human resource capabilities and conflicts between workers	0813	16.14
Inadequate number of workers.	K4		0.771	
Communication between workers and the head craftsman / foreman is often a problem.	K5		0894	
There is a design change by the *owner*	K22		0.396	
Owner delay in making decisions.	K27		0.688	
Equipment malfunction.	K12	Inadequate resources in project implementation	0880	10.57
Unavailability of adequate or appropriate equipment.	K13		0.818	
Low productivity of equipment	K14		0.642	
The low ability of the foreman or operator	K15		0.715	
Damage to materials in storage	K8	Poor management and coordination	0.612	8.74
Lack of field manager experience	K40		0.723	
Communication between the *owner's* representative and the contractor is often problematic.	K41		0828	
Lack of supervision carried out by the *owner* and contractors.	K42		0.717	

Mistakes in ground investigations	K24	Inaccurate ground investigation	0.875	6.85
The number of works that must be repaired or redone due to defects or improper work.	K38	Improvement of work results	0.789	5.57

Based on research conducted by the author, can be explained that the factors causing delays in the implementation of construction projects building in Banggai are six factors of the newly formed from the results of the factor analysis, six of these factors include the factors p Planning for and behavior S *takeholder* , k Capacity of HR and conflicts between workers , s umber of power in the project implementation are inadequate , m anagement and poor coordination , p enyelidikan land that is not accurate , and p Improving the work. In addition, when viewed from the value of *Variance* , p factors Planning for and behavior of *stakeholders* who influence the most substantial of the delay in the implementation of construction projects in Banggai district building with a value of *Variance* for 23 , 89 %.

V. DISCUSSION

Based on the results of the research that the researcher has described systematically in the previous section, it shows that from the extraction results there are six factors that cause delays in the implementation of building construction projects in Banggai, Indonesia, these six factors are *planning* factors and S *takeholder* behavior , HR capabilities and conflicts between inadequate resources for project implementation, poor management and coordination, inaccurate land investigations, and improvement of work results. So that if the six factors experience problems, it will hinder the completion of projects in the area on time.

P Planning for and behavior S *takeholder* a factor with a value of *variance is* the highest, which is expected in the implementation of building projects in Banggai particular project Building Rehabilitation Koni Banggai, rehabilitation Building KNPI, rehabilitation Courthouse Banggai district, the construction of the Emergency Room in the region , *Stakeholders* , in this case the *Owner* and the Contractor implementing the construction and rehabilitation of the building, really pay attention to the potential generated if this factor is not handled properly, the *Stakeholders* must be able to regulate the discipline of workers, because worker indiscipline has a fatal effect on the sustainability of the project. the. Then also needed synergy between planners and contractors in making work drawings in order to avoid disagreement between the two parties, because in many cases, such as the rehabilitation of the Koni Building, Banggai, Indonesia, experienced delays due to disagreements about the work picture between the contractor and the planner.

Furthermore, in this factor, *Stakeholders* also need to pay close attention by identifying the scope of work and the work order plan must be properly managed so that there is no overlap and irregularity in building project work activities in the area. In addition, the determination of the duration of work time must be carefully prepared , in which case scheduling must be arranged based on experience, the level of complexity of the construction design, and the condition of its resources, because many building projects experience delays due to negligence in set the duration of work time.

That planning is an important part of determining the success of a project. The problem that is often faced in projects is the mismatch between the initial plan and the realization in project implementation, no matter how good the initial planning does not rule out changes that result in delays in completion [12],[17]. Stated that the behavior of *stakeholders* is one of the keys to the success of a work program, the behavior referred to here includes the attitudes of *stakeholders* towards their duties and responsibilities in a work program. In addition [11], the results of this study are also in line with the results of research conducted by Aibinu [1] which revealed that the implementation of the construction, Puskesmas building was hampered by poor planning, and on the other hand, irregularities carried out by *stakeholders were* at risk for the sustainability of the building project.

Factors related to human resource capacity and conflicts among workers, this variable is also very possible the cause of unsuccessful achievement of the project in accordance with the planned, as is the case in project development Emergency Room Regional General Hospital Luwuk, where m inimnya experience of labor greatly increased risk of delays in the completion the project, because in the course of work on the project there are of course various problems that hinder the work, if an inexperienced worker will certainly not know how to deal with these problems, therefore it is important for the implementer to recruit people who have high flying hours. in working on projects. Then in this factor it is also necessary to pay attention to the quantity of workers, because a project that is not balanced with an adequate quantity of workers will clearly experience delays, because each work has a different volume and requires different availability of labor. Then in this factor what needs to be prevented is the problem of communication between the workforce and the head craftsman or foreman because if the communication problem between the worker and the head craftsman experiences a problem then conflict cannot be avoided, so the work will be difficult to do in a work environment that is not harmonious. Not only that, the design changes also caused delays in building construction projects in Banggai, Indonesia, where during the construction process of the Emergency Room

Construction project, the *Owner* proposed design changes to several aspects in the implementation of the building construction. D esign is the first step in implementing a construction project, be it a building construction project and civil building construction projects. When a construction project design changes occur despite the construction project has not run or is running, it will affect the cost (*cost*), quality (*quality*) and time (*time*) construction , Many experts believe that the quality of human resources that determine the success or not an activity of work. Thus the m anagement of human resources needs to be addressed, begins with a proper recruitment patterns in accordance with the regulations and based on competence. Then this research is also in line with the results of research conducted, which revealed that the low ability of human resources greatly determines the good and bad of the results of a construction project, especially in a building construction project in Kendari City, where workers are less able to solve various problems. faced when carrying out their work. Then in other aspects, the lack of harmony among workers is very disturbing to the continuity of project work, as a result the risk of delay is very likely to occur.

Then in this study it was also found that inadequate resources in project implementation also affected the achievement of building construction projects in Banggai, Indonesia, where equipment damage , unavailability of adequate or appropriate equipment , low productivity of equipment , and low ability of the foreman or operator. making project implementation prone to delays, these conditions are very risky for the sustainability of project work, you can imagine if these problems occur then the project will run slowly and even stop if it is not supported by adequate resources. That without the support of adequate project resources, such as workers, equipment, and materials, it will be very difficult to achieve optimal results, because project resources are potential capacities that can be utilized for construction activities, which requires a good management system in order to make optimal use of it.

In addition, another problem that sometimes occurs and affects project implementation is the problem of poor management and coordination, where regularity in the project is very important, especially regarding technical aspects, many things happen if management does not work well, for example in the rehabilitation project of the Banggai District Court Building. This project encountered various problems that caused delays, ranging from problems with material damage , to human resource management problems such as there are still field managers who lack experience so that it will be difficult to handle various technical aspects in project implementation, because construction projects are strategic and complex activities. so it requires good management. In addition , in this case, communication between the *owner* and contractor representatives also really needs to be maintained, because in some cases the difficult problem to achieve is targeted is the communication problem at the *top management* level , for that this aspect is also very likely to have an impact on delays in project work, especially in construction projects. building. Then in management it is known as the supervisory process, the supervisory process is an effort to control the resources used in project activities so that they continue to run well over the agreed corridor, not the least, the lack of intense supervision will have a major impact on project implementation, because workers who are not supervised will act at will and even *Fraud* of work implementation will occur so that the project will be hampered and the impact will be the delay in the project. [10] [17] states that the correct application of project management will bring advantages in terms of time and cost compared to management carried out such as regular work management. Projects have certain characteristics that differ from other activities, in terms of organization, management, resource use, time, complexity and uncertainty. Thus, a specific handling method is required for a project that is different from the handling of other activities.

Another factor is the problem of soil investigation inaccurate , p enyelidikan land is often considered less important in the early stages of the project, as is often the conduct of investigations of this land is less value added to the project in the short term. For this reason, this phase will be kept to a minimum to reduce costs and time in the initial phase. Conditions and general description of the project site, the first - all determined based on experience as well as *expert judgment* were carried out to determine the assumptions - assumptions at the design stage. Often on the project - a project in the *waterfront area* found that the design assumptions which have been determined less precise, which can cause problems later on or even when the process takes place. This led to additional site investigations, redesigns and improvements to the construction work which had a significant impact on project time and costs.

Furthermore, in this study the improvement of work results also greatly affects project delays, as previously explained, the results of work that must be repaired or repeated due to defects or incorrectly will take time, so that *delays* are unavoidable. According Messah Many of his significant work must be repeated / corrected for defective / wrong will result in project delays, because all repair / repetition due to defective or incorrectly require additional time. Meanwhile, the same results also exist in research , in which he revealed that many of the building construction projects in Bangai City experienced delays due to repairs to some parts of the building structure that were deemed unsuitable, so this took a long time. long enough.

CLOSING

Conclusion

Based on the results of the research previously discussed, it can be concluded that of the many factors that influence the delay in the implementation of building construction projects in Banggai, Indonesia, planning factors and Stakeholder behavior are the most dominant factors in influencing the delay in the implementation of building construction projects in the Regency. Proud.

Suggestion

1. To contractors who want to implement projects building in Banggai district should consider the 6 (six) which can lead to delays in the construction of buildings, six of those factors is the planning and conduct Stakeholders , human resource capacity and conflicts among workers, resources in the implementation of the project were inadequate, poor management and coordination, inaccurate land investigations, and improvement of work results.
2. In identifying the factors causing project delays, it is expected to evaluate in more depth the effect of delays caused by service users and service providers, which in turn will cause delays in project implementation.
3. This researcher is only a case study of the causes of delay in construction implementation. It is hoped that the next researcher will not only conduct research on the causes of the delay but the impact of the delay in construction implementation.

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