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Research Paper

Construction Implementation Aspects on the Time Performance of the Slope Handling Projects of the Rampa Poriaha/Mungkur Road Segment Progress Related To Time Management

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ABSTRAK
In the implementation of construction projects, time delays can occur and cannot be ignored. Several previous studies have examined aspects of construction implementation on project delays, in the Project for Implementation of Slope Handling for the Poriaha/Mungkur Road Section. This study aims to identify the factors that cause delays in structural work time. The research was conducted by distributing questionnaires to project managers, field managers/site managers, project engineers, coordinators/team leaders of supervisory consultants, or coordinators/team leaders of construction management consultants, site engineers, and field supervisors (Inspectors). A total of 35 questionnaires have been distributed to respondents. The number of re-collected questionnaires was 88.6%. Data analysis used factor analysis methods, validity and reliability tests. Factor analysis included the calculation of the Kaiser-Meyer Oikin (KMO) and Bartlett's Test, Measure of Sampling Adequacy, and Rotated Component Matrixa. From the results of factor analysis, three groups of factors causing delays were found. namely the factor group. The ranking shows that the sequence of factors that cause delays in the work time for the Slope Handling of the Ramp-Poriaha/Mungkur Road section is first: The Covid-19 factor is that there is a request to get an extension of the construction time due to COVID-19, the second is the Management Factor is the Complaint of Residents, and The third factor of work implementation is the difficulty of drilling pint anchors and sling anchors

Keywords: ***time performance, Slope Handling, construction management***

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I. INTRODUCTION

1.1. Background of the problem

In general, a construction project has an implementation plan and schedule to limit the completion time of project work. However, it is not uncommon for the plans and implementation schedules that have been made to be inconsistent with the reality on the ground, resulting in delays in project completion. Aspects of Construction Implementation on Time Performance on the Poriaha/Mungkur Ramp Slope Handling section. Delay in project completion is often a source of disputes and demands between owners and service providers / contractors, so that delays in completion of work will be very expensive in value. The service provider / contractor will be subject to a penalty in accordance with the contract documents and will also experience overhead costs during the construction period. From the job owner's perspective, the delay will have an impact on the low absorption of the Government's budget which has implications for economic growth. Development is an effort to create prosperity and welfare of the people. Therefore, the results of development must be enjoyed by the whole community as an increase in physical and spiritual welfare in a fair and equitable manner. In line with the speed of physical development, companies also began to work as implementers and planners, both for the construction of buildings, roads and irrigation. This is motivated by the hope to get big profits (Kamaruzzaman, 2012). Kareth et al (2012) stated that the implementation of construction projects is a series of activities that depend on each other. The bigger the project, the more problems it has to deal with. Starting from planning we are faced with managing resources such as labor, costs, time, equipment and so on, to project implementation.

Construction projects are a dynamic field and contain risks in terms of time. The risk in terms of time can have an influence on the productivity, performance, quality and cost constraints of the project (Nasrul, 2015). Risk in construction projects however cannot be eliminated but can be reduced or transferred from one party to another (Kangari, 1995). Proboyo (1999) states, delays in project implementation generally always cause adverse consequences for both the owner and the contractor, because the impact of delays is conflict and debate about what and who is the cause, as well as time demands and additional costs. According to Ismael (2013), the time linkage in the implementation of slope handling construction projects needs serious attention to avoid project delays, so a special study is needed in the construction implementation process. A construction project is a series of interrelated activities to achieve certain goals (Slope Handling construction) within certain time, cost and quality constraints. Construction projects always require resources, namely man (human), material (building materials), machine (equipment), method (implementation method), money (money), information (information), and time (time). Susetyo, & Wibowo, 2018) Therefore, with the complexity and complexity of a construction project, it is very necessary for a contractor and good construction project management, so that construction projects can run smoothly during the current COVID-19 pandemic.

The form of the COVID-19 pandemic for people's social life is the disruption of the community's economy and social relations. During this pandemic, the community's economy is also disrupted because of the rules for staying at home for the whole community. And people should not interact directly because it is very dangerous for public health. And the way to break the chain of this virus is to stay at home and not interact directly. To prevent this pandemic, people must obey the rules given by the government to the community so that the pandemic experienced by the community passes quickly. The rules given by the government are actually for the good of the community itself.

1.2. Formulation of the Problem

Based on the description of the background above, the formulation of the problem to be discussed in this study is as follows :

1. FaktorWhat are the factors that influence and most influence the delay in the implementation of the Slope Handling work on the Ramp Poriaha/Mungkur Tapteng Road, North Sumatra.
2. What is the ranking of the factors that influence the completion of the Slope Handling work on the Ramp Poriaha/Mungkur Tapteng Road, North Sumatra.
3. How is the change in cost against time caused by the dominant cause of the main delay in completing the work?

1.3. Research purposes

1. find out what factors influence and most influence the cause of delays in the implementation of Slope Handling for the Ramp Poriaha/Mungkur Tapteng Road, North Sumatra.
2. To find out the ranking of the factors causing delays in the completion of the Slope Handling work on the Ramp Poriaha/Mungkur Tapteng Road, North Sumatra.
3. To find out changes in time caused by the dominant cause of delays in completing work.
4. And the research results are expected to help minimize delays as a guide in the implementation of future projects to find the right solution so that the implementation of further work does not experience delays

1.4. Benefits of research

The aims of this research are as follows:

1 This research is expected to be useful as input for the parties involved, contractor companies, owners, so as to minimize delays in project implementation in the future and to avoid cost overruns from the planned budget.

2 This research is expected to be useful especially for service users, service providers and parties directly related to construction project management, in order to clearly know how to control the causes of delays in project completion as a whole so that the project completion time can be completed according to time and budget. planned costs.

3 And the research results are expected to help minimize delays as a guide in the implementation of future projects to find the right solution so that the implementation of further work does not experience delays

1.5. Research Limits and Scope

1. This research is more focused on the Slope Handling project for the Ramp Poriaha/Mungkur Tapteng Road, North Sumatra
2. This research is limited to the Slope Handling work project for the Ramp Poriaha/Mungkur Tapteng North Sumatra section which was carried out in the 2019-2020 fiscal year
3. Methods of collecting data by means of questionnaires and questions and answers.

4. This study does not aim to distinguish the domicile of the respondents, but only to meet the planned number of samples

4.1. Hypothesis

1. There is a relationship between the independent variables (Covid-19 Factors, Management Factors, Job Implementation Factors) that significantly affect the dependent variable Y.
2. There is a relationship between the partial existence of X2.1 It takes a long time to process requests for and approval of samples of materials by the owner, X6.1 Additional work, and X9.14 allocation of costs for payment of salaries for construction company staff during the temporary suspension period during the COVID pandemic -19 at the time of implementation had a significant effect on the Causedelay in the execution of work Y.
3. With the change in time caused by the dominant cause of the main delay in completing the work, the contractor suffers a loss.

II. LITERATURE REVIEW

2.1.1. Project Definition and Project Management

To standardize the definition of the word Project Management Institute (2004), in the PMBOK Guide 6th edition 2017, it defines a project as follows: "A temporary endeavor undertaken to create a unique project or service." Traditionally, project management has been seen as planning, scheduling, and controlling projects to meet project objectives. While this is still a valid definition, it should be borne in mind that it does not cover the human relations and project evaluation components that are typically carried out after the project is completed. Project Management Institute 6 uses this definition for project management: "The application of knowledge, skills, tools, and techniques to project activities to meet or exceed the needs that stakeholders expect from the project."

2.1.2. Process Management

According to (A.D Austen & R.H Neale: 1994), management or often called the Management Function, in one unit as follows:

1 Placement of goals (goal setting). Goal setting is the initial stage of the management process. Goals are mission goals to be achieved.

2 Planning (planning). Planning is the process of selecting information and making assumptions about future conditions to formulate activities that need to be carried out in order to achieve predetermined goals.

3 Staffing is a management process related to recruitment, placement, training and basic workforce development organization. Basically the principle of the stage of the managementprocess is to place the right people at the
the right place and right at the right time (right people, right position, right time)

4 Directing is an effort to mobilize the resources owned by the organization so that they can move in a single unit in accordance with the plans that have been made. This stage of the process contains efforts on how to motivate people to work.

5 Supervising, Supervising is defined as direct interaction between individuals in an organization to achieve work performance and organizational goals

6 Controlling. Controlling is a guide or rule for carrying out the activities of a business or other parts of the business to achieve the agreed goals

2.1.3. Project Stage

The construction stages are divided into 5 stages (Dipohusodo, I, 1996), namely:

1. Stage of development
2. planning stage
   - By using it as an implementation guide with a definite construction contract price and material so that it will not exceed the available budget limit
   - The work will be completed in accordance with the quality and within the time frame that has been planned or determined
3. Auction stage
4. Stage of Construction Implementation,
5. Stages of operation,

2.1.4. Influence of Aspects on Time

Delay Factor

Ismael (2013) states, in a construction project there are various activities, project activities are temporary activities and last for a limited period of time, with the allocation of certain sources of funds to carry out tasks with predetermined targets. According to Suharto (1999), the many activities and parties involved in the implementation of construction projects give rise to many complex problems. The complexity of the project depends on :

1. Number of activities in the project.
2. Kinds and number of relationships between groups (organizations) within the project itself.
3. Types and number of relationships between activities (organizations) within the project and external parties

This complexity depends on the size of the project. Small projects can be more complex than larger projects. Complexity requires arrangements and controls in such a way that there are no conflicts in project implementation, it is necessary to have reliable and resilient project management to support project implementation.

2.1.4.1. Cause of Delay

According to Ahmed et al, 2003, the causes of delay divided into two categories, namely:

1. External Factors
2. Internal Factors

According to Bakhtiyar (2012), project delay (construction delay) is defined as a delay in completing work according to a work contract which legally involves several situations that cause claims. Project delays arise when the contractor is unable to complete the project in accordance with the time stated in the contract. Project delays according to Kamaruzzaman's (2012) description are caused by the contractor or from the owner. Delays can also occur but are not caused by either party. Delay in construction projects means an increase in the implementation time for the completion of the project that has been planned and stated in the contract documents. Project delays are often a source of disputes and demands between owners and contractors, so that the value will be very expensive, both in terms of contractors and owners. The contractor will be penalized according to the contract. In addition, the contractor will also experience additional overhead costs during the project. From the owner's perspective, project delays will have the effect of reducing income due to delays in the operation of the facility.

2.1.4.3. *Type* of Delay

Theodore (2009) mentions that there are four basic ways to categorize the types of delays:

1. *Excusable delay*,
2. *Non-Excusable*,
3. *Compensabledelay*,
4. *Concurrent delay*,

2.1.4.4. Impact of Delay

According to Levis and Atherley in Suyatno, (2010), delays will have an impact on the original planning as well as on financial problems. Delays in a construction project will extend the duration of the project or increase costs or both. The impact of the delay on the owner is the loss of potential income from the facilities that were built not according to the time specified, while on the contractor is the loss of opportunities to get resources to other projects, the increase in indirect costs due to increased expenses for employee salaries, equipment rental and reduce profits According to (Alifen et al, 2000), that the impact of project delays causes losses to the contractors, consultants, and owners. These losses include:

1. Contracting Party

Delay in project completion results in increased overhead, due to the longer execution time. Overhead costs include costs for the company as a whole, regardless of whether there are contracts being handled, such as prices due to inflation, rising labor wages and bank interest that must be paid.

2. Consultants

The consultant will experience a loss of time, and will be late in working on other projects, if the project implementation experiences delays in completion.

3. Party Owner

Project delays on the part of the owner / owner, means the loss of benefits / income from the building that should have been used or utilized. If the owner is the government, for public facilities such as roads and bridges, of course, delays will harm services to the community, or harm service programs that have been prepared. This loss cannot be assessed with non-refundable money. whereas if the owner is a non-government, for example the

construction of a building, shop or hotel, of course the schedule for using the building will be delayed from the planned time, so there is free time without getting money.

Time Management According to Kareth et al (2012), the timing or scheduling of the activities involved is intended so that a project can run smoothly and effectively. Therefore, the implementing party of a project usually makes an activity time schedule or time schedule. The activity time schedule is a work sequence that contains:

1. The type of work to be completed.
2. The time when a job starts and ends.

The active role of management is one of the main keys to successful project management. A review of the project schedule is needed to determine the steps for fundamental changes so that delays in project completion can be avoided or reduced (Handayani, 2013). Husen (2011) states that time performance standards are determined by referring to all stages of project activities along with the duration and use of resources.

2.1.4.5. Overcome Delay

According to Dipohusodo, I (1996), during the construction process there are always symptoms of periodic shortages of the materials being treated, in the form of basic materials or finished goods, both local and imported.

The handling method varies greatly depending on the project conditions, from being handled directly by special staff within the organization to the form of division of the portion of responsibility among the assignor, contractor and sub-contractor, so that material offers for a project can come from sub-contractors, suppliers or agents, importer, producer or industry, all of which refer to the planning documents and technical specifications that have been set. Ways to control delays are:

1. Deploy additional resources.
2. Removing obstacles, to other efforts to ensure that work progresses and brings back to the plan line.
3 If not possible, sticking to the original plan line may require a revision of the schedule, which will followused as a basis for assessing the progress of work at the next time.

Figure 1 below is an output-stage model illustrating the methodology of this study.

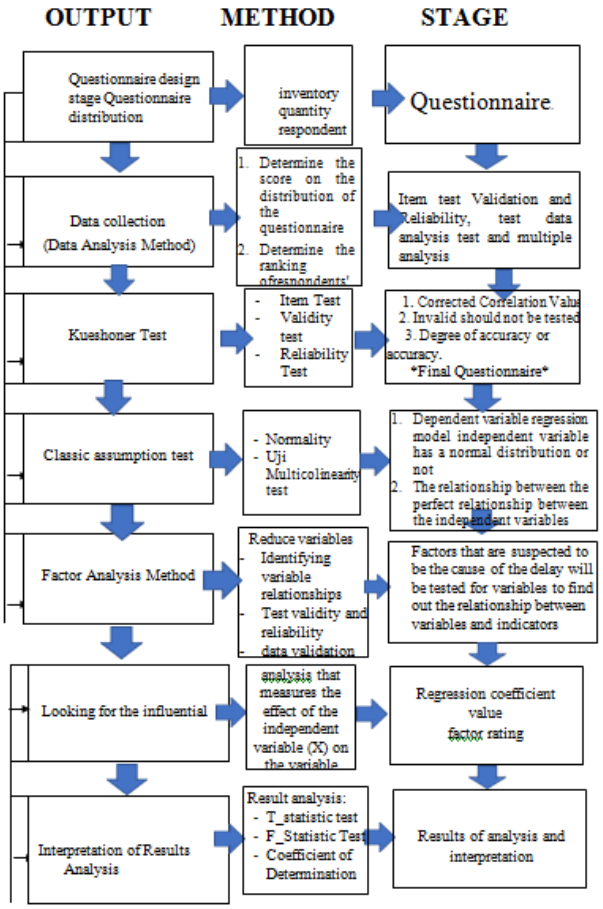

Figure 1. Representative stage-output model of the methodolog

III. RESEARCH METHOD

3.1.Research sites

This project handles slopes using nets, in the work process the slope walls are drilled as high as approximately 25 to 35 m from the road surface, then anchors are installed along 4m, 5m and 10m according to the slope conditions, then carried out the grouting process, after that it is continued with the laying of mats and nets and locking using plates and slings, then the nets are covered with hydroseding plantings on the slopes to reduce erosion

The location of the Rampa – Poriaha/Mungkur slope handling activity is on the Sp.Rampa – Poriaha road segment located at Sta. 8 + 600 – Sta. 9 + 290, administratively this road section is included in the Sitahuis District, Mardame Village, Central Tapanuli Regency - North Sumatra Province and is not directly adjacent to people's houses and public facilities (SD, Church, etc.). The profile of the Poriaha/Mungkur Slope Handling Project is as follows:

Satuan KerjaPPK: PPK 3.1 Prov. SUMUT
Supervising consultants : RenardetSAJOPT.CiptaStrada,PT.Seecon,PT.Daya CreasiMitra Yasa,PT.YodyaKarya
Contractor :PT.GirderIndonesia
No.Contrac :03-03/05A-WINRIP-WP3/CE/A/8043/04-19
Contract Date :01April 2019
Contract value : Rp. 77.749.292.000,-
Handling Length :690 M
Net Area :31.419M2
Number of Anchor : 6.116Pc
Execution time :427calendar day
Anchor Length : 39.594 M
Circumference Length :2.44.92m

Figure 2.1 Map of Slope Handling Project Location
Ruas Jalan Rampah – Poriaha /Mungkur.

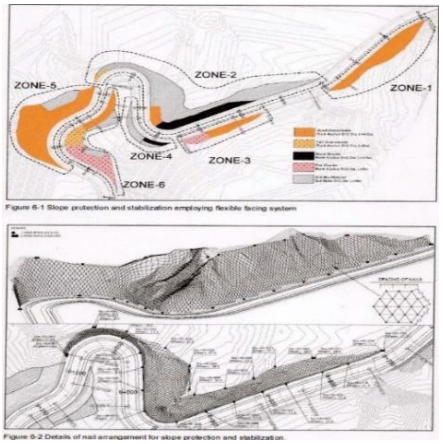

Figure 2.2. Details of Road Slope Handling Locations
Rampah-Poriaha / Mungkur

3.2.**Sampling Selection**

The sampling method used in this research is purposive sampling (purposed sample), which is a sampling technique with certain considerations and is usually used in quantitative research (Sugiyono, 2016), which is determined by selecting units first (eg individual, group of individuals, or groups of individuals). institutions) based on specific objectives related to the answers to research questions

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3.3. Research Object and Location

In this study, the object of research and the location of the research taken is the Slope Handling project of Jalan Ramp Poriaha/Mungkur Tapteng, North Sumatra. The research was conducted on contractors engaged in construction work who have finished working on construction projects.

3.4.Data Collection

The data collected consists of primary and secondary data.

1. Primary Data

Primary data is data obtained directly through questionnaires and interviews in accordance with the number of samples taken.

2. Secondary data

Secondary data is data obtained from other parties, among others, obtained by looking at documents related to research, namely data from the National Road Implementation Unit Region III of North Sumatra Province, so that it can be used to estimate the number of samples to be taken.

3.5.Respondent

Respondents in this study were individuals who had experience as implementers on the Slope Handling project of Jalan Ramp Poriaha/Mungkur Tapteng, North Sumatra and had held roles and positions in the implementation of the activities referred to, both supervisory consultants, implementing contractors and project owners in this case the Implementation Work Unit. National Road Region III of North Sumatra Province and other stakeholders who are directly or indirectly involved in the sustainability of the Slope Handling work of the Ramp Poriaha/Mungkur Tapteng section of North Sumatra.

3.6 Respondent Profile

For convenience, the research results obtained from the questionnaire are divided into three groups, namely the respondent's profile, the project profile and the respondent's perception.

a. Respondent profiles are separated according to the respondent's position, namely; Project manager, field manager / site manager, project engineer, coordinator / team leader of supervisory consultants, or coordinator / team leader of construction management consultants, site engineers, and field supervisors (Inspector).

b. The experience of respondents is grouped into 5 (five) namely experience 1-3 years, 3-5 years, 5-7 years, 7-10 years and greater than 10 years.

3.7.Data Collection Techniques

The data used in this measurement is the research is data with an ordinate scale (ordinate data). The ordinate data has a scale that shows quantitative differences in the level of the subject, such as data expressed in the form of ratings or rankings. In this research, ordinal data is used to measure the attitude or perception of respondents to the factors causing delays in the implementation of the Slope Handling work for the Poriaha/Mungkur Tapteng Section, North Sumatra. Respondents' perceptions can be sorted into: very not influential, not influential, somewhat influential, influential, and very influential. If it is not very influential it is given a value of "1", no effect is given a value of "2", somewhat influential is given a value of "3", influential is given a value of "4", and very influential is given a value of "5".

3.8.Research Instruments – Factors Affecting Time Performance

Data collection instruments are tools that are selected and used by researchers in their collecting activities so that these activities become systematic and facilitated by them. The instrument used in this study was a questionnaire containing statements related to the variables studied. In accordance with the objectives of the study, identification and definition of research variables were carried out to determine the aspects of the influence of the implementation of performance construction on the factors causing delays in the completion of the Poriaha Rampa Slope Handling from the independent variable (X) and the dependent variable (Y) as follows:

3.10. Questionnaire Distribution

After the questionnaire has been compiled, the next step is to distribute the questionnaire. The purpose of distributing this questionnaire is to obtain respondents' perceptions of the contributing factors and time performance of the Slope construction project. The step of distributing this questionnaire is to prepare a questionnaire to be addressed to the respondents. Next, make an inventory of the number of respondents. Then look for information on the right time to distribute questionnaires to respondents. The last step is to distribute and collect research questionnaires according to the planned time

3.11. Data analysis method.

3.12. Research Instrument Testing.

1. Grain Test

Items of questions or statements that do not meet the quality requirements may not be included as part of the test.Testing the validity and reliability of a measuring instrument is only feasible for a collection of questions or statements that have been tested and selected (Azwar, 2003).The selected questions or statements (valid) are those that have a corrected correlation value (rc) greater than or equal to > 0.3 (Azwar, in Widodo 2016; 41).

2. Validity Test

Validity in research is explained as a degree of accuracy or feasibility of research instruments/measures about the content or true meaning of what is being measured.The least that can be done in determining the validity of a measurement instrument is to produce a high degree of proximity to the data obtained with what is believed in the measurement (Umar 2003, in Widodo, 2016, 42).

The validity test uses the Product Moment correlation technique, which is to correlate the item scores with the total score.Calculation of the correlation coefficient between items and the total score will result in overestimation of the actual correlation, it is necessary to make corrections using part-whole.If spearman correlation > 0.05 (5%) means the item is valid, on the other hand if the spearman correlation < 0.05 (5%) means it is invalid (Azwar, in Widodo; 42).

3. Reliability Test

Reliability test is the degree of accuracy, precision or accuracy shown by the measurement instrument of a questionnaire said to be reliable or reliable if a person's answer to a question is consistent or stable from time to time. Reliability is the extent to which the results of a measurement can be trusted and can provide relatively inconsistent results.different when repeated to the same subject.Reliability test is done by calculating Cronbach alpha more than > 0.60 (Azwar, 2003)

3.13. Classic assumption test

Classical assumption test is an analysis performed to assess whether in an Ordinary Least Square (OLS) linear regression model there are classical assumption problems

1. Normality Test

The purpose of the normality test is to test whether in a regression model, the dependent variable, the independent variable or both have a normal distribution or not.A good regression model is a normal or close to normal data distribution.Basically the normality of a data can be recognized or detected by looking at the distribution of data (points) on the diagonal axis of the Histogram graph of the residuals.

2. Multicollinearity Test

Multicollinearity test was conducted to see whether there was a perfect relationship between the perfect relationship between the independent variables.If the test turns out to be a conclusion that the independent variables are interdependent, then the test cannot be carried out into the next stage due to the inability to determine the regression coefficient of the variable and also the standard error value becomes infinity.

3.14. Factor Analysis Method

The choice of factor analysis as an analytical tool in this study is because this study tries to find the relationship (interrelationship) of several variables that are independent of each other, so that a collection of variables that can be made is smaller than the number of initial variables so that it will be easier to control. The main purpose of factor analysis is to explain the structure of the relationship between many variables in the form of factors or latent variables or formed variables.Factors formed are random quantities that previously could not be observed or measured or determined directly

3.15. Regression Analysis Method

Regression analysis is an analysis that measures the effect of the independent variable X on the related variable (Y).Measurement of the influence of variables involving more than one independent variable (X1, X2, X3,..., Xn), used Regression analysis Multiple Linear, called linear because each estimate of the value is expected to increase or decrease following a straight line, the following is a multiple linear regression estimate:

$Y=a + b1X1+ b2X2+b3X3+...+bnXn$

Where :

Y = dependent variable (dependent)

X(1,2,3) = Independent Variable

A = Constant Value

B (1,2,3) = Regression coefficient value

3.16. Hypothesis test

1. Individual Parameter Significance Test (t statistic test)

The t-statistical test basically shows how far the influence of one independent variable individually in explaining the related variation. The purpose of the t test is to test the regression coefficients individually. The null hypothesis (H0) to be tested is whether a parameter (bi) is equal to zero (Kuncoro, 2004)

2. SimultaneousSignificant Test (Statistical TestF)Simultaneous Significant Test (Statistical Test F) The F statistical test basically shows whether all the independent variables included in the model have a joint effect on the dependent variable.The null hypothesis (H0) to be tested is whether all parameters in the model are equal to zero, or H0 : b1 = b2 = bk = 0. That is, whether all independent variables are not significant explanatory factors for the dependent variable.The alternative hypothesis (Ha), not all parameters are simultaneously equal to zero, or: Ha: b1 b2 ... bk≠ 0. This means that all independent variables are simultaneously significant explanatory factors for the dependent variable.

3. Coefficient of Determination (R^2)

The fundamental weakness of using the coefficient of determination is the bias towards the number of independent variables included in the model.Every additional one independent variable, then (R^2) must increase no matter whether the variable has a significant effect on the dependent variable.Therefore, many researchers recommend using the adjusted R2 value when evaluating which regression model is the best (Kuncoro, 2004:84).

IV. RESULTS AND DISCUSSION

4.2.1. Validity and Reliability Test

4.2.2. Validity test

The validity of the instrument in this study was carried out on the results of respondents' answers, these results were obtained by distributing questionnaires or lists of questions to respondents.Assessment is carried out on each question item by looking at the Pearson Correlation value and is said to be valid if the r - calculated Pearson Correlation value is greater than r - table.The value of r - table is obtained by looking at the table at a significance level of 5%, then the number is 0.338.Validity test was carried out using the SPSS program.From the results of thevalidity test of the variables Covid-19 Factor (X1), Management Factor (X2), Work Implementation Factor (X3), Material and Equipment Factor (X4) Task and responsibility factor (Y) which has a total of 23 items seen through the valuesig shows that all of the items are valid, because the sig value of each indicator on all variables has a value less than 0.05 so that all statement items can be included in the next analysis. The results of the reliability test showed that all variables consisting of the Covid-19 Factor (X1), Management Factor (X2), Work Implementation Factor (X3), Material and Equipment Factor (X4) Task and responsibility factor (Y) were reliable because the valueCronbach's alpha coefficient is greater than 0.6 so that the indicators used to measure these variables are reliable.

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4.2.3. UjiReliabilitas

From the factor analysis technique, 23 original variables were extracted into 4 factors.In essence, it measures how far the ability of the regression model to explain the diversity of the dependent variable (Y), which is 0.099, meaning that the regression model obtained can explain 99% of the variability of the delay in the implementation of slope handling work.The R value is a correlation that explains the close relationship between the independent variable (X) and the dependent variable (Y) of 0.099 and Adjusted R Square of 0.099 or 99 %.In determining the independent variable (factor) that has the most dominant influence on the delays in the implementation of slope handling work, it can be done by comparing the value of the coefficient of each independent variable (factor) to the delay in the implementation time of the variable that has a significant effect and has the largest coefficient value.That is :

- Covid-19 Factor X1 (X1.8): There is a request to get an extension of construction time due to COVID-

19

- ❖ Management Factor X2 (X2.1) : (Resident Complaints)
- ❖ Work Implementation Factor X3 (X3.7): Difficulty in drilling pint anchors and sling anchors

4.1. Data Description

Respondents in this study were contractors who were involved in the construction of the Slope Handling of the Ramp Poriaha/Mungkur Tapteng North Sumatra Road Section.

4.1.1. Characteristics of Respondents

The characteristics of the respondent's position indicate that the position of the respondent can be seen that the majority of respondents have a position as PPK(Project Owners) as many as 8 people (17.4%), for respondents who have positions as Assistants (Project Owners) each are 11 people (32.6%), for respondents who have positions as Site Managers (consultants) 11 person (2.2%), Site Manager (contractor) 1 person (2.2%) and Executor (contractor) 1 person (2.2%) while for respondents who have a position as Quality/Quantity Engineer 1 person (2.2%), each of the Chief Inspector amounted to 1 person (2.2%), and and Others each amounted to 14 people (32.6%).

4.1.2. Characteristics of Work Experience

Characteristics of the experience of respondents showed that the experience of the respondents that the majority of respondents had work experience for > 10 years amounted to 35 people (56.1%), respondents who had work experience for 5 – 10 years amounted to 23 people (56.1%), respondents who hadwork experience for 3-5 years amounted to 2 people (4.9%), while for respondents who had work experience for 1-3 years amounted to 1 person (2.2%).

4.2. Classical assumption test analysis

From the classical assumption test, namely the normality test, multicollinearity of the three factors meets the requirements. For the normality test, it can be seen that the Kolmogorov-Smirnov Z Asymp sig (2 tailed) method is 0.095 greater than , so it is concluded that the residuals are normally distributed. Then the assumption of normality is met. so it can be concluded that the data distribution is normal. All variables from the multicollinearity test have a VIF value less than 10, so it can be said that there is no multicollinearity in the model, so it can be concluded that there are no multicollinearity symptoms. Likewise, the linearity test can be seen from the value of sig f > 0.05 so that the linearity requirements are met.

4.3. Multiple Regression Analysis

From the multiple linear regression test, one equation is obtained, namely Y = 0.004 + 0.937 X1.8 + 0.582 X2.1 + 0.365 X3.7.From this equation it can be said that the three independent variables have a positive influence on the use of costs, meaning that an increase in one of the three independent variables will cause an increase in the use of costs

From Hypothesis Testing: Simultaneous test (F test) that the variables that influence the cause of delays in work implementation are the Covid-19 Factor (X1), Management Factor (X2), Work Implementation Factor (X3), Material and Equipment Factor (X4)And in this study the dependent variable is the delay in the implementation of the work, namely the variable (Y). Because the significant value of the F test (0.000) < alpha level of 0.05, then H0 is rejected at a significance level of 5% so that it can be concluded that the independent variables (covid-19 factors, management factors, work implementation factors) have a significant effect on the dependent variable Y. From the results of the t-test (Partial Test) Because the significant value of the F test (0.000) < alpha level of 0.05, then H0 is rejected at a significance level of 5% so that it can be concluded that the independent variables (Project Owner Management Factors, Relationship Factors with government, and the Covid-19 factor) had a significant effect on the dependent variable Y. The multiple regression equation above can be described or explained as follows:

a. Partial test of the effect of X1.8 (there is a request to get an extension of construction time due to COVID-19) on the cause of delay in the implementation of work Y a significant value of 0.911 where the level is significantly smaller than the alpha level of 0.05, so it can be concluded that partially X1.8 There is a request to get an extension of the construction implementation time due to COVID-19 at the time of implementation which has a significant effect on the cause of the delay in the implementation of the work Y.

b. Partial test of the effect of X2.1 (the existence of citizen complaints) on the causes of delays in the implementation of work Y. a significant value of 0.113 where the level is significantly smaller than the alpha level of 0.05, so it can be concluded that partially there is X2.1 The existence of citizen complaints at the time implementation has a significant effect on the cause of the delay in the implementation of work Y.

c. Partial test of the effect of X3.7 on the cause of the delay in the implementation of work Y . that the level is significantly smaller than the alpha level of 0.05, so it can be concluded that partially there is X3.7 Difficulty in drilling anchor pints and anchor slings has a significant effect on the cause of delays in the implementation of work Y

Discussion: Problems that arise beyond the control of the Service Provider due to the impact of the COVID-19 pandemic began to be felt in early March 2020 affectingthe impact of implementation in the field is the existence of a termination order and an appeal to reduce the number of workers which results in being able to meet the minimum number of labor requirements needed to complete work according to contract targets so that it has an impact on delays in completing work.

From the analysis of average daily productivity, which is calculated based on the availability of labor, it should be calculated directly based on the productivity that has been done so far in the field.

Problems that arise beyond the control of the Service Provider due to the COVID-19 pandemic affect the impact on implementation in the field due to a reduction in the number of workers (limited number of skilled workers) resulting in not being able to meet the minimum number of labor requirements needed to complete work according to contract targets. contract target to completethe work according to the co. This affects the minimum amount of labor required to complete the work according to the contract which has an impact on the progress of implementation being delayed. Projects affected by the COVID-19 pandemic, a letter was issued from the regent of Tapteng regarding labor restrictions, the ideal number of workers is 65 people, but there are 24 people there and the Regent of Tapteng was not given permission to enter the rest. PPK calculates the days neededbased on the remaining volume according to the schedule and according to the remaining work in the field since March 18, 2020 so that the remaining duration of the drilling work is 61 HK if done by 65 people but the field conditions are 24 people then the remaining time needed is 160 HK. Completion time calculationwork due to the COVID 19 pandemic is the remaining work volume divided by average daily productivity which can be calculated based on work implementation data from March 18, 2020, the initial impact of COVID 19 according to the contractor's claim until May 22, 2020 (before Eid holiday) and work resumes May 29, 2020

Tabel Rekapitulasi RAB Keseluruhan

REKAPITULASI
PERKIRAAN HARGA PEKERJAAN

Proyek / Baggpro : PPK 12 (SIBOLGA, Cs)
No. Paket Kontrak : Paket 05 A
Nama Paket : Pemeliharaan Berkala Ruas Jalan Hampa - Pondahal/ Mungkur (WIM08)
Prop / Kab / Kodya : Sumatera Utara/ Tapteng

No. Divisi	Uraian	Jumlah Harga Pekerjaan (Rupiah)
1	Umum	2.645.560.000
2	Drainase	873.561.268
3	Pekerjaan Tanah	67.575.564.941
4	Pelebaran Perkerasan dan Bahu Jalan	0
5	Pekerasan Non Aspal	0
6	Perkerasan Aspal	0
7	Struktur	730.720.756
8	Pengembalian Kondisi dan Pekerjaan Minor	5.432.579
9	Pekerjaan Harian	0
10	Pekerjaan Pemeliharaan Rutin	0
(A)	Jumlah Harga Pekerjaan (*termasuk Biaya Umum dan Keuntungan*)	71.830.839.544
(B)	Pajak Pertambahan Nilai (PPN) = 10% x (A)	7.183.083.954
(C)	JUMLAH TOTAL HARGA PEKERJAAN = (A) + (B)	**79.013.923.499**
(D)	JUMLAH TOTAL HARGA PEKERJAAN = (A) + (B) (DIBULATKAN)	**79.013.923.000**

Terbilang : *#Tujuh Puluh Sembilan Milyar Tiga Belas Juta Sembilan Ratus Dua Puluh Tiga Ribu Rupiah#*

The concept of time extension by prioritizing the analysis of the need for completion of work. In the order of execution of minor works must wait for the completion of the anchor point drilling work. When the drilling work only leaves zone 2, so for safety reasons, the contractor cannot do other work while drilling work is taking place on it so that minor work waits for drilling work in zone 2 to finish first, and for Anchoring Works it is 4788 pin anchor work points already worked on and there are still 793 points left in Zone 2(in this case the management aspect of the contractor's project implementation is not well planned). The calculation of losses caused by these dominant factors is the loss in terms of overhead costs.

*Source from GS contractor PT. Indonesian Girder

From table Recapitulation of the Estimated Price of the Work, there is no additional Contract fee. However, the contractor's loss with work delays that occurred for 157 calendar days, the contractor suffered a financial loss in terms of the OH overhead budget of about 4% x 79,013,923,000 = Rp 3,160,556,920,- During the implementation period the initial contract value was 300 working days (the duration of the initial contract)) Then the cost of OH is = Rp 3,160,556,920/300 = Rp 10,535,190 Because the duration of the project has been delayed for 157 days, it means that the cost of OH will increase by 157 x 10,535,190 = Rp. 1,654,024,788, - which means the contractor's loss is Rp. 1,654,024,788,- in addition the contractor must also receive a fine of 1/1000 x Contract Value x number of days of delay, according to the contract document.

4.1. Evaluation of Multiple Regression Results

Decision: because the significance is more than , then H0 is accepted, which means that the regression residuals are normally distributed. Because the significance value (0.095) is more than , it is concluded that the residuals are normally distributed. Then the assumption of normality is met.

4.4.4.Multicollinearity Test

To test for detecting multicollinearity, it can be seen by paying attention to the size of the VIF. The value of VIF obtained as a whole has a magnitude below 10, which means that there is no multicollinearity.

4.4.7.Normality test

The adjusted R2 value from the table above is a coefficient of determination which essentially measures how far the regression model's ability to explain the diversity of the dependent variable (Y) is, which is 0.099, meaning that the regression model obtained can explain 99% of the variance of the variable delay in the implementation of slope handling work. The R value is a correlation that explains the close relationship between the independent variable (X) and the dependent variable (Y) of 0.99. And adjusted R Square of 0.099 is 0.099 or 99%

4.1.1. F Uji Test

Simultaneous test (F test) shows that all independent variables consist of Covid-19 Factor (X1), Management Factor (X2), Work Implementation Factor (X3), Material and Equipment Factor (X4) Task and responsibilityfactor (Y)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16717,622	1	16717,622	26588,426	.000[b]
	Residual	21,378	34	,629		
	Total	16739,000	35			
2	Regression	16722,015	2	8361,007	16244,115	.000[c]
	Residual	16,985	33	,515		
	Total	16739,000	35			

a. Dependent Variable: Y2

b. Predictors: (Constant), X2.1

c. Predictors: (Constant), X2.1, X1.8

Based on the output above, it is known that the significant value for the influence of Management Factor (X2), Work Implementation Factor (X3), Material and Equipment Factor (X4) simultaneously on Y

4.1.2. UjiT

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	X1.8	-.099[b]	-,113	,911	-,027	2,628E-05	38050,521	2,538E-05
	X2.1	.769[b]	1,673	,113	,376	8,313E-05	12029,375	8,313E-05
	X3.7	-1.170[b]	-2,064	,055	-,448	5,093E-05	19634,826	5,093E-05

a. Dependent Variable: Y1

b. Predictors in the Model: (Constant), X4.3, X1.9, X3.5, X1.2, X3.3, X1.5, X4.1, X1.4, X1.7, X1.1, X3.2, X3.4, X3.1, X4.2, X1.6, X3.6, X1.3

Whether or not the independent variable is significant in influencing the dependent variable is done by:

- Know the value of Sig. for the effect of X1.8 on Y is equal to 0.911 <0.05 and the value of t count 0.113 < t table. 2,030. So it can be concluded that H1 is accepted which means there is an effect on X1.8 on Y

- Know the value of Sig. for the effect of X1.8 on Y is equal to 0.911 <0.05 and the value of t count 0.113 < t table. 2,030. So it can be concluded that H1 is accepted which means there is an effect on X1.8 on Y

- Know the value of Sig. for the effect of X3.7 on Y is equal to 0.055 < 0.05 and the value of t count is 2.064 < t table. 2,030. So it can be concluded that H1 is accepted which means there is an effect on X3.7 on Y
- So it can be concluded that H1 is accepted which means there is an effect on X1.8 X2.1, X3.7, on Y

V. CONCLUSION

Based on research on the influence of the Analysis of Factors Causing Delay in Completion of the Slope Handling Package Work on the Rampa Poriaha/Mungkur Road section, the researchers drew several conclusions to answer the problem formulation and hypotheses that had been stated previously. The conclusions that can be drawn consist of:

1. Factors that affect the delay in the implementation of the Slope Handling work for the Poriaha Rampa Road are X1.8 X2.1X3.7 There is a request to get an extension of the construction time due to COVID-19, the existence of community complaints, type, difficulty in drilling anchor pints and anchor slings

2. The most influential factor in the delay in the implementation of the Slope Handling work for the Poriaha Ramp Section is the Project Owner Management Factor X1.8 (There is a request for an extension of the construction time due to COVID-19)
3. The ranking of the factors that influence the completion of the implementation of the Slope Handling Package Work for the Poriaha/Mungkur Ramp section is X1 Covid-19 Factor, namely X1.8 (There is a request to get an extension of construction time due to COVID-19) and X2 Factor X2.1 Management (There are citizen complaints)

Respondents' perceptions of the factors causing delays in completing work are mostly of the opinion that the factors causing delays in completing work are caused by: There is a delay in the completion of ongoing project work during the COVID-19 pandemic in the initial contract and the existence of citizen complaints. Problems that arise beyond the control of the Service Provider due to the impact of the COVID-19 pandemic which began to be felt in early March 2020 affect and have an impact on the implementation of work in the field, due to the large number of workers which results in not being able to meet the minimum number of manpower requirements needed to complete the work. according to contract targets. The impact of the COVID-19 pandemic has been felt since early March 2020, especially the implementation of PSBB (Large-Scale Social Restrictions) in accordance with the circular letter of the Governor of North Sumatra No. 440/2666/2020 so that a reduction in the number of workers is carried out in carrying out the work while construction work continues in accordance with PUPR inmen no. 02/IN/M/2020. This affects the minimum amount of labor required to complete the work according to the contract which has an impact on the implementation progress being delayed. With the enactment of PSBB, there has been a slowdown in progress towards the contract target since March, April, and May 2020 due to the limited number of skilled workers in the field due to PSBB. According to PUPR Inmen no. 02?IN/M/2020 regarding the Protocol to Prevent the Spread of Corona Virus Disease 2019 (COVID-19) in the Implementation of Construction Services that with the COVID-19 pandemic, construction work continues by implementing the Health protocol.

There is community resistance claiming that the work location still belongs to residents and there are many illegal stone miners at the work location so that the Service Provider has not been able to enter the location according to the schedule in the contract. There is community resistance claiming that the work location still belongs to the residents and there are many illegal stone miners at the work location so that the Service Provider has not been able to enter the location according to the schedule in the contract.

4. Delay in the implementation of work caused by Factors. The calculation of losses caused by these dominant factors is a loss in terms of overhead costs that cause financial losses of Rp.1.654.024.788,-

5.1. Suggestion

Based on the conclusions described above, the researchers will provide suggestions and inputs that need to be considered by the authorities for future improvements, these suggestions consist of:

1. As a consideration for companies engaged in the construction sector to avoid delays in the completion of construction projects
2. As input for the government in supervising construction projects to avoid delays in project completion.
3. It is hoped that the design will pay more attention to the timeliness of both planning and design revisions that are needed
4. Further research is expected to add or develop other variables that are new factors that can affect the delay in the work of the Slope Handling Package for the Ramp Poriaha/Mungkur Road. to obtain more accurate data

REFERENCES

[1]. Manlian Ronald. A. Simanjuntak[1*], Juse Roejanto[2*], Kajian Resiko Potensial Pekerjaan Pelaksanann Secan Pile pada Proyek apartemen di Makasar2020

[2]. Christopher Triarman[1)], Jane Sekarsari[2],Analisis Faktor Penyebab Keterlambatan Waktu pada Pekerjaan Struktur Proyek Konstruksi2018.

[3]. Rangga Bhantara, Studi faktorpenyebab keterlambatan penyelesaian pekerjaan konstruksigedung diUniversitasAirlangga Surabaya, 2017.

[4]. Haekal Hasan,"Faktor Penyebab Keterlambatan pada Proyek Konstruksi dan Alternatif Penyelesaianya,2016

[5]. Anwar,Analisa Resiko teknis yang Mempengaruhi Kinerja waktu proyek Pembangunan Pengaman Proyek Pembangunan Pengaman Pantaai di Provinsi Sulawesi Barat, 2016

[6]. Widodo, M,. Analisis Keterlambatan Waktu Pelaksanaan Pembangunan Gedung Olahraga (Indoor), 2016

[7]. Aziz Abdul M., Marthen Riyandi W., Dianita Ratna K., Nugroho Hartono, "Analisa Faktor Penyebab Keterlambatan Progres Terkait dengan Manajemen Waktu Pelaksanaan Gedung UPT PP Politeknik Negeri Semarang), 2016.

[8]. Baiq Faridah SakinahAnalisis penyebab keterlambatanpada pekerjaan konstruksi jalan kabupaten Lombok tengah dengan metode analisis faktor, 2015

[9]. Subaidillah FansuriDosen Fakultas Teknik Universitas Wiraraja, Penyebab terjadinya Keterlambatan Waktu Penyelesaian Proyek Konstruksi di Dinas PU. Bina Marga Kabupaten Sumenep2014.