

Analysis of Non Excusable Delays Risk of High Rise Building Construction Project Process Improving Time Performance in Dki Jakarta

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ABSATRACT :The city of Jakarta is currently a vibrant city to build high-rise buildings in Indonesia, which of course during the construction process there will be factors that affect the performance of the project, among others, the risk of project delays, where one example is the delay (non excusable delays). Non Excusable delays are unavoidable or unforgivable delays due to contractor faults that affect the performance of a particular project at a time. Successful implementation of a project implemented by a construction service company is associated with the extent to which project objectives (on time, quality and cost) can be met. By conducting risk management, it is hoped that the right target of cost, timely, and appropriate project in the construction of tall buildings can be realized. The problem of this research is to know the factors of non excusable delays that can have risk on project performance specially at project time, so that by knowing these factors can do preventive steps to improve project performance. The next problem is identifying the non excusable delays of the construction process. The methodology of this research has a process that starts from the preparation, implementation and evaluation of research results. The research method used is qualitative method by using analysis of secondary data result. In this study, secondary data to be obtained, identified by first preparing the research instrument in the form of research questionnaires. Through this research, it is hoped that it will produce a recommendation for improvement of risk assessment under study in building project in Jakarta. The impact of this research will also be useful for contractors to be able to maximize services performed.

KEYWORDS: *Construction process, risk, non excusable delays, time.*

I.INTRODUCTION

Project implementation in the field of construction services is generally faced with three parameters namely cost, time and quality. Successful implementation of a project implemented by a construction service company is associated with the extent to which the three parameters become the objectives that can be met. The problems faced by the construction service company if not immediately resolved, then the successful implementation of a project will be disrupted, from the three targets that faced the problems encountered by the construction service company is the absence of the target of construction project inaccuracy of completion as specified in the contract.

For the Contractor, any delay in addition to causing swelling of project costs due to increased project implementation time may also result in reduced contractor credibility for the time to come. As for the owner, the delay in the use or operation of the construction project results and potentially dampens the occurrence of disputes and claims between owners and contractor (Soeharto, 1997) .The delay is very detrimental to the relevant parties, contractors and project owners themselves. Presidential Decree No. 61 Year 2004 states that fines (financial sanctions) may be imposed on service providers if they can not implement projects according to the time available in the contract.

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The main factors of non excusable delays that contribute to the timing of a construction project are central. So that can be determined corrective action to be done to minimize non excusable delays factors on the implementation of construction projects in DKI Jakarta.

II. RESEARCH PROBLEMS

1. What are the factors and variable risks of non-excusable delays construction process?
2. What is the result of factor and risk analysis of non excusable delays?
3. What are the causes of important non-excusable risk delays?
4. What is the improvement recommendation of the research result?

III. LITERATURE REVIEW

Risk management is a structured / methodological approach to managing threat-related uncertainties; a series of human activities including: Risk assessment, development of strategies for managing them and risk mitigation using resource empowerment / management. Strategies that can be taken include transferring risks to others, avoiding risks, mitigating the negative effects of risk, and accommodating some or all of the consequences of certain risks. Traditional risk management focuses on the risks arising from physical or legal causes (such as natural disasters or fires, deaths, and lawsuits) Financial risk management, on the other hand, focuses on risks that can be managed using financial instruments. of the implementation of risk management is to reduce the different risks associated with the chosen field at an acceptable level by the people. It can be a variety of threats caused by the environment, technology, people, organizations and politics. risk management involves every means available to humans, especially to risk management entities (human, staff, and organization).

Construction of a tall Building is a construction work, therefore we should understand the concept of a construction work. Before understanding the construction work I mean in the title, we should first understand about the project itself, because the construction process / construction work is part of project management. Project is a temporary and non-repetitive activity to create a unique product. Construction process is the stage to realize every plan made by the planner. Implementation of work is a very important stage and requires the arrangement and supervision of good work to obtain good results, on time, and in accordance with what has been planned previously. The implementation phase of work is the stage that determines the success or failure of a project, therefore need to be prepared all things related to technical work, work plans, and executive staff, especially professionals who can manage the work well and can take decisions about the problem -problems encountered in the field.

Scheduling is an activity to determine the time required and the sequence of activities and determine the time the project can be completed (Ervianto, 2002: 154). Scheduling is to think deeply through various problems, to examine logical paths, and to arrange various tasks that produce a complete activity, and to write down various activities in a logical and timely sequence (Luthan and Syafiriadi, 2006 : 8).

Scheduling in the sense of a construction project is a device for determining the activities required to complete a project in a particular order and time frame, in which each activity must be carried out in order for the project to be completed on time at an economical cost (Callahan, 1992). Scheduling includes manpower, materials, equipment, finances, and time. With proper scheduling then some sort of loss can be avoided such as delays, cost swelling, and disputes. In fact, the scheduling procedure through the estimation process contains an element of uncertainty. This is in accordance with the characteristics of the construction project, ie the high risk level of any changes that occur, whether changes in political system, weather, labor dependence, construction failure, dependence of others, and etc.

Kraiem and Dickman in Proboyo (1999), stated that delays in construction project implementation are categorized into three major groups: Excusable Delays, Non Excusable Delays and Compensable Delays.

Performance is something that is produced within a certain period with reference to the established standard. Performance should be measurable outcomes and describe the empirical conditions of various agreed sizes. To know the performance achieved then performed performance appraisal. The purpose of performance appraisal is to motivate personnel to achieve organizational goals and adhere to predetermined standards of behavior, in order to produce the actions and outcomes desired by the organization. Standards of conduct may be management policies or formal plans

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outlined in the organization's strategic plans, programs and budgets. Performance appraisals are also used to suppress undue behavior and to stimulate and enforce desirable behaviors, through timely feedback of performance results and rewards, both intrinsic and extrinsic.

Performance time is a process of comparing work in the field (actual work) with a planned schedule. Time management on construction projects is a control and timing or schedule in project activities. Time performance standards are determined by referring to all stages of project activity along with the duration and use of resources. Time performance will have implications for costs, as well as overall project performance. Therefore, the variables that influence it should also be monitored. Here is the result of research that became the reference for this research : Vita Melia Nunghraeni. Non-Excusable Scope of Risk Analysis In Implementation Phases of Local Office Construction Projects X Office Affecting the Changes of Project Performance, Faculty of Engineering Civil Engineering Program Specificity Project Management. Jakarta. Yunita Afliana Messah, Theodorus Widodo, Marisyah L. Adoe. Kajian Causes of Delays in Implementation of Building Construction Project In Kupang City, Department of Civil Engineering, Faculty of Science and Engineering University Nusa Cendana. Kupang. Done by distributing questionnaires to contractors, owners and supervisory consultants, the results obtained are processed using mean and variance analysis. From these results, it can be seen that the factor causing the delay in contractor project implementation according to the contractor is the factor of labor availability, whereas according to the owner and consultant supervisor is factor material mobilization. Dhian C. NurAstina, Ida Ayu Rai Widhiawati, I G. Putu Joni. Analisis Factors Causing the Delay of Construction Project Work In Tabanan District, Civil Engineering Department, Denpasar. The determination of the delay rate on eleven (11) factors is based on the highest RI (Relative Index) score and the data analysis technique used to find the most influential sub-factor in each factor is factor score analysis. The result of the research shows that the dominant factor of the delay in the implementation of construction project work is the labor factor, with the RI value of 0.769, the change factor with the RI value of 0.753 and the spot characteristics factor with the RI value of 0.748. Mastura Labombang. Manajemen Risks in Construction Project. Journal Staff Lecturer Department of Civil Engineering University of Tadulako, Palu. The results of the study show that risk management is essential for any construction project to avoid loss of cost, quality and project completion schedule. Carry out any action taken against possible risks (risk response) by: risk retention, risk reduction, risk transfer, risk avoidance. Fachrizal Abdullah, Darmawan Pontan, Raffles. Risk Factor Analysis Against Time On Implementation of Building Construction Project Pondok Indah Residences Building. Department of Civil Engineering Faculty of Civil Engineering and Planning Universitas Trisakti, Jakarta. This study aims to identify and know the risk factors that are significant and potentially high so that the impact on Pondok Indah Residences Project. Stages in this study can be classified into two, namely risk identification and risk analysis. Nadya Safira Asmarantaka. Influential Risk Analysis of Project Performance in Hotel Batiqa Palembang Development, Department of Civil Engineering Sriwijaya University, Palembang. The results showed that the dominant risk factors affecting project performance consisted of six risk factor variables with high risk categories. The variable of risk factor are as follows: Extra work add with risk factor value 0,913, bad weather on construction activity with risk factor value 0,838, Lack of construction material with risk factor value 0,799, Late permit execution with risk factor value 0,754, Lack of labor with value of risk factor 0.730, Equipment damage with risk factor value 0.718. From the result of analysis in this research, it can be concluded that the most influential risk factor for project performance is caused by additional work. Andrew Santoso, Andi Prasetyo, Andi. Performance Analysis Project Time School "X" With Performance Intensity Method. Program Civil Engineering, University Petra, Surabaya. From the results of this study that the delay is caused by various factors, but which often makes the project late is the predecessor factor, labor, and material. Suparno. Planning And Project Scheduling On Building Construction. Journal Staff Lecturer Department of Civil Engineering, State Polytechnic Semarang, Semarang. From the results of this study obtained Causes of weaknesses in terms of planning and scheduling, evaluation, and control are human resource factors. Thus, a real need, that appropriate placement of personnel is required in the field of expertise in an effort to improve the performance of human resources in the management of construction projects undertaken by the contractor, especially regarding the achievement of quality targets, time, and costs. Ashwini Arun Salunkhe, Rahul S. Patil. Effect Of Construction Delays On Project Time Overrun: Indian Scenario. Post Graduate Student, Department of Civil Engineering, Padmeshree Dr. D. Y. Patil Institute of Engineering & Technology, Maharashtra, India.

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IV. RESEARCH METHODOLOGY

1. Research Process

To complete this research, survey method and analysis of risk assessment with qualitative and quantitative is the method used in this research. This survey method is conducted to know the risk of non excusable delays that affect the performance of time at the stage of construction of high buildings in Jakarta according to perception based on questionnaires filled by respondents. Survey conducted on some people or the owner who is involved in the building project development is by distributing questionnaires that have been validated by experts / experts. Simply put, the steps in the survey research that proeses research can be seen in the following flowchart:

2. Survey Respondents

This research will contribute to the respondents from the owner of the Project who is directly involved in the high building construction process. The respondent's criteria are the respondents are building high-rise project and the project is delayed so that the impact of the handover of the project, having experience of at least 3 years on high-rise project, has a good reputation in the construction project, has knowledge of scheduling the construction of high- and have a minimum education D3 according to discipline that support in it.

c. Instrument Research

Instrumen penelitian yang dipergunakan dalam penelitian ini berupakan kuisioner dan wawancara yang diperoleh dari responden. Menurut Sugiyono (2014, 92) menyatakan bahwa instrumen penelitian adalah suatu alat pengumpul data yang digunakan untuk mengukur fenomena alam maupun sosial yang diamati.

V. DATA ANALYSIS OF RESEARCH RESULTS

1. Realibility Test.

Table 1.1 Reliability Statistics

Cronbach's Alpha	N of Items
.904	53

Based on the above table 1.1 obtained value factor reliability factor test alpha crombachs is 0.904, which means the factor component is considered very reliable, referring to the standard reliability Guilford by Sugiyono (2007: 183) which divides the level of reliability in the following five criteria :

Table 1.2 Tingkat Realibel (Sugiyono 2007)

Alpha	Reliability Level
0.00-0.2	Less Reliable
0.20-0.4	Somewhat Reliable
0.40-0.6	Quite Reliable
0.60-0.8	Reliable
0.80-1	Very Reliable

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2. Correlation Test

In this research, the correlation test is conducted to measure the relationship between all independent variables which are important factors that are in the process stages of the construction of precast facade method to the time performance of the building project in South Tangerang. Correlation analysis done in research using SPSS version 20 program aid and because the data used in this study is numerical then correlation analysis used is product moment correlation analysis. The independent variable with correlation value of $r \geq 0,4$ is considered to have a close relationship with the increasing of time performance in building project in South Tangerang City and will be analyzed further by using intercorrelation analysis. Table 1.3 The following are the variables that pass in correlation analysis (have correlation value $r \geq 0,4$ to variable of process performance of precast facade construction method) and will be analyzed further by intercorrelation analysis:

Table 1.3 Results of Correlation Analysis

Variable X	R Count	Correlation
X1	0,496	Correlation
X2	0,639	Correlation
X3	0,300	No Correlation
X4	0,228	No Correlation
X5	0,082	No Correlation
X6	0,173	No Correlation
X7	0,174	No Correlation
X8	0,551	Correlation
X9	0,254	No Correlation
X10	0,489	Correlation
X11	0,404	Correlation
X12	0,444	Correlation
X13	0,219	No Correlation
X14	0,529	Correlation
X15	0,572	Correlation
X16	0,021	No Correlation
X17	0,357	No Correlation
X18	0,068	No Correlation
X19	0,017	No Correlation
X20	0,058	No Correlation
X21	0,050	No Correlation
X22	0,053	No Correlation
X23	0,285	No Correlation
X24	0,062	No Correlation
X25	0,405	Correlation
X26	0,594	Correlation
X27	0,362	No Correlation
X28	0,633	Correlation
X29	0,420	Correlation
X30	0,318	No Correlation
X31	0,274	No Correlation
X32	0,514	Correlation
X33	0,203	No Correlation
X34	0,433	Correlation

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X35	0,284	No Correlation
X36	0,280	No Correlation
X37	0,480	Correlation
X38	0,126	No Correlation
X39	0,411	Correlation
X40	0,037	No Correlation
X41	0,101	No Correlation
X42	0,448	Correlation
X43	0,568	Correlation
X44	0,007	No Correlation
X45	0,224	No Correlation
X46	0,565	Correlation
X47	0,472	Correlation
X48	0,616	Correlation
X49	0,646	Correlation
X50	0,153	No Correlation
X51	0,110	No Correlation
X52	0,122	No Correlation

Independent variables that pass the correlation test in summary can be seen in the following table 1.4:

VariableX	Information	RCount
X1	Improper implementation scheduling	0.496
X2	Conflict with other construction activities	0.639
X8	Lack of experience in monitoring	0,551
X10	Disadvantages of Peronil to supervise	0,489
X11	Unsuitable supervision procedures	0,404
X12	Low Motivation To Monitor	0,444
X14	Human safety in Construction	0,529
X15	Low labor mobilization	0,572
X25	Material delivery delay	0,405
X26	The material supplier is not reliable	0,594
X28	Incorrect material procurement system	0,633
X29	Pengawasan manajemen material buruk	0,420
X32	Import Construction Materials	0,514
X34	Delay in equipment delivery	0,433
X37	The equipment provider is unreliable	0,480
X39	Difficulty to mobilize Equipment	0,411
X42	Specialist contractor is not reliable	0,448

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X43	Specialist Contractor this Collapse	0,568
X46	Limitations of specialist contractors	0,565
X47	The quality of the specialist contractor is bad	0,472
X48	Mobilization of specialist contractors is slow	0,616
X49	Conflict work schedule of specialist contractors	0,646

3. Factor analysis test

➤ KMO And Bartlett

Bartlett of Sphericity and Keizer Meyer Olkin test Mearuse of Sampling Adequacy (KMO) is a test instrument used to measure intercorrelation between variables and whether factor analysis can be done. Criteria data that can be analyzed factors are data showing KMO > 0.5 and Bartlett's test of Sphericity at significant < 0.05 (Ghozalli, 2006). The following is a table 4.10 KMO-MSA result of factor analysis:

Table 1.4 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	,763
Approx. Chi-Square	495,944
Bartlett's Test of Sphericity df	231
Sig.	,000

Based on table 1.4 above, the value of KMO result of factor analysis is 0.763, KMO value obtained more than 0.5, this means factor analysis can be done. Furthermore, the significant value obtained from the Bartlett test is 0,000 and this value is smaller than 0.05 which means there is a significant relationship between independent variables inside and outside factors.

➤ Matriks Anti Image

Anti-image matrix is used to determine whether there is a match between variables that are in 1 factor. The diagonal value of the anti Image Matrix in this study is > 0,500, it shows that the variable matches / corresponds to the other variable structure within the factor, the following is the anti Image matrix view of the factor analysis

Table 1.5 Matrix of Anti Image Result Factor Analysis

	X43	X46	X47	X48	X49
X43	1,000				
X46	0,568	1,000			
X47	0,472	0,565	1,000		
X48	0,616	0,472	0,565	1,000	
X49	0,646	0,616	0,565	0,472	1,000

Based on the anti Image matrix in table 1.5 above, the diagonal values of all variables > 0,500, meaning all variables match the structure of other variables in the factor, so no independent variables are eliminated from the model. 22 independent variables selected intercorrelation test results can be further analyzed by regression analysis.

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➤ Total Variance Explained

The total variance explained table describes the number of component factors that can be formed from the 22 independent variables analyzed. The following is a table of total variance explained results from the analysis of these factors: The total variance explained table describes the number of component factors that can be formed from the 22 independent variables analyzed. The following is a table of total variance explained results from the analysis of these factors

Table 1.6 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,889	35,858	35,858	7,889	35,858	35,858
2	1,946	8,846	44,703	1,946	8,846	44,703
3	1,530	6,956	51,659	1,530	6,956	51,659
4	1,308	5,947	57,605	1,308	5,947	57,605
5	1,112	5,056	62,662	1,112	5,056	62,662
6	1,037	4,712	67,373	1,037	4,712	67,373
7	,880	4,000	71,373			
8	,803	3,652	75,025			
9	,707	3,213	78,238			
10	,659	2,997	81,235			
11	,626	2,846	84,081			
12	,564	2,564	86,644			
13	,513	2,334	88,978			
14	,455	2,067	91,045			
15	,393	1,788	92,833			
16	,357	1,622	94,455			
17	,328	1,493	95,948			
18	,286	1,299	97,247			
19	,218	,993	98,239			
20	,170	,772	99,011			
21	,132	,600	99,611			
22	,086	,389	100,000			

Extraction Method: Principal Component Analysis.

Based on Table 1.6 above, it can be seen that the total variance describes the result of factor analysis is 67.373% (> 60%). This means that the factors used by the 22 independent variables are sufficient to explain non-excusable factors in the construction of high-rise buildings in DKI Jakarta. The analysis result of these factors is able to form 6 component factor.

➤ Component matriks

According to Hair Et. Al (1998), each variable in factor analysis must have a strong correlation with its component factor. Each question item (variable) must have factor loading over 0.40. The following is the factor loading factor of each variable in its factors

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Tabel 1.7 Component Matriks

	Component					
	1	2	3	4	5	6
X1	,464	-,009	,570	,134	-,057	,405
X2	,746	-,208	,027	,130	-,232	,001
X8	,562	,214	,105	,144	,035	,274
X10	,552	-,258	,491	-,191	-,099	-,190
X11	,590	-,194	-,246	,135	,332	,346
X12	,521	-,017	,084	,599	,319	-,270
X14	,585	,302	-,349	-,122	-,112	,049
X15	,672	,006	,170	-,088	,022	,206
X25	,599	-,242	,120	-,252	,481	-,053
X26	,551	,365	,270	-,096	,146	-,058
X28	,555	,318	,242	,164	-,485	-,262
X29	,608	-,486	,112	-,318	-,059	-,199
X32	,501	,477	-,050	-,445	-,005	-,291
X34	,683	-,454	-,138	-,056	-,027	,172
X37	,681	-,363	-,190	,161	-,102	-,142
X39	,661	-,429	-,372	,030	-,222	-,180
X42	,530	,376	-,461	-,152	,217	,022
X43	,541	,293	,212	,276	,061	,029
X46	,607	,139	-,310	,350	-,174	,045
X47	,631	,036	,079	-,344	,092	,119
X48	,609	,264	-,138	-,174	-,310	,325
X49	,643	,254	,001	,129	,285	-,345

Based on table 1.7 above, the value factor loading each independent variable to its component > 0.4 which means the four independent variables analyzed have a strong correlation to its components.

VI. CONCLUSION

Based on the results of analysis and discussion of research, the authors take the conclusion that is the answer of the questions on research problems are:

1. In this research there are 7 Factors and 52 Variables Non Excusable Delays
2. a. Based on the above table 1.1 obtained value factor reliability factor test alpha crombachs is 0.904.
 - b. Based on table 1.4 above, the value of KMO result of factor analysis is 0.763, KMO value obtained more than 0.5, this means factor analysis can be done. Furthermore, the significant value obtained from the Bartlett test is 0,000 and this value is smaller than 0.05 which means there is a significant relationship between independent variables inside and outside factors.
 - c. Based on the anti Image matrix in table 1.6 above, the diagonal values of all variables > 0,500, meaning all variables match the structure of other variables in the factor, so no independent variables are eliminated from the model. 22 independent variables selected intercorrelation test results can be further analyzed by regression analysis.
 - d. Based on Table 1.6 above, it can be seen that the total variance describes the result of factor analysis is 67.373% (> 60%). This means that the factors used by the 22 independent variables are sufficient to explain non-excusable factors in the construction of high-rise buildings in DKI Jakarta. The analysis result of these factors is able to form 6 component factor.

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- e. Based on table 1.7 above, the value factor loading each independent variable to its component > 0.4 which means the four independent variables analyzed have a strong correlation to its components.
3. Based on the results of the analysis, the factors that are the most influential factors of the 22 most dominant variables of the 4 Variables Sourced from Specialist Contractor factors are X46, X47, X48 and X49
4. Recommendation

According to the results of this study, the most representative factor is the specialist contractor factor so when the procurement process is necessary Professionalism of the selection of specialist contractors takes into account the specialist contracting capabilities in terms of Method, Financial and the ability to implement several projects at the same time.

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