

Factors Affecting Delays in Luwansa Manado Hotel Project

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Abstract

Building construction in Indonesia from year to year is growing, especially in the construction world. The increasing number of construction service providers in recent times should be offset by cost savings, quality in accordance with standards and also project time management. In Indonesia especially in Manado city there are many hotel developments, one of which is the construction of Hotel Luwansa manado. Acting as the main contractor (Main Contractor) of PT. Recta Construction, as the winner of the tender of the project. The construction of Hotel Luwansa Manado is one of the hotel developments not far from Manado City Beach which has 1 Tower, covering 10 floors, roof top, and 2 basements. At the time of implementation of the project one of the sub contractors had already started the foundation work in July 2019 and should have been completed in October 2019. However, the design of the foundation work on the project retreated to January 2020, due to design changes and resulted in the addition of foundation work at The Luwansa Hotel Project Manado. The method carried out in this study is the collection of data through questionnaires distributed to several respondents. The method of analysis performed is quantitative descriptive. The quantitative approach is research that focuses on hypothesis testing, the data used must be measured, and produce a generalized conclusion. This method uses (analysis tools) inference statistics (inconclusive). This method of analysis aims to describe the delay in construction work of Hotel Luwansa Manado building. From the analysis using the SPSS program there are five dominant variables namely X18 of 0.270, X16 of 0.239, X24 of 0.212, X17 of 0.172, and X27 of 0.104.

Keywords:

Analysis of questionnaire data, Project delay, SPSS program.

1. Introduction

1.1. Background

Building construction in Indonesia from year to year is growing, especially in the construction world. The increasing number of construction service providers in recent times should be offset by cost savings, quality in accordance with standards and also project time management. In Indonesia especially in Manado city there are many hotel developments, one of which is the construction of Hotel Luwansa manado. Acting as the main contractor (Main Contractor) of PT. Recta Construction, as the winner of the tender of the project.

The construction of Hotel Luwansa Manado is one of the hotel developments not far from Manado City Beach which has 1 Tower, covering 10 floors, roof top, and 2 basements. At the time of implementation of the project one of the sub contractors had already started the foundation work in July 2019 and should have been completed in October 2019 (Mochtar, 2019). However, the design of the foundation work on the project retreated to January 2020, due to design changes and resulted in the addition of foundation work at The Luwansa Hotel Project Manado. Furthermore, during the process of carrying out the work of the building structure resulted in the work of the main contractor was hampered. To overcome the constraints on the initial implementation of structure work such as lack of HR efficiency, waiting for the structural work of sub contractors, changes in work picture, material entrant, and so on. The role of the main contractor to complete the work in time will be the added value of the owner of the project to the main contractor, by accelerating its implementation.

Delays in the implementation of construction projects can be overcome by accelerating implementation in order to achieve the target plan. But in the decision to accelerate the implementation of the work should certainly pay attention to the financing factor so that the expected result is the minimum cost without ignoring the quality according to the desired standards (Male, 2017). In the case of this construction project is the delay of work that will adversely affect the project. Therefore, researchers here are interested in discussing the identification of the factors causing the delay in the construction project's work, and how to address the delays caused by the factors that are the cause of the delay in the project.

1.2. Identify Problems

Based on the background that the author has described, the identification of problems based on observations in the field is:

- a. Kslowed the implementation of structural work on the Luwansa Manado Hotel project in the implementation process was delayed at the beginning of implementation with a delay of 22.2% from the original plan, supposed to start in October backwards to January. With a loss of 18.61 % of the contract value.
- b. The implementation of time management on the structure work on the Luwansa Manado Hotel project was not suitable, resulting in delays in the construction of the structure.

1.3. Problem Formulation

From background writing and identification of the above problems, the formulation of problems related to this research includes:

- a. What are the dominant factors that caused the delay in the work of the Luwansa Manado Hotel project structure?
- b. How is the strategy to overcome structural work delays on the Luwansa Manado Hotel project project?

1.4. Intent And Purpose

The intent and purpose of writing this Final Task are:

- a. Knowing what dominant factors caused the delay in the work of the Luwansa Manado Hotel project structure?
- b. Knowing what strategies to be able to overcome structural work delays on the Luwansa Manado Hotel project project?

2. Methodology

Preparation of Research Water Diagram is:

1. Identify problems and formulation of problems: at this stage researchers conduct research by looking for objects and problems that occur at Hotel Luwansa Manado, then formulate the problem as a guideline in conducting research.
2. Literature studies and data collection: researchers conduct literature studies that examine several journals and articles to find out which studies have been conducted in the past related to the meticulous, variables and factors studied, the procedures that have been applied, the results and obstacles found in the research. Researchers also conducted primary data collection, by disseminating questionnaires to several respondents.
3. Preparation of Questionnaire :
 - a. Phase I Questionnaire: Preparation of phase I questionnaire intended to ask experts to review questionnaires that have been compiled by researchers.
 - b. Phase II Questionnaire: The dissemination of phase 2 questionnaires was given to several prospective respondents.
 - c. Phase III questionnaire: At this stage the researchers conducted the dissemination of questionnaires given to respondents involved in the work of Hotel LuwansaManado.
 - d. Questionnaire data input: Here the researchers re-collected the questionnaire that the respondents had filled out to be further analyzed.
4. Data Analysis Problem :

To analyze the data of the questionnaire researchers used quantitative descriptive analysis methods with the help of the SPSS program.
5. Data processing and discussion:

After the results of the questionnaire are analyzed then discuss with experts about the results of the analysis of questionnaires that have been done, so that experts provide recommendations.
6. Data Analysis Problem 2 :

To analyze the data for the formulation of problem 2.
7. Preparation of Phase IV Questionnaire:

The dissemination of the phase IV questionnaire by interviewing experts mengenai analisis results from the questionnaire that has been conducted, so that mem experts provide recommendations that include preventive and corrective measures on variables that affect the delay in construction project work.
8. Conclusions and Suggestions :

At this stage, researchers are providing conclusions from the results of the study on the causes of delays in building construction work in order for the researchers to further develop.

3. Results and Discussion

3.1 Introduction

This chapter describes the analysis and asil of the dominant factors that affect the delay of the Luwansa Manado HotelProject. Data collection begins with the dissemination of questionnaires to experts, followed by the dissemination of pilot survey questionnaires on samples from populations and then the dissemination of questionnaires to respondents. The method used in analyzing such data is statistical data analysis..

3.2 Analysis With Spss Program

3.2.1 Validity and Reability Test

Table 3.1 Internal Validity Test Results

Variable	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Conclusion	R Table
X1	113.98	128.295	0.676	0.897	Valid	0.294
X2	114.76	133.416	0.202	0.908	Tidak Valid	0.294
X3	113.93	132.518	0.396	0.901	Valid	0.294
X4	113.93	132.518	0.495	0.900	Valid	0.294
X5	113.96	129.998	0.545	0.899	Valid	0.294
X6	114.11	127.965	0.637	0.897	Valid	0.294
X7	114.56	131.798	0.407	0.901	Valid	0.294
X8	114.33	132.182	0.302	0.904	Valid	0.294
X9	114.22	127.404	0.716	0.896	Valid	0.294
X10	114.51	131.301	0.305	0.905	Valid	0.294
X11	114.96	128.953	0.520	0.899	Valid	0.294
X12	113.98	127.886	0.618	0.897	Valid	0.294
X13	114.13	129.118	0.624	0.897	Valid	0.294
X14	114.04	134.043	0.436	0.901	Valid	0.294
X15	114.24	130.462	0.467	0.900	Valid	0.294
X16	114.36	125.916	0.789	0.894	Valid	0.294
X17	114.42	131.522	0.449	0.900	Valid	0.294
X18	114.24	132.916	0.260	0.905	Tidak Valid	0.294
X19	114.42	132.840	0.434	0.901	Valid	0.294
X20	114.47	131.391	0.526	0.899	Valid	0.294
X21	114.02	133.249	0.407	0.901	Valid	0.294
X22	114.27	132.745	0.360	0.902	Valid	0.294
X23	114.18	128.968	0.584	0.898	Valid	0.294
X24	114.53	128.164	0.602	0.897	Valid	0.294
X25	114.00	134.500	0.402	0.901	Valid	0.294
X26	115.16	129.180	0.460	0.900	Valid	0.294
X27	114.67	130.727	0.445	0.900	Valid	0.294
X28	114.62	125.195	0.699	0.895	Valid	0.294

(Source : Statistical Software Processed)

Table 3.2 Realization Test Results

Cronbach's Alpha	N of Items
0.903	28

(Source : Statistical Software Processed)

3.2.2 Deskriptif analysis

Table 3.3 Descriptive Test Results

Variable	N	Minimum	Maximum	Mean
X1	45	2	5	4.58
X3	45	2	5	4.62
X4	45	3	5	4.62
X5	45	3	5	4.60
X6	45	2	5	4.44
X7	45	2	5	4.00
X8	45	1	5	4.22
X9	45	2	5	4.33
X10	45	1	5	4.04
X11	45	2	5	3.60
X12	45	2	5	4.58
X13	45	2	5	4.42
X14	45	3	5	4.51
X15	45	3	5	4.31
X16	45	3	5	4.20
X17	45	3	5	4.13
X19	45	3	5	4.13
X20	45	3	5	4.09
X21	45	3	5	4.53
X22	45	3	5	4.29
X23	45	3	5	4.38
X24	45	2	5	4.02
X25	45	3	5	4.56
X26	45	2	5	3.40
X27	45	1	5	3.89
X28	45	3	5	3.93

(Source : Statistical Software Processed)

3.2.3 External Validation (Correlation Test)

Table 3.4 Correlation of Variable Relationships X and Y

Variable	N	<i>Correlation Coefficient</i>	Sig. (2-tailed)
X1	45	.705**	0.0000
X3	45	.478**	0.0009
X4	45	.522**	0.0002
X5	45	.552**	0.0001
X6	45	.702**	0.0000
X7	45	.599**	0.0000
X8	45	.544**	0.0001
X9	45	.750**	0.0000
X10	45	.488**	0.0007
X11	45	.552**	0.0001
X12	45	.671**	0.0000
X13	45	.609**	0.0000
X14	45	.478**	0.0009
X15	45	.499**	0.0005
X16	45	.796**	0.0000
X17	45	.518**	0.0003
X19	45	.457**	0.0016
X20	45	.532**	0.0002
X21	45	.499**	0.0005
X22	45	.447**	0.0021
X23	45	.578**	0.0000
X24	45	.655**	0.0000
X25	45	.421**	0.0039
X26	45	.479**	0.0009
X27	45	.506**	0.0004
X28	45	.754**	0.0000

(Source : Processed Results Software processed statistical data)

Table 3.5 Variables with high correlation

Variable	Descriptive
X1	Perubahan design by Owner.
X3	Imade a decision.
X4	Perubahan material oleh owner.
X5	Poor communication between owner and planner on planning.
X6	Communication between consultants and contractors.
X7	Preparation of work schedules and revisions by consultants while construction is underway.
X8	Changes in technical specifications of work items
X9	Understaffing and trained management to support construction implementation
X10	Projectinitial planning
X11	Waiting for permission for materialcontrol.
X12	Material Shortage
X13	Material changes to shapes, functions, and specifications.
X14	Delay sending materials
X15	Difficult location.
X16	Environmental sustainability.
X17	Inappropriate booking times
X19	Incompetent workforce.
X20	Workforce capabilities.
X21	Financial availability during implementation
X22	Late payment process by Owner.
X23	National economic situation
X24	Fluctuations in rupiah value against the dollar
X25	Late payment of the owner.
X26	Social and cultural factors
X27	The effect of rain on construction activities.
X28	The effect of environmental security on project development.
Variable	Descriptive
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X28	The effect of environmental security on project development.

(Source : Own Processed Products 2020)

3.2.4 Regression Analysis

Table 3.6 Entered/Removed Variables

Model	Variables Entered	Variables Removed	Method
1	X16		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	X18		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	X24		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	X17		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	X27		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

(Source : Processed Results Software processed statistical data)

Table 3.7 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.669 ^a	0.447	0.435	0.412
2	.851 ^b	0.724	0.711	0.294
3	.910 ^c	0.828	0.816	0.235
4	.937 ^d	0.877	0.865	0.201
5	.945 ^{and}	0.892	0.879	0.191

a. Dependent Variable: y

b. Predictors: (Constant), X16

c. Predictors: (Constant), X16, X18

d. Predictors: (Constant), X16, X18, X24

e. Predictors: (Constant), X16, X18, X24, X17

f. Predictors: (Constant), X16, X18, X24, X17, X27

(Source : Processed Results Software processed statistical data)

Table 3.8 Anova Table / Test F

Model		Sum of Squares	df	Mean Square	F	It's getting you out of here
1	Regression	5.906	1	5.906	34.821	.000 ^b
	Residual	7.294	43	0.170		
	Total	13.200	44			
2	Regression	9.560	2	4.780	55.148	.000 ^c
	Residual	3.640	42	0.087		
	Total	13.200	44			
3	Regression	10.934	3	3.645	65.933	.000 ^d
	Residual	2.266	41	0.055		
	Total	13.200	44			
4	Regression	11.581	4	2.895	71.527	.000 ^{and}
	Residual	1.619	40	0.040		
	Total	13.200	44			
5	Regression	11.779	5	2.356	64.635	.000 ^f
	Residual	1.421	39	0.036		
	Total	13.200	44			

(Source : Processed Results Software processed statistical data)

Table 3.9 Table of Coefficients and Test T

Model		Unstandardized Coefficients		Standardized Coefficients	t	It's getting you out of here
		B	Std. Error	Beta		
1	(Constant)	2.167	0.350		6.190	0.000
	X16	0.484	0.082	0.669	5.901	0.000
2	(Constant)	0.976	0.310		3.148	0.003
	X16	0.470	0.059	0.650	8.015	0.000
	X18	0.290	0.045	0.526	6.492	0.000
3	(Constant)	0.591	0.259		2.277	0.028
	X16	0.357	0.052	0.493	6.850	0.000
	X18	0.261	0.036	0.474	7.225	0.000
	X24	0.245	0.049	0.363	4.986	0.000
4	(Constant)	0.272	0.236		1.155	0.255
	X16	0.308	0.046	0.426	6.676	0.000
	X18	0.251	0.031	0.456	8.099	0.000
	X24	0.199	0.044	0.294	4.550	0.000
	X17	0.182	0.045	0.251	3.999	0.000
	(Constant)	0.064	0.241		0.266	0.791
5	X16	0.239	0.053	0.330	4.507	0.000
	X18	0.270	0.030	0.490	8.848	0.000
	X24	0.212	0.042	0.314	5.069	0.000
	X17	0.172	0.043	0.238	3.982	0.000
	X27	0.104	0.045	0.158	2.329	0.025

(Source : Processed Results Software processed statistical data)

3.3 Final Expert Validation

Table 4.1 Final Validation Results (Expert I)

Variable	Description	Statement	Conclusion
X16	Environmental sustainability	Already	Agree
X18	Labor shortage	Already	Agree
X24	Fluctuations in rupiah value against the dollar	Already	Agree
X17	Inappropriate booking times	Already	Agree
X27	The effect of rain on construction activities	Already	Agree

(Source : Self-Processed Products 2020)

Table 4.2 Delay Factor Handling Strategies (Expert I)

Variable	Statement	Opinion
X16	Agree	Penggalangan coordination with the environment and police officers.
X18	Agree	Accelerate the labor recruitment process through recommendations from project employees under certain conditions.
X24	Agree	Set the unit price at the beginning with anticipation of a dollar increase.
X17	Agree	Ensuring and selecting suppliers who have good credibility in the delivery of materials.
X27	Agree	Accelerate implementation time with the addition of manpower.

(Source : Self-Processed Products 2020)

Table 4.3 Final Validation Results (Expert II)

Variable	Description	Statement	Conclusion
X16	Environmental sustainability	Already	Agree
X18	Labor shortage	Already	Agree
X24	Fluctuations in rupiah value against the dollar	Already	Agree
X17	Inappropriate booking times	Already	Agree
X27	The effect of rain on construction activities	Already	Agree

(Source : Self-Processed Products 2020)

Table 4.4 Delay Factor Management Strategies (Expert II)

Variable	Statement	Opinion
X16	Agree	Increase supervision of project areas through the implementation of patrols in order to reduce the risk of delays arising from people not interested in entering the construction project area (scavengers, children, grass seekers, etc.)
X18	Agree	Accelerate the labor recruitment process through recommendations from project employees.
X24	Agree	Set the unit price at the beginning with anticipation of a dollar increase.
X17	Agree	Take into account the time to know the material will run out in storage.
X27	Agree	Accelerate implementation time with the addition of manpower.

Source : (Self-Processed Products 2020)

Table 4.5 Final Validation Results (Expert III)

Variable	Description	Statement	Conclusion
X16	Environmental sustainability	Already	Agree
X18	Labor shortage	Already	Agree
X24	Fluctuations in rupiah value against the dollar	Already	Agree
X17	Inappropriate booking times	Already	Agree
X27	The effect of rain on construction activities	Already	Agree

Source : (Self-Processed Products 2020)

Table 4.6 Delay Factor Management Strategies (Expert III)

Variable	Statement	Opinion
X16	Agree	If there are reports of loss, security should be at least able to make Event News to be reported to the boss..
X18	Agree	Accelerate the labor recruitment process.
X24	Agree	Set the unit price at the beginning with anticipation of a dollar increase.
X17	Agree	Management of order time by paying attention to stock material in storage.
X27	Agree	Accelerate implementation time with the addition of manpower.

(Source : (Self-Processed Products 2020))

4. Conclusion and Suggestions

4.1 Conclusion

Based on the results of processing and analysis of data that has been done in previous chapters, it can be drawn some conclusions of the dominant cause of delays in the construction project of Hotel Luwansa Manado..

1. The dominant factor is the delay in the construction project work of Hotel Luwansa Manado, namely:

Table 4.7 Analysis Results

Variable	Causes of Delay	Slope/Coefficient Estimate
X18	Labor shortage	0.270
X16	Environmental sustainability	0.239
X24	Fluctuations in rupiah value against the dollar	0.212
X17	Inappropriate booking times	0.172
X27	The effect of rain on construction activities	0.104

(Source : (Self-Processed Products 2020))

2. Based on the analysis that has been done in this study that the factor that is very influential to the delay of work on the Project Hotel Luwansa Manado is the Labor Factor (X18) by 27.0%. Strategies to reduce work delays are by approaching each cause of delays. Other strategies to overcome delays in Hotel Luwansa Manado project are as follows:

- a. Accelerate the labor recruitment process through recommendations from project employees.
- b. Increase the supervision of the project area through the implementation of patrols in order to reduce the risk of delays arising from people who are not interested in entering the construction project area (scavengers, children, grass seekers, etc.).
- c. Set the unit price at the beginning with anticipation of a dollar increase.
- d. Ensuring and selecting suppliers who have good credibility in the delivery of materials.

4.2 Suggestions

From the results of research, analysis and discussion and conclusions taken, it can be suggested:

1. From the results of the author's study on the delay in the implementation of the project. The authors found that late work was influenced by 4 (four) dominant variables, should contractors pay attention to the 4 (four) dominant variables.
2. Contractors need to coordinate more with the field supervisor in order to be more careful in looking at the progress of the work, so as to suppress or speed up the completion time of the work.

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