

# Analysis Of Performance Factors Of Construction Management Consultant Affecting The Failure In Achieving Time And Quality Targets On Construction Project Of Samarinda Baru Airport

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**Abstract:** This research aims to determine the performance factors of construction management consultants affecting the failure in achieving time and quality targets on construction project of Samarinda Baru Airport. This research uses survey method by collecting respondent's opinion, experience and attitude by taking primary data from questionnaires and secondary data from related institutions. The results of the research are: 1) Factors directly affecting the Time Target (Y1) are the Understanding of Contract Document (X1), Material Requirements (X3), Worker Requirements (X4) and Equipment Completeness (X5) while factors indirectly affecting the Time Target (Y1) are the Understanding of Technical Specifications (X2) and Local Government Regulations (X7), 2) Factors directly affecting the Quality Target (Y2) are the Understanding of Contract Document (X1), the Understanding of Technical Specifications (X2), Material Requirements (X3), Worker Requirements (X4), Equipment Completeness (X5) and Time Target (Y1) while factor indirectly affecting the Quality Target (Y1) is Local Government Regulations X7, 3) The most dominant factor affecting the unsuccessful Time Target (Y1) is the Worker Requirements (X4) with the path coefficient value of 0.431. While the most dominant factor affecting the unsuccessful Quality Target (Y2) is Worker Requirements (X4) with path coefficient value of 0.579, 4).

**Index Terms:** Performance; Consultant; Management; Construction; Project.

## 1. INTRODUCTION

Airport is a mode of transportation that has a very important role in supporting the rate of economic growth, development and social culture, especially in its contribution to serve human mobility and the distribution of goods and services. Moreover, the airport is also needed to bridge the gap and encourage equitable development between urban and remote areas, so it can synergize positively in the acceleration of regional development. By the increase of economic growth and development of traffic and government policies in the field of air transport, the needs for facilities and infrastructure increase too, so that the development in the construction of the airport should be able to support these conditions, it needs to implement an adequate infrastructure development in the airports and do some maintenances to support that conditions, so that the quality of the airport can be maintained and the age of service gets longer. On the implementation of construction projects, it is often encountered swelling costs (cost overrun) or delay in the implementation time as well as a decrease in the quality of work that is allegedly caused by several influencing factors so that it experiences failure in achieving the objectives of the project; on time, on cost and right quality, so there is a failure in reaching the desired goals and objectives [1]. There are several factors that cause delays include problems of workers, budget, as well as lack of professional management [2]. Therefore, it is necessary to supervise and assist the project activities during its implementation. Therefore, a consultant company has the task of overseeing the owner in the early stages of the project (planning and designing stage) to prepare for the next phase, during the construction period (physical development). Job description of consultants in general is to translate the wants and needs of the owner by accompanying the consultant planner in the design process as outlined in the picture documents, calculations, and other supporting documents [3]. A mature planning at the start of project will result in an accurate product

implementation guideline, which will greatly influence the success of a project, and supervisory consultants also have an important role in the success of the project on time and quality [4,5]. Construction Management Consultant as consultant for the owner must be able to understand and accommodate all input from the owner, then supervise and assist the consultant planner in implementing it into the design [6]. The process can occur repeatedly, where in most cases the owner has many needs and wants to be accommodated (especially if the owner consists of more than one person/related parties, as many occur in government agencies projects) [7]. The process of discussion, design, presentation, design revision/redesign, more discussions, more presentations, redesigns, and so on, almost always happens on every project [8]. That is why; consultants should be smart to address it, so that it will not interfere with the construction process. Samarinda Baru Airport in East Borneo Province has a very strategic role that is part of a national strategic project. Based on data obtained from East Borneo Provincial Transportation Agency, the implementation of Samarinda Baru Airport development project has not achieved the target of time and quality, with the change of contract/addendum of added time and unsuitable quality. This is due to the planning is different than the schedule, the implementation of retiring contracts, the contractual changes that cause the scope of work and the reschedule [9]. Factors that are suspected to affect the performance of Construction Management Consultants on the failure in achieving Time Targets and Quality of Work on Airport Development are the Understanding of Contract Documents, Understanding of Technical Specifications, Material Requirements, Labor Requirements, Equipment Completeness, Implementation Methods and Local Government Regulations [9]. From the statement above, the aims of this research is to know the performance factors of construction management consultant affecting the failure in achieving the target time and quality of work on the development project of

Samarinda Baru Airport.

## 2. RESEARCH METHOD

This research uses survey method by collecting respondent's opinion, experience and attitude by taking primary data from questionnaires and secondary data from related institutions. Based on what factors affecting the Construction Management Consultant's Performance on the failure in achieving the time target and the quality of work at Samarinda Baru Airport development project, it will determine the factors that are suspected to affect the Construction Management Consultant's Performance on the failure in achieving the time target and the continuing quality by determining the indicators to be used as items of questions to be measured in the form of questionnaires.

## 3. RESULTS AND DISCUSSION

### 3.1. Factor Analysis

A group of variables are appropriate to use factor analysis if it has a degree of relatedness (dependencies) which are quite high. The indication of the level of relatedness is determined by the value of KMO (Keizer Meyer Olkin) and MSA (Measures Sampling Adequacy). Here are the results of the selection of indicators (items) that affect the performance of construction management consultant towards time and quality of work, the selection is conducted on the value of the MSA. Variables with the lowest value of the items of MSA and less than 0.50 will be dropped then it is recalculated until all of the points have a value of more than 0.50 MSA. Analysis of the 7 variables shows that no item should be dropped, for all items have a value of more

than 0.50 MSA. After the process of selecting the appropriate items; filtering of the items, it obtains items that are eligible for analysis. The next is summarizing or extraction of the set of existing items, thus forming one or more factors that constitute the main data structure of influence towards the performance of construction management consultant in the failure of achieving the target time and quality of work [10]. The results of factor extraction are followed by an interpretation of the loading factor of each item. Factors will represent a number of items if the consideration loading factor is more than 0.50. Loading factors also explain the correlation of an item with other formed factor. The results loading factors are used and are obtained from the component matrix. When the significant factors are many, it is often found difficulty in the interpretation of the factors because of the extraction of the overlapping factors. To overcome this factor, rotation is carried out. Thus, the extraction will be seen from the calculation factor loading factor after it is rotated (rotated component matrix). Varimax rotation method is used to obtain the optimum loading factor [11].

#### 3.1.1. Latent variables of understanding contract document (X1)

Understanding Latent Variable Contract Documents (X1) was measured with four items of questions that are descriptors of things that become influence measurement of performance Construction Consultants in failure of achieving the target time and the quality of construction project of Samarinda Baru Airport. This can be seen in Table 1.

**Table 1.** Results of Factor Analysis for the Variable of Contract Documents Understanding (X1)

Manifest Variable	The value of Communality	Loading Factor 1	KMO	MSA	Bartlett's Statistical Significance
X1.1	0.648	0.805		0.664	
X1.2	0.674	0.821		0.658	
X1.3	0.526	0.725		0.784	
X1.4	0.317	0.563	0.703	0.811	0.000
Eigen Value		2.166			
Total Diversity		54.143			
Cumulative Total Diversity		54.143			

Table 1 displays a summary of the value of communality, loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) on Latent Variable of Contract Document Understanding (X1). Whole MSA has value above 0, 5 so that it can be concluded that the answer to any indicators on Latent Variables of Contract Document Understanding (X1) can be used for further analysis. The values KMO of 0.703 is above 0.5. This shows the appropriateness of model implementation with factor analysis for these variables which is quite good. Significance values of Bartlett's Test is 0.000, it less than  $\alpha$  (0.05), it indicates that the correlation matrix between the manifest variable (indicator) is not the identity matrix (the matrix could be = 0). So that it can be concluded that the answer to the question for each indicators on Latent Variables Understanding of the Contract Documents (X1) can be used for further analysis. In result of Factor Analysis with extraction method of Major Component Analysis, it turns out that there is only 1 significant Eigen Value ( $> 1.0$ ),

with cumulative percentage contribution factor to research data is 54,143%. The level of cumulative contributions indicate that the influence of contract documents understanding (X1) on the Performance of Construction Consultants to the failure in achieving Target Time and Quality of Work on Project Development service of Samarinda Baru, can be explained by 54.143% by the indicators of Variable Latency of Contract Documents Understanding (X1), while the rest of 45.857% is an error or those that are formed by other indicators that have not been detected in this research. In the table above, it shows that all manifest variables that form latent variables of Contract Document Understanding (X1) has a factor loading value above 0.5 then all manifest variables are included in subsequent analysis, as many as originally estimated, it is as many as 4 manifest variables consisting of: Do not understand the contents of the document (X1.1), do not learn the contents of the contract documents (X1.2), do not understand the contract documents (X1.3) and do not

understand the advantages and disadvantages of the contract documents (X1.4).

### 3.1.2. Latent variable of technical specification understanding (X2)

Latent Variables of Technical Specifications Understanding

(X2) are measured by three items of questions that are descriptors of things that become the measurement of influence on the performance of construction management consultant for the failure in achieving the target time and quality of works on the construction of Samarinda Baru Airport. This can be seen in Table 2.

**Table 2.** Results of Factor Analysis for Latent Variable of Technical Specification Understanding (X2)

Manifest Variable	The Value of Commuality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X2.1	0.473	0.688		0.670	
X2.2	0.582	0.763		0.608	
X2.3	0.703	0.838	0.607	0.575	0.000
	Eigen Values	1.758			
	Total Diversity	58.584			
	Cumulative Total Diversity	58.584			

Table 2 displays a summary of the value of communalities, Loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) of Latent Variables of Technical Specifications Understanding (X2). All MSA has value above 0, 5 so that it can be concluded that the answers to the question of indicators on Latent Variables of Technical Specifications Understanding (X2) can be used for further analysis. The value KMO is 0.607 which is above 0.5. This demonstrates the suitability of the application of the model with factor analysis for these variables, which is pretty good. Significance use values Bartlett's Test 0,000 have less than  $\alpha$  (0.05), this shows that the correlation matrix between variables manifest (indicator) is not an identity matrix (the matrix could be = 0). So that it can be concluded that the answer to the question of indicators on Latent Variables of Technical Specifications Understanding (X2) can be used for further analysis. In result of Factor Analysis with extraction method of Major Component Analysis, it turns out 1 eigen value can be significant ( $> 1.0$ ), with cumulative percentage factor contribution to research data of 58,584%. The cumulative contribution rate shows that the effect of technical

specifications understanding (X2) can be explained by 58.584% by the indicators Latent Variables of Technical Specifications Understanding (X2), while the remaining 41.416% is an error or formed by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the Implementation of the latent variable loading factor of employment has a value above 0.5 then all manifest variables are included in the subsequent analysis, it is as much as originally estimated that as many as 3 manifest variables: do not understand the technical specifications (X2.1), Do not understand the technical specification (X2.2) and Not immediately provide solution (X2.3).

### 3.1.3. Latent variable of material requirement (X3)

Latent Variable of Material Requirements (X3) are measured with three items of questions that are descriptor of things that become measurement of influence on the performance of the Construction Management Consultants for failure in achieving the target time and the quality of construction work of Samarinda Baru Airport. This can be seen in Table 3.

**Table 3.** Results of Factor Analysis for Latent Variable of Material Requirement (X3)

Manifest Variable	The value of Commuality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X3.1	0.655	0.809		0.762	
X3.2	0.786	0.887		0.647	
X3.3	0.726	0.852	0.691	0.688	0.000
	Eigen Values	2.167			
	Total Diversity	72.222			
	Cumulative Total Diversity	72.222			

Table 3 displays a summary of the value of communalities, loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) on Latent Variable of Material Requirements (X3). Whole MSA has values are above 0, 5 so that it can be concluded that the answer to any question indicators on Latent Variable of Material Requirements (X3) can be used for further analysis. The values of KMO is 0.691 has been above 0, 5. it shows the appropriateness of the model implementation with factor analysis for these variables which is quite good. Significance value of Bartlett's Test is 0.000 has less than  $\alpha$  (0.05), it indicates that the correlation matrix between the manifest variable (indicator) is not the identity matrix

(possibly the matrix = 0). So it can be concluded that the answer to the question for each indicators on Latent Variable of Material Requirements (X3) can be used for further analysis. In result of Factor Analysis with extraction method of Major Component Analysis, it turns out 1 Eigen Value can be significant ( $> 1.0$ ), with cumulative percentage factor contribution to research data of 72,222%. The cumulative contribution rate shows that the influence of material requirements (X3) on the performance of construction management consultant on development projects Samarinda International Airport can be explained by 72.222% by indicators Latent Variables of Material Requirements (X3), while the remaining 27.778% is

erroneous or constituted by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the Latent Variables of Material Requirements (X3) has a loading factor values above 0.5 then all manifest variables are included in the subsequent analysis is as much as will be uncontrolled Consultants material (X 3 .1), consultant does not understand the quality of the material (X3 .2), and the consultant does not scrutinize the quality of the material

(X3.3).

### 3.1.4. Latent variable of worker requirement (X4)

Latent Variable of Labor Requirements measured with four items of questions that are descriptors of things that become measurement of influence on the performance Construction Consultants for failure in achieving the target time and quality of works on development projects Samarinda International Airport.

**Table 4.** Results of Factor Analysis for Latent Variable of Worker Requirement (X4)

Manifest Variable	The value of Communality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X4.1	0.707	0.841		0.697	
X4.2	0.759	0.871		0.687	
X4.3	0.612	0.782		0.803	
X4.4	0.551	0.742	0.738	0.824	0.000
Eigen Values		2.627			
Total Diversity		65.686			
Cumulative Total Diversity		65686			

Table 4 displays a summary of the value of communality, Loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) on Latent Variable of Worker Requirements (X4). Whole MSA value is above 0, 5 so that all the indicators on Latent Variable Design changes can be used for further analysis. All values of KMO amounting to 0.738; it is above 0, 5. It shows the appropriateness of the model implementation with factor analysis for these variables is quite good. Significance values of Bartlett's Test is 0.000 which has less than  $\alpha$  (0.05), it indicates that the correlation matrix between the manifest variable (indicator) is not the identity matrix (possibly the matrix = 0). So it can be concluded that the answer to the question for each Latent Variable indicator on Worker Requirements (X4) can be used for further analysis. In result of Factor Analysis with extraction method of Major Component Analysis, it turns out that there is only 1 significant Eigen Value ( $> 1.0$ ), with cumulative percentage contribution factor to research data of 65,686%. The cumulative contribution rate shows that the effect of Worker Requirements (X4) on the performance Construction Consultants for failure in achieving the target time and quality of works on construction projects of Samarinda

International Airport can be explained by 65.686% by indicators Latent Variables of Terms of Employment (X 4), while the remaining 34.314% is an error or formed by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the latent variable of Worker Requirements (X4) has a loading factor values above 0.5 then all manifest variables as much as originally estimated that as many as 4 variables obtained manifest consisting of consultant does not understand the power quality work (X 4 .1), Consultants cannot distinguish between skilled and unskilled workers (X 4 .2) Consultants do not check the quality of the workers (X 4 .3) and the consultant doesn't give admotinition strike (X4.4).

### 3.1.5. Latent variable of equipment completeness (X5)

Latent variables of Equipment Completeness (X5) was measured with four items of questions that are descriptors of things that become measurement of influence on the performance of construction management consultant for failure in achieving the target time and quality of works on construction projects Samarinda International Airport. This can be seen in Table 5.

**Table 5.** Results of Factor Analysis for Latent Variable of Equipment Completeness (X5)

Manifest Variable	The value of Communality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X5.1	0.540	0.735		0.827	
X5.2	0.614	0.784		0.826	
X5.3	0.682	0.826		0.725	
X5.4	0.743	0.862	0.761	0.714	0.000
Eigen Values		2.579			
Total Diversity		64.484			
Cumulative Total Diversity		64.484			

Table 5 displays a summary of the value of communality, loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) on Latent Variable of Equipment Completeness (X5). Whole MSA has value is above 0, 5 so that it can be concluded that the answer to any question indicators on Latent Variable of Equipment Completeness (X5) can be used for further

analysis. The values of KMO is 0.761 which has been above 0, 5. It indicates conformity with the application of factor analysis models for these variables in which is pretty good. Significance Value of Bartlett's Test is 0,000 which has less than  $\alpha$  (0.05), this shows that the correlation matrix between manifest variables (indicator) is not an identity matrix (the possibly matrix is = 0). SO it can be concluded

that the answer to the question for each indicators on Latent Variable of Equipment Completeness (X5) can be used for further analysis. In result of Factor Analysis with extraction method of Major Component Analysis, it can be shown 1 significant Wigen Value ( $> 1.0$ ), with cumulative percentage factor contribution to research data equal to 64,484%. The cumulative contribution rate shows that the influence of Equipment Completeness (X5) on the performance Construction Consultants for failure in achieving the target time and quality of works on development projects Samarinda International Airport can be explained by 64.484% by indicators Latent Variables of Equipment Completeness (X5), while the remaining 35.516% is an error or formed by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the latent variables of Equipment Completeness (X5) has a loading factor values above 0.5 then all manifest variables

are included in the subsequent analysis is as much as originally estimated that as many as 4 manifest variables that the Consultant does not know the number of the equipment (X5.1), the Consultant does not understand the capacity of the equipment (X5.2), the Consultant does not know the condition of the equipment (X5.3) and The consultant does not give admonition (X5.4).

### 3.1.6. Latent variable of work implementation model (X6)

Latent variables of Work Implementation Method is measured by three items of questions that are descriptor of things that become measurement of influence on the performance of the Construction Management Consultants for failure in achieving the target time and quality of works on development projects of Samarinda International Airport. This can be seen in Table 6.

**Table 6. Results of Factor Analysis for Latent Variable of Work Implementation Method (X6)**

Manifest Variable	The Value of Communality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X6.1	0.562	0.750		0.713	
X6.2	0.723	0.850		0.614	
X6.3	0.637	0.798	0.652	0.655	0.000
Eigen Values		1.922			
Total Diversity		64.070			
Cumulative Total Diversity		64.070			

Table 6 displays a summary of the value of communality, loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) on Latent Variable of Work Implementation Method (X6). All indicators of MSA has a value greater than 0, 5 so that all indicators in Latent Variables of Work Implementation Method (X6) can be used for further analysis. The KMO value is 0.652 in which it has been above 0, 5. It shows the appropriateness of the model implementation with factor analysis for these variables in which is quite good. Significance values of Bartlett's Test is 0.000 in which it has less than  $\alpha$  (0.05), it indicates that the correlation matrix between the manifest variable (indicator) is not the identity matrix (possibly the matrix = 0). So it can be concluded that the answer to the question for each indicators on Latent Variables of Work Implementation Method (X6) can be used for further analysis. Factor Analysis on the Main Component Analysis extraction method, can be raised 1 significant Eigen Values ( $> 1.0$ ), with a cumulative percentage rate factor towards the research data of 64.070%. The cumulative contribution rate shows that the effect of Work Implementation Method (X6) on the performance of the Construction Management for failure in achieving the target time and quality of works on construction projects of Samarinda Baru Airport can be

explained by 64.070% by indicators Latent Variables of Work Implementation Method (X 6), while the remaining 35.930% is an error or formed by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the latent variable of Work Implementation Method (X6) has a loading factor values above 0.5 then all manifest variables that are included in the subsequent analysis are as much as originally estimated that as many as 3 manifest variables are: the Consultant does not understand the methods of implementation (X6.1), consultant does not understand well the implementation method (X6.2) and the consultant does not give admonition to the workers (X6.3).

### 3.1.7. Latent variable of local government regulation (X7)

Latent variables of Local Government Regulation (X7) are measured by 2 items of question which is the descriptor of the things that become the measurement of influence on the performance of construction management consultant for failure in achieving the target of time and quality of work at Development Project of Samarinda Baru Airport. This can be seen in Table 7.

**Table 7. Results of Factor Analysis for Latent Variable of Local Government Regulation (X7)**

Manifest Variable	The value of Communality	Loading factor	KMO	MSA	Bartlett's Statistical Significance
X7.1	0.745	0.863		0.500	
X7.2	0.745	0.863		0.500	
Eigen Values		1.489	0.500		0.000
Total Diversity		74.463			
Cumulative Total Diversity		74.463			

Table 7 displays a summary of the value of communality, Loading factors, KMO, MSA and Bartlett's Statistical Significance for the manifest variables (indicators) of Latent Variables of Local Government Regulation (X7). Whole MSA has value above 0, 5 so that it can be concluded that the answer to any question indicators on Latent Variables of Local Government Regulation (X7) can be used for further analysis. The KMO values is 0.500 in which it has been above 0, 5. It shows the appropriateness of the model implementation with factor analysis for these variables in which is quite good. Significance values of Bartlett's Test is 0.001 which has less than  $\alpha$  (0.05), it indicates that the correlation matrix between manifest variables (indicator) is not an identity matrix (possibly the matrix = 0). So it can be concluded that the answer to the question for each indicators on Latent Variables of Local Government Regulation (X7) can be used for further analysis. In the result of Factor Analysis with Extraction Method of Main Component Analysis, it can only show 1 significant Eigen Value ( $> 1.0$ ), with cumulative percentage factor contribution to research data equal to 74,463%. The cumulative contribution rate shows that the effect of failure of the contract time is amounted to 74.463% can be explained by the indicators of Latent Variables of Local Government Regulation (X 7), while the remaining 25.537% is an error or formed by other indicators that have not been detected in this research. In the above table shows that the entire manifest variables that make up the latent variables of Local Government Regulation (X7) has a loading factor values above 0.5 then all manifest variables that are included in the subsequent analysis is as much as originally estimated that as many as two variables manifest consisting of No error work plan (X7.1) and the permit has not been issued (X7.2). From the extraction of the factors which continue to do the interpretation of the loading factor of each item above shows that the latent variables of Contract Documents Understanding (X1), Technical Specifications Understanding (X2), Material Requirements (X3), Worker Requirement (X4), Equipment Completeness (X5) Work Implementation Method (X6) and the Local Government Regulation (X7) can be formed by grouping manifest variables, which are summarized as follows:

1. Variable of Contract Documents Understanding (X1), formed by the manifest variables of consisting of Do not understand the contents of the contract documents (X1.1), Do not learn the contents of the contract documents (X1.2), do not understand the contract documents (X1.3) and not understand the advantages and disadvantages of the contract documents (X1.4).
2. Variable of Technical Specifications Understanding (X2), formed by the manifest variables consisting of Do not comprehend the technical specifications (X2.1), do not understand the Technical Specifications (X2.2) and do not immediately give a solution (X2.3).
3. Variable of Material Requirements (X3), formed by the manifest variables consisting of the Consultant does not control the material (X3.1), the Consultant does not understand the quality of the material (X3.2), and the consultant does not examine the quality of the material (X 3 .3)
4. Variable of Worker Requirements (X4), formed by the manifest variables consisting of consultant does not understand the quality of labor (X4.1), Consultants

cannot distinguish between skilled and unskilled workers (X4.2), the Consultant does not check out quality of worker (X 4 .3) and the Consultant does not perform admonition (X4.4)

5. Variable of Equipment Completeness (X5), formed by the manifest variables consisting of consultant does not know the number of equipment (X5.1), the Consultant does not understand the capacity of the equipment (X5 2), the Consultant does not know the condition of the equipment (X5.3) and consultant does not do a admonition (X5.4)
6. Variable of Work Implementation Method (X6), formed by the manifest variables consisting of consultants do not understand the methods of implementation (X6.1), the Consultant does not understand well the implementation of the method mean (X6.2) and the Consultant does not perform admonition to the workers (X6.3).
7. Variable of Local Government Regulation (X7), formed by the manifest variables consisting of Error work plan (X 7 .1) and the permit that has not been issued (X7.2).

#### 4. CONCLUSION

Based on the results of research and discussion that has been described in previous chapters, it can be concluded that: 1) Factors that affect directly to the Target Time (Y1) is Contract Documents Understanding (X1), Material Requirements (X3), Worker Requirement (X4) and Equipment Completeness (X5) whereas the factors that influence indirectly to Target time (Y1) is Technical Specifications understanding (X2) and Local Government Regulation (X7), 2) Factors that affect directly to the Quality Target (Y2) is understanding the Contract Documents (X1), Technical Specifications Understanding (X2), Material Requirements (X3), Worker Requirement (X4), Equipment Completeness (X5) and Time Target (Y1) while the factors affecting indirectly to Quality Target (Y1) Local Government Regulation (X7), 3) the most dominant factor affecting failure in achieving Time Target (Y1) is a Worker Requirement (X4) with coefficient path of 0.431. While the most dominant factor on the failure in achieving the Quality Target (Y2) is Worker Requirement (X4) with coefficient path of 0,579, 4). Strategies to improve performance Construction Consultants so that time and quality target of the project can be fulfilled are as follows.

##### 4.1. Owner of the Work (Owner)

1. Owner of the work should be firm to the consultant if there is a worker replacement that is not in accordance with the required criteria
2. The owner communicates intensively to the consultant if there are problems that occur in the field
3. Owner of the work must describe in detail the technical specifications of the work that consultants fully understand the job done

##### 4.2. Consultant

1. The consultant must have qualified and experienced workers so they can understand the type of work to be performed
2. Consultants should be more careful to choose a highly skilled workers to work in accordance with the field

3. Consultants must carefully choose appropriate workers with expertise to support the work
4. Consultants must expressly give admonition if the worker are lazy so that the work can be completed as expected

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