

A STUDY OF THE IMPACT OF CONSTRUCTION ACCIDENTS ON THE PROJECT CONTINUITY

Final Project Report

as one of requirement to obtain S1 degree of

Universitas Atma Jaya Yogyakarta

By:

KARTIKA IRIANTHY ZEBUA

NPM. : 11 13 13888



**INTERNATIONAL S1 PROGRAM
DEPARTMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
UNIVERSITAS ATMA JAYA YOGYAKARTA
YOGYAKARTA**

2014

STATEMENT

I signed below stating that the final project with title:

**“A STUDY OF THE IMPACT OF CONSTRUCTION
ACCIDENTS ON THE PROJECT CONTINUITY”**

It is the result of my own work and not a result of plagiarism of other people's work. Ideas, research data, and quotes directly or indirectly derived from the writings or ideas of others expressly provided in this Final Project. If it is proved later that this Final Project is the result of plagiarism, which I get the certificate would be canceled and I will return to the Rector of Universitas Atma Jaya Yogyakarta.

Yogyakarta, *January 2015*

Who made the remarks,



Kartika Irianthy Zebua

APPROVAL

Final Project

A STUDY OF THE IMPACT OF CONSTRUCTION
ACCIDENTS ON THE PROJECT CONTINUITY

By:

KARTIKA IRIANTHY ZEBUA

11 13 13888

Has been approved

Yogyakarta,

21/1/15

Advisor,



(A. Koesmargono Ir. M.C.M., Ph.D)

Approved by:

Head of Civil Engineering Department,

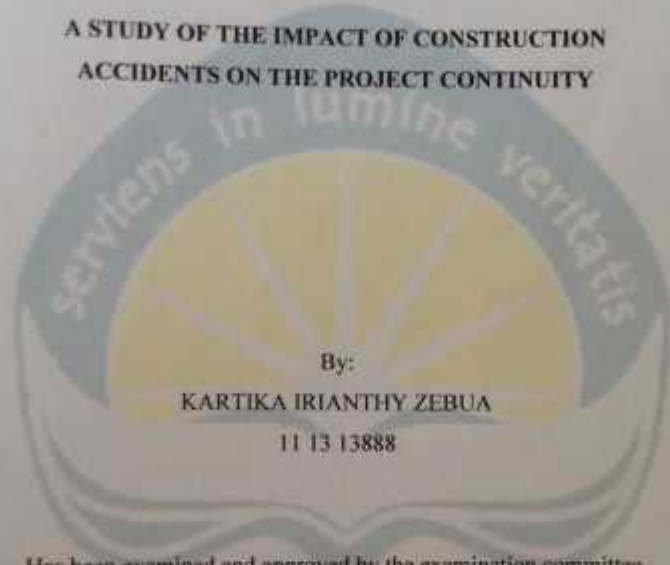


FAKULTAS
TEKNIK SIPIL
(Jember Sudjati, ST., MT)

APPROVAL

Final Project

A STUDY OF THE IMPACT OF CONSTRUCTION
ACCIDENTS ON THE PROJECT CONTINUITY



By:

KARTIKA IRIANTHY ZEBUA

11 13 13888

Has been examined and approved by the examination committee

	Name	Signature	Date
Chairperson	: KOESM ARBONO		21/1/15
Member	: JOHN TRI HATIRO		21/1/15
Member	: PETER KAMING		21/1/15

ACKNOWLEDGEMENTS

First and foremost, I would like to thank to Jesus Christ for the blessing, therefore I can prepare and finish this final project well. In this opportunity, I would like thank to:

1. Koesmargono Ir. M.C.M., Ph.D. as my advisor for his advice and counseling.
2. Anastasia Yunika, S.T., M. Eng. as Coordinator of International Civil Engineering.
3. J. Januar Sudjati, ST., MT. as the head of Civil Engineering Department of Universitas Atma Jaya Yogyakarta.
4. All lectures in civil engineering especially in international program, therefore I can graduate from Universitas Atma Jaya Yogyakarta.
5. My lovely family especially for my parents, my sisters and brother for their love, affection, orison, and support.
6. My boyfriend, Michael Abraham Wahyu Dwi Atmojo, for all support, love, and help.
7. My friends in international program, Dea, Dhoni, Justi, Johan, Wira, and Arif for the support and help.
8. All parties that I cannot be mentioned all, thank you for your support and help.

I realize, this report has some mistakes. Therefore, I would like to apologize for that. Finally, I hope this report may be useful for the reader and me.

Yogyakarta, January 2015

The Author



Kartika Irianthy Zebua

11 13 13888

TABLE OF CONTENT

Title	i
Statement.....	ii
Approval.....	iii
Acknowledgment.....	v
Table of Content	vi
List of Table.....	xii
Abstract.....	xiv
 CHAPTER I INTRODUCTION	
1.1. Background.....	1
1.2. Problem Statement.....	3
1.3. The Originality of Final Project.....	4
1.4. The Objective of Final Project.....	5
1.5. The Benefits of Final Project.....	5
1.6. The Systematic of Report.....	6
 CHAPTER II LITERATURE REVIEW	
2.1. Construction Project.....	8
2.2. Construction Safety Regulation.....	8
2.3. Accident Causation Model.....	8

2.3.1. Domino Theory.....	9
2.3.2. Human Error Theory.....	9
2.3.3. ARCTM.....	9
2.4. Classification of Work Accidents.....	10
2.5. Lost of Cost Injury.....	11
2.5.1. Direct Cost.....	12
2.5.2. Indirect Cost.....	12
2.6. Lost of Work Time.....	13
2.7. Project Continuity.....	13
2.7.1. Planning.....	14
2.7.2. Project Development and Environment.....	14
2.7.3. Design.....	14
2.7.4. Right of Way.....	14
2.7.5. Construction.....	15
2.7.6. Maintenance.....	15
2.8. The Measurement of Project Continuity.....	15
2.8.1. Cost.....	16
2.8.2. Time.....	16
2.8.3. Quality.....	16

CHAPTER III METHODOLOGY

3.1. Type of Observation.....	18
3.2. Area of Observation.....	18
3.3. Time of Observation.....	18
3.4. Population and Sample of Observation.....	18
3.5. The Variable of Observation.....	19
3.5.1. Independent Variable.....	19
3.5.2. Dependent Variable.....	19
3.6. The Measurement Aspects of Observation.....	19
3.7. Research Realization.....	22
3.8. Data Tabulation.....	23
3.9. Method of Testing Instruments.....	23
3.10. Data Analysis.....	25
3.10.1 Multiple Correlation Analysis.....	25
3.10.2. F Test.....	27
3.10.3. T Test.....	29

CHAPTER IV DATA ANALYSIS AND DISCUSSION

4.1. Data of Respondents.....	33
4.1.1. Profession of Respondents.....	33
4.1.2. Age of Respondents.....	34

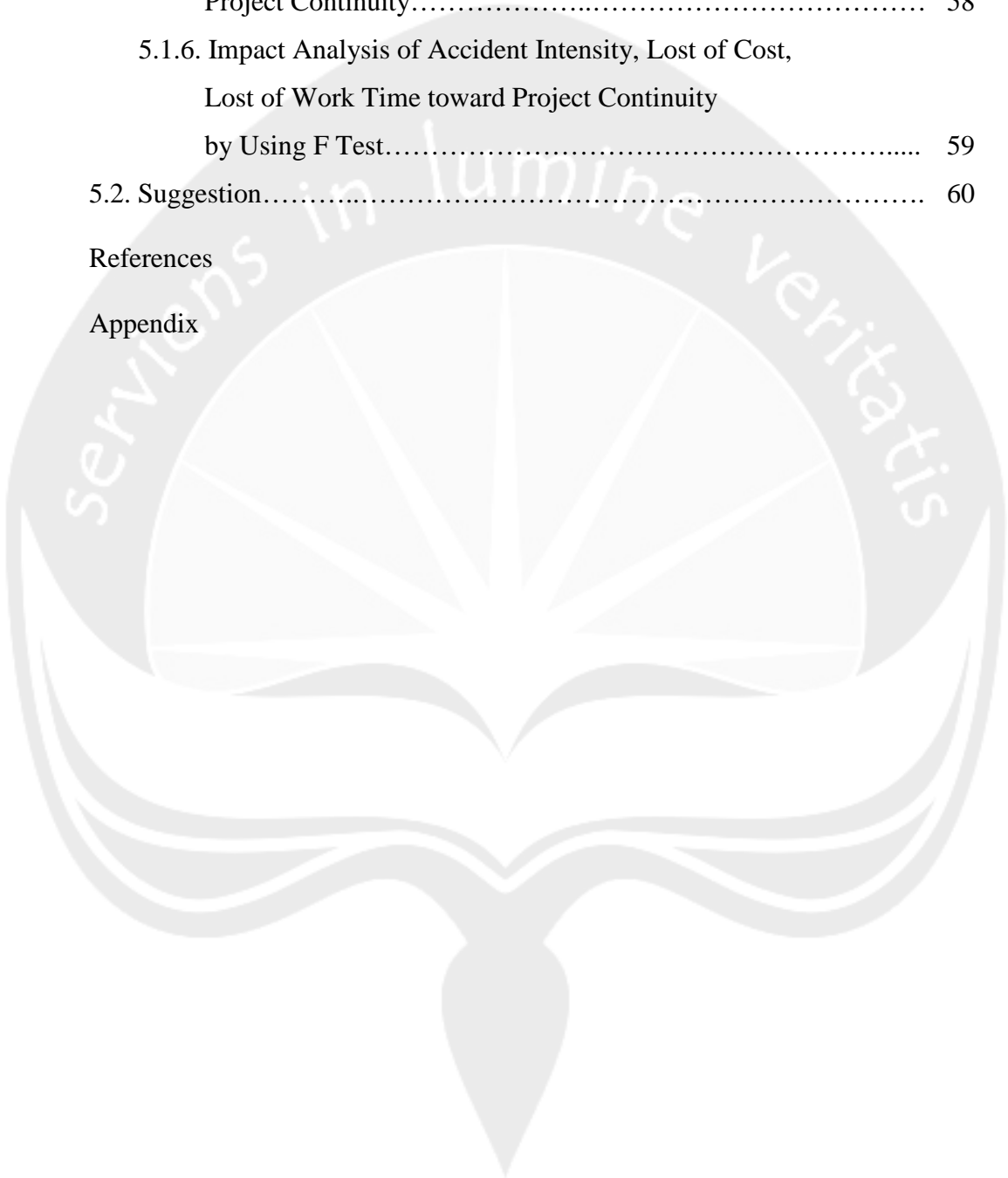
4.1.3. Experience of Respondents.....	34
4.1.4. Education Background of Respondents.....	35
4.2. Data of Projects.....	36
4.2.1. Budget of Projects.....	36
4.2.2. Number of Labors.....	37
4.2.3. Duration of Projects.....	38
4.3. Prerequisite Test	
4.3.1. Validity Test.....	39
4.3.2. Reliability Test.....	40
4.4. Analysis of Factors that Influence Project Continuity.....	41
4.4.1. Analysis of Accident Intensity in Construction Project.....	41
4.4.2. Analysis of Lost of Cost caused by Accident in Construction Project.....	42
4.4.3. Analysis of Lost of Work Time caused by Accident in Construction Project.....	44
4.5. Analysis of Respondents' Opinions about The Impact of Accident on Project Sustainability.....	45
4.5.1. Analysis of Influence Level of Accident Intensity towards Project Continuity.....	46
4.5.2. Analysis of Influence Level of Lost of Cost towards Project Continuity.....	46
4.5.3. Analysis of Influence Level of Lost of Work Time Towards Project Continuity.....	47
4.6. Analysis of Accident Intensity towards Project Continuity.....	48

4.6.1. Analysis of Accident Intensity towards Project Continuity by Using Correlation.....	49
4.6.2. Analysis of Accident Intensity towards Project Continuity by Using T Test.....	50
4.7. Analysis of Lost of Cost towards Project Continuity.....	50
4.7.1. Analysis of Lost of Cost towards Project Continuity by Using Correlation.....	51
4.7.2. Analysis of Lost of Cost towards Project Continuity by Using T Test.....	52
4.8. Analysis of Lost of Work Time towards Project Continuity.....	52
4.8.1. Analysis of Lost of Work Time towards Project Continuity by Using Correlation.....	53
4.8.2. Analysis of Lost of Work Time towards Project Continuity by Using T Test.....	54
4.9. Analysis The Relationship between Accident Intensity, Lost of Cost, Lost of Work Time and Project Continuity	55

CHAPTER V CONCLUSION AND SUGGESTION

5.1. Conclusion.....	56
5.1.1. Analysis of Factors that Influence Project Continuity.....	56
5.1.2. Analysis of Respondents' Opinions about the Impact of Accident on Project Sustainability.....	57
5.1.3. Analysis of Accident Intensity towards Project Continuity.....	57
5.1.4. Analysis of Lost of Cost by Accident towards Project Continuity.....	58

5.1.5. Analysis of Lost of Work Time by Accident towards Project Continuity.....	58
5.1.6. Impact Analysis of Accident Intensity, Lost of Cost, Lost of Work Time toward Project Continuity by Using F Test.....	59
5.2. Suggestion.....	60
References	
Appendix	



LIST OF TABLE

Table 4.1. Profession of Respondent	33
Table 4.2. Age of Respondent	34
Table 4.3. Experience of Respondent	35
Table 4.4. Education Background of Respondent	36
Table 4.5. Project's Budget	37
Table 4.6. Labors Amount	38
Table 4.7. Duration of Project	38
Table 4.8. Reliability Test Result	40
Table 4.9. Various of Accident on Construction Project	42
Table 4.10. Lost of Cost by Accident in Construction Project	43
Table 4.11. Lost of Work Time by Accident in Construction Project	45
Table 4.12. Effect of Accident Intensity towards Project Continuity	46
Table 4.13. Effect of Treatment Cost towards Project Continuity	47
Table 4.14. Effect of Lost of Work Time towards Project Continuity	48
Table 4.15. Correlation between Accident Intensity and Project Continuity	49
Table 4.16. Analysis of Accident Intensity toward Project Continuity by using T test	50
Table 4.17. Correlation between Lost of Cost by Accident and Project Continuity	51

Table 4.18. Analysis of Lost of Cost by Accident toward Project Continuity by Using T Test	52
Table 4.19. Correlations Between Lost of Work Time by Accident and Project Continuity	53
Table 4.20. Analysis of Lost of Work Time by Accident toward Project Continuity by Using T Test	54
Table 4.21. Analysis The Relationship between Accident Intensity, Lost of Cost, Lost of Work Time and Project Continuity	55

ABSTRACT

A STUDY OF THE IMPACT OF CONSTRUCTION ACCIDENTS ON THE PROJECT CONTINUITY, Kartika Irianthy Zebua, Student Number 11.13.13888, year of 2015, Construction Management, Civil Engineering International Program, Faculty of Engineering, Universitas Atma Jaya Yogyakarta.

Construction workers have significant portion in every engineering project. They build roads, houses and also repair and maintain public infrastructures. Construction workers have the highest possibility to experience accident, some of them experience fatal injuries during do their work in the project. The number of worker injury in Indonesia is one of the highest in ASEAN. Based on earliest BPJS data almost 32% the accident are happened at construction sector include all projects like buildings, roads, bridges, tunnels, etc. This fact clarify that labor safety need more attention, there are many factors that have to be considered to prevent the loss of accident. Based on that explanation, author is interested to investigate about the impact of construction accident toward project continuity.

Instrument used for this study is questionnaire which consists of three independent variable; Accident Intensity, Lost of Cost, Lost of Work time, and dependent variable about project continuity that has aim to measure the influence level of accident toward project continuity. Obtained data was analyzed using SPSS that consists of Percentage analysis, Mean analysis, and Pearson's Correlation analysis, T Test, and F Test.

From the result of data analysis showed that type of injuries from accidents that most often occur in construction projects is a surface injury. A type of injuries from accidents that require the highest medical costs in construction projects is bruised. A type of injury due to an accident that result the highest loss of working time in construction projects is bruised. There are 35.9% of respondent asses if the influence level of accident intensity towards project continuity is in neutral level. 32.8% of respondent asses if the influence level of lost of cost towards project continuity is in neutral level. 29.7% of respondent asses if the influence level of lost of work time towards project continuity is in influence level.

Key Words: project continuity, construction management, accident, Pearson's Correlation, questionnaire.