PREVENTION OF FALL ON CONSTRUCTION SITE

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Dedicated to...

Beloved abah, mama and family members

For giving me infinite love, care and blessing...

Assoc. Prof Aziruddin Ressang for his guidance

Thank you from bottom of my heart for being my inspiration

Lastly to my special one and also my dear friends,

Thank for your endless support to me...
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ABSTRACT

Construction industry plays an important role in improvement of any country’s economy. Despite the contributions to economy, there are many accidents and fatalities happening in construction industry. Falling is one of the most frequent accidents on construction site. The research is to study causes of fall, factor affecting fall on construction site and to propose way to reduce construction falls. This research is done by reviewing published paper, journal and interviewing project participant; the severity and frequency of causes of construction fall on site and factor affecting them have been measured. Research conducted was formulated and distributed to project participant such as site engineer, safety officer, etc. The data collected have been analyzed using Cronbach’s alpha (α): frequency rate, Mean Value, Relative Importance Index (RII) and Hazard Identification, Risk Assessment and Risk Control (HIRARC). The results showed the most frequency causes of falls are improper use of Personal Protective Equipment (PPE), slippery substances on surface, unsafe ladder and tools, weather condition, removal of protection measures, load handling and etc. Apart from that, the factor affecting construction falls are lacks of safety commitment among management team, lack of safety organizations which evaluate the safety level of design, and etc. Based on the result obtained, the proposed way to reduce construction fall is from administrative and management control, introduce of PPE, behavior control and engineering control.
ABSTRAK

# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td></td>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>xii</td>
</tr>
<tr>
<td></td>
<td>LIST OF FIGURES</td>
<td>xv</td>
</tr>
<tr>
<td></td>
<td>LIST OF ABBREVIATIONS</td>
<td>xvii</td>
</tr>
<tr>
<td></td>
<td>LIST OF APPENDICES</td>
<td>xvi</td>
</tr>
<tr>
<td>1</td>
<td>INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Problem Statement</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>Objectives of Study</td>
<td>4</td>
</tr>
<tr>
<td>1.4</td>
<td>Scope of Study</td>
<td>5</td>
</tr>
<tr>
<td>1.5</td>
<td>Significance of Study</td>
<td>5</td>
</tr>
<tr>
<td>1.6</td>
<td>Methodology of Study</td>
<td>5</td>
</tr>
</tbody>
</table>
## LITERATURE REVIEW

2.1 Introduction 8  
2.2 Construction Industry 9  
2.3 Malaysian Construction Industry 12  
2.4 Construction Accidents Theories 13  
  2.4.1 Management-Based Theories 13  
2.5 Causes of Fall in Construction Industries 15  
  2.5.1 Individual Factor 16  
  2.5.2 Task Factor 16  
  2.5.3 Environment Factor 17  
  2.5.4 Tool and Equipment Factor 17  
2.6 Factor Affecting Fall on Construction Site 18  
  2.6.1 Human Factor 19  
  2.6.2 Legislative and Management Factor 20  
  2.6.3 Financial and Contractual Factor 20  
2.7 Risk Control 21  
2.8 Fall Prevention Practices 24  
2.9 Roles of People in Construction Project to Prevent Falls 25  
  2.9.1 Employers 25  
  2.9.2 Employees 25  
  2.9.3 Architects and Engineers 25  
  2.9.4 Building Owners and Managers 26  
  2.9.5 Equipment Manufacturers 26  
  2.9.6 Lawyers 26  
2.10 Propose a Safety Program to Reduce Fall in Construction Industry 26
3 RESEARCH METHODOLOGY

3.1 Introduction 29
3.2 Conceptualization 30
3.3 Research Information 31
  3.3.1 Source of Data 31
3.4 Methods Used 32
  3.4.1 Preliminary Discussion 32
  3.4.2 Preparation of Questionnaire 33
  3.4.3 The Distribution of Questionnaire 33
    3.4.3.1 Distribution via Email 33
    3.4.3.2 Distribution via Hand Delivery 34
  3.4.4 Data Collection 35
    3.4.4.1 Documents Studies 35
    3.4.4.2 Interviews 35
    3.4.4.3 Questionnaire 36
      3.4.4.3.1 Likert Scale Method 36
  3.4.5 Compilation and Data Transfer 37
  3.4.6 Data Analysis 38
    3.4.6.1 Reliability Test 38
    3.4.6.2 Frequency Rate 39
    3.4.6.3 Hazard Identification, Risk Assessment and Risk Control (HIRARC) 39
    3.4.6.4 Mean Value 41
    3.4.6.5 Relative Importance Index (RII) 42
  3.4.7 Conclusion and Recommendation 43
ANALYSIS AND DISCUSSION

4.1 Introduction 45

4.2 Questionnaire Feedback 46

4.3 Analysis and Results 46

4.3.1 Section A (Respondents General Information) 46

4.3.1.1 Respondents’ Gender 47

4.3.1.2 Respondents’ Age 48

4.3.1.3 Respondents’ Racial Background 49

4.3.1.4 Respondents’ Education Level 50

4.3.1.5 Respondents’ Role 51

4.3.1.6 Respondents’ Working Experience 53

4.3.1.7 Respondents’ Number of Employees 54

4.3.1.8 Fall Protection Program Existence in Respondents’ Company 55

4.3.1.9 Fall Protection Program Enforcement in Respondents’ Company 56

4.3.2 Section B 57

4.3.2.1 Reliability Test (Cronbach’s Alpha) 57

4.3.2.1.1 Part One (Level of Seriousness) 57

4.3.2.1.2 Part Two (Frequency) 60

4.3.2.2 Hazard Identification, Risk Assessment and Risk Control (HIRARC) 63

4.3.2.2.1 Individual Factor 63

4.3.2.2.2 Task Factor 64

4.3.2.2.3 Environment Factor 65

4.3.2.2.4 Tool and Equipment Factor 66
4.3.2.2.5 Overall Factor

4.3.3 Section C

4.3.3.1 Reliability Test (Cronbach’s Alpha)

4.3.3.2 Mean Value and Relative Importance Index (RII)

4.3.3.3 Explanations Based on Main Factor of Affecting Fall on Construction Site

4.3.3.3.1 Human Factor

4.3.3.3.2 Legislative and Management Factor

4.3.3.3.3 Financial and Contractual Factor

4.4 Risk Control

5 CONCLUSION AND RECOMMENDATION

5.1 Introduction

5.2 Conclusion based on the First Research Objective

5.2.1 To Study the Causes of Fall on Construction Site

5.3 Conclusion based on the Second Research Objective

5.3.1 To Study Factor Affecting Fall on Construction Site

5.4 Conclusion based on the Third Research Objective

5.4.1 To Propose Suggestions to Reduce fall on Construction Site

5.5 Recommendations

REFERENCES

APPENDIX A
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Factor Affecting Fall on Construction Site</td>
<td>18</td>
</tr>
<tr>
<td>2.1</td>
<td>Factor Affecting Fall on Construction Site (Cont.)</td>
<td>19</td>
</tr>
<tr>
<td>3.1</td>
<td>Ranges of Reliability Coefficients</td>
<td>38</td>
</tr>
<tr>
<td>3.2</td>
<td>Likelihood (Frequency) Table</td>
<td>40</td>
</tr>
<tr>
<td>3.3</td>
<td>Severity (Seriousness) Table</td>
<td>40</td>
</tr>
<tr>
<td>3.4</td>
<td>Classification of Rating Scale (Section C – Questionnaire)</td>
<td>42</td>
</tr>
<tr>
<td>3.5</td>
<td>RII on a 5-point Likert scale (Section C - Questionnaire)</td>
<td>43</td>
</tr>
<tr>
<td>4.1</td>
<td>Questionnaire Feedback</td>
<td>46</td>
</tr>
<tr>
<td>4.2</td>
<td>Respondents’ Gender</td>
<td>47</td>
</tr>
<tr>
<td>4.3</td>
<td>Respondents’ Age</td>
<td>48</td>
</tr>
<tr>
<td>4.4</td>
<td>Respondents’ Racial Background</td>
<td>49</td>
</tr>
<tr>
<td>4.5</td>
<td>Respondents’ Education Level</td>
<td>50</td>
</tr>
<tr>
<td>4.6</td>
<td>Respondents’ Role</td>
<td>51</td>
</tr>
<tr>
<td>4.7</td>
<td>Respondents’ Working Experience</td>
<td>53</td>
</tr>
<tr>
<td>4.8</td>
<td>Respondents’ Number of Employees</td>
<td>54</td>
</tr>
<tr>
<td>4.9</td>
<td>Fall Protection Program Existence in Respondents’ Company</td>
<td>55</td>
</tr>
<tr>
<td>4.10</td>
<td>Fall Protection Enforcement in Respondents’ Company</td>
<td>56</td>
</tr>
<tr>
<td>4.11</td>
<td>Value of Cronbach’s Alpha for Each Item in Section B (i) of Questionnaire</td>
<td>58</td>
</tr>
<tr>
<td>4.11</td>
<td>Value of Cronbach’s Alpha for Each Item in Section B (i) of Questionnaire (Cont.)</td>
<td>59</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Construction Casualties Statistics</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Category of Death Unit (Malaysia)</td>
<td>3</td>
</tr>
<tr>
<td>1.3</td>
<td>Frequency Type of Construction Accident</td>
<td>4</td>
</tr>
<tr>
<td>2.1</td>
<td>Category of Type of Accident by State in Malaysia</td>
<td>12</td>
</tr>
<tr>
<td>2.2</td>
<td>Domino Theory of Accident Causation</td>
<td>14</td>
</tr>
<tr>
<td>2.3</td>
<td>Updated Domino Accident Causation Theory</td>
<td>15</td>
</tr>
<tr>
<td>2.4</td>
<td>Risk Management</td>
<td>27</td>
</tr>
<tr>
<td>2.5</td>
<td>Fall Prevention Program (DOSH, 2008)</td>
<td>28</td>
</tr>
<tr>
<td>3.1</td>
<td>Methodology Flowchart</td>
<td>30</td>
</tr>
<tr>
<td>3.2</td>
<td>Risk Matrix (Section B – Questionnaire)</td>
<td>41</td>
</tr>
<tr>
<td>4.1</td>
<td>Respondents’ Gender</td>
<td>47</td>
</tr>
<tr>
<td>4.2</td>
<td>Respondents’ Age</td>
<td>48</td>
</tr>
<tr>
<td>4.3</td>
<td>Respondents’ Racial Background</td>
<td>49</td>
</tr>
<tr>
<td>4.4</td>
<td>Respondents’ Education Level</td>
<td>50</td>
</tr>
<tr>
<td>4.5</td>
<td>Respondents’ Type of Role</td>
<td>52</td>
</tr>
<tr>
<td>4.6</td>
<td>Respondent’s Working Experience</td>
<td>53</td>
</tr>
<tr>
<td>4.7</td>
<td>Average Respondents’ Number of Respondents’ Employees</td>
<td>55</td>
</tr>
<tr>
<td>4.8</td>
<td>Fall Protection Program Existence in Respondents’ Company</td>
<td>56</td>
</tr>
<tr>
<td>4.9</td>
<td>Fall Protection Program Enforcement in Respondents’ Company</td>
<td>57</td>
</tr>
</tbody>
</table>
4.10 Results of Individual Factor 64
4.11 Results of Task Factor 65
4.12 Results of Environment Factor 66
4.13 Results of Tool and Management Factor 67
4.14 Overall Result for Causes of fall on Construction Site 69
4.15 Level of Effect of Human Factors on Construction Site 78
4.16 Level Of Effect Of Legislative and Management Factors On Construction Site 79
4.17 Level Of Effect Of Financial and Contractual Factors On Construction Site 80
4.18 Results for Risk Control for Causes of fall on Construction Site 85
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>ABBREVIATIONS</th>
<th>FULLNAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOSH</td>
<td>Department of Occupational Safety and Health</td>
</tr>
<tr>
<td>HSE</td>
<td>Health and safety executive</td>
</tr>
<tr>
<td>HIRARC</td>
<td>Hazard Identification, Risk Assessment and Risk Control</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labor Organization</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute of Occupational Safety and Health</td>
</tr>
<tr>
<td>OSH</td>
<td>Occupational Safety and Health</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Association</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>RII</td>
<td>Relative Importance Index</td>
</tr>
<tr>
<td>SOCSO</td>
<td>Social Security Organization</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Science</td>
</tr>
<tr>
<td>SMR</td>
<td>Standard Mortality Ratios</td>
</tr>
<tr>
<td>HF</td>
<td>Human Factor</td>
</tr>
<tr>
<td>LMF</td>
<td>Legislative and Management Factor</td>
</tr>
<tr>
<td>FCF</td>
<td>Financial and Contractual Factor</td>
</tr>
</tbody>
</table>
# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>APPENDIX</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Questionnaire</td>
<td>98</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION

1.1 Introduction

Work safety is the basic guarantee for enterprises to realize their continued and stable economic development, and this is especially true for the construction industry, where safety must be a top priority. Despite the contributions to economic development, construction industry has always been blamed for the high rate of accidents and fatalities; this matter has placed the construction industry among the industries with unreasonable rate of accidents, disabilities and fatalities. (Abdul Rahim Abdul Hamid et al., 2003)

Although Regulations enacted and many hard workings have been done in order to decrease the rate of accidents and fatalities in construction phase such as Occupational Safety and Health (OSHA), statistics gathered by safety related organizations such as ministry of labor, Social security organization (SOCSO), health and safety executive (HSE) and many others show unpleasant numbers of accidents and deaths and if not but very little improvement in safety and health compliance.
Reduction in number of accidents and fatalities is the ultimate aim of
construction safety and health management in order to improve the overall
performance of site activities that can reduce the risks of delay, cost, quality, labor
turnover, and inefficiency and etc. Studies have been done that construction industry
have become one of the most hazardous industries in many parts of the world and
falls from height are a leading cause of fatalities in construction operations (Sorock
et al., 1993).

Falls are a persistent hazard found in all occupational settings. A fall can
occur during the simple acts of walking or climbing a ladder to change a light fixture
or as a result of a complex series of events affecting an ironworker 80 feet above the
ground. In Malaysian construction industry, even though OSHA strictly focused on
falls and made revisions to the fall protection regulations workers’ deaths due to falls
from elevations has been shown to be persistently higher as compared to proportion
to all deaths.

1.2 Problem Statement

Nowadays in construction industries are dealing with the issues of fatality.
The major issues is fall in the workplace. According to the statistical analysis of
national construction casualties in 2012 (Figure 1), falling injury is 53.10% of total
deaths in the construction industry, structure or temporary support the collapse is
14.43%, injury from objects is 10.57%, mechanical injury is 9.82%, and construction
industry casualties from electric shock is 7.18%. More than 95% of all construction
accidents are from these five categories (Zhao et al., 2006). However, falling injuries
have the largest proportion of accidents.
Apart from that, Malaysian sector which causes the highest number of fatal. As can be seen from the figure (2), showing that the category of death unite as published by DOSH in 2008. The bar chat shows that the construction industry has the highest number of fatal victim with 67 victims. The Manufacturing sector come the next by 48 victims. The agriculture is come the third position with 46 victims.

The study conducting by (Abdul Rahim Abdul Hamid et al., 2003) shows that the classification of fatal accident at the Malaysian construction industry. There are several reasons of fall in construction site such as, fall victim, falling objective, caughtin between, stepping on objective. Whereas, the highest number of victims
was by falling in construction site with 32%. The fall objective is the second highest causes of fatal by 26% followed by steeping on object with 25%.

![Figure 1.3: Frequency Type of Construction Accident](image)

This research is aimed at identifying the causes of fall in construction site and factors affecting them. Then to propose procedures and control which will help to mitigate the current scenario of falling injuries in Malaysian building construction.

### 1.3 Objective of Study

The aim of this research is to propose way to reduce the incidents of fall in construction industry. To achieve the above aim, the following objectives have been identified:

i. To study the causes of fall on construction site.

ii. To study the factor affecting falls on construction site.

iii. To find ways to reduce construction falls.
1.4 **Scope of Study**

The research is confined to building construction in Peninsular Malaysia. The research will be concentrated on studying causes and factor affecting fall in construction site. The questionnaire will be distributed to 50 targeted among project participant from different construction site in Peninsular Malaysia. Apart from that, face-to-face interview will be conducted to expert panels for collecting more information for this research.

1.5 **Significance of Study**

Most of people involved in construction industries were not take safety issues seriously. They are lack of awareness on safety and were not always beware in construction site. Construction sites are the most dangerous workplaces because of high incidence of accidents. We need to take safety first to preventive and avoid fatality.

The findings of this study are important to help people who involved in construction industry to understand on their own safety at construction site. The results of this research will help designers to consider hazards in their design so as to enhance the safety and health of construction workers in construction phase of projects.

1.6 **Methodology of Study**

Each research has a methodology in order to achieve its aim and objectives. The aim of this research is achieved through several stages which constitute the
methodology of the research. The following phases are not fixed and during the progress of research they may change.

**Phase 1: Preliminary stage**

Selection of the research topic is done through reading articles and journals, problem finding, determining the aim and objectives of the research and determination of the research scope constitutes the first phase of research.

**Phase 2: Literature review**

Previous literatures related to topic is reviewed. Secondary data consist of books, articles in journals and internet will be scrutinized to achieve an overview of the previous studies, researches, results and analysis.

**Phase 3: Data collection**

Besides collecting information from secondary data, the objectives of the research will be studied through primary data in third phase; predesigned questionnaires will be distributed and semi-structured interviews will be conducted for this reason. Safety professionals, managers and officers constitute the respondents of primary data collection in this phase of research.

**Phase 4: Analysis and discussion**

Analysis of data which have been collected in previous phases is will be performed; a summary of results will be prepared to conduct a discussion with expert panels to ensure the accuracy of results.
Phase 5: Conclusion and recommendation

Followed by analysis of data, the conclusion is made and based on conclusions recommendations and suggestions will be proposed.
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Geoff Taylor, Kellie Easter and Roy Hegney, 2004, *Enhancing Occupational Safety and Health*


