

**UNIVERSITI TEKNOLOGI MARA**

**THE COST AND EFFECT OF  
OCCUPATIONAL HEALTH HAZARDS:  
A CASE STUDY OF PROTON  
MANUFACTURING PLANT MALAYSIA**

**SITI FAIRUZA HASSAM**

Thesis submitted in fulfillment  
of the requirements for the degree of  
**Master of Science**

**Faculty of Business Management**

**November 2013**

## **AUTHOR'S DECLARATION**

I declare that the work of this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.


**Name of Student** : **Siti Fairuza Hassam**

**Student I.D. No** : **2010990687**

**Programme** : **Master of Science in Business Management  
(Employee Safety & health) (BM 780)**

**Faculty** : **Faculty of Business Management**

**Thesis Title** : **The Cost and Effect of Occupational Health Hazards:  
A Case Study of PROTON Manufacturing Plant Malaysia**

**Signature of Student** : 

**Date** : **November 2013**

## ABSTRACT

There are many hidden costs which management erroneously believe do not affect their cost calculation and profit performance as a well. It is actually can be broadly classed as insured and uninsured or hidden costs which arise after a safety and health issues takes place. This research is conducted to study the uninsured cost or hidden costs effect of occupational health hazards mainly focus for Perusahaan Otomobil Nasional Sdn Bhd PROTON manufacturing plant Malaysia. It is aims to determine the relationship between occupational health hazards in workplace with its cost implication (uninsured cost) by focusing on ergonomic, physical, chemical and biological hazards factor. It is measured in terms of working environment conditions, human error and management failure. Meanwhile, identified costs associated which are loss times, training cost, employees' morale and productivity cost are measured to determine the cost related due to workplace safety and health issues. Besides, it is intended to establish the uninsured cost estimation equation model that can be used in minimizing the cost implication due to major health hazards factor intervention in workplace. With several Occupational Safety and Health (OSH) programs implemented, this research also identified the relationship between these OSH practices with the safety and health issues in the company. A descriptive study is undertaken in order to ascertain and able to describe the major factors of occupational health hazards with the cost implication interest in a workplace situation. A comprehensive questionnaire was designed based on all determined issues and distributed to the employees' representative through self-administered method. To strengthen the findings gathered, semi-structured interview session was conducted with the Safety Manager of PROTON Malaysia in helping of elaboration and verification for further detail. It was revealed that, physical hazard factor is a most outstanding occupational health hazards followed by chemical hazard factor. Hence to end of this study, final estimated equation for minimize cost calculation due to physical and chemical hazard factors have been suggested (  $y = 3.745 + 0.409x_1 + 0.344x_2$  ). There are also some beneficial recommendations made in minimizing as well as eliminating the cost incurred resulted from the safety and health issues in workplace. Other than determining the major health hazards and its cost implication to the company, this study is also an attempt to motivate employers and employees to improve their health and safety performance as well as to guide them in measuring the costs implication due to health and safety failures.

## TABLE OF CONTENTS

	<b>Page</b>
<b>AUTHOR'S DECLARATION</b>	<b>ii</b>
<b>ABSTRACT</b>	<b>iii</b>
<b>ACKNOWLEDGEMENT</b>	<b>iv</b>
<b>TABLE OF CONTENTS</b>	<b>v</b>
<b>LIST OF TABLES</b>	<b>ix</b>
<b>LIST OF FIGURES</b>	<b>xi</b>

### **CHAPTER ONE: INTRODUCTION**

1.1	Introduction	1
1.2	Background of Study	3
1.3	Problem Statement	6
1.4	Research Objectives	8
1.5	Research Questions	9
1.6	Scope of Study	9
1.7	Significant of Study	10
	1.7.1 To the employees	10
	1.7.2 To the company (Automotive industry)	10
	1.7.3 To the researcher	11
1.8	Definition of terms	11
	1.8.1 OSH Act 514	11
	1.8.2 Hazard	11
	1.8.3 Occupational hazards	12
	1.8.4 Occupational diseases	12
	1.8.6 Workplace	12
	1.8.7 Ergonomic hazard	12
	1.8.8 Physical hazard	12

1.8.9	Chemical hazard	13
1.8.10	Biological hazard	13
1.8.11	Cost implication	13
1.9	Summary	13

## **CHAPTER TWO: LITERATURE REVIEW**

2.1	Introduction	14
2.2	Occupational Health Disease and Injury	14
2.3	Ergonomic Hazard	22
2.4	Physical Hazard	26
2.5	Chemical Hazard	30
2.6	Biological Hazard	33
2.7	Cost Implication	35
2.7.1	Time loss	39
2.7.2	Employees' moral	40
2.7.3	Training cost	41
2.7.4	Productivity cost	42
2.8	Occupational Safety and Health (OSH) Practices	43
2.8.1	Safety policy program	44
2.8.2	Training program	46
2.8.3	Safety audit program	47
2.8.4	Personal protective equipment (PPE) program	48
2.9	Conceptual Framework	49
2.9.1	Conceptual Framework 1	50
2.9.2	Conceptual framework 2	50
2.10	Hypothesis	51
2.11	Summary	51

## **CHAPTER THREE: RESEARCH DESIGN**

3.1	Introduction	52
3.2	Research Methodology	52