

ANALYSIS ON THE RELATIONSHIP BETWEEN PRODUCTION WORKERS'
KNOWLEDGE, SKILLS, AND ATTITUDE TOWARDS SAFETY AND
HEALTH ACCIDENTS ON SELECTED MANUFACTURING
COMPANIES IN TRECE MARTIRES CITY, CAVITE

THESIS

EMILINE GRACE B. LOYOLA
MERLENE L. MONTENEGRO

College of Engineering and Information Technology

CAVITE STATE UNIVERSITY

Indang, Cavite

Cavite State University (Main Library)



T6398

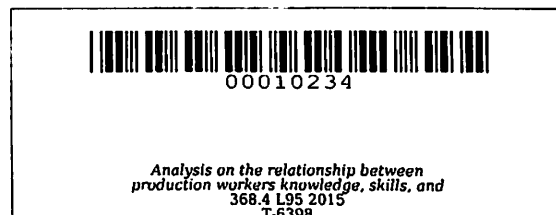
THESIS/SP 368.4 L95 2015

April 2015

**ANALYSIS ON THE RELATIONSHIP BETWEEN PRODUCTION WORKERS'
KNOWLEDGE, SKILLS, AND ATTITUDE TOWARDS SAFETY AND
HEALTH ACCIDENTS ON SELECTED MANUFACTURING
COMPANIES IN TRECE MARTIRES CITY, CAVITE**

Undergraduate Thesis
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfillment of the
requirements for the degree
Bachelor of Science in Industrial Engineering



**EMILINE GRACE B. LOYOLA
HERLENE L. MONTENEGRO**
April 2015

ABSTRACT

LOYOLA, EMILINE GRACE B. and MONTENEGRO, HERLENE L. Analysis on the Relationship between Production Workers' Knowledge, Skills, and Attitude towards Safety and Health Accidents on Selected Manufacturing Companies in Trece Martires City, Cavite. Undergraduate Thesis. Bachelor of Science in Industrial Engineering. Cavite State University, Indang, Cavite. April 2015. Adviser: Ms. Mary Joyce P. Alcazar.

The study primarily aimed to analyze the relationship between production workers' knowledge, skills, and attitude towards safety and health accidents on selected companies in Trece Martires City, Cavite. The study was conducted at selected manufacturing companies in Trece Martires City, Cavite from November 2013 to March 2015.

Data was gathered using survey questionnaires. A total of 105 production workers were the participants of the study. The 27 out of 105 production workers were from Network Trade Philippines International Inc. (Metal Industry), 24 from Netpak Philippines Inc. (Packaging Industry), while remaining 54 were from Sustamina - Cavite Feeds Corporation (Feeds Milling Industry).

The results obtained from the questionnaires were tallied and organized to prepare data to be encoded to the application software. Statistical Package for Social Sciences (SPSS) was used to determine the procedure to execute the data for which it was needed. Gamma and Somers' D were used in correlation analysis to determine the relationship between two variables. The data was treated fairly and was resourced to necessary processes to comply with the objectives of the study.

The correlation analysis revealed that the production workers' knowledge, skills, and attitudes were not necessarily affected safety and health accidents inside the production area. In order to prevent accidents in the production area, the proponents recommend the management of each company to provide training to all the employees especially to the production workers about occupational safety and health such as refresher training not only induction or orientation training but enough and proper safety equipment, orientation on safety equipment, 5S or proper housekeeping, lighting, and industrial hygiene, strict supervision in terms of safety and health guidelines and rules, strict adherence to regulations especially in monitoring of wearing personal protective equipment and sort of motivation like rewards for the employee for complying with zero accident for the whole month.

TABLE OF CONTENTS

	Page
TITLE PAGE.....	i
APPROVAL SHEET.....	ii
BIOGRAPHICAL DATA.....	iii
ACKNOWLEDGEMENT.....	v
ABSTRACT.....	vii
TABLE OF CONTENTS.....	ix
LIST OF TABLES.....	xii
LIST OF FIGURES.....	xvii
LIST OF APPENDICES.....	xviii
LIST OF APPENDIX TABLES.....	xix
INTRODUCTION.....	1
Statement of the Problem.....	4
Objectives of the Study.....	4
Importance of the Study.....	5
Conceptual Framework.....	6
Time and Place of the Study.....	7
Scope and Limitations of the Study.....	7
Definition of Terms.....	7
REVIEW OF RELATED LITERATURE.....	9

METHODOLOGY.....	19
Research Design.....	19
Sources of Data.....	19
Data Gathering Procedure.....	20
Data Analysis.....	21
Statistical Treatment.....	22
RESULTS AND DISCUSSION.....	25
Demographic profile of the participants.....	25
Gender of the participants.....	25
Age of the participants.....	26
Educational Attainment of the participants.....	27
Number of years in the company of the participants.....	29
Employment status of the participants.....	30
Number of working hours of the participants.....	32
Work position of the participants.....	33
Level of production workers' knowledge, skills, and attitude towards safety and health accidents.....	34
Level of production workers' knowledge towards safety and health accidents.....	35
Level of production workers' skills towards safety and health accidents.....	42
Level of production workers' attitude towards safety and health accidents.....	50

Encountered accidents of the production workers inside the selected
manufacturing companies..... 59

Demographic data of the participants’ relationship with their
knowledge, skills and attitude towards safety and health
accidents..... 61

Relationship between production workers’ knowledge, skills and
attitude towards safety and health accidents..... 76

SUMMARY, CONCLUSION AND RECOMMENDATIONS..... 77

 Summary..... 77

 Conclusion..... 80

 Recommendations..... 81

LITERATURE CITED..... 82

APPENDICES..... 83

LIST OF TABLES

Table	Page
1 Location and population size of the selected companies.....	20
2 Somers' D Criteria.....	24
3 Gender of the participants on selected manufacturing companies.....	26
4 Age of the participants on selected manufacturing companies.....	27
5 Educational attainment of the participants on selected manufacturing companies in Trece Martires City, Cavite.....	29
6 Number of years in the company of the participants on selected manufacturing companies in Trece Martires City, Cavite.....	30
7 Employment status of the participants on selected manufacturing companies in Trece Martires City, Cavite.....	31
8 Number of working hours of the participants on selected manufacturing companies in Trece Martires City, Cavite.....	32
9 Work position of the participants on selected manufacturing companies in Trece Martires City, Cavite.....	34
10 Frequency of production workers' knowledge about safety and health accidents.....	35
11 Frequency of production workers' knowledge about safety signs.....	36
12 Frequency of production workers' knowledge about fire extinguisher.....	37
13 Frequency of production workers' knowledge about material safety data sheet.....	38

14	Frequency of production workers' knowledge about workers' right.....	38
15	Frequency of production workers' knowledge about obligation as a worker.....	39
16	Frequency of production workers' knowledge about accident prevention.....	40
17	Frequency of production workers' knowledge about safety and health regulations.....	41
18	Frequency of production workers' knowledge about existing hazards in the firm.....	41
19	Level of production workers' knowledge on personal protective equipment.....	42
20	Level of production workers' skills on using personal protective equipment.....	43
21	Level of production workers' skills in handling.....	44
22	Level of production workers' skills in considering safety issues in the workplace.....	44
23	Level of production workers' skills in acting in accordance with safety principles in the workplace.....	45
24	Level of production workers' skills to protect themselves and others at work.....	46
25	Level of production workers' skills in solving health and safety problems.....	47

26	Level of production workers' skills in recognizing what to do to protect health and safety at work.....	48
27	Level of production workers' skills in safety practice.....	48
28	Level of production workers' skills about handling health and safety issues.....	49
29	Level of production workers' skills on being attentive while in work.....	50
30	Production workers' attitude on following safety and health rules and regulations.....	51
31	Production workers' attitude on using personal protective equipment.....	51
32	Production workers' attitude on removing personal protective equipment during production.....	52
33	Production workers' attitude on reporting to the supervisor of faults/ conditions involving a risk for the workers.....	53
34	Production workers' attitude on warning other workers about health and safety risks at the workplace.....	54
35	Production workers' attitude on asking information regarding health and safety at the workplace.....	55
36	Production workers' attitude on get in contact with safety and health committee/representative for health and safety problems.....	56
37	Production workers' attitude on asking questions when in doubt about workplace hazards.....	57
38	Production workers' attitude on telling co-worker to wear personal protective equipment properly if their caught not using it.....	58

39	Production workers' attitude on consulting/asking others if can't fix safety hazards.....	58
40	Determining if the production workers have encountered accidents in the production area on selected manufacturing companies in Trece Martires City, Cavite.....	59
41	Encountered accidents by the production workers' at selected manufacturing companies in Trece Martires City, Cavite.....	61
42	Age of the participants vs. not removing personal protective equipment during production.....	63
43	Educational attainment vs. know what to do when accident or incident occur (first aid)	64
44	Educational attainment vs. solving health and safety problems.....	65
45	Number of years in company vs. using personal protective equipment.....	67
46	Number of working hours vs. using of knowledge on safety signs.....	68
47	Number of working hours vs. using of knowledge on material safety data sheet.....	69
48	Number of working hours vs. using of knowledge on obligation as a worker.....	70
49	Number of working hours vs. using of knowledge on accident prevention.....	71
50	Number of working hours vs. taken on board the safety issues in the workplace.....	72

51	Number of working hours vs. confidence on acting in accordance with safety principles in the workplace.....	73
52	Number of working hours vs. confident that other people they work with know what to do to protect health and safety at work.....	74
53	Number of working hours vs. thinking about safety.....	75
54	Number of working hours vs. following safety and health rules and regulations.....	76
55	Asking questions when in doubt about workplace hazard vs. encountered accident/s in the production area.....	76

LIST OF FIGURES

Figure		Page
1	Conceptual framework of the study.....	6
2	Flow diagram for the analysis on the relationship between production workers' knowledge, skills, and attitude towards safety and health accidents on selected manufacturing companies in Trece Martires City, Cavite.....	21

LIST OF APPENDICES

Appendix		Page
1	Appendix Table.....	85
2	Letter to the companies.....	103
3	Questionnaire.....	107
4	Forms	111

LIST OF APPENDIX TABLES

Appendix Table		Page
1	Summary of the level of production workers' knowledge towards safety and health accidents.....	86
2	Summary of the level of production workers' skills towards safety and health accidents.....	86
3	Summary of the level of production workers' attitude towards safety and health accidents.....	87
4	Correlation matrix between production workers' demographic profile and knowledge towards safety health of selected manufacturing companies.....	88
5	Correlation matrix between production workers' demographic profile and skills towards safety health of selected manufacturing companies.....	89
6	Correlation matrix between production workers' demographic profile and attitude towards safety health of selected manufacturing companies.....	90
7	Correlation matrix between production workers' knowledge and safety and health accidents of selected manufacturing companies.....	91
8	Correlation matrix between production workers' skills and safety and health accidents of selected manufacturing	

	companies.....	92
9	Correlation matrix between production workers' attitude and safety towards health accidents of selected manufacturing companies.....	93
10	Correlation matrix between production workers' demographic profile and knowledge towards safety health of packaging industry in Trece Martires City, Cavite.....	94
11	Correlation matrix between production workers' demographic profile and skills towards safety health of packaging industry in Trece Martires City, Cavite.....	95
12	Correlation matrix between production workers' demographic profile and towards safety health of packaging industry in Trece Martires City, Cavite.....	96
13	Correlation matrix between production workers' demographic profile and knowledge towards safety health of metal industry in Trece Martires City, Cavite.....	97
14	Correlation matrix between production workers' demographic profile and skills towards safety health of metal industry in Trece Martires City in Trece Martires	

15	City, Cavite.....	98
	Correlation matrix between production workers’ demographic profile and attitude towards safety health of metal industry in Trece Martires City, Cavite.....	99
16	Correlation matrix between production workers’ demographic profile and knowledge towards safety health of feeds milling industry in Trece Martires City, Cavite.....	100
17	Correlation matrix between production workers’ demographic profile and skills towards safety health of feeds milling industry in Trece Martires City, Cavite.....	101
18	Correlation matrix between production workers’ demographic profile and attitude towards safety health of feeds milling industry in Trece Martires City, Cavite.....	102

ANALYSIS ON THE RELATIONSHIP BETWEEN PRODUCTION WORKERS' KNOWLEDGE, SKILLS, AND ATTITUDE TOWARDS SAFETY AND HEALTH ACCIDENTS ON SELECTED MANUFACTURING COMPANIES IN TRECE MARTIRES CITY, CAVITE

Emiline Grace B. Loyola
Herlene L. Montenegro

An undergraduate thesis submitted to the faculty of the Department of Industrial Engineering and Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite in partial fulfillment of the requirements for the degree of Bachelor of Science in Industrial Engineering. Contribution number. CEIT-2014-15-045. Prepared under the supervision of Ms. Mary Joyce P. Alcazar.

INTRODUCTION

The workers have the right to a safe workplace. The Occupational Safety and Health Act of 1970 (OSH Act) was passed to prevent workers from being killed or seriously harmed at work. The law requires employers to provide their employees with working conditions that are free of known dangers. The Act created the Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. OSHA also provides information, training and assistance to workers and employers. Workers may file a complaint to have OSHA inspect their workplace if they believe that their employer is not following OSHA standards or that there are serious hazards (OSHA, 2014).

Heinrich (1959), as cited by Idirimanna and Jayawardena (2011) brought up a theory indicating that the most important factor in industrial accidents is unsafe behavior. He suggests that for every 330 unsafe acts, 29 will result in minor injuries and one in a major or lost time incident. Other studies confirmed his theory and made experts