

# MODEL OF THE INDUSTRIAL TECHNOLOGIST PERFORMANCE

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## ABSTRACT

The purpose of this research was to investigate the causes of workplace accidents. The sample size was 83 persons. The questionnaire was divided into 3 parts: personal, behavioural and occupational. The questionnaire is a checklist and a rating scale.

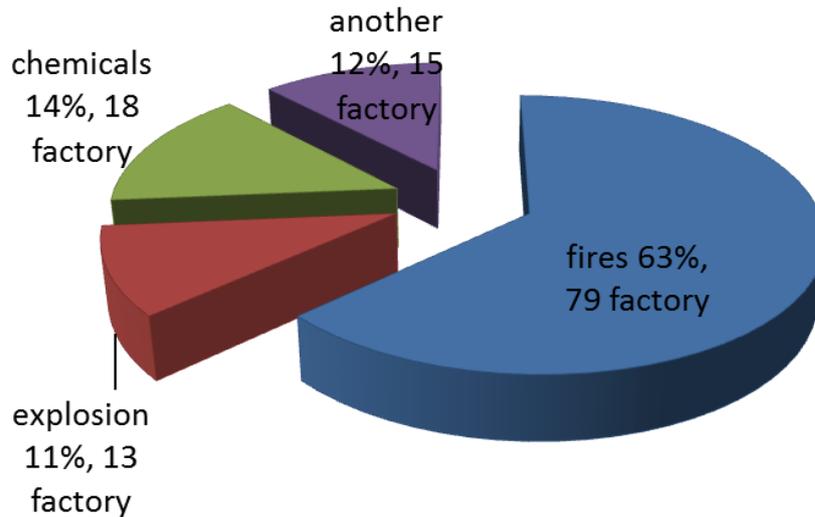
The results showed that the working behaviour of the employees was at a good level ( $\bar{x}$ = 3.64, S.D. = 0.74). The most commonly used machine age was the more than three years, of which 64 were 77.10 percent breakdown per week. The respondents used the highest number of abortions, i.e., one to three times a week, of 44, 53.00%. The machines that the respondents are currently working on are defective - most of the defects are one to three times a day, 42 people, representing 50.60 percent. The machine that the respondents are currently working on has the most protective cover. 58 cards are covered, accounting for 69.90%. The pre-maintenance (PM) period was found. The machines that respondents currently work are doing. PM is the most frequent PM is 67, 80.70 percent.

**Keywords:** Model of Industrial, Technology Performance

## INTRODUCTION

The prospects for serious health hazards to workers, operators and owners of industrial enterprises are relatively new, with limited planning, factory setting and plant layout, as well as most Thai workers who lack the knowledge and experience of safety work are likely to have accidents. The problem is that the workers have been injured in the fire accident. Factories are often formed because some factories do not have security measures but rather focus on productivity and profitability, with little regard for security. The factory and the safety management are governed by the regulations of the Factory Act. It is important to educate and raise awareness about safety, and it is important to include safety knowledge in various courses, especially in the field of mechanics, factory accidents, cleanliness and orderliness (Kijaratporn, 2001, 2000).

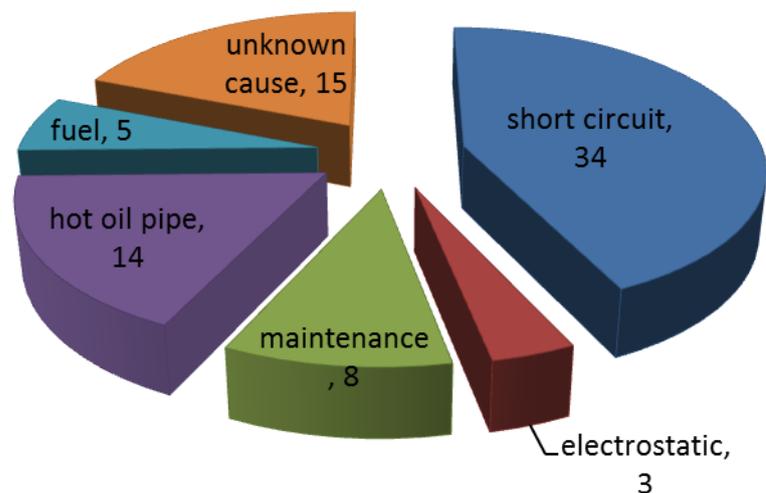
World strategy for enhancing occupational safety and health (Department of Labour Protection and Welfare ASEAN Occupational Safety and Health Conference According to the International Labor Organization (ILO) (Laoudomchoke, 2017) each year about 340 million workplace accidents have occurred, resulting in around 360,000 deaths worldwide, and 2 million deaths from work or illnesses worldwide. It accounts for about 4 percent of the world's gross domestic product (GDP) loss, or about \$ 2.8 trillion. The International Social Security Association (ISSA), a non-profit organization, is headquartered at the Swiss Confederation. The mine accident prevention department is located in the Federal Republic of Germany. It has played an important role in developing and providing Vision Zero strategies for managing and enhancing workplace safety. It has a defensive strategy to move towards the future of security. No deaths from work and no serious accidents, work-related diseases. Including serious traffic accidents, the Labor Department's annual statistics show that the number of deaths has increased and that the amount of compensation paid is increasing. Most of these cases are caused by machinery. Most of the dangers occur in Bangkok, which is populated by populations and businesses. Industrial massively due to the fact that most workers are not regular workers, Thailand suffers from a shortage of workers, mainly from rural areas and when it comes to farming or harvesting. Most of the occupational diseases are chronic. Some industries have to lose, injured, from minor injuries to major organ injuries such as arms, legs, eyes, hearing loss. ear Loss of working time of workers or workers due to the need to help the injured, stopping the cause of the accident, stopping to train the new workers instead of the injured, loss of expenses, damaged equipment must be destroyed and lost, loss of rental, electricity, water supply and other costs will be lost and need to pay normally, if it is closed for several days. In case of fatal accident, accident and industrial accident statistics 2014 by the Safety Technology Bureau (STB) has gathered fire accidents from various agencies. The Department of Industrial Works 1-4 and the Monitoring and Evaluation (IPD) have gathered in the area of the province, including the media to use for data analysis trends in accident and accident prevention and prevention and the development of security in the industry only.



There are 8 types of factories in the scene.

1. The Group operates the textile business. Plant fiber, bleached fabric
2. Wood Processing Group
3. Plastic, Foam, Paper, Rubber
4. Group of companies engaged in the business of chemicals, petrochemicals, chemicals, hazardous substances.
5. Group of companies engaged in the business of color, flammable, recycled, used oil, oil extraction from plants.
6. Group of factories engaged in industrial waste or waste.
7. Food business group.
8. Other general non-factory

The performance of the employees in the company: This is a factor leading to the success of the organization. This research is based on the fact that the researcher is aware of the importance of effective employee behaviour. In order to improve the organization, the researcher is interested to study the accident factors in work and to find ways to prevent and correct the accident from the work of the production staff. This is the basic information and a guideline for safety management planning, development of knowledge about safety, Statistics and best practices to rationalize the safety at work of its employees. Reduce losses and benefit the development of organizations and the nation.



## OBJECTIVES

The objective is to investigate the causes of workplace accidents.

## METHODOLOGY

### Research Methodology

This research is the research instrument was a questionnaire, divided into the following topics:

3.1.1 The population included in this study is the Production Supervisor The total number of 95.

3.1.2. Sample: Bring the population of the sample was compared with the tables of Craig and Morgan (Krejcie & Morgan, cited in Wanhvanich, 2003: 46-48). The sample consisted of 95 employees. The samples were randomly assigned to 83 samples.

### Scope of Research

Area boundaries: Employees of Pluak Daeng District Rayong.

The scope of content: The concept of Inkaew (Intkaew, 2005, 3) was studied. Factors affecting occupational safety behavior include:

- (1) Personal
- (2) Behavior in work.
- (3) Machinery

### Time Duration

October 24, 2015 - October 24, 2019

### Research tools

The questionnaire used in the survey and the trend by dividing the tool used as a questionnaire was divided into 3 steps as follows:

The instrument used to collect the data was a questionnaire with the concept of Champrakone (Champrakone, 2008: 59-66). There were 3 steps.

**Step 1:** Personal factors The questionnaire consisted of 9 questionnaires: age, sex, status, educational level, age, number of hours worked, Department, overtime, and frequency of overtime.

**Step 2:** The behavior of the respondents is a question about the frequency of work behavior. The questionnaire consisted of 5 levels of the questionnaire, 10 questionnaires, 6 positive questions (1, 2, 3, 4, 6, 7) and 4 negative questions (5, 8, 9, 10).

**Step 3:** Machine Factors: The respondents answered the questionnaire in five questionnaires: machine age, breakdown, defect, cover Hazardous Machinery, and PM Machinery Monthly

### Creating research tools

The instrument used to collect data in this research. Has done the following:

- 1) Study papers, articles and research reports are researches on theories, concepts, principles related to the characteristics of individuals.
- 2) Define the conceptual framework and scope for creating the tool in accordance with the objectives.
- 3) The information obtained from the study was created as a questionnaire.
- 4) The questionnaire was revised to improve.
- 5) The questionnaire was sent to 5 experts. The questionnaire was then analyzed. Validity: IOC (Index of Objective Congruence) is 0.50 and above.
- 6) Take the revised questionnaire. Apply to 30 non-experimental groups.
- 7) Take the questionnaire from the experimental group to calculate the reliability, the reliability of the questionnaire (Cronbach, 1970).
- 8) Complete the questionnaire. Then apply to the sample set.

### Analysis of data and statistics used

The data were analyzed by using the computer for data analysis.

1. Personality Analysis: The characteristics of the questionnaire are the checklist. The basic statistics used are frequency and percentage.

2. Analysis of work behavior: The characteristics of the questionnaire were 5 scales. The basic statistics used were arithmetic mean ( $\bar{x}$ ) and standard deviation (S.D.).

3. Mechanical analysis: The characteristics of the questionnaire are the check list. The basic statistics used are frequency and percentage.

The criteria for scoring positive messages are as follows.

Regular =	5 points
Frequently =	4 points

Sometimes	=	3 points
Once in a while	=	2 points
Never	=	1 points

Negative messages will vote in the opposite direction to the positive message:

Never	=	5 points
Once in a while	=	4 points
Sometimes	=	3 points
Frequently	=	2 points
Regular	=	1 point

Criteria for translating scores of behavioral questionnaires

1.00 - 1.49:	Minimal
1.50 - 2.49:	Less
2.50 - 3.49:	Moderate
3.50 - 4.49:	Good
4.50 - 5.00:	Very good

## CONCLUSION

Study of accident factors, prevention approaches and correcting the accident from the work of the production staff is as follows.

**Step 1:** The Personality of the Respondents By frequency and percentage analysis.

**Age:** The respondents had the highest number of respondents aged 31-40 years, 40 (48.20%), followed by the 20-30-year olds (38%). 45.80 and over 40 years old, 5 people or 6.0%.

**Gender:** The number of respondents is older than males. There were 55 males and 66.30 males. 28 people or 33.70%

**Marital status:** The respondents' marital status was highest. There were 52 married couples, 62.70%, followed by 31 married persons, or 37.30%.

**Level of Education:** Found the highest number of respondents in the sixth grade was 48.80% or 57.80%, followed by 32% lower than the sixth grade. 38.60, the lowest was the diploma or diploma, 3 students or 3.6%.

**Age:** The majority of respondents were between 1-5 years old, 51% or 61.40%, followed by 19 - year - olds, 6 - 10 years old, or 22.90%. 12 years of age were 14.50% and the minimum age was 10 years, 1.20%.

**Working Hours:** It was found that the working hours of the respondents who performed the most was 8 hours, 45 persons or 54.20%, and the lowest was 8 hours, 38 persons or 45.80%.

**Departmental work:** The most frequent response system employed by the respondents was 83 employees, representing 100% of the respondents.

**Overtime:** It was found that the overtime work performed by the most current respondents was 83 persons or 100%.

**The frequency of overtime:** It was found that the frequency of overtime work performed by the respondents was more than 75 days per week, 75 persons, or 90.40%, followed by 1-3 days a week. 8 people accounted for 9.60 percent.

**Step 2:** Employee Behavior of the Company By means of an analysis of the population mean ( $\bar{x}$ ) and standard deviation of the population ( $\bar{x}$ = 3.64, SD = 0.74). The highest mean score was observed for the followings ( $\bar{x}$ = 4.87, SD = 0.37), followed by wearing safety equipment ( $\bar{x}$ = 4.81, SD = 0.49), wearing tight and fitting clothes ( $\bar{x}$ = 4.80, SD = 0.53) Machine readiness before work ( $\bar{x}$ = 4.70, SD = 0.58), you strictly follow the strict warnings ( $\bar{x}$ = 4.53, SD = 0.80), you rest sufficiently before the day's work ( $\bar{x}$ = 4.04, SD = 1.11), you rush to work. ( $\bar{x}$ = 2.82, SD = 0.91), you often try to mislead yourself when you do not understand how to work ( $\bar{x}$ = 2.27, SD = 1.05), person tease with colleagues at work ( $\bar{x}$ = 2.10, SD = 0.83), and the lowest mean score was person neglected to work safely ( $\bar{x}$ = 1.49, S.D. = 0.74).

**Part 3:** Information on machine factors by frequency and percentage analysis.

**Machine age:** The majority of the respondents used the machine at present, more than 3 years, 64 persons, 77.10%, followed by 1-3 years, 15 persons or 18.10%. The minimum is less than 1 year, 4 people or 4.80%.

**Breakdowns per week:** It was found that the machines that respondents currently used had the most downtime, i.e., 1 to 3 times a week, of 44 people, or 53.00%, followed by no stopping. 26 people accounted for 31.30% and the lowest was 3 times a week, 13 persons or 15.70%.

The machines that you work on are defective (including downtime): the machines that the respondents are currently working on are defective - the most common defects are 1-3 times per day, 42 people or 50.60% There were 29 defects, 34.90% were missing, and 14.5% were less than 3 times a day.

**Protection card:** Is it possible that the machine that the respondent is currently working on has the most protective cover? 58 people accounted for 69.90 percent, and the lowest was 25 cards, which accounted for 30.10 percent.

**Monthly PM:** The machine that the respondent is currently working on has the most frequent PM. There were 67 PM (80.70%), and the lowest were PM (16 persons), 19.30%

## DISCUSSION

The working behavior of the employees in the manufacturing operation level was at a good level (3.64). The least work behavior was neglected for safety in operation (1.49), which complied with the research of the author (Pomgkajiratipa, 2004) that studied the factors influencing the safety behavior of the company. Behavior in work has the effect on work safety and in accordance with the concept of the author (Pensuwan, 1977: 10) that gives meaning of behavior that means all kinds of activities that human beings do, whether they observe it or not. For example, cardiac function, muscular function, walking, speech, thinking, feeling, interest, and Paomeung (Paomeung, 2011: Abstract). Job placement behaviors have significantly different behavioral behaviors and safety enhancers correlated with overall safety behaviors in the same direction, which corresponds to Tantisirianusorn and Kumpol (Tantisirianusorn and Kumpol, 2016). The working behavior of the employees of the International Company Limited was different. Age and position were different. There were significant differences in the level of factors affecting work behavior in terms of overall compensation, progression and occupational safety at statistical significance at .05 in line with Hirschberg's concept, it is stated that the incentive component is positive, thus making the person satisfied with the job and in line with the research conducted by Sanhapakde (Sanhapakde, 2007) found that the motivational factors affecting the behavior of the employees in the operational level The most demanded are the advancement and survival needs, the need for engagement, and the need for success.

Mechanical factors affecting the safety behavior of working-class employees showed that most of the machines used in the present time were more than 3 years old, accounting for 77.10%. Most of the work is between 1-3 times a week 53.00%. The machines that are currently working are damaged - most defective. The machinery used in the present day has the most protective cover, 59.90 per cent of the machinery. At present, the monthly PM has the most monthly PM as a percentage. 80.70 Long lifespan and defective machinery are one of the causes of accidents in work, which is consistent with the research (Intkaew, 2005) studied factors affecting the safety of the employees of the Department of Bangkok Glass Machinery Co., Ltd. showed that factors affecting safety in accordance with the work. It is found that the readiness of the OTOP producers is divided into 6 areas as follows: (1) the overall management technology was the very good level, (2) technology, quality and standards were the good level, (3) the manufacturing technology was found to be at a moderate level, (4) information technology was the moderate level, (5) environmental technology / occupational safety was found at a moderate level, and (6) technological maintenance was the moderate level.

## SUGGESTIONS

### Researcher's recommendation

The results of the research on the factors affecting the safety behavior of employees in the manufacturing operation level showed that their working behavior was at a good level. Therefore, the researcher would like to propose ways to encourage employees to have better working behavior.

1. The company should emphasize Employees are encouraged to pay more attention to the safety of their employees in order to keep their employees safe in the workplace in accordance with the Safety Journey policy.

2. The Company should organize activities to encourage employees to cooperate. Coordinates and recognizes the importance of enhancing safety in working for themselves and their colleagues.

3. Recommendations of the next researcher.

3.1 The scope of the study should be extended to include factors that affect safety behavior in other types of plant operations.

3.2 Other factors that affect additional safety behavior should be studied. Such values are different. There are relationships related to performance, attitude, personality, perception, barriers, social support and corporate culture, etc., so that other variables affect the safety behavior of the work.

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