A STUDY ON AWARENESS OF SAFETY ACTS AMONG PETROL BUNK EMPLOYEES IN TIRUCHIRAPALLI DISTRICT

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ABSTRACT

The goal of this essay is to investigate the employees of fuel bunks' awareness of safety practises. a way to assess workers' knowledge of safety procedures who work in Tiruchirappalli districts' fuel bunks. In the districts of Tiruchirappalli, they can be divided into five different categories of petrol bunks. They are liquefied petroleum gas, Bharath petroleum, Hindustan petroleum, Indian oil petrol bunk, and Hindustan petroleum petrol bunk. Take a survey to learn more about workplace safety practices. All around, there are warning signs and safety symbols. Safety decals designed to raise awareness on particular occasions. Created and distributed safety stickers. Employees should be informed of the safety procedures in the fuel bunks.

***Keywords:** Safety, Occupational, Cognizance of Protection Performances, Employees, Petrol Bunks.*

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Introduction

Safety

Safety is the quality of being secure, or guarded against damage or other negative consequences. The management of known risks in order to create a favorable risk environment is another definition of safety. Safety is defined as "stable state of an organization or location performing what it is designed to do." The lack of physical harm or damage to people's health, either directly or indirectly as a result of harm to properties or the environment, is what is meant by the term "safety."

Occupational Safety

The safety, health, and interests of people while they are at work are the focus of the multidisciplinary discipline known as occupational health and safety, or occupational safety and health.

Coworkers, family members, and other people who might be hurt by the workplace environment may be protected under occupational safety and health.

Safety Acts

Whether they are defending or advancing the goals of the safety act, suppliers of authorized anti-terrorism devices are shielded from legal liability. The intention is to promote the creation and use of efficient anti-terrorism goods and services by providing liability protection.

Hazardous contributing variables were noted while the gas station was being used and maintained. Hazards contributing factors recorded during operation and maintenance of petrol station.

- House keeping
- Transportation hazards
- Careless
- Fire
- Electrical fault
- Assorted cases
- Medical treatment cases

These factors occur in Hazards for the employee workplace.

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Petrol Bunk

As a popular impression among a major section of India's population, petrol bunks are one of the most profitable businesses with goal returns. In India, there are five different types of petrol bunk

- Hindustan petroleum bunk.
- Indian oil petrol bunk.
- Essar petrol bunk.
- Bharath petrol bunk.
- Reliance petrol bunk.

Review of Literature

Johnson & Umoren (2018): PPE awareness and use, hand washing practices, first aid box availability, and medical checks were all lacking(Oe & Qm, 2018). The independent petroleum marketer's organization and other stakeholders should endeavor to guarantee that filling station owners are responsible for their employees' health and safety.

M. Sam Mannan & Olga Reyes-Valdes (2016): There has been a lot of development in terms of developing technologies and researching themes that promote process safety. However, as the accidents we've reviewed illustrate, there's still a lot of work to be done in the areas of process safety education, research, and practice. The interaction of human process equipment with on-the-job learning resulted in even more negative outcomes and effects. Only when a sufficient number of skilled, trained, and competent inspectors are available can checkups have favourable outcomes(Mannan et al., 2016).

Mingkwan & Kitwattanavong (2013): Workers at gas stations need excellent health protection to avoid exposure to these harmful chemicals, and ambient levels of these compounds should be measured in their workplace on a regular basis to ensure that they are working in a safe environment. Increased levels of BTEX and carbonyl compounds in the ambient air near the petrol station are a result of increased fuel circulation(Kitwattanavong et al., 2013).

Marta Regina Cezar-Vaz & Laurelize Pereira Rocha (2012): the perceptions of gas station workers about physical, chemical, biological, and physiological risk factors in their work environment; the types of occupational accidents involving gas station workers; and the development of a socio-environmental intervention as a tool for risk communication to gas station workers. Occupational accidents are becoming more common, which allows for the perception of risk factors to be realized from the event to the worker(Cezar-Vaz et al., 2012).

Yuganti P Vaidya (2012): It was intended to test lung function in fuel pump personnel based on the duration of occupational exposure. We urge that other research be conducted in different places to back up our findings with more data, as well as studies recommending various preventative strategies for petrol pump operators(Hulke et al., 2012).

Deepak Kumar & T.S. Thakur & Chandra Prabha Bhargava (2011): Contract work is used all throughout the world and has been in use since the dawn of time. The contract workers have no direct contact with the top management. Work has a timeless quality about it. Work is both a byproduct and a requirement of factory work. Work is adequate to employ a significant number of full-time employees, and most businesses are run by regular males(Refineries, 2009).

Gana Godwin J (2010): Maintenance is a broad phrase that encompasses a wide range of tasks in many industries and working situations. Work equipment, personal protective equipment, and work procedures should all be given(et al., 2017).

D. Majumdar & C. Dutta & A.K. Mukherjee (2008): The exposure of workers at gas pumps in Kolkata, as well as the health dangers related with it. At the fueling station, data on ambient mono-aromatic hydrocarbons and carbonyls is gathered, and occupational exposures of filling personnel to mono-aromatics is investigated. Different fractions of VOCs are apportioned according to immediate source contributions using chemical mass balance (CMB) receptor models. Estimates of non-cancer health risk and integrated lifetime cancer risk are made as a result of employees' exposure to some hazardous VOCs. During the pumping and servicing of fuels, workers at petrol stations handle a variety of petroleum products. Risk evaluations for harmful contaminants are commonly employed in air pollution control operations(Majumdar (neé Som) et al., 2008).

G. S. Keretetse, & P. J. Laubscher (2008): Because of their potential neurotoxic and carcinogenic consequences, exposures should be carefully monitored and maintained under control. DNA damage increased and DNA repair ability reduced as a result of exposure to these low levels. The antioxidant capability of the group exposed to petrol VOCs reduced. The antioxidant capacity was harmed by exposure to petrol VOCs, resulting in higher oxidative stress in the exposed group (Keretetse et al., 2008).

Okafoagu Nneka .C (2008): Only a few of them have a good understanding of the subject. The importance of firms implementing workplace safety procedures is underscored. Identify potential dangers in the workplace. To prevent them, put in place safety precautions. New staff should be trained. Retrain employees on safety precautions(et al., 2017).

Ozcan Arslan (2007): Chemical cargoes have a variety of characteristics, and many of them pose health and safety risks, which is a major concern for the tanker sector. Despite the latest navigational systems, accidents and mishaps occur in the maritime industry. Chemical tanker operations result in more mishaps and accidents than other types of ships as a direct result of the behavior of the chemicals being transported(Arslan & Er, 2008).

Snorre Sklet (2006): They help people comprehend the concept of safety barriers. The findings are useful for identifying, describing, developing requirements for, and comprehending the effects of safety barriers in the field of industrial safety(Sklet, 2006).

Yeshvandra Verma & S. V. S. Rana (2001): The phenol concentration of urine samples from petrol-pump personnel and dry cleaners in Meerut City (India) was used to track benzene exposure. Alcohol, it is determined, can change man's sensitivity to benzene toxicity through changing his metabolism. A considerable portion of the population is exposed to benzene as a result of their work environment. The amount of phenol excreted in urine may be affected by the diet consumed as well as other factors such as smoking and alcohol consumption(Verma & Rana, 2001).

Mohan Das, S. K.Bhargava, A. Kumar, A. Khan (1991): Most of the symptoms and signs might be ascribed to petrol fumes and other environmental pollution, as measured by greater concentrations of benzene, sulphur dioxide, and photoionizable dust in the air near petrol stations. Workers who are exposed to petrol fumes exhibit a variety of clinical indications and symptoms that could be related to their work(Das et al., 1991).

Jouko suokas (1988): The use of safety analysis to ensure the safety of new and current industrial systems is becoming more frequent. The identification of accident contributors is one of the most difficult parts of safety analysis. Both safety analysis and accident investigations are complimentary ways to assessing accident risks associated with a system or activity(Suokas, 1988).

Problem Statement

There are various organizations using different risk assessment criteria currently then. Continual occurrences of hazards that can be present while operating and maintenance of PFS reveals flaws in these approaches. These danger factors have Possibility of producing undesirable circumstances at PFS. Therefore, it is necessary to provide a framework for risk assessment that to help with health, priorities dangers and determine risk value in making decisions, safety and environmental experts.

Objectives of the Study

- To research the workplace in order to fuel bullshit.
- To assess the safety features offered to a fuel bunk employee.
- To research employee awareness of safety-related labor laws.

Research Methodology

The term "research" refers to a search for information. It's also referred as as a scientific and methodical search for material information about a certain subject. Data analysis is a method of scientific enquiry. "A diligent investigation or inquiry, especially through quest for new facts in any sort of knowledge," according to the advance learner's dictionary of contemporary English.

Research Design

It's an observational research project. The goal of descriptive surveys is to gather specific details and factual information about a current phenomenon. In Tiruchirappalli District, a structured questionnaire survey was conducted in selected petrol bunk corporations.

Selection of Samples

Total 106 respondents were selected from employees in various petrol bunk corporation in Tiruchirappalli District.

Sources of Data

In order to achieve the objectives of present study, relevant primary and secondary data was used.

Primary Data

Primary data was collected from customers with the help of structured questionnaire by personal visit and conversation.

Secondary Data

Secondary Data was collected from Books, Magazines, Journals News Paper and Websites etc. It was useful sources to designs scientific instrument (questionnaire) for Primary data.

Sampling Technique and Instruments

The 106 employees of Fuel Bunk Corporation in Tiruchirappalli District were chosen using a convenience slicing technique. The information for the questionnaire for the petrol Bunk Corporation in Tiruchirappalli District was also obtained by the researcher. For the study, both primary and secondary data were collected. The structured questionnaire was utilised to do this. The general information of the selected petrol bunk corporation in Tiruchirappalli District was gathered using secondary data from published sources such as annual reports and the website of the petrol bunk corporation in Tiruchirappalli District. The final questionnaire is divided into three sections. The first section includes demographic questions about area, gender, family kinds, marital status, age, educational qualification, and income, as well as present bunk experience and overall carrier experience. The second section contains seven elements that determine the petrol bunk company in Tiruchirappalli District, as well as respondents' preferences and promotional tactics. The second section contains three-point statements depending on the qualities, ranging from agree (represented by 1) to disagree (represented by 3).

Data Analysis and Interpretation

Table 1: ANOVA for Working Environment with Age of Petrol Bunks of Respondents

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Work Envi Avg	Between Groups	2.476	4	.619	1.526	.200
	Within Groups	40.967	101	.406		
	Total	43.443	105			

Inference

The significant value provided by SPSS is 0.200, which is less than 0.05, thus reject the null hypothesis. As a result, there is a significant variance in the working environment based on the age of the respondents' petrol bunks.

The working environment with the age of petrol bunks is divided into one category using the Duncan technique.

TABLE 2: ANOVA for Safety Measures with Age of Petrol Bunks of Respondents

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Safety Meas Avg	Between Groups	2.476	4	.619	1.526	.200
	Within Groups	40.967	101	.406		
	Total	43.443	105			

Inference

The significant value provided by SPSS is 0.200, which is less than 0.05, thus reject the null hypothesis. As a result, there is a significant variation in respondents' awareness of acts based on their age of petrol bunks.

The Duncan technique divides the cognizant of acts with the age of petrol bunks into one category.

Table 3: ANOVA for Aware of Acts with Age of Petrol Bunks of Respondents

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Aware of Acts Avg	Between Groups	2.476	4	.619	1.526	.200
	Within Groups	40.967	101	.406		
	Total	43.443	105			

Inference

Based on the result generated by SPSS, the significant value is0.200 and it's lower than0.05 so reject null hypothesis. Hence there's a significance difference in the aware of acts with age of petrol bunks of respondents.

By using Duncan method, the aware of acts with age of petrol bunks is separated into one group.

Table 4: t- Test for Working Environment with Gender of Respondents

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Work Envi Avg	Male	104	2.6635	.64778	.06352
	Female	2	3.0000	.00000	.00000

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	T	Df
Work Envi Avg	Equal variances assumed	3.327	.071	-.731	104
	Equal variances not assumed			-5.298	103.000

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Work Envi Avg	Equal variances assumed	.466	-.33654	.46021
	Equal variances not assumed	.000	-.33654	.06352

Inference

The result of Levene's Test for Equality of Variances (Homogenisity) indicates a significant value of 0.071, indicating that both groups are homogenous and that the t-test for equal variance should not be used. The female working environment has a mean value of 3.0000, whereas the male working environment has a mean value of 2.6635.

The difference between the two is only 33654 points, which is negligible. The significant value provided by SPSS is 0.000, which is greater than 0.05, thus accept the null hypothesis. As a result, there is no significant difference between the two means, i.e., male and female averages.

Table 5: T-test for Safety Measures with Gender of Respondents

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Safety Meas Avg	Male	104	2.6635	.64778	.06352
	Female	2	3.0000	.00000	.00000

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	T	Df
Safety Meas Avg	Equal variances assumed	1.996	.161	.863	104
	Equal variances not assumed			.871	103.054

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Safety Meas Avg	Equal variances assumed	.466	-.33654	.46021
	Equal variances not assumed	.000	-.33654	.06352

Interface

The result of Levene's Test for Equality of Variances (Homogenisity) indicates a significant value of 0.161, indicating that both groups are homogenous, and so the t-test for equal variance is not presumed to be used. Female safety measures have a mean value of 3.0000, while male safety measures have a mean value of 2.6635.

The difference between the two is only 33654 points, which is negligible. The significant value provided by SPSS is.000, which is greater than 0.05, thus accept the null hypothesis. As a result, there is no discernible difference between the male and female means.

Table 6: t-Test for Aware of Acts with Gender of Respondents

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Aware of Acts Avg	Male	104	2.6635	.64778	.06352
	Female	2	3.0000	.00000	.00000

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	T	df
Aware of Acts Avg	Equal variances assumed	1.996	.161	.863	104
	Equal variances not assumed			.871	103.054

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
Aware of Acts Avg	Equal variances assumed	.466	-.33654	.46021
	Equal variances not assumed	.000	-.33654	.06352

Interface

The result of Levene's Test for Equality of Variances (Homogenisity) indicates a significant value of 0.161, indicating that both groups are homogenous, and so the t-test for equal variance is not presumed to be used.

The female aware of acts has a mean value of 3.0000, whereas the male aware of acts has a mean value of 2.6635. The difference between the two is only 33654 points, which is negligible. The significant value obtained by SPSS is.000, which is greater than 0.05, thus accept the null thesis. As a result, there is no significant difference between the male and female means.

Findings and Suggestion and Summary

Findings for ANOVA Test

- There's significance difference between working environment and age of petrol bunks of respondents, as the significance value0.20 which is less than the0.05, hence null hypothesis is rejected and the alternate hypothesis is accepted.

- There's significance difference between safety measures and age of petrol bunks of respondents, as the significance value0.20 which is less r than the0.05 hence null hypothesis is rejected and the alternate hypothesis is accepted.

- There's significance difference between aware of acts and age of petrol bunks of respondents, as the significance value0.20 which is less than the0.05, hence null hypothesis is rejected and the alternate hypothesis is accepted.

Findings for t- Test

- There's no significance difference between working environment with gender of petrol bunks of respondents, as the significance value0.000 which is lower than the0.05, hence null hypothesis is accepted

- There's no significance difference between safety measures with gender of petrol bunks of respondents, as the significance value0.000 which is lower than the0.05, hence null hypothesis is accepted

Discussion/Suggestions

- Provide a separate toilet facility for men and woman.

- Avoid the female employee at work in night shift.

- Provide a proper canteen for employee.

- Refill the extinguishers regularly.

- Provide googles to the employee.

- Provide apron for the employee.

- Provide hoods for employee.

- Advise to use the gloves in working hours.

- Instruct to clean the hands before take breakfast, lunch, dinner.

- Provide ESI for employee.

- Provide EPF for employee.

- Dispose the waste oil from the working place.

- Instruct employee to be aware of the acts.

- Train employee for use of fire extinguishers.

- Replace the expired medicine regularly.

Conclusion

This study's main focus is on the Petrol Bunk Employees in the Tiruchirappalli District's Awareness of Safety Acts. The information was gathered from employees of the petrol bunks in the Tiruchirappalli District (north, west, south, and east), specifically from Kallukudi, Mambala Salai, Lalkudi, Irrungalur, Sirugannur, Junction, Musiri, and Pettavaithalai. ANOVA TEST and t-TEST are used to examine the gathered data. According to the study's objectives, the researcher gathered a variety of socio-demographic information from the respondents, and this information was then interpreted in light of the study's respondents' knowledge of working conditions, safety precautions, and safety acts. The review's conclusion is that there is no difference or significance between the study's various factors.

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