

EFFECT OF DEMOGRAPHICAL ATTRIBUTES ON EXECUTION OF HEALTH AND SAFETY POLICY OF ONGC AND IOC

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ABSTRACT

Human resources are now considered as human capital so it is the responsibility of each and every organization not only develop but protect their human capital properly so they can give better return to the organization. Health and safety management is a technique which helps the organization to protect their employees and make them more productive. Health and safety management is all about providing safeguard to employees against accidents. Accident is sudden and unplanned event which is not only affects the person who has suffered from it but affects co-workers of the suffered employee psychologically. This paper focuses to explore level of health and safety management practices in oil and gas industry in India and to understand whether age, gender and levels of education of employees have any significant effect on employee health and safety attitudes.

KEYWORDS: *Human Capital, Health and Safety Management, Accident, Consultative Arrangement.*

Introduction

Occupational health and safety management system (OHSMS) have been defined by Gallagher as "...a combination of the planning and review, the management organizational arrangements, the consultative arrangement, and the specific program elements that work together in an integrated way to improve health and safety performance." The institute for health and safety defines HSMS as "the integrated set of organizational elements involved in a continuous cycle of planning, implementation, evaluation and continual improvement directed towards the abatement of occupational hazards in the workplace." Because of, health and safety management is all about accidents and their prevention, it will be worth mentioned the meaning of accidents. Accidents may be defined as an unplanned event which causes injury to a person.

A legal definition of the accident has been provided by the Factories Act 1948 which states that "Accident is an occurrence in an industrial establishment causing bodily injury to a person which makes him unfit to resume his duties in the next 48 hours." There are various types of industrial accidents, which may be classified as major and minor. An accident may be internal or external. An internal injury means sometime a worker fall he or she may show no external injury but he may have fractured a bone or strained on muscle or nerve. Before understanding the importance of health and safety management it is essential to understand the exact meaning of these words. Health can be described as a complete state of physical, mental and social well being. Sometimes, it can be defined as an absence of disease.

But in real the scope of health is broader than it. It is the outcome of the interaction between the individual and its environment. An individual can be considered as healthy when he

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is well adjusted in his environment. The basic objective to study the industrial health is to anticipate potential hazards and preventive actions rather than curative action. Basically it is the condition of enterprise operation in which accident free production is achieved. Generally accidents means when machinery or instruments are damaged, material is spoilt or someone is injured. Sometimes accidents may not result in personal injury but in both situations individual is exposed to an unsafe condition. So, it is essential that engineers, chemists and personnel officers think and identify potential hazards areas and develop control measures to prevent hazards. This study was conducted on the employees and officers of Indian Oil Corporation and Oil and Natural Gas Corporation. Therefore we can say that scope of the study was two selected oil companies of India. Study was all about to know the demographical effect on health and safety management of selected companies.

Research Methodology

This research is designed for the exploration of ideas from which research has been originated. The research method in this research is designed to explore level of health and safety management practices in oil and gas industry in india. Purpose of the study is to understand whether age, gender and levels of education of employees have any significant effect on employee health and safety attitudes. To resolve the above research question, F test has been used to know the answer. F-test is an statistical test in which the test statistic has an F-distribution under the null hypothesis. It is most often used when comparing statistical models that have been fitted to a data set, in order to identify the model that best fits the population from which the data were sampled. If the null hypothesis is true, then the F test-statistic given above can be simplified (dramatically). This ratio of sample variances will be test statistic used. If the null hypothesis is false, then we will reject the null hypothesis that the ratio was equal to 1 and our assumption that they were equal.

Data Sources

There are mainly two type of data source on the basis of collection sources thereof; primary and secondary. Our research is exploratory research which explored the various elements and components of health and safety management in the context of sampled countries. In this research, primary data is mainly used for the data source. However secondary data has also been used to present the financial losses due to health hazards and accidents in Indian economy.

Data Collection Instruments

Structured questionnaires have been used in the study for the data collection. A technique of questionnaire named as "Google Forms" used by researcher for data collection. It is an online mailed form of questionnaire which is often used in survey research.

Scales of Measurements

Mainly there are four types of measurement of scales. The nominal scale of measurement only satisfies the identity property of measurement. Values assigned to variables represent a descriptive category, but have no inherent numerical value with respect to magnitude. The ordinal scale has the property of both identity and magnitude. Each value on the ordinal scale has a unique meaning, and it has an ordered relationship to every other value on the scale. The interval scale of measurement has the properties of identity, magnitude, and equal intervals. The ratio scale of measurement satisfies all four of the properties of measurement: identity, magnitude, equal intervals, and a minimum value of zero. Ratio as well as nominal scale have used in this study. Most of the responses are recorded in five levels Likert scales. Only nominal questions like "Are you aware from health and safety management?" have been recorded in nominal scales, rest of the questions have been recorded in ratio scale.

Hypothesis

Keeping into consideration the objectives and research question of the study, the following null and alternate hypotheses were framed and tested:

- H₀₁** : Age, experience and levels of education of employees have no significant effect on employee health and safety attitudes.
- H₁** : Age, gender and levels of education of employees have significant effect on employee health and safety attitudes.

Data Collection

Data collection was made by survey method by the help of google survey tool. A well-structured questionnaire containing 9 questions for the measurement of health and safety initiatives was served

upon to sample of 92 employees of both the sampled companies and their responses were recorded in following coding table:

Research Question	Oil and Natural Gas Corporation					Indian Oil Corporation				
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
Q1	54	10	5	18	5	66	3	1	20	2
Q2	49	14	3	22	4	49	8	6	28	1
Q3	50	14	2	21	5	54	10	2	21	5
Q4	52	14	0	24	2	52	12	0	26	2
Q5	42	16	1	18	15	50	7	1	22	12
Q6	50	13	4	19	6	50	11	2	25	4
Q7	45	16	1	20	10	45	11	1	30	5
Q8	54	14	4	16	4	54	6	4	24	4
Q9	59	10	3	18	2	59	2	3	26	2

R1= Agree, R2= Disagree, R3= No Opinion, R4= Strongly Agree, R5= Strongly Disagree

Q1= Safety and health of their employees is the priority of management, Q2= The personal Protective Equipment like safety shoes, helmets, goggles, gloves, etc. which are helpful in safe working are always available, Q3= The health and safety training programs are organized by the organization after accessing the needs of the employees, Q4= There is the practice of safety audits and inspection at regular intervals, Q5=The experts do safety audits and inspections, Q6= The Safety Committee of the organization plays an important role in the organization, Q7= Administration seems interested in health and safety before an incident / accident happens, Q8= Follow-up measures after incidents and accidents have taken place, Q9= Employees are satisfied with the inspection and follow-up measures uses by the management.

Demographic Information

Following table is showing information regarding age of managers. Table reveals that age group of 31-40 having highest frequency which depicts that maximum number of workers having age group between the ages of 31-40:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	3.2	3.2	3.2
	31-40	40	42.1	42.1	45.3
	41-50	24	25.3	25.3	70.5
	Above 50 Years	7	7.4	7.4	77.9
	Less than 30 Years	21	22.1	22.1	100.0
	Total	95	100.0	100.0	

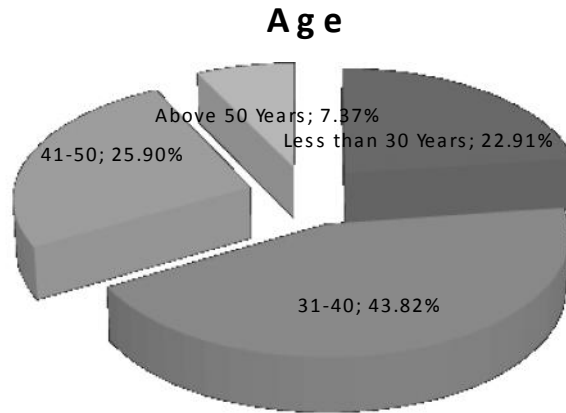
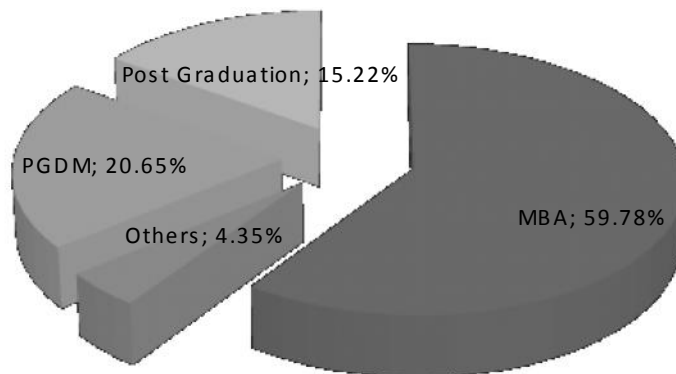


Table 2 is about educational qualification of managers. Out of 92 managerial respondents, 55 managers are having MBA degree which supports excellent data quality for this research.

Table 2: Educational Qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	3.2	3.2	3.2
	MBA	55	57.9	57.9	61.1
	Others	4	4.2	4.2	65.3
	PGDM	19	20.0	20.0	85.3
	Post Graduation	14	14.7	14.7	100.0
	Total	95	100.0	100.0	

Educational Qualification



Above pie chart is also showing the tabled figure in percentage. A huge area of pie chart is covered by MBA degree holders.

Table 3 is containing the data regarding experience of managerial staff. As stated in earlier chapter of research methodology, purposive sampling is selected for managers resulted of which, most of the managerial respondents are having experience more than 20 years.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	3.2	3.2	3.2
	11-20 years	16	16.8	16.8	20.0
	6-10 years	26	27.4	27.4	47.4
	Less than 5 years	20	21.1	21.1	68.4
	More than 20 years	30	31.6	31.6	100.0
	Total	95	100.0	100.0	



Data Analysis

In this hypothesis there are total 4 variables affected namely age, experience, level of education and health and safety attitude. Out of these 4 variables age, experience and level of education are independent variables whereas employee’s health and safety attitude is a dependent variable. For the measurement of safety attitude another two sub variables are formed up result of which is recorded five level Likert scale. Total 92 workers are deliberately selected from both the sampled companies and questionnaires are filled up by these workers. Simple average of these two variables is calculated which is known as health and safety attitude. For the satisfaction of this hypothesis, it is presumed that there is a relation between:

- Age of workers and health and safety attitude
- Experience of workers and health and safety attitude
- Level of education of workers and health and safety attitude

To know that Correlation of above variable is significant or not, F test is regulated. Following table 4 and table 5 are showing the frequency of responses given by workers regarding health and safety attitudes.

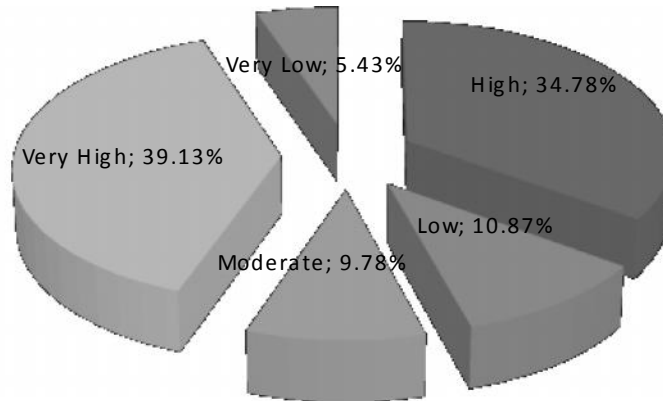
1. Health and safety management should be a integral part of management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	32	34.8	34.8	34.8
	Disagree	8	8.7	8.7	43.5
	No Openion	8	8.7	8.7	52.2
	Strongly Agree	34	37.0	37.0	89.1
	Strongly Disagree	10	10.9	10.9	100.0
	Total	92	100.0	100.0	

Table 5: Level of Compliance Regarding Health and Safety management in Company					
Table 6.24		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	32	34.8	34.8	34.8
	Low	10	10.9	10.9	45.7
	Moderate	9	9.8	9.8	55.4
	Very High	36	39.1	39.1	94.6
	Very Low	5	5.4	5.4	100.0
	Total	92	100.0	100.0	

Frequency Pie Chart of Table 4



Frequency Pie Chart of Table 5



It is revealed from pie chart 6.23 that majority of respondents (37%) are strongly agree with the statement "Health and safety management should be an integral part of management". Likewise, 39% of respondents are admitted that there is very high compliance regarding health and safety management in their company.

F-Test Two-Sample for Variances		
	<i>Age</i>	<i>Attitude</i>
Mean	2.184783	3.358696
Variance	0.767678	0.68311
Observations	92	92
df	91	91
F	1.123798	
P(F<=f) one-tail	0.289445	
F Critical one-tail	1.414341	

F-Test Two-Sample for Variances		
	<i>Education</i>	<i>Attitude</i>
Mean	3.358695652	3.358696
Variance	0.803989489	0.68311
Observations	92	92
df	91	91
F	1.176954013	
P(F<=f) one-tail	0.219297889	
F Critical one-tail	1.414340633	

F-Test Two-Sample for Variances		
	<i>Experience</i>	<i>Attitude</i>
Mean	2.60869565	3.358696
Variance	1.33970377	0.68311
Observations	92	92
df	91	91
F	1.96118202	
P(F<=f) one-tail	0.00075085	
F Critical one-tail	1.41434063	

The above table revealed that the critical value of F is more than the F ratio of age and attitude. It can be concluded that there is no significant effect of age on health and safety attitude of employee. It can be presumed on the basis of this result that increasing age factor may not be forced to an employee to think about his health and safety attitudes. Likewise, in case of table, F statistics falls under the critical value which resulted the same as table showing F-test that there is no significant effect of education on health and safety attitude. In case of table showing F statistics is more than the critical value of F which shows that there is significant effect of experience on health and safety attitude. It may possible due to this fact that by experience, employees are able to know the leakage of his institution regarding health and safety management.

Findings

Responses were recorded in five level Likert scale and average for both the responses know as health and safety attitudes. Correlation was formed up between age, educational level, experience and attitude. Age, Educational level and Experience were presumed as independent variables whereas attitude towards health and safety management was presumed as dependent variable. To test significance of their relationship, F test was used. On the basis of F test, it is concluded that the age factor has not made any effect on employee's health and safety. In simple words it can also be said that increasing age of employees cannot be made a reason of employee to think about his safety at workplace. Educational level of employees has also not made any effect on attitude of employee regarding health and safety management. But amazing result was extracted from hypothesis testing that experience has made significant effect on employee's attitude of health and safety. It can also be said that an employee learns his organization's behavior towards health and safety management because most of the health and safety policy are formed up for long run.

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