EMPLOYEES' HEALTH AND SAFETY IN SINGARENI COLLIERIES COMPANY LIMITED (SCCL) WITH REFERENCE TO KHAMMAM DISTRICT COAL MINES

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ABSTRACT

Energy is most important source for industries to produce products as well as it is also important for households for their living. The energy can be generate by using different natural resource like wind, water and coal etc., in that coal is one of the important natural resource. Coal is the largest source of energy for the generation of electricity worldwide; it extracted from the ground and requires a lot of man power to produce. While producing coal a lot of threats will appear so the companies have to take care of their employees' health and safety. India is world second largest country in supply of coal after china. In India Singareni Collieries Company Limited (SCCL) is the one of the largest company which is situated in Andhra Pradesh with a man power of 63,262. Therefore the researcher aims to analyze the Employees' Health and Safety in Singareni Collieries Company Limited (SCCL) with reference to Khammam District Coal and how the company is providing the health and safety measurement to their employees in Khammam district. The research design undertaken for the study was descriptive research and convenience sampling method is used and the sample size consist of 200 respondents from Khammam district. Simple percentage method and chi-square analysis was used to analyze the data collected and results of the study states that the employees are satisfied with health and safety measurement provided by SCCL.

KEYWORDS: Health and Safety, Singareni Collieries Company Limited and Khammam District

INTRODUCTION

Health and safety at work and healthy work environment are amongst the most valuable assets of individuals, communities and countries. In the light of rapid economic growth and industrial progress in country, it becomes imperative that safety and health at the workplace be given its due importance. However, with stress being laid on quick profits, safety aspects are generally ignored. It is only with the increase in the number of people killed and injured at work that the significance of the problem has been realized.

In India, occupational accidents, traditional physical ergonomic hazards and occupational diseases are important factors influencing the health of the industrial workers.

In India a large number of labour legislations have been enacted for the promotion and protection of worker's welfare. The factories Act, 1948 and the Workmen's Compensation Act, 1923, are specifically directed towards occupational health and safety matters.

Coal is a combustible black or brownish-black sedimentary rock usually occurring in rock strata in layers or veins called coal beds or coal seams. Coal remains an important energy source, due to its low cost and abundance when

compared to other fuels, particularly for electricity generation.

In the year 1871, Dr. King of the Geological Survey of India discovered coal near the village of Yellandu in Khammam district and one of the important coal seams bore his name. The Hyderabad (Deccan) Company Limited incorporated in England acquired mining rights in 1886 to exploit coal found in Yellandu area. The present Company was incorporated on 23rd December 1920 under the Hyderabad Companies Act as a public limited company with the name 'The Singareni Collieries Company Limited' (SCCL). The coal extracted by SCCL in the Godavari valley coalfield up to the year 2012-13 was about 1085.40 million tonnes.

The Singareni Collieries Company Limited (SCCL) is a Government coal mining company jointly owned by the Government of Andhra Pradesh and Government of India on a 51:49 equity basis. SCCL is the second largest public sector under taking in the state and spread in four districts of Andhra Pradesh viz. Adilabad, Karimnagar, Warangal and Khammam Districts with the man power of 63,262. In Khammam district SCCL undertake operations at Kothagudem, Sathupally, Yellandu and Manuguru with man power 8,500, 4,00, 9,00 and 1,600 respectively

OBJECTIVES OF THE STUDY

- To study the health and safety practices followed by the singareni coal mines.

- To known the opinions of employees on health and safety practices in singareni coal mines.

- To analyze the employees opinions health and safety on the bases of age groups.

- To offer suggestions to strengthen the employees' health and safety practices in SCCL.

LIMITATIONS OF THE STUDY

- The study area was limited to the Khammam district region only.

- The study was concentrated on health and safety practices only.

- The minimum age is considered as 18year because it is major and maximum 58years because it the age of retirement.

Tools Used for Data Analysis

The data was collected through research schedule questionnaire. In order to analyze and interpret the data, simple statistical tools like Simple Percentage Analysis and Chi-Square Test are used.

Chi-Square Test

Chi-square test enables the researcher to find out whether the divergence between expected and actual frequencies is significant or not. The following formula can be used for calculating chi-square value.

$$\textbf{Ch-Square Test} = \frac{\sum(Oi - Ei) \wedge 2}{Ei}$$

Where, **O**- Observed Frequency

E- Expected Frequency

Simple Percentage Analysis

Simple percentage method refers to specified kind which is used in making comparison between two or more

series of data. Percentages are based on descriptive relationship. It compares the relative items. Since the percentage reduces everything to a common base and thereby allow meaning comparison. The following formula can be used for calculating percentage.

$$\text{Percentage} = \frac{\text{No. of respondents}}{\text{Total Number of Respondents}} \times 100$$

Data Analysis

Table 1: Simple Percentage Method

S.No.	Factors	Particulars	No. of Respts	%
1	Age	18-28years	28	14
		28-38years	74	37
		38-48years	76	38
		48-58years	22	11
		Total	**200**	**100**
2	Health conduction in general	Very good	02	01
		Good	194	97
		Bad	04	02
		Very bad	00	00
		Total	**200**	**100**
3	Temperature in work area	Too hot	106	53
		Hot	76	38
		Average	18	09
		Cool	00	00
		Total	**200**	**100**
4	Air quality inside work area	Too stuffy	00	00
		Good	136	68
		Average	64	32
		Not enough fresh air	00	00
		Total	**200**	**100**
5	Noise or vibration levels inside the work place	Very high	116	58
		High	82	41
		Normal	02	01
		Very low	00	00
		Total	200	100
6	Unsafe machinery or equipment	Yes	128	64
		No	72	36
		Total	**200**	**100**
7	Are you satisfying safety measurement providing by the management	Yes	160	80
		No	40	20
		Total	**200**	**100**
8	Lighting facility in coal mines	Too dim	00	00
		Good	196	98
		Too bright	04	02
		Total	**200**	**100**
9	Do you have any threats from fire	Yes	90	45
		No	44	22
		Sometimes	66	33
		Total	**200**	**100**
10	Safety needs provided to control fire threats	Safety jackets	110	55
		Water	12	06
		Alarm	78	39
		Total	**200**	**100**
11	What type of occupation problem are	Eye Problems	82	41

	you facing	Ears Problems	82	41
		Some another	36	18
		Total	**200**	**100**
12	Do feel safe with security arrangements inside the coal mines	Yes	190	95
		No	10	05
		Total	**200**	**100**
13	Is there any health and safety issues are addressed promptly in your department	Yes	200	100
		No	00	00
		Total	**200**	**100**
14	In last 12 months you met any accident or injury at work place	Yes	84	42
		No	116	58
		Total	**200**	**100**
15	For this injure or accident which type of help provided by the management	Medical	84	42
		Money	00	00
		Leave for rest	00	00
		None	116	58
		Total	**200**	**100**
16	Do you have any continuous absent regarding sickness	Yes	96	48
		No	104	52
		Total	**200**	**100**
17	Is management conducting health checkups	Yes	198	99
		No	02	01
		Total	**200**	**100**
18	In a year how many times health checkups will be conducted	3 months	88	44
		6 months	112	56
		9months	00	00
		1 year	00	00
		Total	**200**	**100**
19	Is management providing medical insurance	Yes	200	100
		No	0	00
		Total	**200**	**100**
20	Are there any hospitals placed at coal mines for emergency cases	Yes	200	100
		No	0	00
		Total	**200**	**100**
21	Which of the following has your coal mine provided in the last 12 months	Stress management support or advice	00	00
		To prevent from heat	00	00
		Fitness classes at work place	98	49
		Free health advice about healthy life	102	51
		Total	**200**	**100**
22	Do you have canteen facility with healthy food	Yes	104	52
		No	96	48
		Total	**200**	**100**
23	Are your organization provides any early retirement benefit for securing the employee's health	Yes	198	99
		No	02	01
		Total	**200**	**100**
24	Are they conducting any feedback programmes for your health & safety condition	Yes	200	100
		No	00	00
		Total	**200**	**100**
25	How many times they conduct these programmes in a year	2 times	94	47
		4 times	104	52
		6 times	02	01
		Total	**200**	**100**

Chi-Square Test

Hypothesis

H_0: There is no difference between the responses (about health condition) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	37.56	16.919	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about temperature inside the work place) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	15.7245	16.919	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about air quality inside the work place) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	51.21	16.919	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about noise or vibration levels inside the work place) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	17.399	16.919	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about unsafe machinery or equipment) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	14.71	7.815	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the

hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0**:** There is no difference between the responses (about safety measurement provided by the management) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	33.5	7.815	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0**:** There is no difference between the responses (about lighting facility in coal mines) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
06	5.751	12.592	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0**:** There is no difference between the responses (about fire threats) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
06	14.126	12.592	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0**:** There is no difference between the responses (about safety needs provided to control threats) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
06	33.3048	12.592	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0**:** There is no difference between the responses (about occupation problems) given by employees on their age group.

DOF	CV	TV	HypothesisAccepted/Rejected
06	36.76	12.592	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about security arrangements inside the coal mines) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	2.489	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about addressing of health & safety) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	00	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about any accident or injury at work place) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	22.71	7.815	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about help provided by the management if injury at work place) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	6.28	16.919	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about continuous absent regarding sickness) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	4.25	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H₀: There is no difference between the responses (about conducting any health checkups) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	**16.23**	**7.815**	**Rejected**

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H₀: There is no difference between the responses (about number of times health checkups conducted in a year) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	**3.952**	**16.919**	**Accepted**

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H₀: There is no difference between the responses (about availability of medical insurance) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	00	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H₀: There is no difference between the responses (about hospitals near coal mines) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	00	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about health & safety programmes conducted by the management) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
09	44.19	16.919	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about canteen facility) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	9.351	7.815	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about early retirement benefit) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	16.23	7.815	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Hypothesis

H_0: There is no difference between the responses (about feedback on health & safety) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
03	00	7.815	Accepted

The above table shows that calculated value is less than the table value at 5% level of significance. Hence the hypothesis is accepted. This means that the various age groups of employees' opinions are similar.

Hypothesis

H_0: There is no difference between the responses (about number of feedbacks conducted on health & safety) given by employees on their age group.

DOF	CV	TV	Hypothes is Accepted/Rejected
06	42.285	12.592	Rejected

The above table shows that calculated value is greater than the table value at 5% level of significance. Hence the hypothesis is rejected. This means that the various age groups of employees' opinions are not similar.

Findings

- The researcher identified that most of the employees belong to 38-48years age group.

- It is found that employee's health conduction is good.

- It is clear from the analysis that Temperature, Noise or vibration levels are very high and Air, lighting facilities are good at work place.

- From the analysis it is identified that majority of the employees are satisfied with the safety measurements provided by the management.

- It is found from the research that majority of the employees are facing occupational problems like eye and ear.

- Security arrangements provided by SCCL at work place is good.

- Only 42% of the employees are provided with medical allowances out of total in 12 months period.

- Most of the employees replayed that their management is providing medical insurance and conducting regular health checkups.

- The management of SCCL provides early retirement benefit for the secure of their employees.

- The management is conducting feedback programmes four times in a year to known the health and safety condition of their employees.

SUGGESTIONS

- It is suggested that organization has to take required measurements to control the Temperature and Noise or vibration levels at work place by installing new technology.

- The management of SCCL should maintain the same level of air quality and lighting facility in coal mines.

- The safety measurements should be improved at coal mines.

- Fringe benefits system should develop by the organization.

- To avoid the occupational problems like eye and ear the company should provide required safeguards to their employees.

- The security arrangements should improve so that they can avoid the fire injures in coal mines.

CONCLUSIONS

Coal mining in India is at a very critical juncture. Workers and their unions are facing an uphill task in performing their jobs. The accident figures which appear in government statistics do not reveal the actual situation. The figures say almost nothing about the occupational diseases in the mines as the SCCL are not carried out properly and also due to lack of Employees' health and safety system (EHS).

EHS Systems not only identify all hazards and risks to be managed, but also should provided guidelines for how they are to be managed, who is responsible for implementing actions, what resources are required, and the level of training required to properly implement the plans. They also identify the monitoring and review requirements necessary to keep the system effective and appropriate.

REFERENCES

1. http://www.tifac.org.in/index.php?option=com_content&id=690&Itemid=205.

2. http://en.wikipedia.org/wiki/Cool_%28aesthetic%29.

3. http://scclmines.com.

4. Executive Summary of Draft EIA / EMP For The Environmental Public Hearing of The Proposed Sand Mining Project Near Kudurupalli and Beerasagar Villages Mahadevpur Mandal, Karimnagar District, A.P. Department Of Environment The Singareni Collieries Company Limited (A Government Company) Kothagudem - 507 101 (A.P.) June- 2011.

5. http://en.wikipedia.org/wiki/History_of_coal_mining.

6. C.R.Kothari, Research Methodology, New Age International (P) Ltd., New Delhi, pp.234-242.

7. Occupational Health and Safety for Small and Medium Sized Enterprises E. Kelloway Kelloway E. Kevin Kelloway Cary L. Coop

8. Labor and Employment Issues for the Safety Professional Thomas D. Schneid

9. Mining Safety and Health Research at NIOSH: Reviews of Research Programs of the National Institute for Occupational Safety and Health.