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A STUDY ON "HEALTH AND SAFETY MEASURES AT FITWEL TOOLS AND FORGINGS PRIVATE LIMITED"

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ABSTRACT

This paper illustrates the employees health and safety measures at Fitwel Tools and Forgings Private Limited. Aim of the study examines the health and safety measures which are implemented in the industry and its importance. The analysis carried out based on set of objectives of the company. The system of implementing and practicing health and safety measures of employees has a vital role in gaining employees trust whereby once if the trust is built the employees will remain loyal to the company.

INTRODUCTION

The internship is an integral platform for anyone to gain experience in an actual workplace which enables learners to obtain awareness and experience to the business.

The program extends for a period of 6 weeks which provides a good opportunity to experience the practicality in terms of subjects studied.

The origin of the organization was in 1982 with 15-20 employees but the name was fitwel hand tools which has been later changed to Fitwel Tools and Forgings Pvt Ltd ISO/TS 16949/2002 and TS 14001:2009 certified company. In 1985 the company started with producing only spanners forging. It was established in the year 1987 about 70kms away from Bangalore.

Mr.Subramanya started the company and diversified from hand tools production to automobile spare parts manufacturing. Then the company has been diversified in to manufacturing of small precision forged components both horizontal and vertical forgings. The company specializes in the manufacturing of Arm value rockers, gear dark connecting rods, control levers and various other precision forged components After working as an ancillary unit producing hand tools to KSSIDC for about 3 years the company becomes independent in the year 1990

The major components produced by the company are Arm valve rocker :It is used to regulate the fuel in two wheeler bikes. Gear shift fork: It is used in two wheelers for shifting gears, Drive shaft: It is used in diesel pumps, Pump barrel: It is used in diesel pump. Etc.

REVIEW OF LITERATURE

1. Andrew D. Maynard When Andrew Maynard summarises the present state of progress and government funding in nanotechnology research, he writes for the US National Institution for Occupational Safety and Health, which addresses the existing and prospective negative health implications of nanotechnology on workers' health. It is discussed in the article that current ways to figuring out occupational health risks might be upended by nanotechnology.

2. Rice University's International Council on Nanotechnology Efforts to produce "best practises" are reviewed and analysed in the paper "current knowledge and practises on Environmental Health and safety in the Nanotechnology workplace." Attempts to catalogue workplace practises have not, according to this research, systematically recorded current environmental, health, and safety practises across a range of working contexts and geographical locations. It also discovers that certain existing records aren't accessible to the general public.

3. **Johannson, Rask, and Stenberg (2010**).Piece rate pay and their impact on health and safety were the focus of a recent study conducted .To complete this study, a comprehensive review of 75 research papers revealed 31 that were both relevant and high-quality in order to meet the needs of the research team. The survey summarises and analyses the results of these pertinent papers. More recent studies have shown a definite interest in health and musculoskeletal injury, physical exertion, pain, and occupational injury. 27 out of 31 studies indicated negative effects of cutoff rates on health and safety, although this does not establish causation, but in most cases provides very strong evidence that cutoff rates have negative health and safety effects.

4. **Lucia Artazcoz; Imma Cortes; VincentaEscriba-aguir ; Lorena Cascant(2009),** The purpose of this research was to investigate the family and employment factors that are connected with high work hours. In the 2006 Catalonian Health Survey, all paid employees aged 16 to 64 were questioned (3950 men and 3153 women). Gender-specific differences in long-hour factories were found. Poor mental health status, self-reported hypertension, job discontent and smoking were all linked to males who worked 51-60 hours a week. Tobacco and sleep deprivation were the only known risk factors for women. As the breadwinner in the household, men and women's differing health indicators may be linked to their work hours.

HEALTH AND SAFETY MEASURES AT FORGING INDUSTRY

Due to the development of industries in the country on a wide scale, workers there are facing with various types of hazards and accidents. According to the researches and surveys, lakhs of workers are injured. So, in recent years to prevent any such kind of incidents which results in accidents causing to loss of life and even to permanent disability of the employees in the industries.

By giving attention to health and safety of employees/workers, the organization will be able to reduce absentees, ensuring workplace to be more efficient and productive too. Prioritizing health and safety has several other benefits too.

An organization's goal should be to establish an atmosphere that is conducive to productivity and eliminates any sources of stress for workers.

People's well-being at work is a central issue of occupational health and safety, which is a multidisciplinary area.

With regards to the breadth of occupational health and safety, there are several subfields that fall within its purview.

(a)In ensuring that workers' physical, mental, and social well-being is kept to a reasonable level.

B) To avoid the negative health impacts that are induced by their workplace's aforementionedworking

circumstances.

(c) Protecting workers from risk.

(d) Reducing risks which can result from factors adverse to health issues.

(e) Better employee retention and satisfaction.

(f) Less employee downtime.

To have a successful health and safety system, workers must have a good knowledge about how to recognize the hazards and how to reduce the risks and control exposures. The management should make a serious long term commitment to take care of every employee at the organization from hazards and illness on the job.

Because OHI are more harder to deal with, occupational safety problems are given greater attention than OHI. However, if health and safety are being handled, so is the other way around! As a result, health and safety concerns must be addressed in every workplace.

Workers spend at least eight hours a day at work, therefore it's important that their working environment be safe. It may take place on a plantation, in an office, or somewhere else entirely. Employees must be aware of their moral and legal obligations to safeguard their coworkers.

HEALTH AND SAFETY AT WORK

Employers have a common law obligation to provide a safe working environment for their workers, and they are also accountable for any accidents that occur during the course of their employment.

Following are the health and safety responsibilities owed by employers to their employees:

- The availability of a work environment that is free from danger.
- Safe transportation to and from work.
- The provision of working conditions that are free of risk
- Provide workers with the tools, supplies, and gear they need to do their jobs safely.
- The availability of coworkers with appropriate skills.
- There is a responsibility of care to guarantee that workers are not exposed to anyunjustified hazards in the workplace

SUSTAINABLE AND EFFICIENT HEALTH AND SAFETY CONTROL SYSTEM

The components of health and safety management systems include the following.:(1)The importance of management and organizational dedication to a company. (2)Emergency response plan (3)Determine controls. (4)Hazard control. (5)Enforcement of control. (6)Emergency response plan.

OBJECTIVES OF THE STUDY

Basic Objectives:

To learn more about Fitwel Tools and Forgings Private Limited's health and safety policies and procedures.

Other Objectives:

- Workers' awareness of health and safety issues in the workplace will be studied.
- To learn more about the factors that contribute to workplace accidents.
- For the purpose of discovering how much priority the management places on the health andsafety of employees.
- To find out how satisfied workers are with the health and safety policies in place at theircompany.
- To provide recommendations for improving health and safety measures.

LIMITATIONS OF THE STUDY

- Because of this, the researcher can only use a small number of people as a sample.
- The study is applicable only to Fitwel Tools and Forgings Pvt. Ltd, therefore results cannotbe generalized to the whole industry.

RESEARCH METHODOLOGY

Respondents will be asked to fill out a systematic, unobscured questionnaire in order to get the information they need. A list of questions is sent to the responders, and they are asked to answer them. As part of Fitwel Tools and Forgings Private Limited's management team as well as non-managerial employees, researchers have employed a questionnaire developed by the company'sinternal researchers.

TYPES OF RESEARCH

The fundamental plan, which guides the data gathering analysis and phrase, is the framework.That specify the kind of information to be collected the sources of facts and collection process.

RESEARCH INSTRUMENT

The following instruments are used in analysing the data collected from primary and secondarymethods.

- Percentage Analysis.
- Bar Diagrams and charts.

SOURCES OF INFORMATION

1) **Primary Data:**

Through the distribution of the structured non-disguised questionnaire, Fitwel Tools andForgings Private Limited's chosen workers and top executives provided the main data.

2) **Secondary information:**

Secondary sources for the information include both published and unpublished works on thesubject, as well as books, journals, research papers, and other online resources.

SAMPLE SIZE:

The sample size is 50 workers.

SAMPLE UNIT:

The data is collected from Lower and Middle level employees

SAMPLING TECHNIQUE:

Simple Random Sampling.

SAMPLING METHOD:

In order to draw from a wide range of personnel from varied socioeconomic backgrounds, vocations, and genders, the Fitwel Tools and Forgings Private Limited has selected representative sample units of the suitable and justifiable size.

DATA COLLECTION METHOD:

Media sampling has taken the form of answering questionnaires, and information from employees were collected i.e., personal interview.

PROCESSING OF DATA AND PLAN OF ACTION

- Collection of data through questionnaire.
- Checking.
- Editing.
- Coding.
- Tabulation.
- Analysis.
- Interpretation through Graphs and chart.

Sample Technique: The sample method used is random sampling method.

Research Design	Descriptive research
Sampling technique	Random sampling
Sampling area	Fitwel Tools and Forgings
Sampling size	50
Data collection instrument	Questionnaire
Hypothesis testing	Non-Parametric test

DATA ANALYSIS AND INTERPRETATION

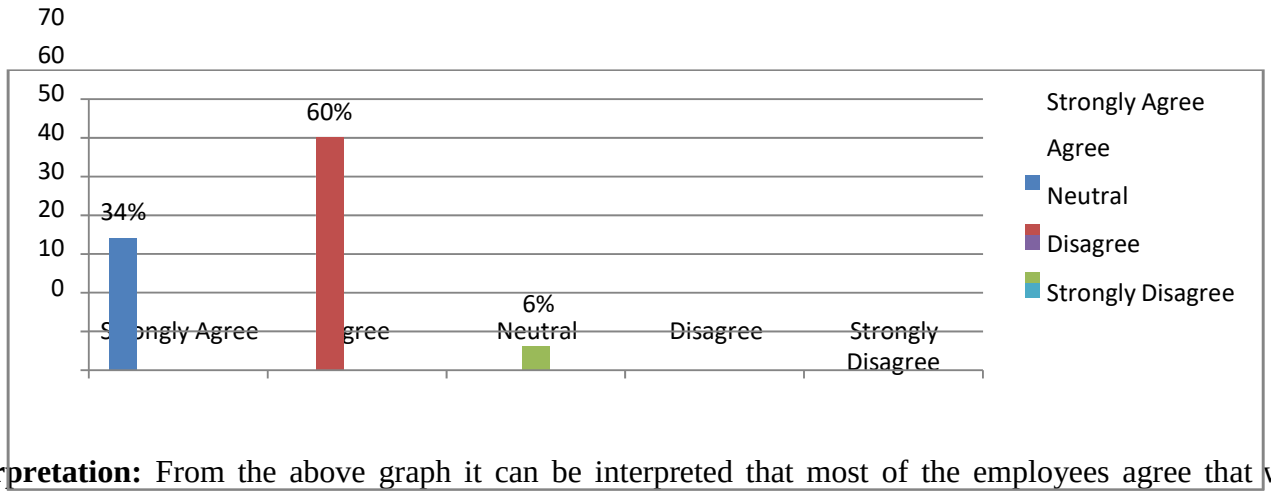
ANALYSIS 1:

Table shows respondents opinion about the work environment in the company is safe to work.

SL No	Particulars	No of respondents	Percentage
1	Strongly agree	17	34
2	Agree	30	60
3	Neutral	3	6
4	Disagree	0	0
5	Strongly Disagree	0	0
Total		**50**	**100**

Analysis: According to the data in the table above, 60% of respondents agree, 34% strongly agree, and 6% have a neutral view regarding whether or not the workplace is safe to work in.

Graph shows respondents opinion about the work environment in the company is safe to work.



Interpretation: From the above graph it can be interpreted that most of the employees agree that work environment in the company is safe to work as it necessary , that the employees to be out of fear about their work

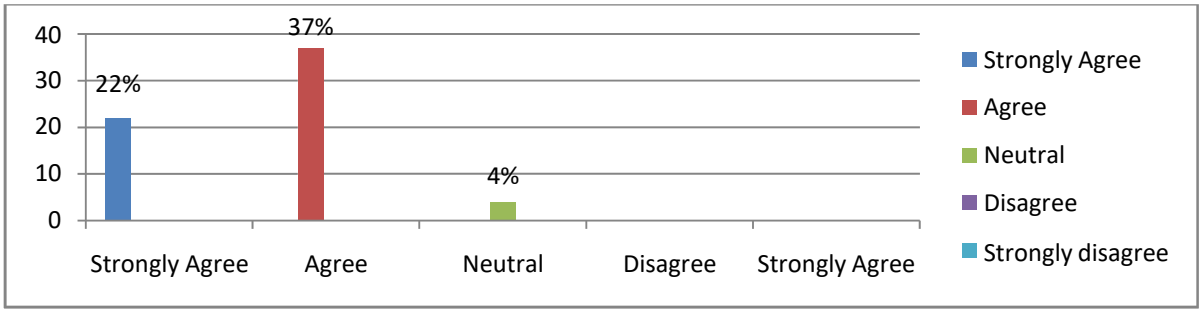
ANALYSIS 2:

Table shows respondents opinions about company implementing effective disciplinary procedure to maintain health and safety of employees.

SL No	Particulars	No of respondents	Percentage
1	Strongly agree	11	22
2	Agree	37	74
3	Neutral	2	4
4	Disagree	0	0
5	Strongly Disagree	0	0
Total		**50**	**100**

Analysis: According to the data in the table above, 74% of respondents agree, 22% strongly agree, and 4% have a neutral view regarding the organization using an effective disciplinary system to safeguard the health and safety of workers.

Graph 4.5:Showing respondents opinions about company implementing effective disciplinary procedure to maintain health and safety of employees.



Interpretation: According to the graph above, the majority of respondents agree and strongly agree that a firm should develop an effective disciplinary mechanism to ensure the health and safety of its workers. This will ensure that employees feel safe in the workplace and will thus be more productive.

HYPOTHESIS

Hypothesis 1:

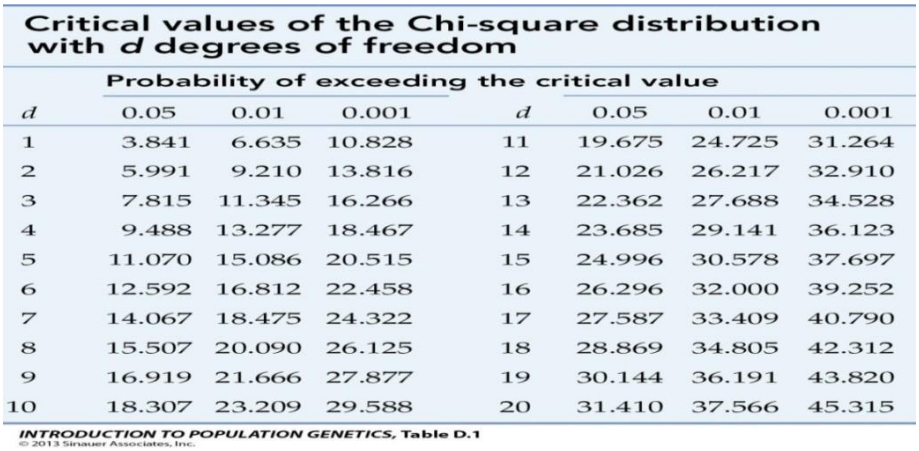
Null hypothesis (H0): The work environment in company is not safe to work.Null hypothesis (H1): The work environment in the company is safe to work.

PARTICULARS	**RESPONDENTS**	**O-E**	**$(O-E)^2$**	**$(O-E)^2/E$**
STRONGLY AGREE	17	7	49	4.9
AGREE	30	20	400	40
NEUTRAL	3	-7	49	4.9
DISAGREE	0	-10	100	10
STRONGLY DISAGREE	0	-10	100	10
TOTAL	50			69.8

E=50/5=10

Degree of freedom=(n-1)

=5-1=4



Critical values of the Chi-square distribution with *d* degrees of freedom

	Probability of exceeding the critical value						
d	0.05	0.01	0.001	*d*	0.05	0.01	0.001
1	3.841	6.635	10.828	11	19.675	24.725	31.264
2	5.991	9.210	13.816	12	21.026	26.217	32.910
3	7.815	11.345	16.266	13	22.362	27.688	34.528
4	9.488	13.277	18.467	14	23.685	29.141	36.123
5	11.070	15.086	20.515	15	24.996	30.578	37.697
6	12.592	16.812	22.458	16	26.296	32.000	39.252
7	14.067	18.475	24.322	17	27.587	33.409	40.790
8	15.507	20.090	26.125	18	28.869	34.805	42.312
9	16.919	21.666	27.877	19	30.144	36.191	43.820
10	18.307	23.209	29.588	20	31.410	37.566	45.315

INTRODUCTION TO POPULATION GENETICS, Table D.1

The number from the preceding table at degree of freedom 4 is 9.488 and the chart value produced is 69.8 for a 5% degree of freedom. As a result, the computed value is higher than the table value. Hence rejected is the null hypothesis.

Hypothesis 2:

Null hypothesis(H0):The company has not implemented effective disciplinary procedure to maintain health and safety of employees.

Null hypothesis(H1): The company has implemented effective disciplinary procedure to maintain health and safety of employees.

PARTICULARS	**RESPONDENTS**	**O-E**	**$(O-E)^2$**	**$(O-E)^2/E$**
STRONGLY AGREE	11	1	1	0.1
AGREE	37	27	729	72.9
NEUTRAL	2	-8	64	6.4
DISAGREE	0	-10	100	10
STRONGLY DISAGREE	0	-10	100	10
TOTAL	50			99.4

E=50/5=10

Degree of freedom=(n-1)

=5-1=4

Critical values of the Chi-square distribution with *d* degrees of freedom

	Probability of exceeding the critical value						
d	0.05	0.01	0.001	*d*	0.05	0.01	0.001
1	3.841	6.635	10.828	11	19.675	24.725	31.264
2	5.991	9.210	13.816	12	21.026	26.217	32.910
3	7.815	11.345	16.266	13	22.362	27.688	34.528
4	9.488	13.277	18.467	14	23.685	29.141	36.123
5	11.070	15.086	20.515	15	24.996	30.578	37.697
6	12.592	16.812	22.458	16	26.296	32.000	39.252
7	14.067	18.475	24.322	17	27.587	33.409	40.790
8	15.507	20.090	26.125	18	28.869	34.805	42.312
9	16.919	21.666	27.877	19	30.144	36.191	43.820
10	18.307	23.209	29.588	20	31.410	37.566	45.315

INTRODUCTION TO POPULATION GENETICS, Table D.1

For 5% degree of freedom, the value from the above table at degree of freedom 4 is 9.488 and the value calculated is 99.4. Here calculated value is greater than the table value. Hence null hypothesis formulated is rejected.

FINDINGS

- All of the people who took the survey are aware of the safety and health precautionstaken by the business.
- About 74% of the people polled thought the firm offered medical services.
- An overwhelming majority (74%) agreed that disciplinary measures are in place toprotect the health and safety of workers.
- According to a majority of the respondents, the organisation offers employees with amonthly health checkup.
- Over two-thirds of those polled believe that accidents are infrequent at their workplaces(78%).
- Workers report that the corporation has been supplying them with the necessary safetyequipment.
- More than two-thirds of those surveyed indicate that the firm performs safety checks on aregular basis.
- More than eight in 10 employees say they are happy with the company's health and safetypolicies.
- All of the respondents say that the organization have a suitable and sufficient fireextinguishing equipments and evacuation system.
- All of the respondents say that all the employees are well trained on how to useextinguishing equipments.
- 98 percent of those polled said that in the case of an emergency or immediate threat, allworkers would be safely evacuated from the building by someone qualified.
- All of the respondents say that there is an ambulance facility in case of emergencies.
- 98% of the respondents say that there are warning labels or signs on hazardous machines.
- All of the respondents say that they report right away to the safety officer when theynotice hazards while working.
- 98% of the respondents say that the organization has made a partnership withoccupational clinicians.

SUGGESTIONS

- The organization needs to focus more on Poka-yoke that is mistake proofing or errorprevention regarding safety.
- The organization needs to have a strong safety team.
- The organization needs to implement frequent training programs on health and safety toavoid the injuries and to work efficiently.
- The organization needs to create more awareness and trainings to workers.
- The organization needs to provide onsite training for new workers before the workmen isallocated with the job.
- The organization needs to provide trainings on 'hazard identification and risk assessment'for workers to know more about safety and environmental requirement.
- The organization needs to improve 5S technique that is good housekeeping practices.

CONCLUSIONS

It was a great experience for me to carry out the project about Health and Safety Measures at Fitwel Tools and Forgings. According to the findings of the research, Fitwel Tools and Forgings implements "Health and Safety Measures" in accordance with the requirements of the Factory Act of 1948. The results show that employees have a reasonable level of knowledge regarding workplace health and safety. Organizational health and safety may be effectively implemented via management's efforts.

Finally, if the firm has efficient discipline processes, they will be able to adhere to its standards and also maintain a healthy work environment.

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