

A STUDY ON EMPLOYEE HEALTH AND SAFETY MANAGEMENT SYSTEM IN OIL AND GAS INDUSTRY AT CHENNAI

Submitted in partial fulfillment of the requirements for the award of

Master of Business Administration

by

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SCHOOL OF BUSINESS ADMINISTRATION

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE
Jeppiaar Nagar, RAJIV GANDHI SALAI, CHENNAI - 600 119**

April - 2021



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of FRANKLIN .J 39410053 who have done the Project work entitled “**A Study on Employee Health and Safety Management System In Oil and Gas Industry at Chennai**” under my supervision from January 2021 to April 2021.

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DECLARATION

I, **FRANKLIN J 39410053** hereby declare that the Project Report entitled “**A Study on Employee Health and Safety Management System In Oil and Gas Industry at Chennai**” done by me under the guidance of Dr.M.Lavanya .at SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY is submitted in partial fulfillment of the requirements for the award of Master of Business Administration degree.

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PLACE: Chennai

SIGNATURE OF THE CANDIDATE

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ABSTRACT

The study on employee health and safety management system in oil and gas industry is used to give an good clarity on the system management provided to employees. The purpose of this study is to find out the safety measures provided to employess in oil and gas sector chennai . In order to have good quality safety management system we should have tools to measure safety within organization to understand where we stand according to safety performance and since measuring qualitative component is complex, so comparison between tools and methods of measurement should be implemented in order to get efficient safety management system. The survey in the form of google forms is used to collect sample size of 130 respondents .descriptive analysis and chi square analysis were used to analyze the given data . finally , the result of the research indicates the health and safety measures provided to employees.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Due to rapid industrialization, industrial workers are exposed to several types of hazards and accidents. Every year lakhs of workers are injured due to mechanical, chemical, electrical and radiation hazards and it leads to partial or total disablement. So in recent years, greater attention is given to health and safety due to pressure from government, trade unions, labour laws and awareness of employers.

The efficiency of workers depends to a great extent on the environment in which they work. Work environment consists of all the factors, which act and react on the body and mind of an employee. The primary aim is to create an environment, which ensures the greatest ease of work and removes all causes of worries. Occupational health and safety is a discipline with a broad scope involving many specialized fields. In its broadest sense, it should aim at:

- a) The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.
- b) The prevention among workers of adverse effects on health caused by their working conditions.
- c) The protection of workers in their employment from risks resulting from factors adverse to health.
- d) The placing and maintenance of workers in an occupational environment adapted to physical and mental needs.
- e) The adaptation of work to humans. Successful occupational health and safety practice requires the collaboration and participation of both employers and workers in health and safety programmes, and involves the consideration of issues relating to occupational medicine, industrial hygiene, toxicology, education, engineering safety, ergonomics, psychology, etc. Occupational health issues are often given less attention than occupational safety issues

because the former are generally more difficult to confront. However, when health is addressed, so is safety, because a healthy workplace is by definition also a safe workplace. The converse, though, may not be true - a so-called safe workplace is not necessarily also a healthy workplace. The important point is that issues of both health and safety must be addressed in every workplace.

Work plays a central role in people's lives, since most workers spend at least eight hours a day in the workplace, whether it is on a plantation, in an office, factory, etc. Therefore, work environments should be safe and healthy. Unfortunately some employers assume little responsibility for the protection of workers' health and safety. In fact, some employers do not even know that they have the moral and often legal responsibility to protect worker

WHAT IS SAFETY ?

Safety refers to the absence of accidents. Stated differently, safety refers to the protection of workers from the danger of accidents. Safety, in simple terms, means freedom from the occurrence or risk of injury or loss. Industrial safety or employee safety refers to the protection of workers from the danger of industrial accidents. An accident, then is a unplanned and uncontrolled event in which an action or reaction of an object, a substance, a person, or a radiation results in personal injury.

NEED FOR SAFETY :

(1) Cost Saving :

Two types of costs are incurred by the management when an accident occurs. There are the direct costs, in the form of compensation payable to the dependents of the victim if the accident is fatal, and medical expenses incurred in treating the patient if the accident is non-fatal. The management, however, is not liable to meet the direct costs if the victim is insured under the ESI scheme. When the victim is uninsured, compensation and medical expenses are the responsibility of the management.

More serious than the direct costs are the indirect or hidden costs which the management cannot avoid. In fact, the indirect costs are three to four times higher than the direct costs. Hidden costs include loss on account of down-time

of operators, slowed-up production rate of other workers, materials spoiled and labour for cleaning and damages to equipment.

(2) Increased Productivity:

Safety plants are efficient plants. To a large extent, safety promotes productivity. Employees in safe plants can devote more time to improving the quality and quantity of their output and spend less time worrying about their safety and well-being.

(3) Moral:

Safety is important on human grounds too. Managers must undertake accident prevention measures to minimize the pain and suffering the injured worker and his/her family is often exposed to as a result of the accident. An employee is a worker in the factory and the bread-winner for his/her family. The happiness of his/her family depends upon the health and well-being of the worker.

(4) Legal :

There are legal reasons too for undertaking safety measures. There are laws covering occupational health & safety, and penalties for non-compliance have become quite severe. The responsibility extends to the safety and health of the surrounding community, too. The supreme court held : An enterprise which is engaged in a hazardous or inherently dangerous industry which poses a potential threat to the health and safety of the persons working in the factory and industry in the surrounding areas, owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of the hazardous or inherently dangerous nature. this implies unlimited liability.

HEALTH AND SAFETY AT WORK :

According to Cole (2002), employer has a common law duty to provide a safe place of work for his or her employees and is liable at common law for accidents encounter by his or her employees in the course of their employment. The duties (regarding health and safety) which employer owes his or her employees basically include the following:

- The provision of a safe place of employment.
- The provision of safe means of access to work.
- The provision of safe systems of working.
- The provision of adequate equipment, materials and clothing to enable employees to carry out their work safely.
- The provision of competent co-workers.
- A duty of care to ensure that employees are not subjected to any unreasonable risks in the workplace.

BUILDING AN EFFECTIVE HEALTH & SAFETY MANAGEMENT SYSTEM :

The components of effective health and safety management system are briefly explained below:

(1) Management Leadership & Organizational Commitment:

For this system to be effective, management must show leadership and commitment to the program. To achieve this, management should put the organization's expectation around health and safety into writing by developing a health and safety policy. Employees who forms part of the health and safety committee, should be involved in writing the policy, and to be signed by senior operating officer, to indicate the commitment of management.

(2) Roles & Responsibilities:

Clearly defined and well communicated health and safety roles and responsibilities for all levels of the organizations will create an expectation of a standard level of performance and accountability among employees, contractors, and visitors. All levels must be aware of their individual roles and responsibilities under both state law and company standards.

(3) Management Commitment :

For a health and safety management system to be effective, management at all levels, should demonstrate their support of the health and safety program. This may be demonstrated through management, participation in health and safety leadership training meetings, facility inspections incident investigations etc.

(4) Employee Participation :

It is important for workers to be involved in the development of the system in order to create ownership as well as help a better fit with the culture of the organization.

(5) Hazard Identification & Assessment Process :

Employers are required to assess a work site for existing and potential hazards before work begins. Hazard assessment data could be used to determine what worker–training needs to be done, and to build the content of employee orientations and job training hazard assessment data could be used as the basis for inspection checklists. In the case of incident investigation, hazard assessment and control data can be used to help determine if a system failure was the cause of an incident.

(6) Determine Controls :

Address identified hazards by assigning methods of control to eliminate or reduce the hazard. The most effective controls can be determined based on legal requirements, manufacturers' specifications, company rules, industry best practices, and worker inputs.

(7) Hazard Control :

Once the hazard assessments are completed, the next step in the development of health and safety management system is the implementation of control measures to eliminate or reduce the risk of harm to workers. In this case, employers should take all reasonable steps to eliminate or control identified hazards in order to make the workplace safer.

(8) Enforcement of Controls :

To enforce control methods, develop a constructive enforcement policy, and communicate the consequences to employees and the steps that will be taken if noncompliance occurs.

(9) Emergency Response Plan :

A serious emergency (Such as explosion, fire, or flood) could seriously affect the operation of a business and put the health, safety, and livelihood of many

employees in jeopardy. The best health and safety management system cannot protect your company from all natural or unexpected disasters; however, having a good emergency response plan (ERP) in place can reduce the severity and risk of loss. Knowing what to do and who to contact can save lives and reduce costs if disaster should strike

WHAT IS HEALTH :

Health is a state of complete physical, mental and social wellbeing and not merely the absence of diseases. It's a positive and dynamic concept which means something more than the absence of illness.

(1) Physical Health :

The health of employees results in reduced productivity, high unsafe acts, and increased absenteeism. A healthy worker, on the other hand, produces results opposite to these. In other words, healthy employees are more productive, more safe conscious, and are more regular to work. The worker who is healthy is always cheerful, confident looking and is an invaluable asset to the organization.

(2) Mental Health :

In recent years, mental health of employees, particularly that of executives, has engaged the attention of employers. Three reasons may be given for this development. First, mental breakdowns are common in modern days because of pressures and tensions. Second, mental disturbances of various types result in reduced productivity and lower profits for the organization. Third, mental illness takes its toll through alcoholism, high employee turnover, and poor human relationships. A mental health service is generally rendered in the following ways :

- (i) Psychiatric counseling.
- (ii) Co-operation and consultation with outside psychiatrists and specialists.
- (iii) Education of company personnel in the manner and the importance of mental health.

(iv) Development & maintenance of an effective human relations programme

IMPORTANCE OF MANAGEMENT COMMITMENT ON HEALTH & SAFETY:

In order to develop a successful health and safety programme, it is essential that there be strong management commitment and strong worker participation in the effort to create and maintain a safe and healthy workplace. An effective management addresses all work-related hazards, not only those covered by government standards. All levels of management must make health and safety a priority. They must communicate this by going out into the worksite to talk with workers about their concerns and to observe work procedures and equipment. In each workplace, the lines of responsibility from top to bottom need to be clear, and workers should know who is responsible for different health and safety issues.

HEALTH AND SAFETY PROGRAMME:

Effective workplace health and safety programmes can help to save the lives of workers by reducing hazards and their consequences. Health and safety programmes also have positive effects on both worker morale and productivity, which are important benefits. At the same time, effective programmes can save employers a great deal of money. For all of the reasons given below, it is crucial that employers, workers and unions are committed to health and safety.

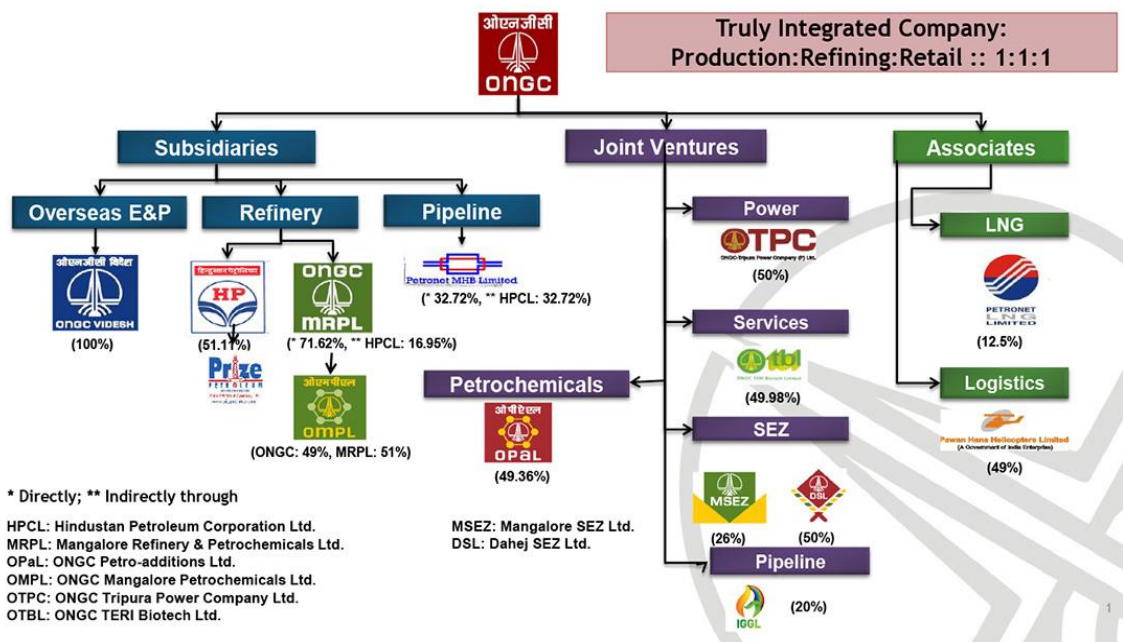
- a) Workplace hazards are controlled - at the source whenever possible.
- b) Records of any exposure are maintained for many years.
- c) Both workers and employers are informed about health and safety risks in the workplace
- d) There is an active and effective health and safety committee that includes both workers and management.
- e) Worker health and safety efforts are ongoing.

1.2 INDUSTRY PROFILE

In oil and gas industry today there are a lot of challenges they are facing, especially in drilling department which they have been trying to solve the problems associating with wellbore instability, stability and strengthening in oil and gas well. Considering the years Back and presently in oil and gas industry, wellbore instability have been a great threat to oil and gas industry, which has cost a lot of damages and economic lost to the industry. Wellbore instability is undesirable state of an openhole interim that does not keep up its gage size and shape and/or its basic respectability which can cause wall or well collapse as a result of over pressurization to the formation, lost circulation of drilling fluid, failure of rock due to stresses in the formation also chemical used as additives can as well cause instability in shale formation due to interaction between the shale and the chemical, which lead to swelling up of shale as well lead to instability during drilling, if all this conditions are not properly manage it will cause instability and wellbore disaster. Stability in wellbore is just a favourable condition in oil and gas well drilling which can only be achieved when the problem associated with instability is properly managed. Wellbore strengthening is a process which intends to build the resistance of developments to circulation loss amid boring or well cementing operations or resistance increase in formation to circulation loss during operations .Lost circulation is known as a standout amongst the most noticeable drilling issues because of its regular occurrence and inconveniences. It can as well cause series of problem in oil and gas wellboring operations. Therefore, wellbore strengthening systems as preventive methodologies towards this issue have pulled in consideration in the previous two decades. The rock strengthening increase during drilling operations may be achieved through different technologies described in the past. However, drilling fluid predicated wellbore invigorating is the most promising approach predicated on the field and laboratory observations and

studies. This approach pursues the engineered design of drilling fluids or specialized pills in order to reach the desired strengthening level. The main focus has been on the properties of the solid contents of the fluids, as they play a key role in the wellbore strengthening process. This system is additionally.

In wellbore strengthening, a progression of field and research facility trials and perceptions prompted depiction of another mechanism for wellbore strengthening called stress caging. Stress caging describes the strengthening mechanism predicated on the postulation that fractures initiate at pre-determined pressure levels. Then, particles in the fluids prop the fractures and thus increase the tangential (hoop) stress around the wellbore predicated on the incremented tangential (hoop) strain, leading to higher fracture gradients around the wellbore.



Indian oil industry was monopoly sector till recently owned by the petroleum ministry as various sectors. By the setting up of liberalisation in country, privatisation in the petroleum sector has been implemented. At the beginning the Government had APM (Administered Pricing Mechanism) for

pricing the products. Which cause higher pricing than the market determined price have been. This situation made the Government to implement privatization in transportation fuel including HSD (High Speed Diesel). The main competitors to the IOCL are Hindustan Petroleum Corporation Ltd, Bharath Petroleum

1.2.1 Porter's five forces of Indian oil and gas sector

Threat of new entrants (Low): Despite the attractiveness of oil and gas industry in India, the threat of new entrant is very low mainly because of two reasons High capital investment requirement and Economies of scale. Capital investment requirement in oil & gas industry is substantial as the investment requirement for setting up the production facilities, development of oil field requires specific technology and skilled labour. As a result of specific labour and resources requirement the entry barriers are high. Also the cost of drilling, services on the oil field and requirement of scientific research and material is also substantial.

As the unit cost of exploration and production of oil is enormous only big companies like ONGC can take the advantage of economies of scale and survive which makes it difficult for other players to enter. Access of distribution channels is very crucial for the companies in this industry .The network of pipes need to be built over time which makes it difficult for others to enter. Before the FDI allowance to the foreign companies, the resources were restricted only to national players which deterred new players.

Threat of Substitutes (Low): Oil and gas is the dominant source of energy and in some sectors like transportation even irreplaceable. This is because among all the other sources like nuclear, wind, thermal etc., it is the cheapest and safest and with the increase in the sophistication of extraction technology, it is going to remain cheaper. Coal is already well established in the Indian market place but other alternative technologies are still far too inefficient to compete over the next decade and without significant steps in terms of policies for renewable sources usage enhancement, the threat of other source of energy will remain low.

Industry Rivalry (Low): In oil and gas sector since the entry barrier are very high, as a result of which only few players are present in the market. Most of the exploration and production activity is controlled by government-owned National Oil companies (NOCs) including Oil & Natural Gas Corporation(ONGC) and Oil India Private Ltd (OIL). As a result of which, they form huge cartels which results in low Industry rivalry. India's Oil and Gas Sector face the dominance of PSUs in the petroleum sector. This has created monopoly in gas transmission and marketing for GAIL. Apart from this, absence of independent regulator in the upstream segment and inadequacy of PNGRB Act, 2006 in promoting competition has also facilitated the monopoly in the industry. Entry of international companies like Hardy Oil & Gas, Santo, and players like Newbury, Cairn Energy, Petronas & Niko Resources into India is a welcome change to break this monopoly

Power of Buyers (High): Buying process in Oil & Gas sector in India is through bidding process in which the the lowest bidder wins the bid. Initially the bidding rules were very strict and only experienced Indian companies could participate in the bidding process but later as a part of Petroleum Sector Reforms(PSR) in 1990, for the first time Indian companies with or without prior experience in exploration & production activities were allowed to participate in the bidding process. As a result of which, existing players specially PSUs are very strong in comparison to other players. Though oil industry is expected to grow in the future, however, there is going to be an oversupply of rigs as the number of rigs is likely to increase to 811. There are 45% of them which are still without contacts. This gives the buyers high bargaining power.

1.2.2 SWOT Analysis

Strategy

ONGC has three major strategic aims: improving its recovery factor; intensifying its exploration activities; and increasing involvement in foreign projects via OVL. The group's long-term goals include doubling its oil and gas reserves by 2020 and increasing its overseas production to 1.2mn barrels by 2025, as well as strengthening its global recovery factor from 28% to the global norm of 40%

over the next 20 years. ONGC has reportedly signed an agreement with oil major ConocoPhillips that will see the duo test India's shale and deep water potential.

Reliance Industries Limited (RIL)

Reliance Industries (RIL) is India's largest private sector enterprise. The company operates in more than 100 countries around the world. RIL operates through four business segments: refining, petrochemicals, oil and gas, and other businesses. In oil and gas exploration and production, RIL is the largest exploration acreage holder in the private sector in India. The company's domestic exploration and production (E&P) portfolio comprises 28 exploration blocks awarded under the government of India's New Exploration Licensing Policy (NELP) and pre-NELP licensing rounds and three coal bed methane (CBM) blocks.

RIL's international E&P portfolio has 13 blocks, including two in Peru; three in Yemen (one producing and two exploratory); two each in Oman, Kurdistan, and Colombia; and one each in East Timor and Australia. The total acreage for all these blocks is 99,145 square kilometre. RIL also has interests in three upstream joint ventures with Chevron, Pioneer Natural Resources, and Carrizo Oil and Gas.

SWOT Analysis

Strategy

Reliance Industries is to make a US\$12bn investment to expand its petrochemicals businesses, reports Bloomberg, citing a company presentation that was made on April 20 2012. Reliance will invest US\$8bn in increasing capacity, while US\$4bn will be directed towards a combustible gas facility to power its refineries and petrochemicals factories in Western India. The company will not rely solely on its Indian asset base for reserves growth, but hopes to develop substantial proven resources in Colombia, Yemen, Egypt, East Timor and Russia. It also entered into two PSCs with the Kurdistan Regional Government in Iraq in 2007 and gained exposure to US shale gas in

early 2010. In November 2009, Reliance said it was looking at farming-out interests in its overseas assets to reduce its participating interests from an average of 80-90% to around 40-50%. In the downstream segment, Reliance is expected to capitalise on the complexity of its integrated Jamnagar complex by diversifying its crude slate, improving margins by running heavy grades such as Russia's Urals blend and Australia's new Pyrenees blend. The partnership with BP across the full value chain could prove critical in taking RIL's oil and gas arm to the next level, as it bolsters technical expertise and enhances financial strength.

Mergers & Acquisitions deals in Oil and Gas industry

Recently, the M&A environment along with joint venture activities has reached a maddening fervour in India. There were more than 10 such deals in 2011 itself which allowed the various players in this industry to consolidate as well as prepare itself for future scenarios . Prominent transactions included BP's US\$7.2bn acquisition of 30% stake in Reliance Industries' exploratory and extraction activities and completion of the US\$8.67bn Cairn- Vedanta transaction. The inbound deals for Indian firms were in relation to acquire technical expertise and monetization of huge capital investments while for the foreign company, the theme revolved around getting access to high-growth energy markets like India.

Access to technology was the key driver in the small to mid-size transaction space, where Heramec sold a 15% stake in its six onshore hydrocarbon producing blocks located in Cambay Basin to Stealth Ventures, a Canadian oil and gas production company. GAIL (India) acquired a 20% stake in US-based Carrizo's Eagle Ford shale assets. Indian state owned companies struck cross-border deals ranging from Kazakhstan and Vietnam to the US. It also signed an agreement with Cheniere Energy in the US for securing long-term LNG supplies and is also a prospective buyer for other LNG sellers around the world. In addition, GAIL plans to establish its presence in the international gas trading and marketing sphere.

There were other significant developments in the gas midstream and downstream segment, owing to the increasing attractiveness of India as a gas market. During the year, Indian players unveiled significant gas infrastructure plans to monetize gas and formed partnerships in the gas trading and marketing segment and on the LNG sourcing front. RIL and BP formed a 50:50 joint venture for sourcing, marketing and transporting gas in India as part of their wider upstream transaction. The JV is related to evaluate construction of Reliance's liquefied natural gas terminals in India.

Significant developments in the LNG space include Gujarat State Petroleum Corporation's long-term LNG supply deal with Bharat Gas (BG) India and commencement of work on Indian Oil Corporation's LNG terminal on India's east coast. The city gas distribution space in India also witnessed M&A activity — BG Group announced its plans to divest its stake in Gujarat Gas Company.

In the refining segment, India's private refiner, Essar Oil acquired Stanlow oil refinery and other associated assets from Shell UK, the second-largest refinery in the UK. Through the US\$350m purchase, Essar will gain direct access to the UK market and open opportunities to export its products from its refinery in India.

The oilfield services segment also saw a couple of deals in 2011. The Australian arm of US-based Newpark Resources acquired a 70% stake in Rheochem India, which is a drilling fluids and services company. In addition, Sara Sae, an India-based manufacturer of oilfield equipment, raised funds to venture into oilfield services by selling its undisclosed minority stake to an Indian private equity firm.

Government Initiatives

Some of the major initiatives taken by the Government of India to promote oil and gas sector are:

- In November 2020, oil regulator Petroleum and Natural Gas Regulatory Board (PNGRB) simplified the country's gas pipeline tariff structure to make fuel more affordable for distant users and attract investment for building gas infrastructure.
- In November 2020, the Indian government urged OPEC to remove pricing anomalies for different regions with a view to aid the Corona-battered global oil industry get back to normalcy.
- As per Union Budget 2019-20, Indian Scheme 'Kayakave Kailasa', the Ministry of Petroleum & Natural Gas has enabled SC/ST entrepreneurs in providing bulk LPG transportation. State run energy firms, Bharat Petroleum, Hindustan Petroleum and Indian Oil Corporation, plan to spend US\$ 20 billion on refinery expansions to add units by 2022.
- The Government is planning to set up around 5,000 compressed biogas (CBG) plants by 2023.
- The Government is planning to invest US\$ 2.86 billion in the upstream oil and gas production to double natural gas production to 60 bcm and drill more than 120 exploration wells by 2022.
- Government of India is planning to invest Rs. 70,000 crore (US\$ 9.97 billion) to expand the gas pipeline network across the country.
- In September 2018, Government of India approved fiscal incentives to attract investment and technology to improve recovery from oil fields, which is expected to lead to hydrocarbon production worth Rs. 50 lakh crore (US\$ 745.82 billion) in the next 20 years.
- State-run oil firms are planning investment worth Rs. 723 crore (US\$ 111.30 million) in Uttar Pradesh to improve the LPG infrastructure in a bid to promote clean energy and generate employment according to Mr. Dharmendra Pradhan, Minister of Petroleum and Natural Gas, Government of India.

- A gas exchange is planned in order to bring market-driven pricing in the energy market of India and the proposal for the same is ready to be taken to the Union Cabinet according to Mr. Dharmendra Pradhan, Minister of Petroleum and Natural Gas, Government of India.
- The Oil Ministry plans to set up bio-CNG (compressed natural gas) plants and allied infrastructure at a cost of Rs. 7,000 crore (US\$ 1.10 billion) to promote the use of clean fuel.

The Government has adopted several policies to fulfil the increasing demand. It has allowed 100% Foreign Direct Investment (FDI) in many segments of the sector, including natural gas, petroleum products and refineries among others. Today, it attracts both domestic and foreign investment as attested by the presence of Reliance Industries Ltd (RIL) and Cairn India.

Corporation Ltd from the public sector and private firms like (RPL), Essar and Reliance Petroleum Ltd. The ministry of petroleum maintain to hold licensing around in an attempt to support exploration process and boost domestic oil production.

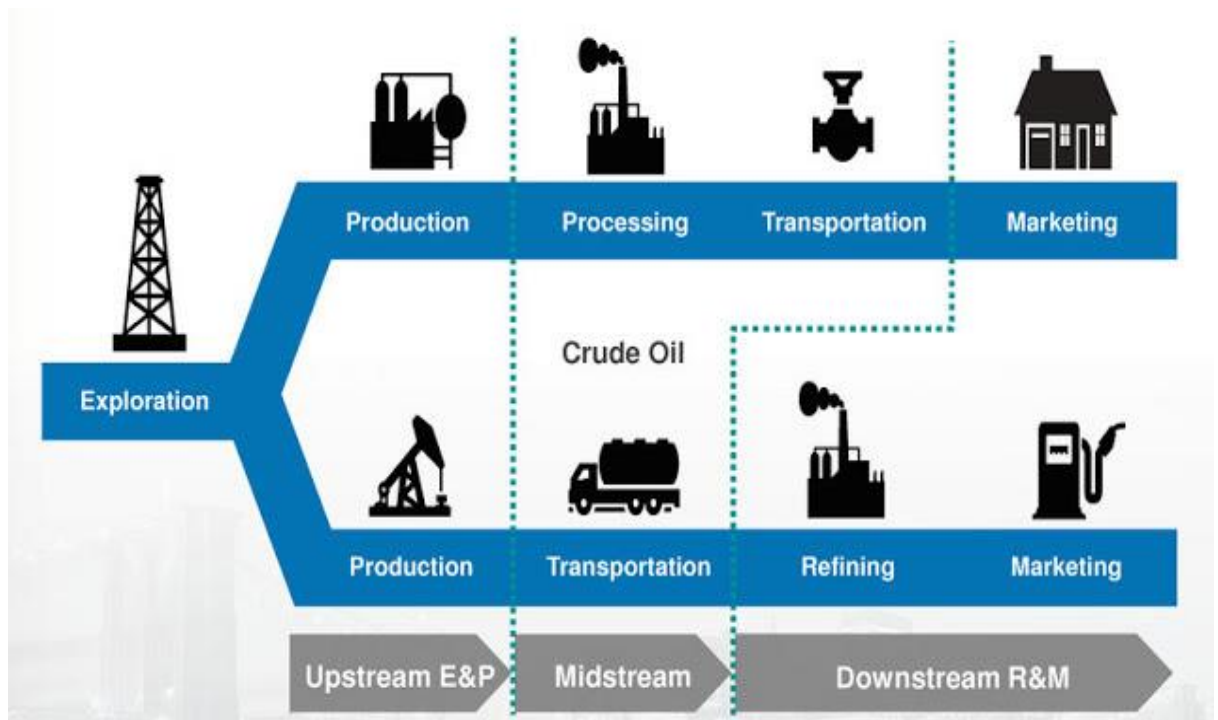


Fig 1.1 OIL AND GAS INDUSTRY PROCESS

Energy demand has a quite big role in India's economic growth and hence the oil and gas industry projects well grow in this sector, making it a good option for investment. Most of the oil and gas companies in the country are Public Sector Undertakings (PSU) organized by the Indian government.

list of **top Oil and Gas companies in India.**

- INDIAN OIL CORPORATION
- ONGC – INDIAN OIL AND NATURAL GAS CORPORATION
- BHARAT PETROLEUM
- RELIANCE PETROLEUM
- HINDUSTAN PETROLEUM CORPORATION
- OIL INDIA LIMITED
- CAIRN INDIA
- ESSAR OIL LIMITED

Vision

To be global leader in integrated energy business through sustainable growth, knowledge excellence and exemplary governance practices.

Mission

World Class

- Dedicated to excellence by leveraging competitive advantages in R&D and technology with involved people.
- Imbibe high standards of business ethics and organizational values.
- Abiding commitment to safety, health and environment to enrich quality of community life.
- Foster a culture of trust, openness and mutual concern to make working a stimulating and challenging experience for our people.
- Strive for customer delight through quality products and services.

Integrated In Energy Business

- Focus on domestic and international oil and gas exploration and production business opportunities.
- Provide value linkages in other sectors of energy business.
- Create growth opportunities and maximize shareholder value.

Dominant Indian Leadership

- Retain dominant position in Indian petroleum sector and enhance India's energy availability.
- ONGC was set up under the visionary leadership of Pandit Jawahar Lal Nehru. Pandit Nehru reposed faith in Shri Keshav Dev Malviya who laid the foundation of ONGC in the form of Oil and Gas division, under Geological Survey of India, in 1955. A few months later, it was converted into an Oil and Natural Gas Directorate. The Directorate was converted into Commission and christened Oil & Natural Gas Commission on 14th August 1956.

- "Not only had India..set up her own machinery for oil exploration and exploitation... an efficient oil commission had been built where a large number of bright young men and women had been trained and they were doing good work" said Pandit JawaharLal Nehru, India's first Prime Minister to Lord Mountbatten, on ONGC in 1959.
- In 1994, Oil and Natural Gas Commission was converted in to a Corporation, and in 1997 it was recognized as one of the Navratnas by the Government of India. Subsequently, it has been conferred with Maharatna status in the year 2010.
- In its 60 years of illustrious journey, ONGC has crossed many a milestone to realize the energy aspirations of India. The journey of ONGC, over these years, has been a tale of conviction, courage and commitment. ONGCs' superlative efforts have resulted in converting earlier frontier areas into new hydrocarbon provinces. From a modest beginning, ONGC has grown to be one of the largest E&P companies in the world in terms of reserves and production.

1.3 SCOPE OF THE STUDY

This study was given an overview of the health and safety measures existing at Innovative Oil industry in chennai Since health and safety are two important elements essential for improving the productivity of an organization, a study on the existing health and safety measures would help the organization to perform better. This study was highlight on the perception of the workers regarding health and safety. Innovative Oil industry in chennai Can identify the areas where it can be improved, so as to improve the performance of the workers. This study would also help to analyze the satisfaction level of the workers towards health and safety measures and suggest provisions to improve health and safety

1.4 IMPORTANCE OF THE STUDY

The industrial progress depends on a satisfied employee force, and the importance of employee welfare measures. After the placement of the employees, they should be given proper training and programmers to develop their efficiency so as to serve the organizations better. Welfare facilities are designed to take care of the well – being of the employees. They do not generally result only in monetary benefit. These welfare measures are provided by government Non – Government agencies and the employers.

1.5 STATEMENT OF THE PROBLEM

Employee welfare measures are an effort towards relieving the industrial workers from want, worry and the adverse effects of industrialization, by improving working and living conditions. The proper administration and implementation of employee welfare facilities plays an important role in fulfilling the economic, social, and psychological needs of employees. In satisfying these needs a favourable attitude towards the job can be developed. Job satisfaction is an attitude, which is the result of many likes and dislikes experienced while working in an organization. The provision of employee welfare facilities is one of the factors instrumental in promoting job satisfaction.

1.6 OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVES

To study the employees health and safety measures in oil and gas industry
Chennai

SECONDARY OBJECTIVES

- To understand the various measures provided in the company.
- To know the satisfaction level of the employees in the welfare measures offered
- To measure the facilities offered in the other benefits like health and safety schemes.
- To create some awareness at workplace
- To find out the expectations of Employees from Management.
- To understand whether the schemes will motivate the employees towards work.

1.7 NEED OF THE STUDY

Health and Safety measures are inevitable to any organization where workers are involved. It's an organization's responsibility to provide to its workers beyond the payment of wages for their services. The worker's health and safety on and off the job within the organization is a vital concern of the employer. The working environment in a factory adversely affects the worker's health and safety because of the excessive heat or cold, noise, odors, fumes, dust and lack of sanitation and pure air etc., which leads to accident or injury or disablement or loss of life to the workers. Providing a health and safer environment is a pre-requisite for any productive effort. These must be held in check by providing regular health check-up, protective devices and compensatory benefits to the workers. This research deals with the study on the health and safety measures provided to the workers at oil and gas industry.

1.8 LIMITATION OF THE STUDY

The sample size selected by the researcher is limited.

- The study is applicable only to oil and gas industry, Chennai. Therefore the results cannot be generalized for the whole industry.
- The time factor in collecting the responses as in conducting the research study would be limiting factor.
- The respondents were unable or unwilling to give response.

Chapter -2

REVIEW OF LITERATURE

2.1 EMPLOYEE WELFARE MEASURES

Johri Puja and Mehrotra Sanjeev (2014) from their study they concluded that voluntary welfare measure should be provided to employee. They study the level of awareness of employee about the various welfare measures.

Bharti P., Parel and Ashok Kumar (2013) stated to identify where any relation exists between welfare provisions and employee's satisfaction. His study also reviews on welfare provisions and employee's satisfaction.

Srinivas K. T. (2013) in his study find out various welfare facilities provided at the company (Bosch limited Bangalore). The study discusses extend of awareness among the employees with various statutory and no statutory welfare measure. It is found that most of the welfare facilities like medical canteen, working environment safety measure etc. are provide by company and most of the employees are satisfied with the welfare facilities.

Mohan Reena& Panwar (2013) their paper aims at providing information about the employee welfare schemes prevalent in retail stores in Udaipur region. Their studies provided not only intra-mural facilities but also extra-mural facilities. Wading up their welfare policies by including health and enduing standard of the employee's which leads to malware employee's welfare schemes are a means to imp lone the productivity and efficiency of the employee's. This paper aims at studding the retail sector which is winging out innovating schemes to please its talented work force and retain them out a longer time period.

Reshma S. BasuaraRajuDr. (2013) the statutory welfare measure provided by donimalai iron ore mine. They study analysis and interpret about the statutory welfare measures in the proposed sample unit. It stated the employee's welfare is a comprehensive term including various services offered to employees of the organization.

SalariaPoonam&SalariaSumit (2013) the analysis of their study concept of employee welfare. The study resultant that employees in auto sector are highly satisfied with the intra-mural welfare measure.

ChaudharyAsiya Dr. (2011) through her paper she identifies the employee welfare measure in Indian railway, her study analysis that inadequacy of financial resources is one of the important reasons pointed out by railway in lack in welfare facilities provided to customer. By the study suggestion are made that it may be railway minimize the cost of social burden and apply for government for betterment of welfare provisions.

Binoyjoseph, josephinjodey (2009), studies in the article points out that, the structure of welfare states rests on a social security fabric. Government, employers, trade unions have done a lot to promote the betterment of workers conditions.

David, A DiCenzo (2001) and Stephen P. Robbinsin their book, "Personnel / Human Resource Management explained the various benefits and services provided by the companies to their employees. According to them, the legally required benefits and services include social security premiums, unemployment compensation, workers compensation and state disability programs. They felt that the cost of the voluntary benefits offered appears to be increasing.

Punekar, Deodhar and Sankaran (2004) in their book, "Employee Welfare, Trade Unionism and Industrial Relations" stated that employee welfare is anything done for the comfort and improvement, intellectual and socialwell being of the employees over and above the wages paid which is not a necessity of the industry.

Grover Chris (2003), in his paper 'welfare measures'-A study on new employee's welfare program to reconstitute the army of employee. So, it is able to fulfil its role in managing economic stability. The employee is as cheap as possible for employee through various direct and indirect wages and requiring more benefits for paid employment.

Meenakshi Yadav (2013), in his paper 'welfare measures'-A study on analysis of workers reveals the welfare measures in the corporate sector. The factor

analysis model has various issues for employee welfare into eight factors. These are: loans and compensation facilities, education, housing, subsidized food, better working environment, stability of work force and provision of cooperative societies. In order to maintain good industrial relations in the organizations, these types of welfare facilities can maintain a long way efficiency in the organizations. The corporate sector should maintain a good provision of welfare measures for the workers.

Ponvannan (2011), in his paper 'employee welfare measures'-He studied on employee welfare measures in Anglo French Textiles. He finalized that welfare work in any industry should improve the working and living conditions of workers and their families. The concept of employee welfare varies from time to time, region to region, industry to industry and country to country, depending upon various factors such as educational level, social customs, and degree of industrialization and general standard of socioeconomic development.

Rajwant Singh (1987), in his paper 'employee welfare measures' -A study on implementation of employee welfare measures must overcome, before the dawn of the new century. This country can find the ways of people's meeting for basic needs like sources of income, food, education, housing, health and hygiene.

Swapna (2011), in his paper, 'employee welfare measures'-A study on social responsibility in light of employee welfare with special reference to Singareni Collieries Company Limited. The linkages involved in employee welfare have been addressed with implications for employee welfare. The concept of social responsibility has been compared with economic welfare. Conceptually and operationally, employee welfare can achieve through social responsibility, which in turn is closely linked to the concept of social welfare. Hence in this process, it is understood the importance of social responsibility towards employee welfare.

Vijaya Banu and Ashifa (2011), in his paper, 'employee welfare measures'-A study on employee welfare measures thus the various dimensions of matter were received from the employees. It highlights the perception and levels of

satisfaction in various employee's welfare measures and these methods to improve the welfare schemes in Public Sector Transport Corporation.

2.2 EMPLOYEE HEALTH AND SAFETY MEASURES

A Spurgeon; J M Harrington; C L Cooper (1997), The European Community Directive on Working Time, which should have been implemented in member states of the European Community by November 1996. This paper reviews the current evidence relating to the potential effects on health and performance of extensions to the normal working day. Research to date has been restricted to a limited range of health outcomes--namely, mental health and cardiovascular disorders. Other potential effects which are normally associated with stress--for example, gastrointestinal disorders, musculoskeletal disorders, and problems associated with depression of the immune system, have received little attention. It is concluded that there is currently sufficient evidence to raise concerns about the risks to health and safety of long working hours.

Graves carol gevecker; Matanoski genevieve m; Tardiff robert g (2000), Carbonless copy paper (CCP), introduced in 1954. Its safety to workers who handle large amounts of CCP has been addressed in numerous studies and reports. This review encompasses the world's literature on CCP and provides a weight-of-evidence analysis of the safety of CCP to workers in the United States. Since 1987, has produced neither primary skin irritation nor skin sensitization under normal conditions of manufacture and use. Finally, very few published complaints have come from the manufacturing sector where the closest and most voluminous contact occurs. Based on the weight of the evidence, NIOSH is anticipated to conclude that CCP is not a hazard to workers and has only a small possibility of producing mild and transient skin irritation.

Karen J.M. Niven (2000), A literature review was described which aimed to evaluate economic evaluations of health and safety interventions in healthcare. Problems were identified with valuing benefits in health and safety because they frequently take many years to emerge and are difficult to measure. Understanding of economic techniques within the health and safety professions

was limited, resulting in wide-ranging assumptions being made as to the positive economic impact of health and safety interventions. Healthcare managers, health economists, and health and safety professionals have not traditionally worked together and have inherent misunderstandings of each other roles. The review concludes that the aim of future research should be to assist the National Health Service (NHS) to make valid decisions about health and safety investment and risk control methods.

N Nakanishia; H Yoshidaa; K Naganoa; H Kawashimob; K Nakamurac (2001), to evaluate the association of long working hours with the risk of hypertension. The work site is in Osaka, Japan. 941 hypertension free Japanese male white collar workers aged 35–54 years were prospectively examined by serial annual health examinations. 424 men developed hypertension above the borderline level. After controlling for potential predictors of hypertension, the relative risk for hypertension above the borderline level, compared with those who worked < 8.0 hours per day was 0.48, for those who worked 10.0–10.9 hours per day was 0.63. These results indicate that long working hours are negatively associated with the risk for hypertension in Japanese male white collar workers.

A Baker; K Heiler; S A Ferguson (2002), The occupational health and safety implications associated with compressed and extended work periods have not been fully explored in the mining sector. Absenteeism and incident frequency rate data were collected over a 33 month period that covered three different roster schedules. The only significant change in absenteeism rates was an increase in the maintenance sector in the third data collection period. The current study did not find significant negative effects of a 12-hour pattern, when compared to an 8-hour system. However, when unregulated and excessive overtime was introduced as part of the 12-hour/5-day roster, absenteeism rates were increased in the maintenance sector.

L Ala-Mursula; J Vahtera; A Kouvonen; A Vaananen; A Linna (2006), The associations of working hours (paid, domestic, commuting, and total) with sickness, absence, and to examine whether these associations vary according to the level of employee control over daily working hours. The study among

25,703 full-time public sector workers in 10 towns in Finland. Long domestic and total working hours were associated with higher rates of medically certified sickness absences among both genders. Low control over daily working hours predicted medically certified sickness absences for both the women and men. In combinations, high control over working hours reduced the adverse associations of long domestic and total working hours with medically certified absences. Employee control over daily working hours may protect health and help workers successfully combine a full-time job with the demands of domestic work.

Lucia Artazcoz; Imma Cortes; Vincenta Escriba-aguir; Lorena Cascant (2007), To provide a framework for epidemiological research on work and health that combines classic occupational epidemiology and the consideration of work in a structural perspective focused on gender inequalities in health. Gaps and limitations in classic occupational epidemiology, when considered from a gender perspective, are described. Classic occupational epidemiology has paid less attention to women's problems than men's. Research into work related gender inequalities in health has rarely considered either social class or the impact of family demands on men's health. The analysis of work and health from a gender perspective should take into account the complex interactions between gender, family roles, employment status and social class.

Dee W. Edington; Alyssa B. Schultz (2008), The aim was to present the literature which provides evidence of the association between health risks and the workplace economic measures of time away from work, reduced productivity at work, health care costs and pharmaceutical costs. A search of PubMed was conducted and high quality studies were selected and combined with studies known to the authors. A strong body of evidence exists which shows that health risks of workers are associated with health care costs and pharmaceutical costs. A growing body of literature also confirms that health risks are associated with the productivity measures. The paper shows that measures of success will continue to be important as the field of worksite health management moves forward.

Lucia Artazcoz; Imma Cortes; Vincenta Escriba-aguir; Lorena Cascant (2009), the objectives of this study was to identify family and job characteristics associated with long work hours. The sample was composed of all salaried workers aged 16–64 years (3950 men and 3153 women) interviewed in the 2006 Catalan Health Survey. Factors associated with long working hours differed by gender. In men, working 51–60 h a week was consistently associated with poor mental health status, self-reported hypertension, job dissatisfaction, smoking, shortage of sleep. Among women it was only related to smoking and to shortage of sleep. The association of overtime with different health indicators among men and women could be explained by their role as the family breadwinner.

Tompa, Emile PhD; Dolinski, Roman MA; de Oliveira (2009), we reviewed the occupational health and safety intervention literature to synthesize evidence on financial merits of such interventions. A literature search included journal databases, existing systematic reviews, and studies identified by content experts. We found strong evidence that ergonomic and other musculoskeletal injury prevention intervention in manufacturing and warehousing are worth undertaking in terms of their financial merits. The economic evaluation of interventions in this literature warrants further expansion. The review also provided insights into how the methodological quality of economic evaluations in this literature could be improved.

Johannson B; Rask K; Stenberg M (2010), this study was to carry out a broad survey and analysis of relevant research articles about piece rate wages and their effects on health and safety. A total of 75 research articles were examined extensively and 31 of these were found relevant and had sufficient quality to serve the purpose of this study. The findings of these relevant articles are summarized and analyzed in the survey. More recent research shows a clear interest for health, musculoskeletal injuries, physical workload, pains and occupational injuries. The fact that 27 of the 31 studied articles found negative effects of piece rates on different aspects of health and safety does not prove causality, but together they give very strong support that in most situations piece rates have negative effects on health and safety.

CHAPTER - 3

RESEARCH METHODOLOGY

3.1 RESEARCH METHODOLOGY:

Research is the process of systematic and in-depth study or search for any particular topic, subject or area of investigation, backed by collection, compilation, presentation and interpretation of relevant details or data.

3.2 RESEARCH PROCESS

In research process, the first and foremost step is defining and selecting a research problem. A Researcher should at first find the problem. Then he should formulate it so that it becomes susceptible to research. For a systematic presentation, the process of research may be classified under three stages- primary stages, secondary stage, and the tertiary stage. The primary stage includes

The secondary stage includes

- Project planning
- Data collection
- Questionnaire preparation
- Analysis of data
- Testing of hypothesis
- Interpretation
- Questionnaire preparation.

3.3 QUESTIONNAIRE DESIGN

The questionnaire for the research study is to be structured in which different types of questions like open ended and close ended are covered. The questions will be designed as an opinion, multiple choices. A closed-ended question is one

where the respondent is given a range of answers and has to make a choice of one or more. The questions in the questionnaire were arranged in a sequential manner grouped under the different factors of study.

3.3 TYPE OF RESEARCH

3.3.1 DESCRIPTIVE RESEARCH

Descriptive research has been used, it involves survey and fact finding enquiries of different kinds, the purpose of descriptive research are the descriptive of state of affairs, as it exists at present.

3.4 SOURCES OF DATA:

Data collection is one of the most important aspects of research. The information through research methodology must be accurate and relevant. The data collection method can be classified into two methods.

PRIMARY DATA

Questionnaire method have been used as a tool for a data collection in this research.

SECONDARY DATA

Secondary data means data that are already available i.e., they refer to data which has already been collected and analysed by someone else. The secondary data for the study was collected from book, company websites, magazines and other sources.

Sample size : 130

3.4.1 DATA COLLECTION TOOLS

- Percentage Analysis is applied to create a contingency table from the frequency distribution and represent the collected data for better understanding.

- Chart Analysis is applied for better understanding of the percentage analysis and it is done via pie, bar charts etc.

3.5 Sampling Technique

The Sampling technique used in this study is Simple random sampling. Simple random sampling is a method used to call a smaller sample size from a larger population and use it to research and make generalizations about the larger group.

3.5.1 Sampling Tools

The collected data will be analyzed with the help of statistical tools. The percentage analysis is used.

TOOLS FOR ANALYSIS

- Percentage Analysis
- Chart Analysis
- Chi-square Analysis

HYPOTHESIS TESTING

H₀ – Null hypothesis (there is no significant relationship between the variables).

H_a – Alternative hypothesis (there is significant relationship between the variables).

After analysing the data, hypothesis testing is done. It will result in either accepting or rejecting the hypothesis.

3.7.1 Descriptive Analysis

It is concerned with charts, tables and interpretations from the finding of a research study. The following are the descriptive statistics which are used in this study,

i. Percentage Analysis

Percentage analysis is the method to represent raw data as a percentage for better understanding of the data collected. It is one of the statistical estimates used to divulge the attributes of the sample or population in total. It includes computing proportions of factors chosen for the analysis and its findings will give simple elucidation for the researchers and readers.

ii. Mean

The statistical refers to suggest or the average that is used to derive the relevant tendency. It is determined to calculate all the data divided by the total population the result variety is called mean or average .

iii. Weighted Average

Weighted average is a median calculated by using the given value in the set of records that keep greater influence in keeping with few attributes of information . each amount is commonly taken and assigned a weight these weight decide relative importance of the each amount of average .

iv. Inferential Statistics

It is concerned with the drawing inferences and conclusion from the finding of a research study.

CHAPTER - 4

DATA ANALYSIS AND INTERPRETATION

4.1 DATA ANALYSIS AND INTERPRETATION

TABLE : 4.1.1

TABLE INDICATING THE GENDER OF RESPONDENTS

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Male	62	47.6
2	Female	68	52.3
	Total	130	100

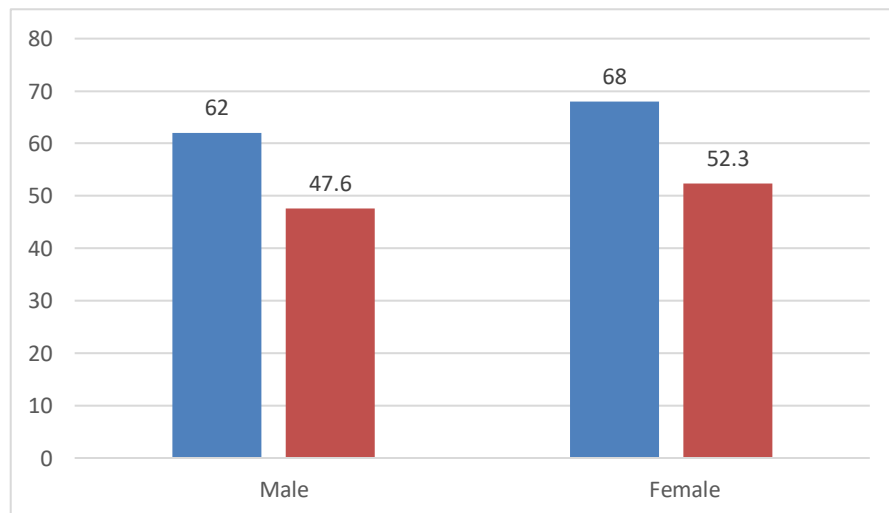


CHART : 4.1.1

CHART REPRESENTING THE GENDER OF RESPONDANTS

INTERPRETATION

From the table 4.1.1, it is observed that 52.3% of the respondents are Female and the remaining 47.6% of the respondents are female.

TABLE : 4.1.2
TABLE INDICATING THE AGE GROUP OF RESPONDENTS

S.No	Particulars	No of Respondent	Percentage of Respondent
1	18 -25 years	52	40
2	25 - 35 years	45	34.6
3	Above 35	33	25.3
	Total	130	100

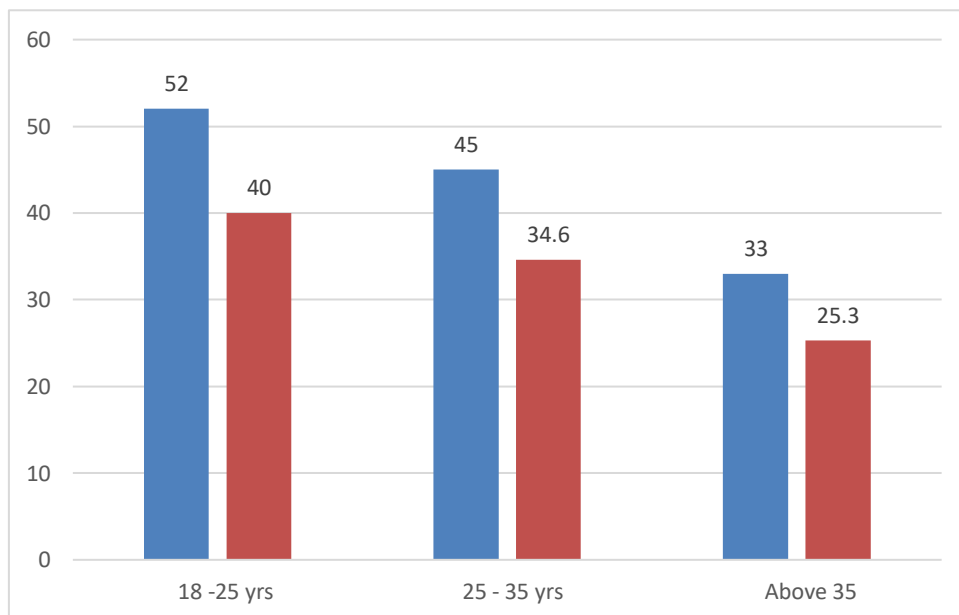


Chart: 4.1.2

CHART REPRESENTING THE AGE GROUP OF RESPONDENTS

INTERPRETATION

From the table 4.1.2, it is observed that 40% of the respondents are 18-25 years, 34.6% are 25-35 years and the remaining 25.3% are above 35 years.

TABLE: 4.1.3

**TABLE INDICATING THE YEARS OF WORK EXPERIENCE OF
RESPONDENTS**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	1-3 years	25	19.2
2	3-5 years	46	35.3
	More than 5 years	59	45.3
	Total	130	100

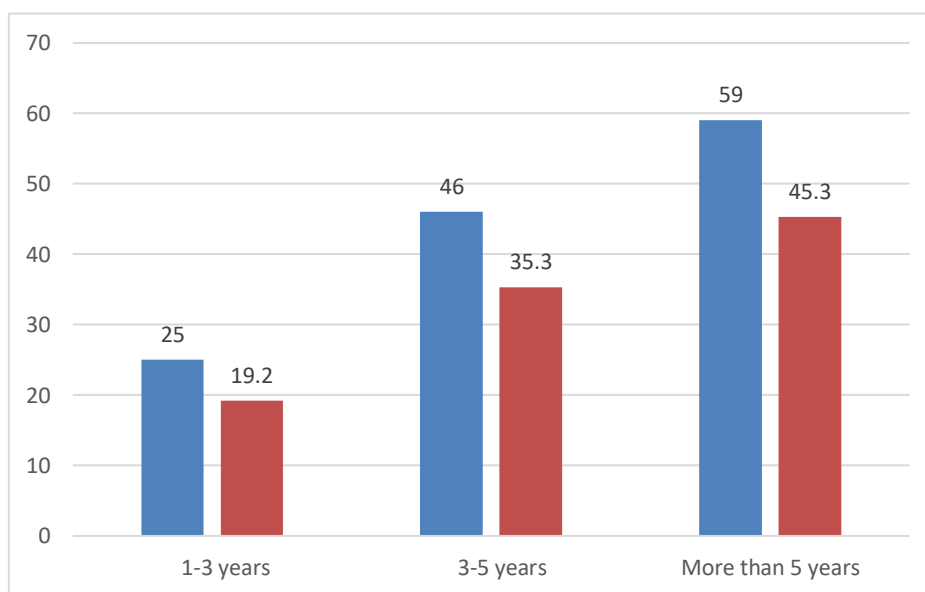


CHART : 4.1.3

**CHART REPRESENTING THE WORK EXPERIENCE OF RESPONDENTS IN
OIL AND GAS INDUSTRY**

INTERPRETATION

From the table 4.1.3, it is observed that 19.2% of the respondents are 1-3 years of experience, 35.3% are 3-5 years and the remaining 45.3% are more than 5 years.

TABLE: 4.1.4

**TABLE INDICATING THE RATING LEVEL OF WORKING ENVIRONMENT IN
THE ORGANIZATION**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	32	24.6
2	Satisfactory	42	32.3
3	Averagely Satisfactory	35	26.9
4	Dissatisfactory	20	15.3
5	Highly Dissatisfactory	1	0.7
	Total	130	100

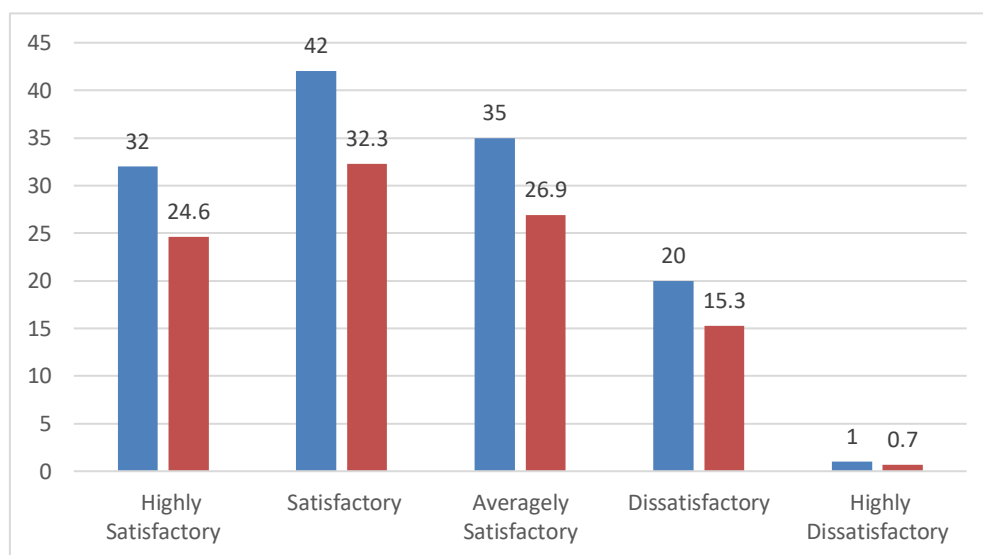


CHART: 4.1.4

**CHART REPRESENTING THE RATING LEVEL OF WORKING
ENVIRONMENT IN THE ORGANIZATION**

INTERPRETATION

From the table 4.1.4, it is observed that 24.6% of the respondents are highly satisfied with the working environment, 32.3% are satisfactory, 26.9% are averagely satisfactory.

TABLE: 4.1.5

**TABLE INDICATING THE RATING OF MEDICAL BENEFITS PROVIDED BY
THE ORGANIZATION FOR THE EMPLOYEES & THEIR FAMILIES**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	41	31.5
2	Satisfactory	28	21.5
3	Average	32	24.6
4	Dissatisfactory	29	22.3
5	Highly Dissatisfactory	0	0
	Total	130	100

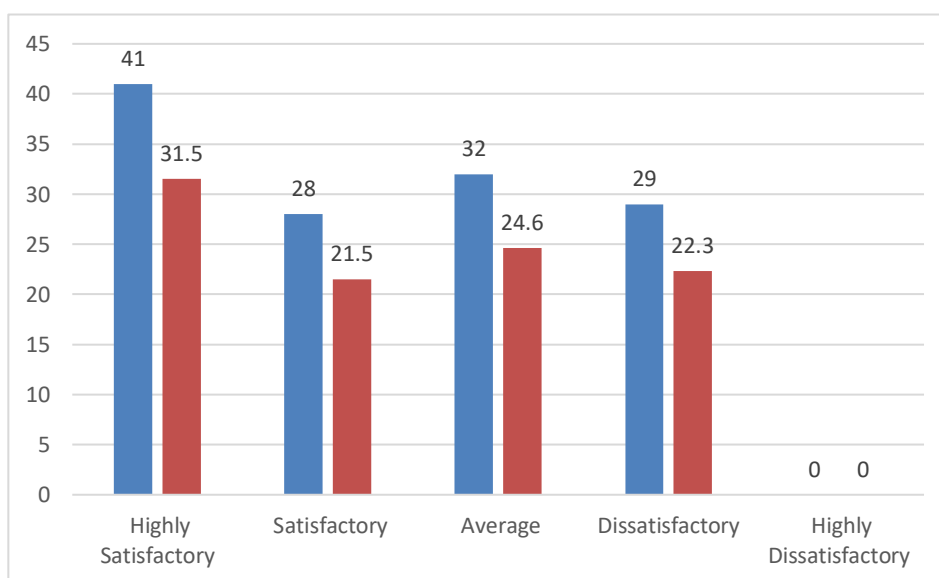


CHART: 4.1.5

**CHART REPRESENTING THE RATING OF MEDICAL BENEFITS
PROVIDED BY THE ORGANIZATION FOR THE EMPLOYEES & THEIR
FAMILIES**

INTERPRETATION

From the table 4.1.5, it is observed that 31.5% of the respondents are highly satisfied with the medical benefits provided by the organization, 21.5% are satisfactory, 24.6% are average

TABLE: 4.1.6

**TABLE INDICATING RESPONDENTS RATE OF SITTING ARRANGEMENT
OF THE ORGANIZATION**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	33	25.3
2	Satisfactory	39	30
3	Average	25	19.2
4	Dissatisfactory	22	16.9
5	Highly Dissatisfactory	11	8.4
	Total	130	100

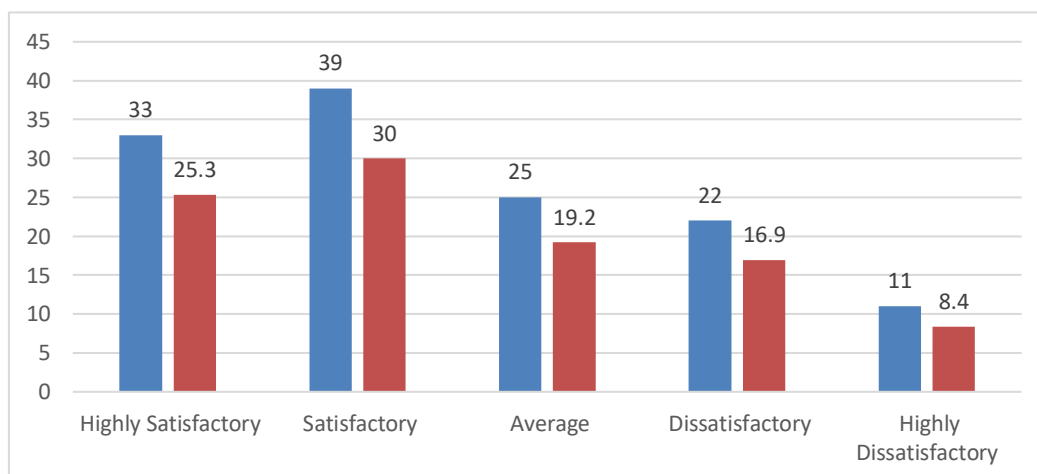


CHART: 4.1.6

**CHART REPRESENTING RESPONDENTS RATE OF SITTING
ARRANGEMENT OF THE ORGANIZATION**

INTERPRETATION

From the table 4.1.6, it is observed that 25.3% of the respondents are highly satisfied with the sitting arrangement provided by the organization, 30% are satisfactory, 19.2% are average.

TABLE: 4.1.7

**TABLE INDICATING THE RESPONDENTS RATE OF CONVEYANCE
ALLOWANCE OFFERED BY THE ORGANIZATION**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	25	19.2
2	Satisfactory	43	33.07
3	Average	33	25.3
4	Dissatisfactory	18	13.8
5	Highly Dissatisfactory	11	8.4
	Total	130	100

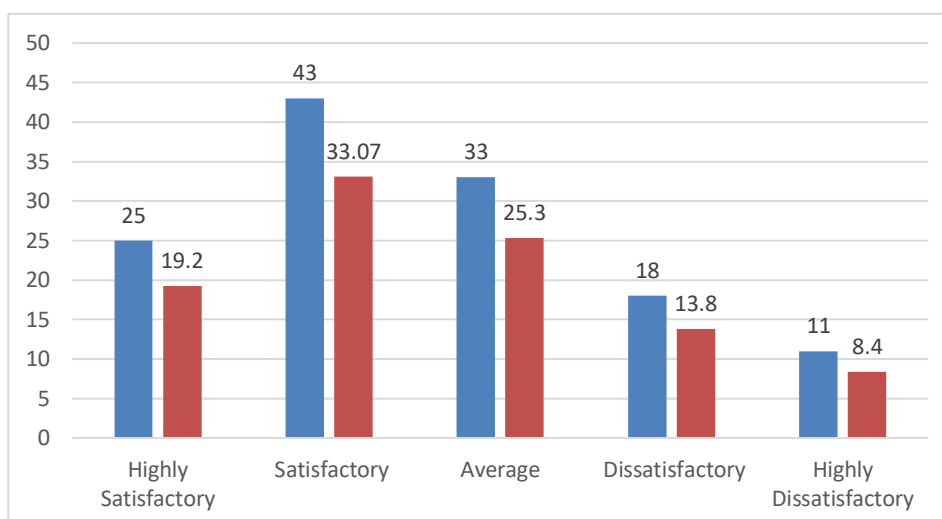


CHART: 4.1.7

**CHART REPRESENTING RESPONDENTS RATE OF CONVEYANCE
ALLOWANCE OFFERED BY THE ORGANIZATION**

INTERPRETATION

From the table 4.1.7, it is observed that 19.2% of the respondents are highly satisfied with the conveyance allowance provided by the organization, 33.07% are satisfactory, 25.3% are average.

TABLE: 4.1.8

TABLE INDICATING HOW DO YOU RATE LEAVE POLICY OF THE ORGANIZATION

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	55	42.3
2	Satisfactory	31	23.8
3	Average	35	26.9
4	Dissatisfactory	9	6.9
5	Highly Dissatisfactory	0	0
	Total	130	100

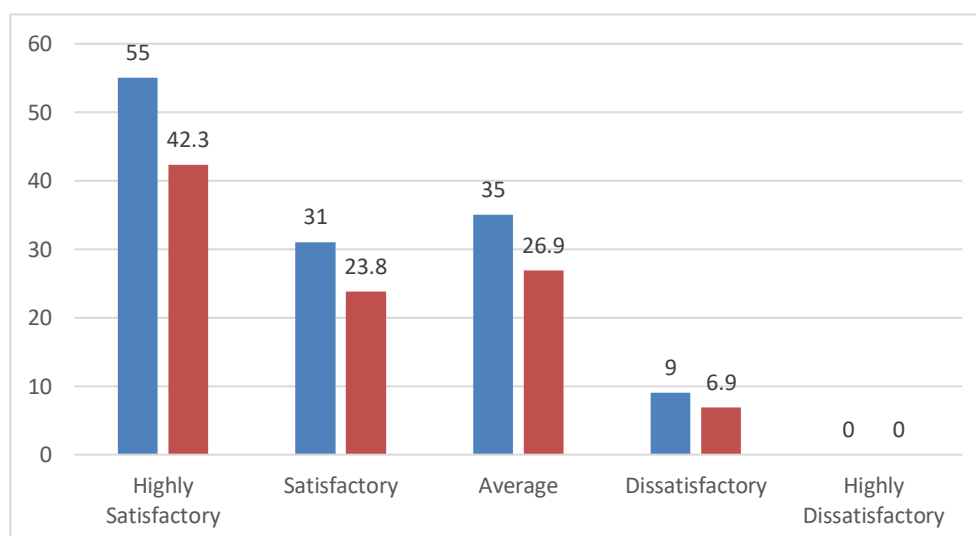


CHART: 4.1.8

CHART REPRESENTING HOW DO YOU RATE LEAVE POLICY OF THE ORGANIZATION

INTERPRETATION

From the table 4.1.8, it is observed that 42.3% of the respondents are highly satisfied with the leave policy provided by the organization, 23.8% are satisfactory, 26.9% are average.

TABLE: 4.1.9
TABLE INDICATING DO YOU GET REGULAR INCREMENTS

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Yes	82	63.07
2	No	48	36.9
	Total	130	100

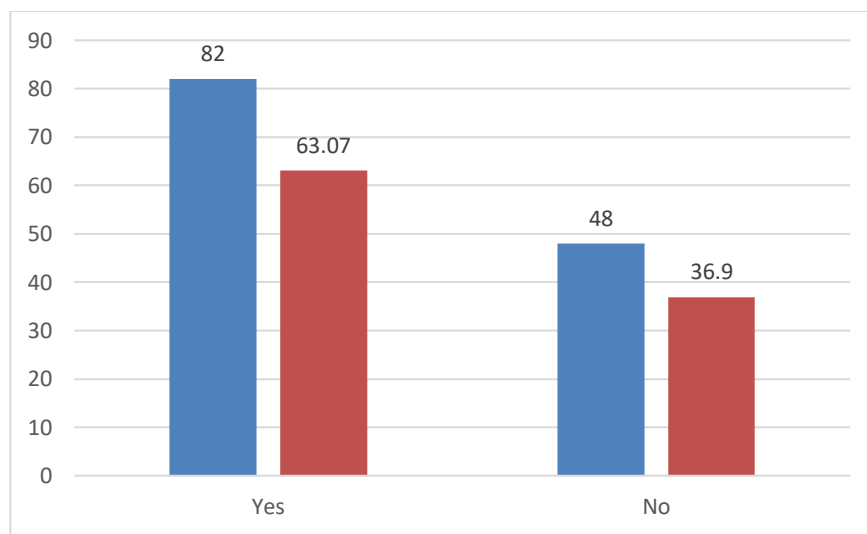


CHART: 4.1.9
CHART REPRESENTING DO YOU GET REGULAR INCREMENTS

INTERPRETATION

From the table 4.1.9, it is observed that 63.07% of the respondents get regular increments and 36.9 % of respondents do not get regular increments.

TABLE: 4.1.10

TABLE INDICATING HOW OFTEN FIRST AID BOX WITH PRESCRIBED CONTENTS IS AVAILABLE

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Every time	50	38.4
2	mostly	49	37.6
3	sometimes only	31	23.8
	Total	130	100

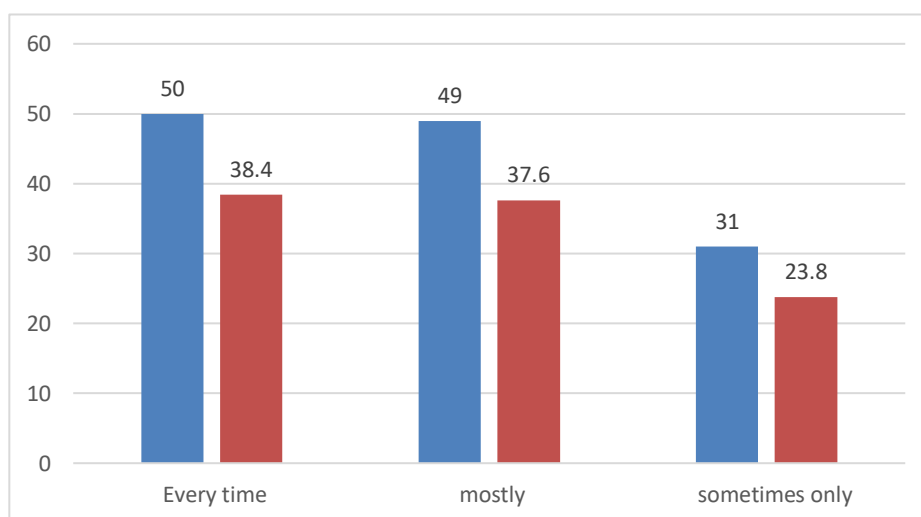


CHART: 4.1.10

CHART REPRESENTING HOW OFTEN FIRST AID BOX WITH PRESCRIBED CONTENTS IS AVAILABLE

INTERPRETATION

From the table 4.1.10, it is observed that 38.4% of the respondents are every time with the first aid box with prescribed contents is available , 37.6% are mostly, 23.8% are sometimes only.

TABLE 4.1.11

TABLE INDICATING HOW DO YOU RATE WORKING HOURS OF THE ORGANIZATION

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	28	21.5
2	Satisfactory	42	32.3
3	Average	52	40
4	Dissatisfactory	8	6.1
5	Highly Dissatisfactory	0	0
	Total	130	100

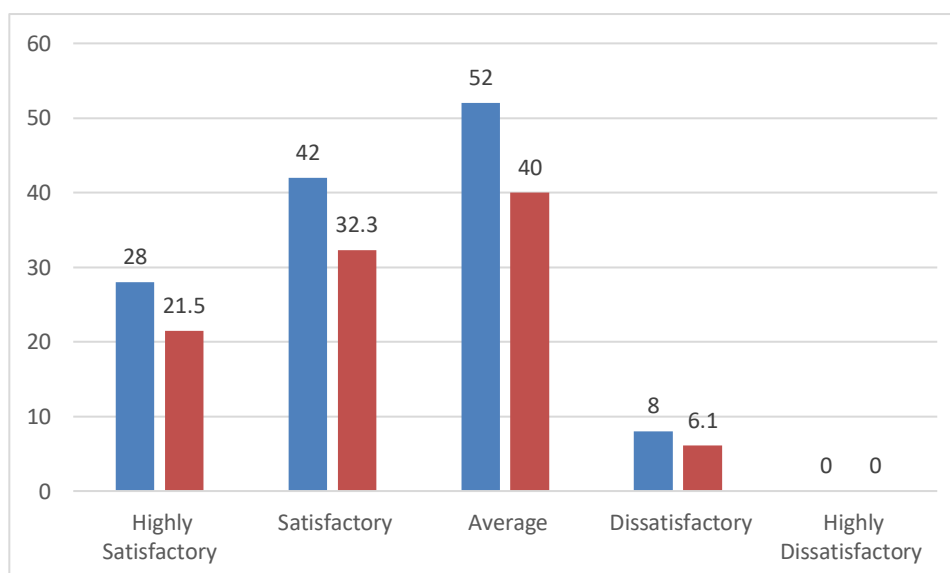


CHART 4.1.11

CHART REPRESENTING THE HOW DO YOU RATE WORKING HOURS OF THE ORGANIZATION

INTERPRETATION

From the table 4.1.11, it is observed that 21.5% of the respondents are highly satisfied with the working hours of the organization , 32.3% are satisfied, 40% are average.

TABLE: 4.1.12

TABLE INDICATING ARE YOU SATISFIED WITH THE DRINKING WATER FACILITIES PROVIDED

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	29	22.3
2	Satisfactory	40	30.7
3	Average	32	24.6
4	Dissatisfactory	19	14.6
5	Highly Dissatisfactory	10	7.6
	Total	130	100

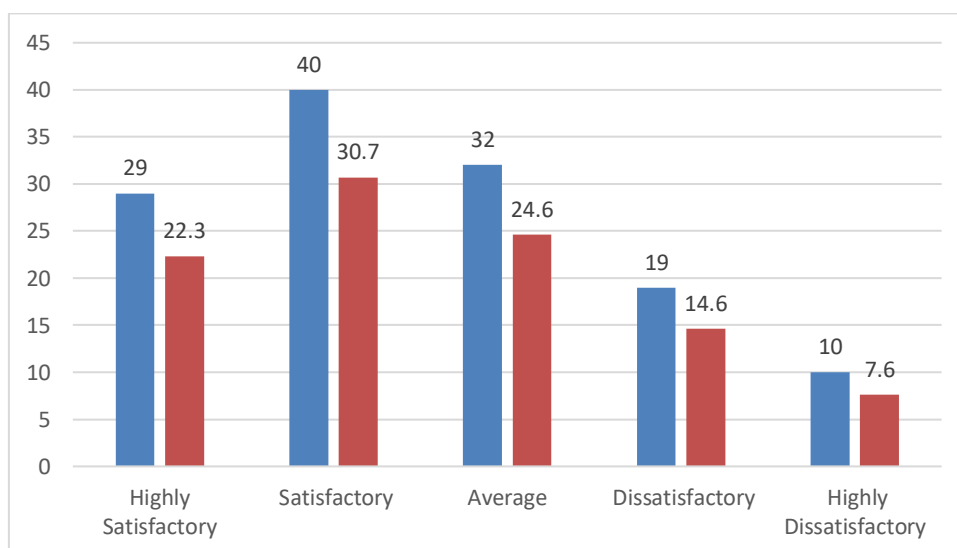


CHART: 4.1.12

CHART REPRESENTING ARE YOU SATISFIED WITH THE DRINKING WATER FACILITIES PROVIDED

INTERPRETATION

From the table 4.1.12, it is observed that 22.3% of the respondents are highly satisfied with the drinking water facilities provided, 30.7% are satisfied, 24.6% are average.

TABLE: 4.1.13

**TABLE INDICATING THE RATING OF CANTEEN SERVICES PROVIDED BY
THE ORGANIZATION**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	36	27.6
2	Satisfactory	33	25.3
3	Average	39	30
4	Dissatisfactory	22	16.9
5	Highly Dissatisfactory	0	0
	Total	130	100

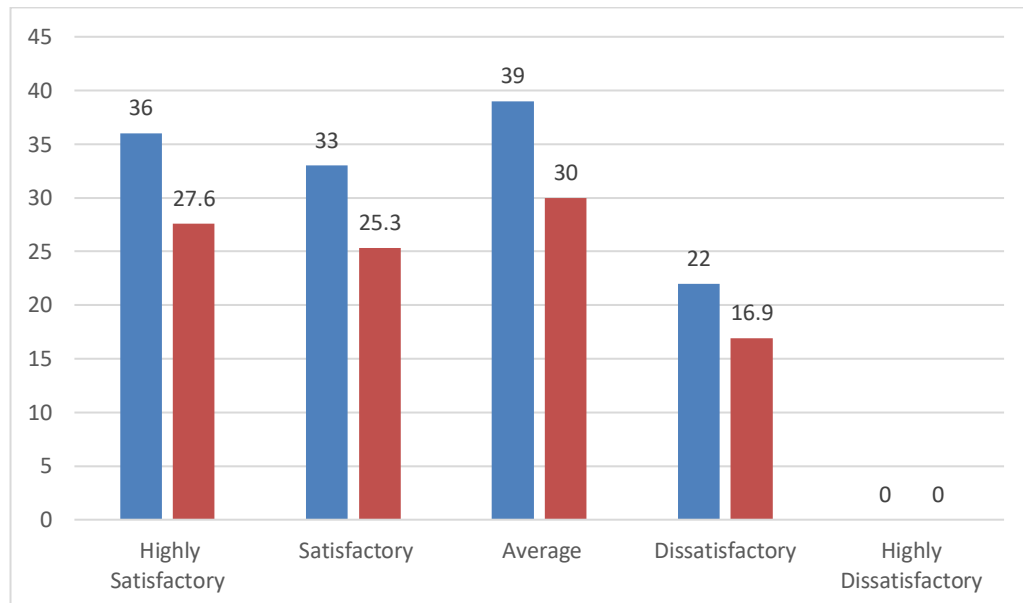


CHART: 4.1.13

**CHART REPRESENTING THE RATING OF CANTEEN SERVICES
PROVIDED BY THE ORGANIZATION**

INTERPRETATION

From the table 4.1.13, it is observed that 27.6% of the respondents are highly satisfied with the canteen facilities provided, 25.3% are satisfied, 30% are average.

TABLE: 4.1.14

**TABLE INDICATING THE RATE OF REST ROOM AND LUNCH ROOM
FACILITY TO THE EMPLOYEES**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	40	30.7
2	Satisfactory	22	16.9
3	Average	25	19.2
4	Dissatisfactory	20	15.3
5	Highly Dissatisfactory	23	17.6
	Total	130	100

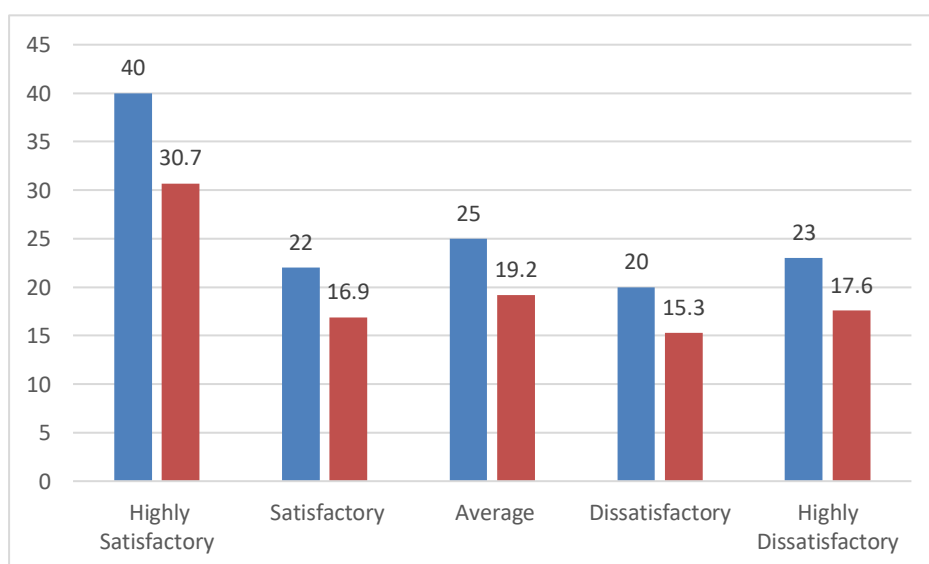


CHART: 4.1.14

**CHART REPRESENTING THE RATE OF REST ROOM AND LUNCH ROOM
FACILITY TO THE EMPLOYEES**

INTERPRETATION

From the table 4.1.14, it is observed that 30.7% of the respondents are highly satisfied with the restroom and the lunch room facilities provided, 16.9% are satisfied, 19.2% are average.

TABLE: 4.1.15

**TABLE INDICATING DO YOU THINK ACTIVITIES OF THE ORGANIZATION
GIVE A FEELING OF SAFETY AND IMPROVES YOUR PERFORMANCE**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Strongly agree	38	29.2
2	Agree	26	20
3	Neutral	45	34.6
4	Disagree	20	15.3
5	Strongly disagree	1	0.7
	Total	130	100

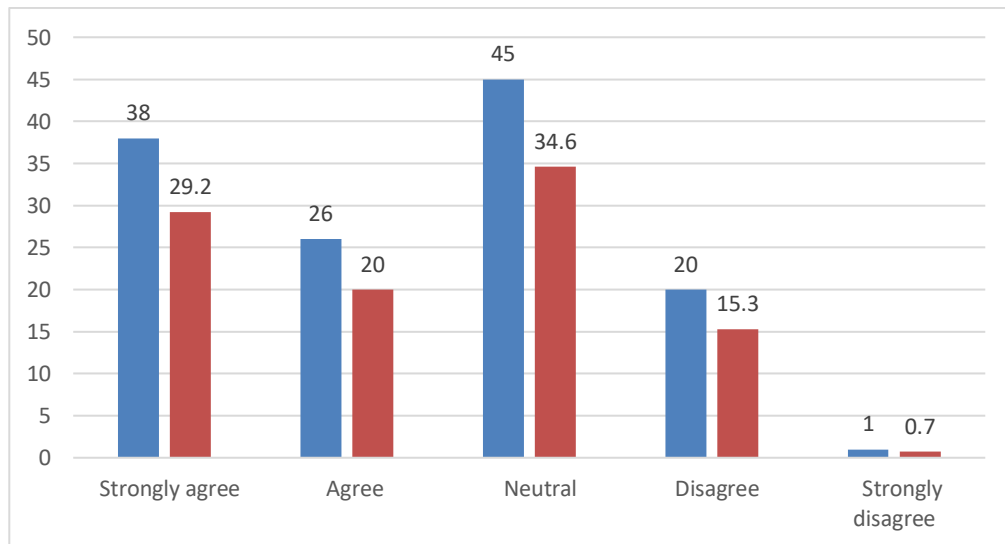


CHART: 4.1.15

**CHART REPRESENTING DO YOU THINK ACTIVITIES OF THE
ORGANIZATION GIVE A FEELING OF SAFETY AND IMPROVES YOUR
PERFORMANCE**

INTERPRETATION

From the table 4.1.15, it is observed that 29.2% of the respondents are strongly agreed with the safety and to improve the performance, 20% are agreed, 34.6% are neutral.

TABLE: 4.1.16
TABLE INDICATING ARE YOU AWARE OF THE VARIOUS MEASURES
PROVIDED BY THE INDUSTRY TO EMPLOYEES

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Yes	65	50
2	No	45	34.6
3	Partially	20	15.3
	Total	130	100

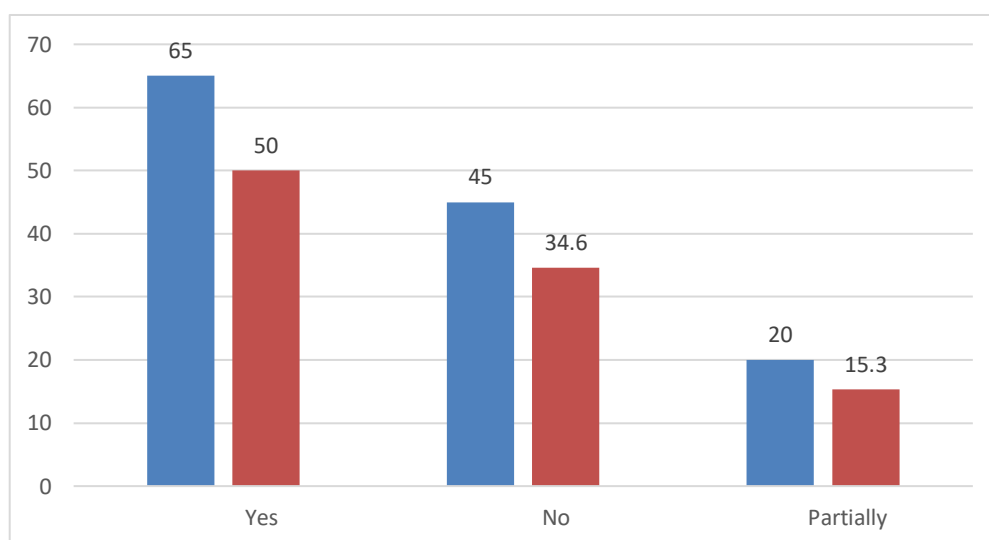


CHART: 4.1.16
CHART REPRESENTING ARE YOU AWARE OF THE VARIOUS
MEASURES PROVIDED BY THE INDUSTRY TO EMPLOYEES

INTERPRETATION

From the table 4.1.16, it is observed that 50% of the respondents are aware of the various measures provided by the industry to employees, 34.6% are not, 15.3% are partially.

TABLE: 4.1.17

**TABLE INDICATING THE RATE OF OVERALL SATISFACTION WITH
EMPLOYEE WELFARE ACTIVITIES OF THE ORGANIZATION**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	37	28.4
2	Satisfactory	32	24.6
3	Average	32	24.6
4	Dissatisfactory	29	22.3
5	Highly Dissatisfactory	0	0
	Total	130	100

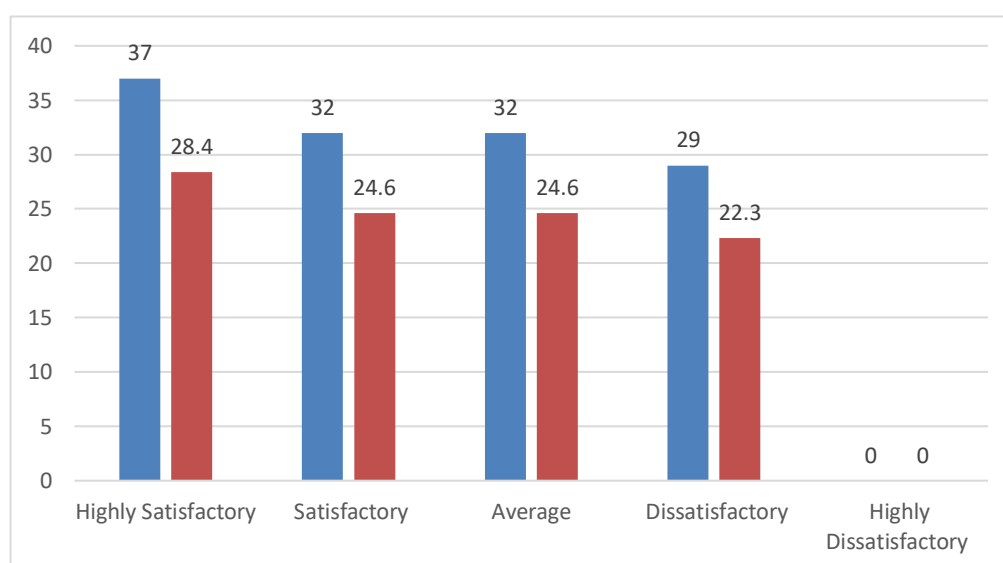


CHART: 4.1.17

**CHART REPRESENTING THE RATE OF OVERALL SATISFACTION WITH
EMPLOYEE WELFARE ACTIVITIES OF THE ORGANIZATION**

INTERPRETATION

From the table 4.1.17, it is observed that 28.4% of the respondents are highly satisfied with the overall satisfaction with the employee welfare activities, 24.6% are agreed, 24.6% are neutral.

TABLE: 4.1.18

**TABLE INDICATING THE HOW OFTEN YOU COME ACROSS GRIEVANCES
REGARDING FOOD AND OTHER FACILITIES**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	almost	40	30.7
2	always	33	25.3
3	often	29	22.3
4	sometimes	20	15.3
5	rarely	8	6.1
6	never	0	0
	Total	130	100

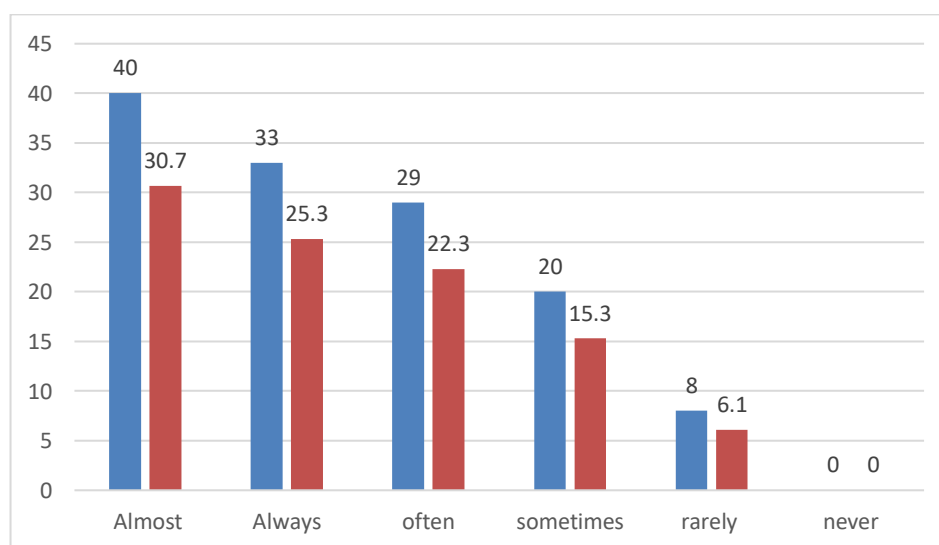


CHART: 4.2.18

**CHART REPRESENTING THE HOW OFTEN YOU COME ACROSS
GRIEVANCES REGARDING FOOD AND OTHER FACILITIES**

INTERPRETATION

From the table 4.1.18, it is observed that 30.7% of the respondents are almost come across the grievance regarding food and other facilities, 25.3% are always, 22.3% are often and the remaining 15.3% are sometimes.

TABLE: 4.1.19

**TABLE INDICATING THE KNOWLEDGE ABOUT THE HEALTH AND
SAFETY REGULATIONS AT WORK**

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Strongly agree	39	30
2	Agree	40	30.7
3	Neutral	33	25.3
4	Disagree	12	9.2
5	Strongly disagree	9	6.9
	Total	130	100

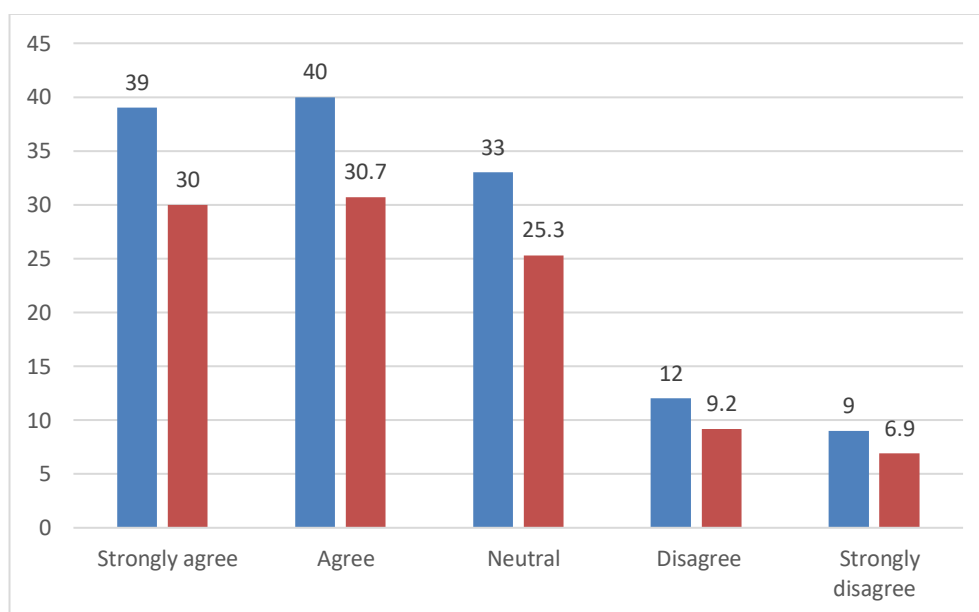


CHART: 4.1.19

**CHART REPRESENTING THE KNOWLEDGE ABOUT THE HEALTH AND
SAFETY REGULATIONS AT WORK**

INTERPRETATION

From the table 4.1.19, it is observed that 30.7% of the respondents are agreed with the health and safety regulations at work, 30% are strongly agreed, 25.3% are neutral

TABLE: 4.1.20

TABLE INDICATING THE REFUSING TO WORK IN UNSAFE ENVIRONMENT

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Strongly agree	39	30
2	Agree	36	27.6
3	Neutral	33	25.3
4	Disagree	22	16.9
5	Strongly disagree	0	0
	Total	130	100

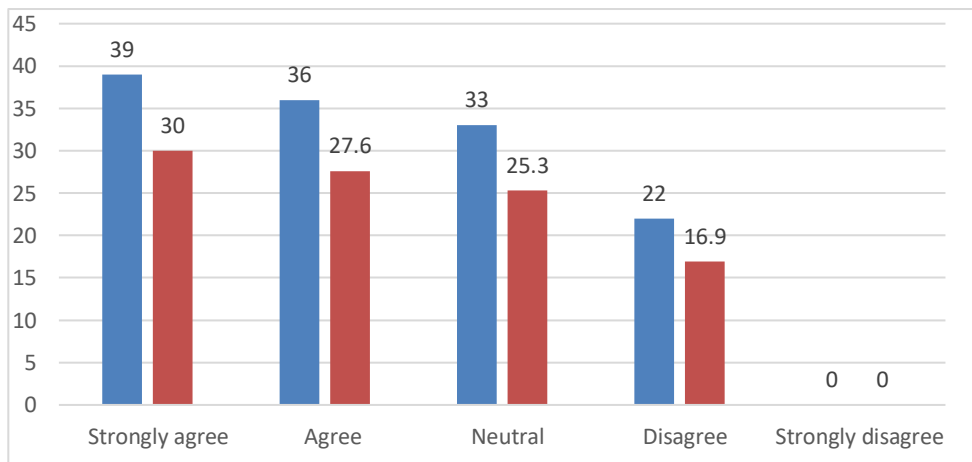


CHART: 4.1.20

CHART REPRESENTING THE REFUSING TO WORK IN UNSAFE ENVIRONMENT

INTERPRETATION

From the table 4.1.20, it is observed that 30% of the respondents are strongly agreed with refusing to work in unsafe environment, 27.6% are agreed, 25.3% are neutral

TABLE: 4.1.21

TABLE INDICATING TO UNDERSTAND THE IMPORTANCE OF HEALTH AND SAFETY

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Strongly agree	36	27.6
2	Agree	40	30.7
3	Neutral	26	20
4	Disagree	25	19.2
5	Strongly disagree	3	2.3
	Total	130	100

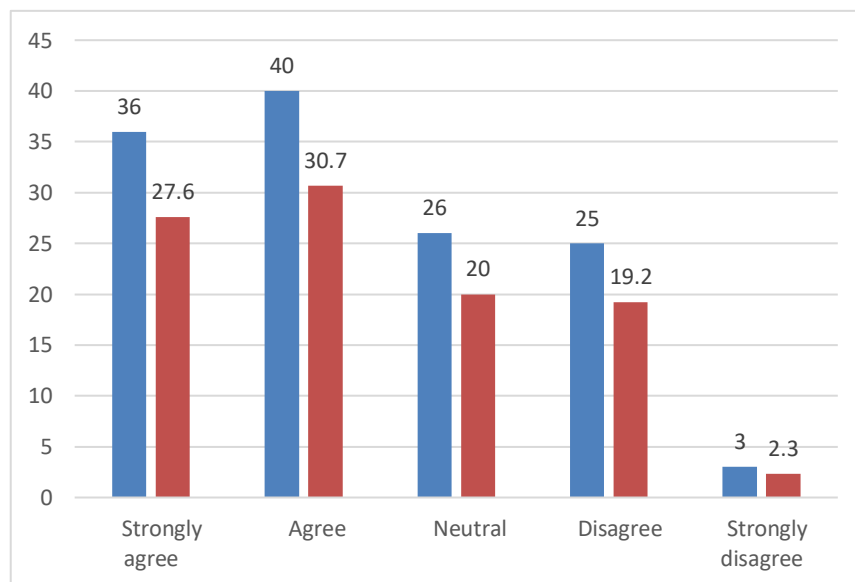


CHART: 4.1.21

CHART REPRESENTING TO UNDERSTAND THE IMPORTANCE OF HEALTH AND SAFETY

INTERPRETATION

From the table 4.1.21, it is observed that 27.6% of the respondents are strongly agreed with the importance to health and safety, 30.7% are agreed, 20% are neutral

TABLE: 4.1.22

TABLE INDICATING THE CERTIFIED WITH PROPER AUTHORITIES

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Strongly agree	33	25.3
2	Agree	27	20.7
3	Neutral	29	22.3
4	Disagree	22	16.9
5	Strongly disagree	19	14.6
	Total	130	100

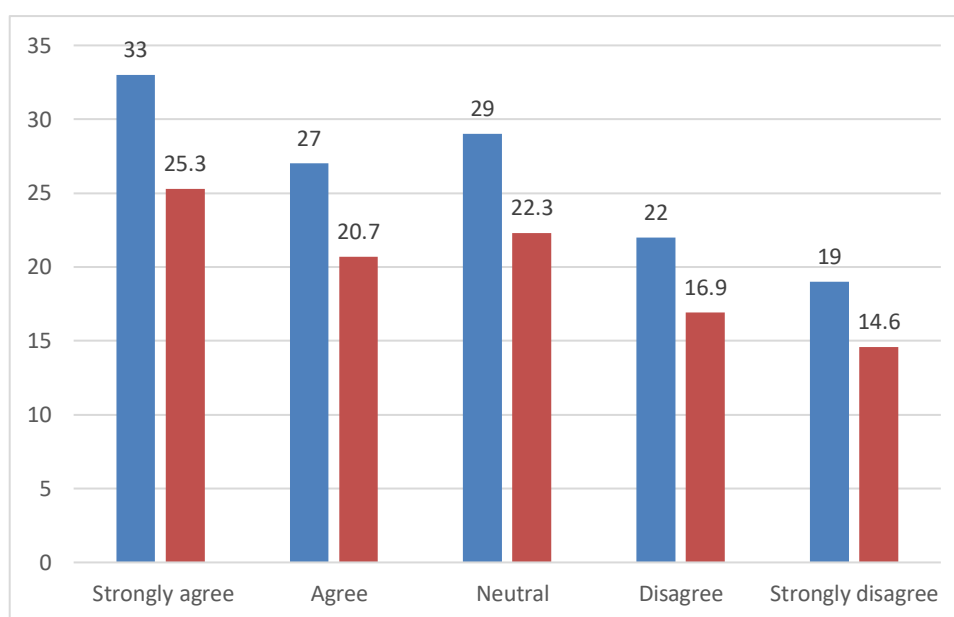


CHART: 4.1.22

CHART REPRESENTING THE CERTIFIED WITH PROPER AUTHORITIES

INTERPRETATION

From the table 4.1.22, it is observed that 25.3% of the respondents are strongly agreed with proper authorities, 20.7% are agreed, 22.3% are neutral

TABLE: 4.1.23
TABLE INDICATING HOW DEDICATED ARE YOU TO YOUR WORK

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Completely	56	43.07
2	not completely	45	34.6
3	Partially	29	22.3
	Total	130	100

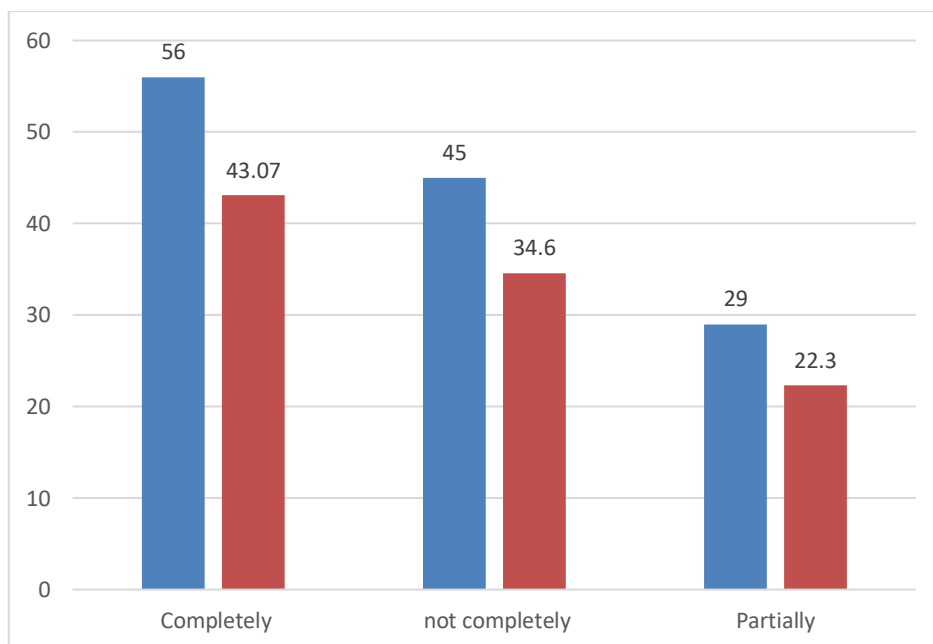


CHART: 4.1.23
CHART REPRESENTING HOW DEDICATED ARE YOU TO YOUR WORK

INTERPRETATION:

From the table 4.1.23, it is observed that 43.07% of the respondents are completely dedicated to work, 34.6% are not completely, 22.3% are partially.

4.2 : CHI SQUARE ANALYSIS

I have considered the analysis to know the relationship between the age group of employees and working in oil and gas industry

Have considered the following table for analysis

TABLE: 4.1.2
TABLE SHOWING THE AGE GROUP

S.No	Particulars	No of Respondent	Percentage of Respondent
1	18 -25 years	52	40
2	25 - 35 years	45	34.6
3	Above 35	33	25.3
	Total	130	100

TABLE: 4.1.3
TABLE INDICATING THE EXPERIENCE BEEN WORKING IN OIL & GAS INDUSTRY

S.No	Particulars	No of Respondent	Percentage of Respondent
1	1-3 years	25	19.2
2	3-5 years	46	35.3
	More than 5 years	59	45.3
	Total	130	100

Null Hypothesis H0: The two categorical variables are independent.

Alternative Hypothesis H1: The two categorical variables are dependent.

The Chi Square test statistic is calculated by using the formula: $\chi^2 = \sum (\frac{O-E}{E})^2$

Where O represents the Observed Frequency. E is the Expected Frequency under the null Hypothesis and computed by: $E = \frac{\text{Row Total} * \text{Column Total}}{\text{Sample Size}}$

We will compare the value of the test statistic to the critical value of χ^2_{α} with degree of freedom = (r - 1) (c - 1), and reject the null hypothesis if $\chi^2 > \chi^2_{\alpha}$.

Observation Table- 1.3

Particulars	1-3 years	3-5 years	More than 5 years	Total
18 -25 years	10	20	22	52
25 - 35 years	5	20	20	45
Above 35	10	6	17	33
Total	25	46	59	130

Expected Table- 1.4:

Particulars	1-3 years	3-5 years	More than 5 years	Total
18 -25 years	10	18.4	23.6	52
25 - 35 years	8.65	15.9	20.4	45

Above 35	6.34	11.6	14.9	33
Total	25	46	59	130

(O-E) Table 1.5

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	1.6	-1.6
25 - 35 years	-3.65	4.1	-0.4
Above 35	3.66	-5.6	2.1

(O-E) (O-E) Table-1.6

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	2.56	2.56
25 - 35 years	13.3	16.8	0.16
Above 35	3.66	31.3	19.4

(O-E) (O-E)/E Table-1.7

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	0.13	0.108

25 - 35 years	13.3	1.05	0.007
Above 35	0.57	2.69	1.30

Calculated value from Table 1.7 = 19.155

Degree of freedom= (r - 1) (c - 1), (3-1)(3-1)= 4

Table value for DOF, Level of significance at 95%, 0.05= 9.487

Calculated value < table value therefore we reject alternate hypothesis and conclude that there is no significant relationship between the expected factor from the organization age group of employees and working in oil and gas industry.

I have considered the analysis to know the relationship between the rate of sitting arrangement and allowance offered by the organization.

Have considered the following table for analysis

TABLE: 4.1.6
TABLE SHOWING THE HOW DO YOU RATE THE SITTING ARRANGEMENT OF THE ORGANIZATION

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	33	25.3
2	Satisfactory	39	30
3	Average	25	19.2
4	Dissatisfactory	22	16.9
5	Highly Dissatisfactory	11	8.4
	Total	130	100

TABLE: 4.1.7
TABLE SHOWING THE HOW DO YOU RATE THE CONVEYANCE
ALLOWANCE OFFERED BY THE ORGANIZATION

S.No	Particulars	No of Respondent	Percentage of Respondent
1	Highly Satisfactory	25	19.2
2	Satisfactory	43	33.07
3	Average	33	25.3
4	Dissatisfactory	18	13.8
5	Highly Dissatisfactory	11	8.4
	Total	130	100

Null Hypothesis H₀: The two categorical variables are independent.

Alternative Hypothesis H₁: The two categorical variables are dependent.

The Chi Square test statistic is calculated by using the formula: $\chi^2 = \sum (O - E)^2 / E$

Where O represents the Observed Frequency. E is the Expected Frequency under the null Hypothesis and computed by: $E = (\text{Row Total} * \text{Column Total}) / \text{Sample Size}$

We will compare the value of the test statistic to the critical value of χ^2_{α} with degree of freedom = (r - 1) (c - 1), and reject the null hypothesis if $\chi^2 > \chi^2_{\alpha}$.

OBSERVATION TABLE- 1.3

Particulars	Highly satisfactory	satisfied	average	dissatisfactory	Highly dissatisfactory	Total
Highly Satisfactory	7	10	11	3	2	33
Satisfactory	5	20	10	0	4	39
Average	10	6	5	4	0	25
Dissatisfactory	2	5	7	5	3	22
Highly Dissatisfactory	1	2	0	6	2	11
Total	25	43	33	18	11	130

Expected Table- 1.4:

Particulars	Highly satisfactory	satisfied	average	dissatisfactory	Highly dissatisfactory	Total
Highly Satisfactory	6.34	10.9	8.37	4.56	2.79	33
Satisfactory	7.5	12.9	9.9	5.4	3.3	39
Average	4.80	8.26	6.34	3.46	2.11	25
Dissatisfactory	4.23	7.27	5.58	3.04	1.86	22
Highly Dissatisfactory	2.11	3.63	2.79	1.52	0.93	11
Total	25	43	33	18	11	130

(O-E) Table 1.5

Particulars	Highly satisfactory	satisfi ed	avera ge	dissatisfactory	Highly dissatisfactory
Highly Satisfactory	0.66	-0.9	2.63	-1.56	-0.79
Satisfactory	-2.5	7.1	0.1	-5.4	0.7
Average	5.2	-2.26	-1.34	0.54	-2.11
Dissatisfactory	-2.23	-2.27	1.42	1.96	1.14
Highly Dissatisfactory	-1.11	-1.63	-2.79	4.48	1.07

(O-E) (O-E) Table-1.6

Particulars	Highly satisfactory	satisfie d	averag e	dissatisfactory	Highly dissatisfactory
Highly Satisfactory	0.43	0.81	2.63	2.43	0.62
Satisfactory	6.25	7.1	0.01	29.1	0.49
Average	27.04	5.10	1.79	0.29	4.45
Dissatisfactory	4.97	5.15	2.01	3.84	1.29
Highly Dissatisfactory	1.23	2.65	7.78	20.07	1.14

Null Hypothesis H0: The two categorical variables are independent.

Alternative Hypothesis H1: The two categorical variables are dependent.

The Chi Square test statistic is calculated by using the formula: $\chi^2 = \sum (O-E)^2 / E$

Where O represents the Observed Frequency. E is the Expected Frequency under the null Hypothesis and computed by: $E = (\text{Row Total} * \text{Column Total}) / \text{Sample Size}$

We will compare the value of the test statistic to the critical value of χ^2_{α} with degree of freedom = $(r - 1) (c - 1)$, and reject the null hypothesis if $\chi^2 > \chi^2_{\alpha}$

(O-E) (O-E)/E Table-1.7

Particulars	Highly satisfactory	satisfie d	averag e	dissatisfactory	Highly dissatisfactory
Highly Satisfactory	0.06	0.07	2.63	4.58	0.22
Satisfactory	0.83	0.55	0.0010	5.38	0.14
Average	5.63	0.61	0.28	0.083	2.10
Dissatisfactory	1.17	0.70	0.36	1.26	0.69
Highly Dissatisfactory	0.58	0.73	2.78	13.2	1.14

Calculated value from Table 1.7= 45.77

Degree of freedom= (r - 1) (c - 1), (5-1)(5-1)= 4 * 4 = 16

Table value for DOF, Level of significance at 95% , 0.05= 26.29

Calculated value > Table value therefore we suggest alternate hypothesis and conclude that there is a significant relationship between the rate of sitting arrangement and allowance offered by the organization.

CHAPTER 5

5.1 SUMMARY OF FINDINGS

Around 52.3% of the respondents are Female and the remaining 47.6% of the respondents are female.

Around 40% of the respondents are 18-25 years, 34.6% are 25-35 years and the remaining 25.3% are above 35 years.

Around 19.2% of the respondents are 1-3 years of experience, 35.3% are 3-5 years and the remaining 45.3% are more than 5 years.

Around 24.6% of the respondents are highly satisfied with the working environment, 32.3% are satisfactory, 26.9% are averagely satisfactory.

Around 31.5% of the respondents are highly satisfied with the medical benefits provided by the organization, 21.5% are satisfactory, 24.6% are average.

Around 25.3% of the respondents are highly satisfied with the sitting arrangement provided by the organization, 30% are satisfactory, 19.2% are average

Around 19.2% of the respondents are highly satisfied with the conveyance allowance provided by the organization, 33.07% are satisfactory, 25.3% are average.

Around 42.3% of the respondents are highly satisfied with the leave policy provided by the organization, 23.8% are satisfactory, 26.9% are average.

Around 63.07% of the respondents get regular increments.

Around 38.4% of the respondents are every time with the first aid box with prescribed contents is available , 37.6% are mostly, 23.8% are sometimes only.

Around 21.5% of the respondents are highly satisfied with the working hours of the organization , 32.3% are satisfied, 40% are average.

Around 22.3% of the respondents are highly satisfied with the drinking water facilities provided, 30.7% are satisfied, 24.6% are average.

Around 27.6% of the respondents are highly satisfied with the canteen facilities provided, 25.3% are satisfied, 30% are average.

Around 30.7% of the respondents are highly satisfied with the restroom and the lunch room facilities provided

Around 29.2% of the respondents are strongly agreed with the safety and to improve the performance, 20% are agreed, 34.6% are neutral.

Around 50% of the respondents are aware of the various measures provided by the industry to employees, 34.6% are not, 15.3% are partially.

Around 28.4% of the respondents are highly satisfied with the overall satisfaction with the employee welfare activities, 24.6% are agreed, 24.6% are neutral.

Around 30.7% of the respondents are almost come across the grievance regarding food and other facilities, 25.3% are always, 22.3% are often and the remaining 15.3% are sometimes.

Around 30.7% of the respondents are agreed with the health and safety regulations at work, 30% are strongly agreed, 25.3% are neutral

Around 30% of the respondents are strongly agreed with refusing to work in unsafe environment, 27.6% are agreed, 25.3% are neutral

Around 27.6% of the respondents are strongly agreed with the importance to health and safety, 30.7% are agreed, 20% are neutral

Around 25.3% of the respondents are strongly agreed with proper authorities, 20.7% are agreed, 22.3% are neutral

Around 43.07% of the respondents are completely dedicated to work, 34.6% are not completely, 22.3% are partially.

5.2 SUGGESTIONS AND RECOMMENDATIONS

- The company has to create the awareness for the workers regarding health and safety.
- They have to provide effective arrangements to the workers for communicating their health and safety matters.
- It is better to provide frequent health and safety training, at least once in a year.
- The company has to provide enough drinking water facility available at all the time.
- The management has to take necessary steps to reduce the stress level of the workers.
- Orientation programmes can be conducted to make the workers to feel that their work environment is safe to work.
- The maintenance department has to maintain the machines properly to reduce lead-time.
- Proper training has to be given to the workers to avoid frequent accidents.

5.3 CONCLUSION

It is revealed from the study that , the health and safety measures adopted in innovative oil and gas industry in chennai are provided to the workers according to the provisions of the factories act. It reveals that the awarness of the workers about health and safety in workplace is inadequate . Also repeated accidents like electric shocks, finger injuries are occurred at the work place . suitable ideas were suggested to avoid accidents and to improve the health and safety in the organization in very effective . most of the workers were satisfied with the health and safety measures adopted in the company . The role of management implementing health and safety in the organization is very effective . If the company implements effective disciplinary procedures , it will help the company to go with their policies and also to maintain health and safety in the organization.

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APPENDIX - I QUESTIONNAIRE

Q1. Gender of Respondent

- A. Male B. Female

Q2. Age of respondent

- A. 18-25yrs B. 25-35yrs C. above 35

Q3. Experience of working in oil & gas industry

- A. 1-3years B. 3-5years C. More than 5 years

Q4. How do you rate the Working Environment of the Organization?

- A. Highly satisfactory B. Satisfactory C. Averagely Satisfactory
D. Dissatisfactory E. Highly Dissatisfactory

To understand the various measures provided in the company.

Q5. How do you rate the medical benefits provided by the Organization for the employees & their families?

- A. Highly satisfactory B. Satisfactory C. Averagely Satisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q6. How do you rate the sitting arrangement of the Organization?

- A. Highly satisfactory B. Satisfactory C. Averagely Satisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q7. How do you rate the Conveyance Allowance offered by the Organization?

- A. Highly satisfactory B. Satisfactory C. Averagely Satisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q8. How do you rate leave policy of the Organization?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

To measure the facilities offered in the other benefits like health and safety schemes.

Q9. Do you get regular increments ?

- A. Yes B. NO

Q10. How often first aid box with prescribed contents is available?

- A. Every time B. Mostly C. Sometimes only

Q11. How do you rate the working Hours of the Organization?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q12. Are you satisfied with the drinking water facilities provided?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q13. Rate the canteen services provided by the organization.

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q14. Rate the Rest room and lunch room facility to the employees?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

To measure the facilities offered in the other benefits like health and safety schemes.

Q15. Do you think activities of the Organization give a feeling of safety and improves your performance?

- A. Strongly agree B. Agree C. Neutral
D. Disagree E. Strongly Disagree

Q16. Are you aware of the various measures provided by the industry to employees?

- A. Yes B. No C. Partially

Q17. Rate the overall satisfaction with employee welfare activities of the Organization?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
D. Dissatisfactory E. Highly Dissatisfactory

Q18. How often you come across grievances regarding food and other facilities?

- A. Almost B. Always C. Often
D. Sometimes E. Rarely F. Never

Awareness at workplace

Q19. Clear about the health and safety regulations at work

- A. Strongly agree B. Agree C. Neutral
- D. Disagree E. Strongly Disagree

Q20. Refusing to work in unsafe environment

- A. Strongly agree B. Agree C. Neutral
- D. Disagree E. Strongly Disagree

Q21. To understand the importance of health and safety

- A. Strongly agree B. Agree C. Neutral
- D. Disagree E. Strongly Disagree

Q22. Certified with proper authorities

- A. Strongly agree B. Agree C. Neutral
- D. Disagree E. Strongly Disagree

Q23. How dedicated are you to your work?

- A. Completely B. Not completely C. Partially

To understand whether the schemes will motivate the employees towards work.

Q24. Are you satisfied with the training programs provided to you?

- A. Highly satisfactory B. Satisfactory C. AveragelySatisfactory
- D. Dissatisfactory E. Highly Dissatisfactory

Q25. What is your first objective in the company?

- A. Higher productivity B. Expert in Skills and Knowledge
- C. Gain Individuality

Q26. Are you satisfied with the improvement in living condition of the employees.?

- A. Excellent B. Above Average C. Average
- D. Below Average E. Un Satisfactory

Q27. Are satisfied with the motivational factor like recognition.

- A. Excellent B. Above Average C. Average
- D. Below Average E. Un Satisfactory

Q28. Which part do you think need improvement with regards to employee welfare?

- A. Food and Environment B. Transport C. Salary
- D. Trainings E. Extra Curricular Activities

APPENDIX - II JOURNAL

A STUDY ON EMPLOYEE HEALTH AND SAFETY MANAGEMENT SYSTEM IN OIL AND GAS INDUSTRY AT CHENNAI

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600119

ABSTRACT

The study on employee health and safety management system in oil and gas industry is used to give an good clarity on the system management provided to employees. The purpose of this study is to find out the safety measures provided to employees in oil and gas sector chennai . In order to have good quality safety management system we should have tools to measure safety within organization to understand where we stand according to safety performance and since measuring qualitative component is complex, so comparison between tools and methods of measurement should be implemented in order to get efficient safety management system. The survey in the form of google forms is used to collect sample size of 130 respondents .descriptive analysis and chi square analysis were used to analyze the given data . finally , the result of the research indicates the health and safety measures provided to employees.

Key words : Health and safety , Employees , system management ,
Organization

1 . INTRODUCTION

Due to rapid industrialization, industrial workers are exposed to several types of hazards and accidents. Every year lakhs of workers are injured due to mechanical, chemical, electrical and radiation hazards and it leads to partial or total disablement. So in recent years, greater attention is given to health and safety due to pressure from government, trade unions, labour laws and awareness of employers.

The efficiency of workers depends to a great extent on the environment in which the work. Work environment consists of all the factors, which act and react on the body and mind of an employee. The primary aim is to create an environment, which ensures the greatest ease of work and removes all causes of worries. Occupational health and safety is a discipline with a broad scope involving many specialized fields. In its broadest sense, it should aim at:

- a) The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.
- b) The prevention among workers of adverse effects on health caused by their working conditions.
- c) The protection of workers in their employment from risks resulting from factors adverse to health.
- d) The placing and maintenance of workers in an occupational environment adapted to physical and mental needs.
- e) The adaptation of work to humans. Successful occupational health and safety practice requires the collaboration and participation of both employers and workers in health and safety programmes, and involves the consideration of issues relating to occupational medicine, industrial hygiene, toxicology, education, engineering safety, ergonomics, psychology, etc. Occupational health issues are often given less attention than occupational safety issues because the former are generally more difficult to confront. However, when

health is addressed, so is safety, because a healthy workplace is by definition also a safe workplace. The converse, though, may not be true - a so-called safe workplace is not necessarily also a healthy workplace. The important point is that issues of both health and safety must be addressed in every workplace.

1.2 STATEMENT OF THE PROBLEM

Employee welfare measures are an effort towards relieving the industrial workers from want, worry and the adverse effects of industrialization, by improving working and living conditions. The proper administration and implementation of employee welfare facilities plays an important role in fulfilling the economic, social, and psychological needs of employees. In satisfying these needs a favourable attitude towards the job can be developed. Job satisfaction is an attitude, which is the result of many likes and dislikes experienced while working in an organization. The provision of employee welfare facilities is one of the factors instrumental in promoting job satisfaction.

1.3 SCOPE OF THE STUDY

This study was given an overview of the health and safety measures existing at Innovative Oil industry in chennai Since health and safety are two important elements essential for improving the productivity of an organization, a study on the existing health and safety measures would help the organization to perform better. This study was highlight on the perception of the workers regarding health and safety. Innovative Oil industry in chennai Can identify the areas where it can be improved, so as to improve the performance of the workers. This study would also help to analyze the satisfaction level of the workers towards health and safety measures and suggest provisions to improve health and safety.

1.4 OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVES

To study the employees health and safety measures in oil and gas industry
Chennai

SECONDARY OBJECTIVES

- To understand the various measures provided in the company.
- To know the satisfaction level of the employees in the welfare measures offered
- To measure the facilities offered in the other benefits like health and safety schemes.
- To create some awareness at workplace
- To find out the expectations of Employees from Management.
- To understand whether the schemes will motivate the employees towards work.

2. REVIEW OF LITERATURE

Johri Puja and Mehrotra Sanjeev (2014) from their study they concluded that voluntary welfare measure should be provided to employee. They study the level of awareness of employee about the various welfare measures.

Bharti P., Parel and Ashok Kumar (2013) stated to identify where any relation exists between welfare provisions and employee's satisfaction. His study also reviews on welfare provisions and employee's satisfaction.

Srinivas K. T. (2013) in his study find out various welfare facilities provided at the company (Bosch limited Bangalore). The study discusses extend of awareness among the employees with various statutory and no statutory welfare measure. It is found that most of the welfare facilities like medical canteen, working environment safety measure etc. are provide by company and most of the employees are satisfied with the welfare facilities.

Mohan Reena& Panwar (2013) their paper aims at providing information about the employee welfare schemes prevalent in retail stores in Udaipur region. Their studies provided not only intra-mural facilities but also extra-mural facilities. Wading up their welfare policies by including health and enduing standard of the employee's which leads to malware employee's welfare schemes are a means to imp lone the productivity and efficiency of the employee's. This paper aims at

studding the retail sector which is winging out innovating schemes to please its talented work force and retain them out a longer time period.

Reshma S. BasuaraRajuDr. (2013) the statutory welfare measure provided by donimalai iron ore mine. They study analysis and interpret about the statutory welfare measures in the proposed sample unit. It stated the employee's welfare is a comprehensive term including various services offered to employees of the organization.

SalariaPoonam&SalariaSumit (2013) the analysis of their study concept of employee welfare. The study resultant that employees in auto sector are highly satisfied with the intra-mural welfare measure.

ChaudharyAsiya Dr. (2011) through her paper she identifies the employee welfare measure in Indian railway, her study analysis that inadequacy of financial resources is one of the important reasons pointed out by railway in lack in welfare facilities provided to customer. By the study suggestion are made that it may be railway minimize the cost of social burden and apply for government for betterment of welfare provisions.

3. RESEARCH METHODOLOGY

Research design : In this study descriptive research is used in research topic.

Sample size : sample size of 130 employees working in oil and gas sectors chennai .

Sources of data : The primary data for the study is collected through the questionnaire with the help of google forms . The secondary data is collected by referring website , journals , articles and research papers.

Sampling technique and tools used : The collected data will be analyzed with the help of statistical tools. The percentage analysis is used.

TOOLS FOR ANALYSIS

- Percentage Analysis

- Chart Analysis
- Chi-square Analysis

4. RESULTS

4.1 CHI SQUARE ANALYSIS

I have considered the analysis to know the relationship between the age group of employees and working in oil and gas industry

Have considered the following table for analysis

TABLE SHOWING THE AGE GROUP

S.No	Particulars	No of Respondent	Percentage of Respondent
1	18 -25 years	52	40
2	25 - 35 years	45	34.6
3	Above 35	33	25.3
	Total	130	100

TABLE INDICATING THE EXPERIENCE BEEN WORKING IN OIL & GAS INDUSTRY

S.No	Particulars	No of Respondent	Percentage of Respondent
1	1-3 years	25	19.2

2	3-5 years	46	35.3
	More than 5 years	59	45.3
	Total	130	100

Null Hypothesis H0: The two categorical variables are independent.

Alternative Hypothesis H1: The two categorical variables are dependent.

The Chi Square test statistic is calculated by using the formula: $\chi^2 = \sum (\frac{O-E}{E})^2$

Where O represents the Observed Frequency. E is the Expected Frequency under the null Hypothesis and computed by: $E = \frac{(\text{Row Total} * \text{Column Total})}{\text{Sample Size}}$

We will compare the value of the test statistic to the critical value of χ^2_{α} with degree of freedom = (r - 1) (c - 1), and reject the null hypothesis if $\chi^2 > \chi^2_{\alpha}$.

Observation Table

Particulars	1-3 years	3-5 years	More than 5 years	Total
18 -25 years	10	20	22	52
25 - 35 years	5	20	20	45
Above 35	10	6	17	33
Total	25	46	59	130

Expected Table

Particulars	1-3 years	3-5 years	More than 5 years	Total
18 -25 years	10	18.4	23.6	52
25 - 35 years	8.65	15.9	20.4	45
Above 35	6.34	11.6	14.9	33
Total	25	46	59	130

(O-E) Table

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	1.6	-1.6
25 - 35 years	-3.65	4.1	-0.4
Above 35	3.66	-5.6	2.1

(O-E) (O-E) Table

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	2.56	2.56
25 - 35 years	13.3	16.8	0.16
Above 35	3.66	31.3	19.4

(O-E) (O-E)/E Table

Particulars	1-3 years	3-5 years	More than 5 years
18 -25 years	0	0.13	0.108
25 - 35 years	13.3	1.05	0.007
Above 35	0.57	2.69	1.30

Calculated value from Table 1.7 = 19.155

Degree of freedom= (r - 1) (c - 1), (3-1)(3-1)= 4

Table value for DOF, Level of significance at 95%, 0.05= 9.487

Calculated value < table value therefore we reject alternate hypothesis and conclude that there is no significant relationship between the expected factor from the organization age group of employees and working in oil and gas industry.

5. SUGGESTIONS

The company has to create the awareness for the workers regarding health and safety.

- They have to provide effective arrangements to the workers for communicating their health and safety matters.
- It is better to provide frequent health and safety training, at least once in a year.
- The company has to provide enough drinking water facility available at all the time.
- The management has to take necessary steps to reduce the stress level of the workers.
- Orientation programmes can be conducted to make the workers to feel that their work environment is safe to work.

6. CONCLUSION

It is revealed from the study that, the health and safety measures adopted in Innovative Oil and gas industry in chennai are provided to the workers according to the provisions of the factories Act. It reveals that the awareness of the workers about health and safety in the workplace is inadequate. Also repeated accidents like electric shocks, finger injuries are occurred in the workplace. Suitable ideas were suggested to avoid those accidents and to improve the health and safety measures. The role of management in implementing health and safety in the organization is very effective. Most of the workers were satisfied with the health and safety measures adopted in the company.

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Dear Authors,

We are glad to inform you that your paper has been accepted as per our fast peer review process:

Authors Name: Franklin J, Dr. Lavanya. M.

Paper Title: A Study on Employee Health and Safety Management System in Oil and Gas Industry Chennai

Paper Status: Accepted

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A Study on Employee Health and Safety Management System in Oil and Gas Industry at Chennai

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ABSTRACT

The study on employee health and safety management system in oil and gas industry is used to give an good clarity on the system management provided to employees. The purpose of this study is to find out the safety measures provided to employess in oil and gas sector chennai . In order to have good quality safety management system we should have tools to measure safety within organization to understand where we stand according to safety performance and since measuring qualitative component is complex, so comparison between tools and methods of measurement should be implemented in order to get efficient safety management system. The survey in the form of google forms is used to collect sample size of 130 respondents. descriptive analysis and chi square analysis were used to analyze the given data. finally, the result of the research indicates the health and safety measures provided to employees.

Key words: Health and safety, Employees, system management, Organization

INTRODUCTION

Due to rapid industrialization, industrial workers are exposed to several types of hazards and accidents. Every year lakhs of workers are injured due to mechanical, chemical, electrical and radiation hazards and it leads to partial or total disablement. So in recent years, greater attention is given to health and safety due to pressure from government, trade unions, labour laws and awareness of employers.

The efficiency of workers depends to a great extends on the environment in which the work. Work environment consists of all the factors, which act and react on the body and mind of an employee. The primary aim is to create an environment, which ensures the greatest ease of work and removes all causes of worries. Occupational health and safety is a discipline with a broad scope involving many specialized fields. In its broadest sense, it should aim at:

- a) The promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.
- b) The prevention among workers of adverse effects on health caused by their working conditions.
- c) The protection of workers in their employment from risks resulting from factors adverse to health.
- d) The placing and maintenance of workers in an occupational environment adapted to physical and mental needs.
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Statement of the Problem

Employee welfare measures are an effort towards relieving the industrial workers from want, worry and the adverse effects of industrialization, by improving working and living conditions. The proper administration and implementation of employee welfare facilities plays an important role in fulfilling the economic, social, and psychological needs of employees. In satisfying these needs a favourable attitude towards the job can be developed. Job satisfaction is an attitude, which is the result of many likes and dislikes experienced while working in an organization. The provision of employee welfare facilities is one of the factors instrumental in promoting job satisfaction.

Scope of The Study

This study was given an overview of the health and safety measures existing at Innovative Oil industry in Chennai. Since health and safety are two important elements essential for improving the productivity of an organization, a study on the existing health and safety measures would help the organization to perform better. This study was highlight on the perception of the workers regarding health and safety. Innovative Oil industry in Chennai can identify the areas where it can be improved, so as to improve the performance of the workers. This study would also help to analyze the satisfaction level of the workers towards health and safety measures and suggest provisions to improve health and safety.

OBJECTIVES OF THE STUDY

Primary Objectives

To study the employee's health and safety measures in oil and gas industry Chennai

Secondary Objectives

- To understand the various measures provided in the company.
- To know the satisfaction level of the employees in the welfare measures offered
- To measure the facilities offered in the other benefits like health and safety schemes.
- To create some awareness at workplace
- To find out the expectations of Employees from Management.
- To understand whether the schemes will motivate the employees towards work.

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RESEARCH METHODOLOGY

Research design:

In this study descriptive research is used in research topic.

Sample size:

Sample size of 130 employees working in oil and gas sectors Chennai.

Sources of data:

The primary data for the study is collected through the questionnaire with the help of google forms. The secondary data is collected by referring website, journals, articles and research papers.

Sampling technique and tools used:

The collected data will be analyzed using statistical tools & percentage analysis.

Tools for Analysis

- Percentage Analysis
- Chart Analysis
- Chi-square Analysis

RESULTS

Chi Square Analysis

I have considered the analysis to know the relationship between the age group of employees and working in oil and gas industry

Have considered the following table for analysis

Table 1: Showing the Age Group

S.No	Particulars	No of Respondent	Percentage of Respondent
1	18 -25 years	52	40
2	25 - 35 years	45	34.6
3	Above 35	33	25.3
	Total	130	100

Table: 2 Indicating the Experience Been Working In Oil & Gas Industry

S.No	Particulars	No of Respondent	Percentage of Respondent
1	1-3 years	25	19.2
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Null Hypothesis H0: The two categorical variables are independent.

Alternative Hypothesis H1: The two categorical variables are dependent.

The Chi Square test statistic is calculated by using the formula: $\chi^2 = \sum (\frac{O-E}{E})^2$

Where O represents the Observed Frequency. E is the Expected Frequency under the null Hypothesis and computed by:
 $E = \frac{\text{Row Total} * \text{Column Total}}{\text{Sample Size}}$

We will compare the value of the test statistic to the critical value of $\chi^2_{2\alpha}$ with degree of freedom = (r - 1) (c - 1), and reject the null hypothesis if $\chi^2 > \chi^2_{2\alpha}$.

Observation Table

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SUGGESTIONS

The company has to create the awareness for the workers regarding health and safety.

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- It is better to provide frequent health and safety training, at least once in a year.
- The company has to provide enough drinking water facility available at all the time.

- The management has to take necessary steps to reduce the stress level of the workers.
- Orientation programmes can be conducted to make the workers to feel that their work environment is safe to work.

CONCLUSION

It is revealed from the study that, the health and safety measures adopted in Innovative Oil and gas industry in Chennai are provided to the workers according to the provisions of the factories Act. It reveals that the awareness of the workers about health and safety in the workplace is inadequate. Also repeated accidents like electric shocks, finger injuries are occurred in the workplace. Suitable ideas were suggested to avoid those accidents and to improve the health and safety measures. The role of management in implementing health and safety in the organization is very effective. Most of the workers were satisfied with the health and safety measures adopted in the company.

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