

# **CHAPTER – III**

## **Literature Review**

**&**

## **Methodology**

### **3.1: Review of Existing Literature**

For the development of a research thesis, review of literature is an important part, which is helpful for a researcher to give an insight look to the problem and gather as much as information on the research studies that have been conducted before. It also serves as a framework of reference for studies, helps to focus on the feasibility of the study and also guides to frame research methodology. Keeping in view the objectives and variables, considered in this study, we have gone through various books, research theses, and journal articles; and a comprehensive review of literature of such investigations is mentioned here.

Joshi N. M. in his book, “Trade Union Movement in India” wrote that the uncovered areas by the minimum standard of working conditions fixed by the Factories Act and other benefits under social legislation are covered by employee welfare which employers make for the benefit of the employees as well as for their long-term benefits. (Joshi, 1927)

Seth in his book “Labour in Indian Coal Industry” discussed the bitter situations of Indian Coal miners under colonial rule, where no welfare activities were done and described the workers’ bitter situation because of the absence of such kind of activities (Seth, 1940).

Srivastava in his thesis, “Labour Welfare in India” explained in detail the labour welfare measures undertaken by selected public and private sector companies in India. It has been found that in the provision of welfare facilities to workers and employees, private sector companies are lagging behind public sector companies. (Srivastava, 1953).

Omprakash Verma in his thesis, “Labour Welfare and Industrial Peace in India” pointed out that industrial discontent has become a common phenomenon among different industries because of the failure of the industries to provide adequate welfare facilities to their employees (Verma, 1958-65).

Badhwan in his thesis, “Workmen’s compensation Act, 1923 - with special reference to coal Mining Industry in India” revealed that the provision of welfare for coal miners are execrable and the victims of mine accidents are paid very less compensation. So, there is a great need for taking care of the welfare and social security aspects of the miners (Badhwan, 1959-64).

Dharam Veersingh’s thesis, “Social and Economic Welfare Services in Uttar Pradesh” reflects that after independence, the successive Governments were unable to provide to the needy people the required social and economic welfare services and because of that particular reason, many people were living below the poverty line (Veersingh, 1963-67).

V.L.Srivastava in his book, “A Socio-Economic Survey of the Workers in the Coal Mines of India” revealed the poor socio-economic conditions of coal workers in India, especially in Bihar. He found that high indebtedness, low wages and poor welfare facilities- these factors are responsible behind the poor socio-economic conditions of miners (Srivastava, 1970).

Sharma in his thesis, “Living Conditions of Colliery Workers in Jharia Coal Field’s” explained the bitter condition of workers and employees in Jharia coal fields due to poor welfare facilities and absence of other necessary supports from employer’s site. Hence, there is a great need for improvement of welfare facilities to enhance the living conditions of the coal workers (Sharma, 1974).

Mishra in his thesis, “History and Working of Trade Unions in the Coal Mining Industry of Bihar” threw light on history, growth, and development of trade unions in the mining industry. He also discussed the role of trade unions in mitigating the problems of workers and employees by interfering in various welfare activities (Mishra, 1978).

Garewal's article, "Dimensions of Welfare in Coal Industry" reveals that employee welfare has got acceleration and top priority after in 1973 the nationalisation of the coal industry which has brought a major revolution in its operating philosophy (Garewal, 1978).

Kudchelkar in his book, "Aspects of Personnel Management and Industrial Relations" explained the necessity of labour welfare for maintaining good Industrial Relations. He felt that employees need to be provided with good welfare facilities as they are exposed to various risks and hazards (Kudchelkar, 1979).

SubbaRao in his M.Phil. dissertation, "Women Welfare in Jute Industry: A Study on Welfare Programmes in selected Jute Mills in Andhra Pradesh" revealed the miserable condition of the women workers of the Shri Bhajaranga Jute Mills, Guntur, Shri Krishna Jute Mills, because of insignificant welfare facilities provided by the companies. So, it has been felt that there is a huge need for improvement of welfare for the sake of the women (SubbaRao, 1980).

Tyagi, B. P. in his book, "Labour Economics and Social Welfare" discussed theoretically the intra-mural and also extra-mural labour welfare practices in India and also discussed the involvement of various agencies in labour welfare (Tyagi, 1982).

Varma Pramod in his book, "Labour Economics and Industrial Relations" explained that mainly three types of welfare facilities are provided by the organisations. According to him, provision of subsidised canteens, crèches and medical facilities come under the first type of welfare facilities, while cooperative credit facilities and educational assistance come under the second type of welfare facilities. The third type of welfare facilities is provided by community centres, welfare centres, etc. (Varma, 1987).

Ahuja's book- "Personnel Management" deals with the necessity of labour welfare and social security in India. He explained that employees can be satisfied with the help of the provision of welfare and social security measures and that can lead them to show their improved performance (Ahuja, 1988).

Monappa Arun in his book, "Industrial Relations" explained in detail the labour welfare and social security measures. Problems faced by enforcement machinery for implementation of these welfare and social security measures have also been discussed in this book (Monappa, 1990).

Narayana Murthy in his thesis, "Employee Welfare in Public Sector – A Study on Selected Units in Visakhapatnam" presented a clear picture of the various welfare facilities provided by public sector companies like - BHPV Ltd, Hindustan Shipyard Limited, Visakhapatnam, Port Trust, and Dredging Corporation of India. It has also been found from the study that all the four public sector enterprises are highly concerned about employee welfare and they are doing their best in this field to create their own image (Murthy, 1992).

Krishnaiah in his thesis, "Work Life and Welfare of Coal Miners in SCCL" revealed the picture of work life of coal miners, where he drew the miserable work life condition of the coal miners. The miserable condition of the coal workers is mainly because of the absence of welfare activities from the end of the employers (Krishnaiah, 1994).

Sambasivarao's thesis, "A Study of Welfare, Health and Safety of Workers in the Cement Industry of Guntur District" gives us an idea about the health, safety, and welfare measures provided by various cement companies in the Guntur district of Andhra Pradesh. The study found that large cement companies provide better health, safety and welfare measures as compared to small and medium scale cement companies (Sambasivarao, 1996).

A Spurgeon, J M Harrington, C L Cooper jointly conducted a research study entitled “Health and safety problems associated with long working hours: a review of the current position”. Here, they have expressed that in member states of the European Community, the European Community Directive on Working Time, by November 1996, should have been implemented. Including the right of employees to refuse to work more than 48 hours a week, the European Community Directive on Working Time contains several requirements related to working hours. Arguing that there is no convincing evidence that hours of work should be limited to health and safety grounds, the United Kingdom government attempted to oppose the Directive. Much of the study in this field has focused on the glitches of shift working and that is why previous reviews have tended to give emphasis on this aspect of working hours. However, according to the study, there is very less information regarding the central element of the terms of the Directive, i.e. overtime work effects. This paper has done assessments on the recent evidence associated with the potential effects on health and also on the performance of extensions to the normal working day. In the literature, several gaps are addressed. Researchers have restricted their research, till date, to the boundary of health outcomes; such as cardiovascular disorders and mental health. Little attention has been given on potential effects, normally related to stress- for example, musculoskeletal disorders, gastrointestinal disorders, and problems connected to depression of the immune system. Also, a few systematic investigations of performance effects have been there, and little consideration of the implications for occupational exposure limits of extensions to the working day. Current data is concerned with the circumstances where working hours surpass 50 a week. Regarding shift work, it is clear that a range of modifying factors have an impact on the level and nature of health and also performance outcomes. These include motivation and the attitudes of the concerned people, the requirements of the job, and other

characteristics of the organisational and cultural environment. They concluded that there is sufficient proof to raise concerns about the risks related to health and safety of long working hours. For defining the nature and level of different risks, further research work is required (Spurgeon, Harrington, & Cooper, 1997).

Tripathi's book- "Personnel Management & Industrial Relations" deals with the principles of labour welfare services, types of labour welfare services, different legislation. He also gave an insight look into various welfare facilities in terms of medical care, sickness benefit, unemployment benefit, maternity benefit, etc., in his book (Tripathi, 1998).

Haworth, Narelle, Claes Tingvall, and Naomi Kowadlo, in their study "Review of Best Practice Road Safety Initiatives in The Corporate and/or Business Environment" summarised an inquiry of the potentiality of introducing road safety-based initiative in the context of a corporate environment. Many government and private organisations, in response to a growing awareness of the role of work-related driving in crashes and the associated costs, have developed programs to improve fleet safety. Among road safety agencies, there is significant interest in fleet safety as a strategic tactic for improving the safety of the total vehicle fleet. Corporate purchasers of vehicles and transport services, under this view, can specify top to bottom safety standards. Thus, for providers of vehicles and transport services, this helps to create an economic imperative to meet these standards. To focus on a market-driven method and target fleets, principally the government fleet, is a possible approach to occupant protection for road safety agencies. It may be necessary for evaluation and cost estimation for convincing both fleets and government agencies of the practicability of this approach for improving road safety. But, the study identified, difficulties are there of identification of fleet vehicles in most of the road crash databases, which makes it difficult to compare the safety performance of the fleet and private vehicles and evaluating large-scale programs has also

become difficult. Promotion of improvements, according to the study, from the OHS legal perspective, for fleet safety should be considered with the appropriate approach in the short-term, accompanied by encouragement of longer-term legislative changes (Haworth, Narelle, Tingvall, and Kowadlo, 2000).

Matanoski Genevieve, Graves Carol Gevecker, Tardiff Robert carried out research entitled “Carbonless copy paper and workplace safety: A review”, where they have studied safety-related issues in the context of Carbonless copy paper (CPP) workers. Introduced in 1954, Carbonless copy paper (CCP) is omnipresent in the United States marketplace, and many workers come with its contact because of this. Safety-related issues of the workers who handle a huge amount of CCP has been addressed in various reports and studies; and what, if any, hazards to health CCP might pose, has been sought by NIOSH on two occasions. The world's literature on CCP has been encompassed in this review which also provides analysis of weight-of-evidence the safety of CCP workers in the US. Using repeat insult patch tests, CCP is methodically studied on large sets of humans. An association between carbonless copy paper use and generic symptoms have been observed in a study in 1974. But later NIOSH assessed the literature in the context of possible hazards to health because of CCP, and NIOSH concluded that CCP is not a notable hazard to the workers because it has only a slight possibility to produce skin irritation which is also mild and transient (Graves, Matanoski, & Tardiff, 2000).

David, A Decenzo and Stephen P. Robbins in their book, “Personnel / Human Resource Management” discussed in detail the various benefits and services that employers provide to their employees in the companies. Also, they explained the necessity of social security premiums, unemployment compensation, workers compensation, and state disability programs (Decenzo, and Robbins, 2001).

Michael V. P. in his book, "Human Resource Management and Human Relations" said that quality of work life of employees can be improved with the help of the provision of intra-mural and extra-mural welfare facilities which paves the way of good human relations among different cadres of employees (Michael, 2001).

Kannan in his work "State Assisted Social Security for Poverty Alleviation and Human Development: Kerala's Record and its Lessons" stated that among the sub-sectors of the informal sectors there is an ever-increasing demand for welfare funds; and that's because of, in an unprotected labour market, the desperate reactions of the workers for a measure of social security (Kannan, 2001).

H Yoshidaa, H Kawashimob, K Naganoa, K Nakamurac N, Nakanishia in their research work - "Long working hour and risk of hypertension in Japanese male white collar workers" intended to evaluate the correlation between extensive working hours and the risk of hypertension. Hypertension free 941 male white-collar workers from Osaka, Japan, aged 35–54 years were taken into consideration for the research purpose and they were prospectively checked by successive annual health examinations. The hypertension level reached above the borderline level of 424 men. Taking into consideration, the relative risk for hypertension, those who worked less than 8.0 hours per day were compared with those who worked 10.0–10.9 hours per day. It was found that those who worked less than 8.0 hours per day, their hypertension above the borderline level was 0.48 and those who worked 10.0–10.9 hours per day, their hypertension above the borderline level was 0.63. It was indicated by the results that among Japanese male white-collar workers, extended working hours are adversely associated with the risk for hypertension (Nakanishi, Yoshida, Nagano, Kawashimo, Nakamura, & Tatara, 2001).

Karen J.M. Niven in his study “A review of the application of health economics to health and safety in healthcare” described literature review which is aimed to evaluate economic assessments of safety and health interventions in the context of healthcare and he identified critical limitations in methodology of published works. Costing studies have been given emphasised mostly in earlier studies but in their own right which is not economic assessments. He opined that healthcare managers, health and safety professionals, health economists have not worked together and does not have role clarity. It has been concluded that the, to help to make valid decisions about safety and health investment and risk control approaches, the aim of future research should be assisting the National Health Service (Karen, 2002).

Pylee M. V. and George A.Simon in their book, “Industrial Relations and Personnel Management” explained that besides various welfare facilities, various retirement benefits such as provident fund, gratuity and pension should be provided to the employees by the companies; so that besides instilling in them a feeling of security, the provision of these benefits assists employees to be free from fear of want and fear of starvation (Pylee, and George, 2003).

Moulvi in his thesis, “Impact of Social Security-cum-Labour welfare Measures on Production, Absenteeism and Attitudes of Industrial workers - A Comparative Study of KSRTC Regional Work Shops of Hubli and Bangalore” found that because of provision of welfare facilities, the productivity of the workers has increased a lot and also positive attitudes have been developed within the employees towards the company. But, the provision of social security and welfare measures was unable to reduce the absenteeism of the employees (Moulvi, 2003).

Baker, Ferguson, Heiler in their study “The impact of roster changes on absenteeism and incident frequency in an Australian coal mine” tried to find out the association of occupational safety and health insinuations with compressed and lengthy work hours, which had not been fully reconnoitred in the mining sector. Over a 33 month period, absenteeism and incident frequency rate data were collected that covered three different roster schedules. When compared to an 8 hour per day system, the current study did not find such significant negative effects of a 12 hour per day working pattern. But, when the study undertook excessive unregulated overtime as part of the 12-hour/5-day roster, in the maintenance sector, absenteeism rates increased (Baker, Ferguson, and Heiler, 2003).

Madhumathi and Desai’s article, “Analysis of Pre and Post Reform Security and Labour Welfare Expenditure in Karnataka State Road Transport Corporation” gives us a clear picture of labour welfare and the social security measures adopted for the employees by KSRTC and also they had analysed on the above factors in detail. It has been found in this study that because of continuous pressure by the union and the changing pattern of relationship between employees and management the labour welfare expenditure in KSRTC had grown year after year. Further, they found that during the post-reforms period, per capita labour welfare expenditure had increased substantially (Madhumathi, and Desai, 2003).

Punekar, Deodhar and Sankaran in their book, “Labour Welfare, Trade Unionism and Industrial Relations” opined that labour welfare is something that is done for intellectual and social-wellbeing and also the comfort and improvement of the employees over and above the wages paid which is not a necessity of the industry (Punekar, Deodhar, and Sankaran, 2004).

Gupta K. Shashi and Joshi Rosy in their book, “Human Resource Management” deals with detailed discussion on labour welfare, where all aspects of labour welfare such as types of

labour welfare, statutory provisions concerning welfare, approaches to welfare and also the significance of labour welfare has been given emphasis (Gupta, and Joshi 2005).

Singh in his book, “Industrial Relations: Emerging Paradigms” stated that disease, wants, squalor, idleness and ignorance- these five giants can be handled by providing welfare facilities and social security. According to him, social security should not be considered as a burden but it should be considered as a kind of wise investment that offers, in the long run, good social dividends (Singh, 2005).

Raju and Jena jointly in their article, “Pioneering Welfare Practices in Oil and Natural Gas Corporation Limited-Rajahmundry Asset” identified that the labour welfare practices which were adopted by ONGC had a positive contribution to the economic development which further paves the way to efficient, productive and committed labour force and which again take industrial relations to the next level (Raju, and Jena 2005).

Venkata Ratnam in his book, “Industrial Relations” explained elaborately the labour legislation, Indian constitutional provisions of social security, voluntary and collective agreements for the organised sector. The key issues in social security and welfare, in the context of the emerging socio-economic environment, has also been discussed in this book (Ratnam, 2006).

Micheal Armstrong’s book, “A Hand Book of Human Resource Management” deals with various concepts of welfare services provided to employees in detail. According to him, identification of employees with the companies in which they are employed can be improved with the provision of welfare services in terms of individual services, group services and employment assistance programs (Armstrong, 2006).

Rama Vani in her thesis, “Incentive Schemes in Coal Industry: A Case Study of Singareni Collieries Company Limited” placed her findings on various incentives that are provided by Singareni Collieries Company Limited to its employees intended to improve the productive performance of the employees. She opined that the incentives provided by the company helped to improve the productivity of the workers which paves the way of all over the industrious performance of the company (Vani, 2006).

Ala-Mursula in his research work entitled “Long Hours in Paid and Domestic Work and Subsequent Sickness Absence: Does Control Over Daily Working Hours Matter?” evaluated the associations of working hours with sickness absence, and inspected whether these associations differ according to the level of employee control over daily working hours. 25,703 public sector full-time workers were considered from 10 towns in Finland for the research purpose. Extensive domestic and aggregate working periods were connected with greater proportions of medically certified illness absences among both genders. Small contrivance over every day working hours anticipated medically certified illness nonappearances for both the women and men. In combinations, the adverse associations of long domestic and total working hours with medically certified absences were reduced by high control over working hours. The study concluded that employee will be able to protect their health and help themselves to maintain the balance between a full-time job and domestic work if they can take control over their daily working hour (Ala-Mursula, 2006).

Aquinas in the book, “Human Resource Management” explained in detail about welfare facilities provided to employees. He opined that some welfare benefits are provided as per legislation while some other welfare benefits are provided voluntarily by management or as a result of bi-partite settlements between the Management and Trade Unions. The intra-mural and extra-mural welfare benefits also have been discussed in this book (Aquinas, 2007).

Srivastava's thesis, "Study of Labour Welfare and Social Security in the Industrial undertakings of Rai Bareilly District" deals with various social security and welfare measures adopted by different companies established in the district. The major findings from this study are- the companies that have adopted strong welfare and social security measures, experiencing better Industrial Relations, higher productivity among the workers (Srivastava, 2007).

Tompa, Emile, Dolinschi, Roman, de Oliveira, in their study "A systematic review of occupational health and safety interventions with economic analyses" opined that in warehousing and manufacturing sectors, interventions should be undertaken to prevent ergonomic and other musculoskeletal injuries. This proactive approach has financial merits. Another worth undertaking factor, according to them is multisector disability management (Tompa, Emile, Dolinschi, Roman, de Oliveira, 2007).

Imma Cortes, Lorena Cascant, Lucia Artazcoz, Vincenta Escriba, in their study "Occupational Epidemiology and Work-Related Inequalities in Health: A Gender Perspective for Two Complementary Approaches to Work and Health Research" analysed epidemiological study on work and health which combines common job-related epidemiology and the deliberation of work in a structural viewpoint concentrated on gender disparities in health. In their study, loopholes and boundaries in classic occupational epidemiology, while deliberated from a gender viewpoint, are explained. Classic job-related epidemiology has given less consideration to women's glitches than men's. The investigation into work occupational gender discriminations in health was rarely considered either community class or the effect of family burdens on men's health. The enquiry of his labour and health from a gender viewpoint should take into consideration the composite exchanges

among family roles, employment status, gender and social class (Cortes, Cascant, Artazcoz, Escriba, 2007).

Mirei Uetani, Shouji Nagashima, Yasushi Suwazono, Yasushi Okubo in their study “Working hours and mental and physical fatigue in Japanese workers” intended to illuminate the impact of working hours on both physical and mental symptoms of fatigue and what should be the permissible limit of working hour. They have conducted a survey on day-shift male workers, using Cumulative Fatigue Symptoms Index (CFSI) and the Self-Rating Depression Scale (SDS). 715 workers were taken into consideration. ‘Chronic tiredness’ of CFSI and the odds ratios for SDS and ‘irritability’ were increased in the group working 260–279 h/month. The study advocated that in a month working hours should be less than 260 hours in order to reduce fatigue (Nagashima, Suwazono, Okubo, Uetani, Kobayashi, Kido, & Nogawa, 2007)

Viswanadh’s thesis, “A Study on Welfare Facilities and its Impact on the efficiency of employees in APSRTC” provides us with a vivid picture that there is a positive correlation between welfare facilities, provided to the workers and the employees’ efficiency (Viswanadh, 2008).

Deepika’s article, “A Relook into the Measurement of Human Welfare and Happiness” advocates that instead of Gross National Product (GNP) Governments should emphasis on and measure Gross National Happiness (GNH) as it is a better indicator to measure human welfare and happiness because ultimately at the end of the day happiness counts (Deepika, 2008).

Alyssa B. Schultz, Dee W. Edington in their study “The total value of health: a review of the literature” had given emphasis on various aspects of health and health-related issues. Here they have shown that workers’ health risks are associated with pharmaceutical costs, health care costs, and productivity measures as well. It has been also found out in this study that

measures of success are fully dependent on worksite health management (Alyssa, & Edington, 2008).

David E. Cantor in his study “Workplace safety in the supply chain: a review of the literature” reviewed the literature which can also pave the way of further research into the regulatory, human, and operational issues that add value to safety in the workplace in the supply chain. He identified some potential research prospects that can increase consciousness of the significance of cultivating safety practices at workplaces in a firm (Cantor, 2008).

Gary Dessler and Biju Varkkey in their book, “Human Resource Management” threw light on the benefits and welfare services provided to employees in India. They also discussed besides the discretionary benefits, benefits to be provided as per Central or State Law provided to the employees (Gary, and Biju, 2009).

Jeya A and Kirubakaran Samuel’s article, “A Study on Impact of Social Welfare Schemes on Rural women in Cuddalore District” intended to examine how rural women are benefited by social welfare schemes. The study was purely based on a field survey which revealed the positive impact of social welfare schemes on rural women (Jeya and Samuel, 2010).

P. Katsuro, C. T. Gadzirayi, Taruwona M. and Suzanna Mupararano in their research paper titled “Impact of occupational health and safety on worker productivity: A case of Zimbabwe food industry” sought to do an assessment about the impact of occupational health safety on productivity in the context of the commercial food industry. The study was intended to bring out the real scenario of OHS problems in different work areas and also their impact on productivity. The study targeted shop floor employees, industrial clinic nurses, and production supervisors. To collect data, as research instruments, observations and interviews were used. Bad occupational health safety practices in food factories, as per the findings, decrease the workers’ performance; which obviously decrease productivity. Also at

workplaces, high incidents of accidents occur because of poor implementation of OHS practices. A worker misses set targets if he suffers from illness because he becomes slower and weaker. On the other hand, in the food industry, the morale of the workers is very low. They concluded that little attention is given to the training on occupational health and safety; which actually shows a negative attitude of management towards OHS (Katsuro, Gadzirayi, Taruwona, & Mupararano, 2010).

P. M. Albizu-Urionabarrenetxea, E. Tolosana-Esteban, E. Roman-Jordan in their study “Safety and Health in Forest Harvesting Operations. Diagnosis and Preventive actions: A review” examined the present state of labour risks and health and safety conditions in the context of forest harvesting work intending to suggest better ways to minimise accidents. This study is focused on those countries which are developed. In this study, few risk factors have been identified and studied; these are age, experience, training, seasonality, mechanization degree, protective equipment, etc. It is found that in comparison with other work sectors, forest harvesting bears more accident risks. Here what they suggested is entrepreneurial risk management is the key factor to minimize labour risks (Albizu-Urionabarrenetxea, Tolosana-Esteban, and Roman-Jordan, 2013).

Ranklin Nkudefe Adjotor in his thesis titled “The Effects of Occupational Safety and Health on Labour Productivity: A Case Study of Some Selected Firms in the Greater Accra Region of Ghana” determined the relationship between labour productivity and the safety and health status of the employees. Most of the Ghanaian industries are worried because of countless incidences of death, injury, huge compensation costs and frequent absenteeism which prevents economic development of the country. Negative effects of unsafe and unhealthy work environment continue to hamper labour productivity. Problems because of improper management of health and safety costs around 7 per cent of Ghana’s GDP. So, it can be said

efficient management of health and safety hazard must be done to improve productivity. For this study, mostly primary data has been used and multivariate estimation technique was adopted. The study also investigated the impact of safety and health on performance indicators like concentration, quality, efforts, quantity, and attendance of employees. Findings indicate that health and safety play a pivotal role in one's productivity. The marginal impact of health on employees' productivity was 21 per cent and safety's contribution was 27 per cent. It was also evident one's quality, concentration levels, effort, quantity, and attendance at work are positively affected by health and safety. The study further suggests that health care incentives should be implemented effectively and all categories of the workforce should be covered (Adjotor, 2013).

Hesapro in the study titled "The link between productivity and health and safety at work" investigated the existence of the link between health and safety at work and productivity. About 2.2 million people, globally, die every year from occupational accidents and diseases, as per the estimation of The International Labour Organization (ILO). On the other hand, for work-related causes, about 270 million people suffer from serious non-fatal injuries and another 160 million, for shorter or longer periods, fall ill. Unfortunately, it also effects also their families. The most surprising fact, as per the estimation of ILO, is that the total costs of workplace accidents and ill health amount to about 4 per cent of the GDP of the whole world. European Commission estimated that the costs of occupational accidents in the 15 European Union Member States in the year 2000 was €55 billion. The study suggested that initiatives should be taken by the companies to integrate OHS Programme or measures to work organisation and health, also safety issues must be regarded as a crucial factor for workplace development that will obviously improve performance and productivity (Hesapro, 2013).

The report titled, "Current Knowledge and Practices regarding Environmental Health and Safety in the Nanotechnology Workplace," reviewed and examined existing safety and health practices in the context of nanotechnology workplace. Also, an effort has been given to assess product stewardship issues. Reviewed efforts differ from the aspect of several fronts comprising the scope of the study, type of study, method, regional focus, and the manner of findings. Overall observation says that in nanotechnology sectors, few research efforts have produced noteworthy information documenting existing environmental health and safety practices (Ethics.iit.edu, 2006).

Md Shafiqul Islam and Tanjila Islam in their paper "Safety in Workplace and Its Effect on Labor Productivity: A Case Study for Pharmaceutical Industry" analyzed condition of safety in the pharmaceutical industry and how it affects Labor Productivity. In a manufacturing factory, Safety in the workplace is one of the major issues. Proper safety protocols can increase productivity by saving lives, reducing downtime and reducing accidents. Few factories were selected for the purpose of investigating the relationship between safety and individual labour productivity; and for this purpose, 2 sets of questionnaires were developed separately for management personnel and workers. Using Kurosawa's approach, Individual labour productivity was measured in this study. For the analysis, Minitab-17 was used. It was found that safety and labour productivity are significantly correlated. At last, the study suggested that necessary actions should be taken to reduce unproductive work hours by ensuring a safe workplace where the probability of occurrence of accidents is down to the minimum (Islam & Islam, 2018).

### **3.2: Research Gap**

Any organization as the system consists of various inter-dependent factors or sub-systems e.g. managerial, technological, structure, people, etc. It is very difficult to achieve organisational goals unless different sub-systems are integrated into a structured manner which ultimately helps an organization function smoothly. In order to accomplish its basic goals, an organization, therefore, requires integration of human activities around various other components or sub-systems. Unfortunately, technological factors have always been given more emphasis by the management, neglecting human factor, only because of past success with technology. The same thing has been reflected in the writing of the researchers because most of the researchers have followed the same tradition. So, there is an urge to cover human-related factors which create impacts on productivity.

Though many social researchers covered various aspects of the plantation industry in India, few of them have given emphasis on safety, health, welfare measures of tea workers. Another thing, the impact of the above factors on the productivity of the tea workers, has not been clearly explored. And also, the much said Terai region of West Bengal, undertaken in this study, is still uncovered from the above aspects that have been considered for this study. So, from above all aspects, this study is quite relevant and significant.

### **3.3: Objectives of the Study**

The proposed work is undertaken to fulfil the following objectives:

- To highlight and bring out the real picture of the exact state of health and hygiene of the tea workers of the particular region and the related safety and welfare measures provided for them.

- To examine the impact of health, safety, and welfare measures on the productivity of tea workers.
- To make a comparative study on the state of health, safety, welfare services provided for the tea workers community and productivity of the tea workers, in the different types of tea estates such as Public, Private, and Proprietorship.

### **3.4: Research Questions**

The following research questions will be probed in this proposed research:

1. What are the existing practices of welfare activities for tea workers in different tea estates in the Terai region? Are the practices relevant?
2. What is the exact state of health and hygiene of the tea workers of particular estates?
3. What types of initiatives are taken by the managers considering health & Safety aspects of the tea workers? Are the undertaken initiatives adequate?
4. What are the productivity levels of tea workers of different tea estates in the Terai region?
5. Is there any significant difference considering the above variables among the tea estates in the Terai region?

### **3.5: Scope of the Study**

The productivity of the employees of an organization in one year may differ from another preceding or succeeding year. Over a period of time, changes in the productivity of employees of an organization may depend on a number of factors. This difference may occur due to technology and capacity of the machine on one side, this difference may occur due to employees' ability to work which again is dependent on various factors including health, safety, and welfare measures. According to a study, during 1985-1991, in spite of the sharp

increase in the capital-labour ratio, there was a negligible increase in productivity in Indian industrial enterprises. Therefore, productivity improvement in Indian enterprises, high-tech formulae cannot be the answer. As productivity gets affected by a large number of technological and human-related factors, it is very difficult to cover all the factors in a single study. Even if we consider only human-related factors, in an empirical study, covering all the factors are really challenging one. That is why; the scope of the study is restricted to a few specific human-related factors- that are health, safety, welfare measures. Moreover, it is very complicated to translate health, safety, and welfare measures into quantitative terms. Therefore, certain methods have been applied to bring out the real picture of health, safety, welfare measures and the impact of these factors on productivity of the workers working in the tea gardens located in Terai region in West Bengal.

### **3.6: Rationale of the Study**

Safety and health of workers in tea estates are traditionally regarded as an extraneous obligation. Various welfare measures, provided by employers, have an immediate impact on the health, alertness, morale, and overall physical and mental efficiency of the workers and thereby contributing to higher productivity. But most of the workers of tea estates are deprived of these aspects, so naturally, the productivity of the workers is decreasing consequently. Traditional safety, health, and welfare measurements that are practised in tea estates produce quality results with a high degree of uncertainty. Workers in the tea planting industry are exposed to a variety of occupational health and safety hazards. The safety of all workers, involved in the production, should be the top priority. On the other hand, welfare protects not just the employees but also their entire family by giving benefit packages. Welfare schemes are very much required to the tea workers for the sustenance of their family members. On the other hand, close monitoring of health and safety conditions of the workers

to identify and remediate risk is now of greater needs. Thus, with the help of adequate safety and welfare measures, the oppressed class tea workers will be able to enrich themselves to a certain extent which will ultimately create a good impact on society.

### **3.7: Area of the Study**

It has already been stated that, for this empirical study, Terai region of West Bengal has been selected. In the Terai region, there are 50 organized tea gardens. Out of 50 organized tea estates, we have taken 15 tea gardens for our study considering different ownership patterns. Out of these 15 tea estates, 4 partnership tea estates, 3 proprietorship tea estates, and 8 public tea estates have been taken into consideration using the simple random sampling method. Bought-leaf factories, small tea grower's gardens and also closed tea gardens have not been considered in this study.

### **3.8: Period of the Study**

The basic objectives of the study are to bring out a real picture of health, safety, and welfare measures in tea estates and to examine the impact of these factors on the productivity of the tea workers. We have collected data from the period of 1998 to 2017.

There is a reason for considering data 1998 onwards. Although in India, the process of globalization was initiated in the year 1991, the country's participation in the globalization process, however, was reaffirmed with the establishment of the World Trade Organization in 1995.

Mostly from 1998 onwards, the price situation of agricultural commodities in the international market began to show a dramatic turnaround. Gradually it started to fall down and because of which Indian domestic price turned comparatively higher than international

price, because of which exporters of other countries were prompted to export their agricultural commodities in the Indian market (Biswas, 2011).

This situation forced to weakened agricultural export and also created huge pressure on domestic prices which is considered to be the root cause for the crisis most particularly felt in plantation industry in general and tea industry in particular. So, in simple language, although the process of globalization in India was initiated in the year 1991, we observed the effect of globalization from 1998 onwards in the agricultural sector.

Therefore, the study covers a period of 20 years (1998-2017) to extract real scenario of health, safety, and welfare practices in tea estates of Terai region and also to examine the relationship among the variables- health, safety, and welfare measures and labour productivity.

### **3.9: Sources of Data**

We have used both primary and secondary sources for the purpose of data collection. Primary sources have greatly been emphasized in this regard. Primary data have been collected through field survey in 15 tea gardens belonging to the Terai region of West Bengal. Secondary data sources include TBITA, various journals, articles, various publications of Tea Board of India, Planters Associations, various reports published by the Department of Economics and Statistics, Department of Labour, Govt. of West Bengal, and various newspapers, magazines, etc.

### **3.10: Sampling Technique**

We have selected 15 tea gardens out of 50 tea estates using simple random sampling technique. Out of this 15 selected tea estates, 4 partnership tea estates-as only 4 partnership

tea estates are there in Terai region, 3 proprietorship tea estates- as only 3 proprietorship tea estates are there in Terai region and 8 public tea estates have been taken into consideration. The health, safety, welfare expenses and productivity of all the gardens of the respective years were added separately to make the data set eligible for regression analysis in Eviews.

### **3.11: Standardization of Parameter**

The parameters which have been used to establish relationship are Welfare, Health, Safety, and Productivity. Here dependent variable is productivity (y), and independent variables are Welfare (x1), Health (x2), and Safety (x3). In this study, productivity has been calculated as (total production of made tea) / (average number of workers); that means labour productivity has been taken into consideration. For explaining labour productivity, the values of all the independent variables have been taken in terms of expenses; i.e. welfare expenses, health expense, safety expenses for the respective years of the undertaken tea estates.

### **3.12: Hypotheses of the Study**

1. H<sub>01</sub>: There is no significant impact of health, safety and welfare on the productivity of the tea workers.
2. H<sub>02</sub>: There is no significant difference in the health of the tea workers of tea estates run by different companies.
3. H<sub>03</sub>: There is no significant difference in safety measures provided to the tea workers run by different companies.
4. H<sub>04</sub>: There is no significant difference in welfare schemes provided to the tea workers run by different companies.
5. H<sub>05</sub>: There is no significant difference in the productivity of the tea workers run by different companies.

### **3.13: Research Design**

For the successful completion of the study, the research work has been designed in the following manner.

- i)** The first objective of the study is to reveal the real practices of health, safety, and welfare measures in the tea gardens. To achieve this objective, raw data have been tabulated and graphical figures have been presented.
- ii)** The second objective is to examine the impact of health, safety and welfare measures on the productivity of the tea workers. To fulfil the objective, 20 years data have been analysed by applying simple linear regression model along with multiple linear regression model, considering labour productivity as dependent variable and health, safety, and welfare as independent variables.
- iii)** Finally to meet the third objective i.e. to make a comparative study on the state of health, safety, and welfare measures provided to the tea workers community and also on productivity of the tea workers, in the different types of tea estates such as public, private, & proprietorship, the regression coefficients, extracted from simple linear regression and multiple regression, have been compared.

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