

CHAPTER - VII

Summary of Observations, Conclusions, and Recommendations

7.1: Introduction

Tea, only because of its unique ability to twist our mood and make us feel refreshed, in the world, it has become the second most consumed beverage, next to only water, leaving behind coffee, soda, and others. On the other hand, if we talk about India, India has become the second-largest tea producer in the world (“Tea Production in the World”, 2011). Additionally, our country is the third-largest tea exporter which exports one of the finest quality tea globally (Workman, 2019).

The 172 years old Indian tea industry plays a pivotal role in the national economy. With the number of 1692 registered tea producers, 2200 registered tea exporters, 5548 registered tea buyers and 9 tea auction centres across India, Indian tea industry spreads across Uttaranchal, Assam, Tamilnadu, West Bengal, Sikkim, Kerala, Tripura Karnataka, Himachal Pradesh, Bihar, Arunachal Pradesh, Manipur, Nagaland, Mizoram and Meghalaya.

Indian tea industry had a significant contribution to the national GDP in the year 2016-17 (Nimmi, n.d.). We experienced a record-breaking production of 1,250.49 million kg of made tea in that year and the Indian tea industry was efficient enough to increase the rate of production at 1.41 per cent over the figure of the year 2015-16. Though all states had a significant contribution behind this achievement, Assam, and West Bengal were the main game-changers.

It obviously sounds good, while we talk about any kind of achievement, which has broken all the previous records; it makes us feel good, and it makes us proud also. But, we never know the pain, the agony, the sorrow, the grief, the distress, the misery, hidden behind the achievement; rather we do not want to know also. Contextually, we usually have a discussion on tea industry but, we hardly have a discussion on the condition of the tea workers (Borah, 2013).

It is really unbelievable that even after 69 years of independence, the workers are still being harshly tormented by the dominant class (Pal, Biswas, & Pahari, 2018). Presently also, the tea workers are unprotected from various social constraints. The daily wage of the labours is lower than the minimum daily wage, fixed by the state government. Consequently, starvation, malnutrition, and untimely deaths have become regular features among the tea workers. The poorly paid Indian tea workers and their deprived families have become a major target of human traffickers who entice away, mainly women and children, promising a new life; but, ultimately they end up enslaved in factories and households (Reynolds, 2014). Deaths of workers, because of various occupational diseases like- snake bites, dengue, malaria, etc. have become a regular issue.

Now the question is, if the concepts of safety, security, welfare, and minimum wages of workers are unable to function properly on the tea workers, why should they exist in society? And also if these situations prevail in society, how can we raise the question of their productivity? So, in these present crucial circumstances, the status of the working class people should be re-evaluated, specifically from the aspect of health, safety, and welfare, within as well as outside of the establishment, so that these social factors become efficient enough to create a good impact on the productivity of the tea workers.

Though extensive studies have been done earlier, by many of the social researchers, on plantation industry in India, the aspects- safety, health, welfare measures, and productivity of tea workers have been taken into consideration by few of them. Another thing, which has not been clearly explored earlier that the impact of the above factors on the productivity of the tea workers. Above all, the much said Terai region of West Bengal, undertaken in this study, is still untouched in by the social researchers.

Therefore 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 to them.
- To examine the impact of health, safety, and welfare measures on the productivity of tea workers.
- To make a comparative study on the provided health, safety, and welfare measures, along with their productivity, in addition with the impact of these factors on the productivity of the tea workers in the different types of tea estates such as public, private, and proprietorship.

It is noteworthy that an extensive scope has been recognized for this study. Labour productivity, in any organization, does not remain constant. It varies over the period of time because of its dependency on numerous factors, which again can be categorized under two broad factors namely, technical factor, and human-related factor. Studies say that many organizations are still striving hard to reach optimum labour productivity, in spite of huge investment in continuous mechanical innovations. This indicates that human-related factors play an integral part in labour productivity. However, while we talk about the scope of this study, 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. On the other hand, 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 has been kept restricted to the three specific important human-related factors namely, health, safety, and welfare measures, considering the fact that these have a direct impact on labour productivity. However, 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.

For justifying the undertaken objectives, we have collected data from the period of 1998 to 2017. There is a specific reason for choosing this specific period. Though the process of globalization in India was initiated in the year 1991, the country started observing its effects from 1998 onwards in the agricultural sector. Therefore, the study covers a period of 20 years.

Data has been collected from both primary, and secondary sources for the purpose of the study. Since it is an empirical study, primary sources have greatly been emphasized in this regard. Primary data have been collected through field survey from fifteen tea gardens belonging to the Terai region of West Bengal. On another hand, secondary data sources include various journals, reports, articles, and publications of Terai Branch Indian Tea Association, Tea Board of India, Planters Associations, Department of Economics and Statistics of Govt. of India, Department of Labour, Govt. of West Bengal, etc.

The targeted fifteen tea gardens have been sorted out from fifty tea gardens using simple random sampling technique. Four partnership tea estates, three proprietorship tea estates, and eight public tea estates make the sample size of fifteen, in this study.

The parameters which have been used to establish relationship are welfare, health, safety, and productivity. In this study, the assumed dependent variable is productivity (y), and independent variables are welfare (x_1), health (x_2), and safety (x_3). Here, 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 expenses, and safety expenses, for the respective years of the undertaken tea estates. Different expenses and labour productivity of all the gardens of the respective years have been added separately to make the data set eligible for regression analysis in Eviews.

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

- i)** To get the real picture of health, safety, and welfare measures in the tea gardens, raw data have been tabulated and graphical figures have been presented.
- ii)** To examine the impact of health, safety, and welfare measures on the productivity of the tea workers, twenty 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, the regression coefficients, extracted from simple linear regression, and multiple regression, have been compared to make a comparative study on the health, safety, and welfare measures provided to the tea workers and also for the purpose of comparing the impact of undertaken factors on the productivity of the tea workers, in the different types of tea estates such as public, private, and proprietorship.

7.2: Findings of the Study

The study has been carried out with the broad objectives of bringing out the exact scenario of health, safety, and welfare measures and examining the impact these measures on the productivity of tea workers with an additional intention of making a comparison of the tea estates which fall under different ownership patterns such as public, private, and proprietorship. Let us take a look at the findings.

7.2.1: Exact Picture of Health, Safety, and Welfare Measures in the Tea Estates

From the analysis, it has been found that various kinds of welfare, health, and safety measures are undertaken by the employers of the tea estates in the Terai region. Some of the measures are statutory, whereas rests are voluntary. The welfare services that the workers enjoy in tea estates are housing facility, separate latrine and urinal facility for male and female workers, canteen facility with subsidized food, provision of school along with the facility of school vehicle for the children of the workers, supply of electricity in household, etc. In the tea estates, the female workers for their children can avail the facility of crèches, with the additional provision of taking care of children by the attendants, washing facility, latrine facility, and supply of milk. For recreational purpose, playgrounds and clubs are also available for the workers and their families.

Here, in this study, the important findings, concerning welfare measures are as follows.

- The highest number of houses exist in Pahargoomiah tea estate.
- The highest number of latrines exist in Kamala tea estate.
- Tirrihannah tea estate has the perfect 1: 1 ratio of houses covered with electricity.
- In most of the tea estates, ring wells are the most important sources of water.
- The highest number of crèches are present in Kamala tea estate.

- 87 percent of our sample tea estates has washing facilities in crèches.
- The highest number of attendants, in the crèches, are present in Gungaram tea estate.
- In 67 percent of sample tea estates, crèches include latrine facility.
- All of the tea estates have milk supply facility in the crèches.
- Playgrounds are present in all of the tea estates.
- 73 percent of sample tea estates has canteen facility.
- In four of the selected tea estates canteens are subsidised, which indicates that in most of the tea estates, workers are unable to get a subsidised meal.
- 80 per cent of the tea estates has the provision of school for the school going children.
- 60 per cent of the tea estates has the facility of the vehicle for school going children.
- 87 per cent of our sample tea estates has club facility for recreational purpose.

Now, let us focus on the findings of health and safety measures for the tea workers of the tea estates of the Terai region. Besides welfare services, various kinds of health and safety measures are provided to tea workers. The provision of hospital or dispensary, primary health centre, first aid box for quick relief, accessibility of ambulance in case of emergency, the facility of personal protective equipment like- goggles, safety footwear, gloves, and nose mask are few of them.

The important findings in this study, concerning health and safety measures are as follows.

- Pahargoomiah tea estate has the highest number of hospital or dispensaries which is 13 per cent of total hospital or dispensaries in selected tea estates.
- Atal tea estate has the highest number of first aid boxes, which is 16 per cent of the total available first aid boxes in or selected tea estate.
- 60 per cent of total selected tea estates has primary health centre.

- The facility of separate male and female ward is provided by 60 per cent of the tea estates.
- The highest number of beds are available in Kamala tea estate which contributes to 16 per cent of the total beds, available in the tea estates.
- Ambulance facility is provided by 87 per cent of the selected tea estates.
- All the selected tea estates are very much concerned about personal protective equipment for the tea workers. These include goggles, safety footwear, gloves, and nose mask.
- To talk about the number of the nurses in the selected tea estates, only Kamala tea estate has 4 nurses, whereas others have only 1 nurse each, except Gungaram tea estate where 2 nurses are there. This indicates an unhealthy ratio of the number of workers and the availability of nurses.
- In 60 per cent of the selected tea estates, trained nurses take care of the patients.
- Pahargoomiah tea estate and Gayaganga tea estate have the highest total number of nurses, midwives, compounder, and health assistants and interestingly, each of the tea estates contributes to 9 per cent to the total number in selected tea estates, individually.

7.2.2: Impact of Health, Safety, and Welfare Measures on the Productivity of the Tea Workers

It has been found from the analysis that welfare, health, and safety- all the explanatory variables create a positive impact on the productivity of tea workers, but differently, as expected. Let us take a look.

7.2.2.1: Extraction from Simple Regression Analysis in the Context of the Partnership Tea Estates

- In partnership farm, 1% increase in welfare expenditure, per year, leads to 0.262543% increase in labour productivity, per year, during the period of 1998 – 2017.
- On the other hand, 1% increase in health expenditure, per year, in partnership farm leads to 0.25126 % increase in labour productivity, per year, during the period of 1998 – 2017.
- Lastly, in partnership tea estates, 1% increase in safety expenditure, per year, leads to 0.242785 % increase in labour productivity per year during the period of 1998 – 2017.

7.2.2.2: Extraction from Simple Regression Analysis in the Context of the Proprietorship Tea Estates

- In proprietorship tea estates, 1% increase in welfare expenditure, per year, leads to 0.242116 % increase in labour productivity, per year, during the period of 1998 – 2017.
- On another hand, 1% increase in health expenditure, per year, in proprietorship tea estates leads to 0.240310 % increase in labour productivity, per year, during the period of 1998 – 2017.
- Last but not the least, in proprietorship tea estates, 1% increase in safety expenditure, per year, leads to 0.237614 % increase in labour productivity, per year, during the period of 1998 – 2017.

7.2.2.3: Extraction from Simple Regression Analysis in the Context of the Public Tea Estates

- In public tea estates, 1% increase in welfare expenditure, per year, lead to 0.218091% increase in labour productivity, per year, during the period of 1998 – 2017.
- Secondly, 1% increase in health expenditure, per year, in public tea estates, leads to 0.243802 % increase in labour productivity, per year, during the period of 1998 – 2017.
- Lastly, in public tea estates, 1% increase in safety expenditure, per year, leads to 0.249800 % increase in labour productivity per year during the period of 1998 – 2017.

7.2.3: Comparative Study on Welfare, Health, and Safety Measures and Impact of these on the Productivity of the Workers

7.2.3.1: Comparative Study on Different Types of Ownership Patterns: Based on Multiple Regressions

- In partnership tea estates, 1% increase in welfare expenditure, health expenditure, safety expenditure per year, leads to 0.134918 %, 0.059841 %, and 0.070258% increase in labour productivity, per year, respectively during the period of 1998 – 2017.
- In proprietorship tea estates, 1% increase in welfare expenditure, health expenditure, safety expenditure per year, leads to 0.123925 %, 0.057498 %, and 0.068986 % increase in labour productivity, per year, respectively during the period of 1998 – 2017.

- In public tea estates, 1% increase in welfare expenditure, health expenditure, safety expenditure per year, leads to 0.110604 %, 0.059154 %, and 0.072866 % increase in labour productivity, per year, respectively during the period of 1998 – 2017.

7.2.3.2: Comparative Study on the Impact of Welfare Expenses on Labour Productivity:

Based on Simple Regression

- In the partnership tea estates, 1% increase in welfare expenditure, per year, leads to 0.262543% increase in labour productivity, per year, during the period of 1998 – 2017.
- In proprietorship tea estates, 1% increase in welfare expenditure, per year, leads to 0.242116 % increase in labour productivity, per year, during the period of 1998 – 2017.
- In public tea estates, 1% increase in welfare expenditure, per year, lead to 0.218091% increase in labour productivity, per year, during the period of 1998 – 2017.

7.2.3.3: Comparative Study on the Impact of Health Expenses on Labour Productivity:

Based on Simple Regression

- In the partnership tea estates, 1% increase in health expenditure, per year, leads to 0.25126 % increase in labour productivity, per year, during the period of 1998 – 2017.
- In the proprietorship tea estates, 1% increase in health expenditure, per year, leads to 0.240310 % increase in labour productivity, per year, during the period of 1998 – 2017.
- In the public tea estates, 1% increase in health expenditure, per year, leads to 0.243802 % increase in labour productivity, per year, during the period of 1998 – 2017.

7.2.3.4: Comparative Study on the Impact of Safety Expenses on Labour Productivity:**Based on Simple Regression**

- In partnership tea estates, 1% increase in safety expenditure, per year, leads to 0.242785 % increase in labour productivity per year during the period of 1998 – 2017.
- In proprietorship tea estates, 1% increase in safety expenditure, per year, leads to 0.237614 % increase in labour productivity, per year, during the period of 1998 – 2017.
- In public tea estates, 1% increase in safety expenditure, per year, leads to 0.249800 % increase in labour productivity per year during the period of 1998 – 2017.

From the above findings, the following coefficient ranking tables, viz. table- 7.1, table- 7.2, table- 7.3, and table7.4 can be formed, which will give us a vibrant picture of varies impact of welfare, health, and safety on the productivity of the tea workers. Let us take a look.

Table – 7.1**Comprehensive Comparative View of Coefficient Ranking Matrix:****BASED ON SIMPLE REGRESSION, IN VIEW OF THE VARIABLES**

Variables	Welfare on Productivity	Health on Productivity	Safety on Productivity
Partnership Tea Estate	0.262543 1 st	0.25126 2 nd	0.24279 3 rd
Proprietorship Tea Estate	0.242116 1 st	0.24031 2 nd	0.237614 3 rd
Public Tea Estate	0.218091 3 rd	0.243802 2 nd	0.2498 1 st

Source: Prepared by the author

Table – 7.1 gives us a comprehensive comparative view of the coefficient ranking matrix, which is based on simple regression. The ranking has been done, here, in view of the variables. From the table, observing the coefficient values, we can assert that in the partnership tea estates, welfare measures have the most impact on the productivity of the workers, followed by health, and safety measures respectively. Interestingly, the same degree of impact of the variables can be observed in proprietorship tea estates. But, a different situation is observed in the case of the public tea estates. Here, the coefficient values, extracted from simple regression suggest that the safety measures create the greatest impact on the productivity of the tea workers, followed by health, and welfare measures respectively.

Table – 7.2

Comprehensive Comparative View of Coefficient Ranking Matrix:

BASED ON SIMPLE REGRESSION, IN VIEW OF OWNERSHIP PATTERN

Variables	Welfare on Productivity	Health on Productivity	Safety on Productivity
Partnership Tea Estate	0.262543 1 st	0.25126 1 st	0.24279 2 nd
Proprietorship Tea Estate	0.242116 2 nd	0.24031 3 rd	0.237614 3 rd
Public Tea Estate	0.218091 3 rd	0.243802 2 nd	0.2498 1 st

Source: Prepared by the author

Table – 7.2 gives us the comprehensive comparative view of a coefficient ranking matrix, which is, also, based on simple regression. Here, the ranking has been done in view of the different ownership patterns. From the above table, looking at the coefficient values, we can assert that welfare measures have the highest impact on labour productivity in the partnership tea estates, followed by the proprietorship, and public tea estate respectively. Similarly, health measures create the most impact on the partnership tea

estate but followed by the public tea estate and proprietorship tea estates respectively. Astonishingly, safety measures create the most impact on the productivity of the labours in the public tea estates, followed by the partnership and the proprietorship tea estates respectively.

Table – 7.3

Comprehensive Comparative View of Coefficient Ranking Matrix:

BASED ON MULTIPLE REGRESSION, IN VIEW OF THE VARIABLES

Variable	Welfare on Productivity	Health on Productivity	Safety on Productivity
Partnership Tea Estate	0.134918 1st	0.059841 3rd	0.070258 2nd
Proprietorship Tea Estate	0.123925 1st	0.057498 3rd	0.068986 2nd
Public Tea Estate	0.110604 1st	0.059154 3rd	0.072866 2nd

Source: Prepared by the author

Table – 7.3 gives us a comprehensive comparative view of the coefficient ranking matrix, which is based on multiple regression. The ranking has been done, here, in view of the variables. From the table, observing the coefficient values, we can assert that in the partnership tea estates, welfare measures have the most impact on the productivity of the tea workers, followed by safety, and health measures respectively. Remarkably, the same degree of impact of the variables can be observed in proprietorship, and also in case of the public tea estates.

Table – 7.4**Comprehensive Comparative View of Coefficient Ranking Matrix:****BASED ON MULTIPLE REGRESSION, IN VIEW OF OWNERSHIP PATTERN**

Variable	Welfare on Productivity	Health on Productivity	Safety on Productivity
Partnership Tea Estate	0.134918 1 st	0.059841 1 st	0.070258 2 nd
Proprietorship Tea Estate	0.123925 2 nd	0.057498 3 rd	0.068986 3 rd
Public Tea Estate	0.110604 3 rd	0.059154 2 nd	0.072866 1 st

Source: Prepared by the author

Table – 7.4 gives us the comprehensive comparative view of the coefficient ranking matrix, based on multiple regression. Here, the ranking has been done in view of the different ownership patterns. From the above table, looking at the coefficient values, we can assert that welfare measures have the highest impact on labour productivity in the partnership tea estates, followed by the proprietorship, and public tea estate respectively. Similarly, health measures create the most impact on the partnership tea estate but followed by the public tea estate and proprietorship tea estates respectively. Astonishingly, the situation is different in case of safety measures. Safety measures create the most impact on the productivity of the workers in public tea estates, followed by the partnership and the proprietorship tea estates respectively.

7.3: Concluding Remarks

Through the rigorous analysis in this study, it can be firmly asserted that each of the factors viz. welfare, health, and safety create a positive influence on the productivity of tea workers, obviously with different degree of impact. On the other hand, the degree of impact varies from one ownership pattern to another ownership pattern. For all kind of tea estates, be it a partnership, proprietorship or public, welfare facilities play a pivotal role in the productivity of the tea workers, followed by safety provisions, and health facilities.

Here one thing is noteworthy that though welfare expenses, health expenses, and safety expenses are positively correlated with the productivity of the workers, during the study period, it is observed that the rate of increase or decrease in productivity is low with the increase or decrease of the expenses. That means there must have certain other factors that are affecting labour productivity. To conclude, it can be said that, if management incurs more expenditure for health, safety, and welfare measures of the tea workers, obviously they can expect better labour productivity from the workers' side. But management has to find out and work on the other factors that are obstructing the rate of increase in productivity of the tea worker to get a better return on investment.

7.4: Suggestive Measures

For maintaining better productivity of the tea workers, hereunder, the following suggestions are provided.

1. Management should incur more expenditure for health, safety, and welfare measures for the tea workers to get better labour productivity from the workers' side.

2. Special attention needs to be given on the supply of electricity.
3. Since ring well is the only source of drinking water in some tea estates, the ring well should be taken care of properly.
4. The condition of the crèches, in the tea estates, need to be improved from all aspects like washing facility, latrine facility, etc.
5. Special care should be taken for the improvement of canteen facility and also the management of all the tea estates, need to take necessary steps so that the workers get subsidized meal.
6. All the tea estates must keep the provision of education for worker's children.
7. Vehicle facility for the school going children needs to be improved.
8. Special care should be taken for the recreational facility of the workers so that they spend quality leisure time.
9. The number of primary health centres or dispensaries or primary health centres need to be increased by ensuring quality medical facilities.
10. First aid boxes should be properly maintained in each tea estate.
11. Separate male and female ward should exist in and every tea estate.
12. The number of beds should be increased to ensure better service.
13. Provision of the ambulance should be strictly maintained in every tea estates.
14. An adequate number of efficient and properly trained nurses should be appointed to take care of the patients in the tea gardens.

15. Public tea estates should focus more on welfare measures and obviously incur more expense for the same to experience better productivity.
16. Proprietor tea estates should give special attention to health facilities as well as to safety-related measures.
17. Partnership tea estates should give special attention to safety-related measures.
18. Management of each tea estate has to find out and work on the other factors which are obstructing the rate of increase in productivity of the tea worker to get better labour productivity.

7.5: Limitations of the Study

- The study is restricted to the Terai region of West Bengal and is based on only selected tea gardens of this region.
- A limited time period of 20 years, is considered for this study.
- Health, safety, and welfare – only these three variables have been taken into consideration to measure labour productivity. Apart from these variables, there are numerous factors, which are responsible for labour productivity.

7.6: Scope for Further Research

- Future studies can be conducted by increasing the time period.
- The area can be increased in future studies.
- The number of variables can be increased in future studies.

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