4.1 Introduction:

Due to the growth of the industrial sector and permanent wage system, workers prefer to choose their employment in the industrial sector rather than in the agricultural sector. The concepts related to the wages in the industries are more important to visualise the gap between the economic conditions and the standard of living between developed and developing countries and it is of course due to the differences in the wage pattern in the industrial sector. The wages are supposed to be related to the basic needs of the employees. The minimum need base wages are hardly sufficient to satisfy the bare needs of the food, clothing and shelter for the family.

In this context, some studies are available in the literature, wage comparisons and wage productivity linkages are considered by Gronan (1974) and Mongia (1984). A study on the measure of capital - labour exploitation has done by Murray - Brown (1966). Mahesh Chandra (1975)
has considered the wage structure in context of productivity. The study of labour market in colonial India is carried out by Gupta (1981). Jaiswal and Jani (1970), (1976) have also considered the study of productivity, profitability and wage pattern of certain major industries in India.

In this chapter, an attempt is made to analyse the wage pattern in the industrial sector of Gujarat State and India as a whole. The study is carried out by the comparison of the real earnings per manday worked by all labour (workers including employees) in the industrial sector as a whole for Gujarat and all India.

The following aspects are studied in this chapter.

(i) wages and salaries per manday (wage rate)
(ii) Wages and salaries per total productive capital employed and
(iii) Wages and salaries per value added by manufacturer (VAM).

4.2 Notations:

The notations used for the basic variables in this chapter are as under:

\[ S_t = \text{Wages and salaries paid to employees during the year } t \text{. (In Rs. lakhs)} \]

\[ \text{Where } t = 0, 1, 2, 3, \ldots, 20 \]
\[ C_t = \text{Total productive capital employed during the year } t. \text{ (In Rs. lakhs)} \]
\[ V_t = \text{Value added by manufacturers during the year } t. \text{ (In Rs. lakhs)} \]
\[ N_t = \text{Numbers of mandays during the year } t. \]

It may be noted that
\[ t = 0 \text{ refers to the base year } \text{i.e. } 1960-'61 \]
\[ t = 1 \text{ refers to the year } 1961-'62 \text{ etc.} \]
\[ t = 20 \text{ refers to the year } 1980-'81 \]

(i) \textbf{Wages and Salaries per manday (Wage Rate)}

In order to find out the wages and salaries paid to the employee per day (assumed to be 8 hours day on average), this ratio is represented by \( W_t \) and it is computed by the formula

\[ W_t = \frac{S_t}{N_t} \quad \text{where } t = 0,1,2,3,\ldots,20 \]

\[ \text{..........................}(4.1) \]

The indices of the above series are computed from the formula,

\[ I_t (w) = \frac{W_t}{W_0} \times 100 \quad \text{..........................}(4.2) \]

(Where \( W_0 \) is the base year (1960-'61) wage rate)
However, for more realistic comparison,
the constant price series are also computed here to
review the real wage situation to take care of the
increase in the cost of living. The series of wages
and salaries are deflated by the consumer price index
with 1960-61 as the base year and denoted them by \( W_t^{(a)} \).
The values of these series are given in the table - 4.1.

Further let,

\[
W_G = \frac{\sum_{t=1}^{n} W_{G,t}}{n} = \text{Average wage rate (at constant prices) for the workers in the}
\text{industrial sector of Gujarat State.}
\]

Where \( W_{G,t}^{(a)} \) = Wage rate (at constant prices)
for the workers in the industrial sector of Gujarat State for the
year \( t \).

\[
\sigma_G = \text{Standard deviation (S.D.) of the wage rate}
\text{(at constant prices) for the workers in the}
\text{industrial sector of Gujarat State.}
\]

\[
\bar{W}_I = \frac{\sum_{t=1}^{n} W_{I,t}}{n} = \text{Average wage rate (at constant}
\text{prices) for the workers in the}
\text{industrial sector of India as a whole.}
\]
Where, \( W_{I, t} \) = Wage rate (at constant prices) for the workers in the industrial sector of India as a whole for the year \( t \).

\[ n = \text{Total number of years considered (} n = 21 \text{)} \]

\[ \sigma_I = \text{Standard deviation of the wage rate (at constant prices) for the workers in the industrial sector of India as a whole.} \]

On the basis of the above formulae, \( 3\sigma \) limits are computed and the diagramatic representations are made for the wage rates in both the sectors at state and at national levels. These limits are denoted by the following formulae.

(A) For the Industrial Sector of Gujarat State

(i) Upper wage rate limit
\[ = (UWRRL)_G = \overline{W}_G + 3. \sigma_G \]

(ii) Lower wage rate limit
\[ = (LWRRL)_G = \overline{W}_G - 3. \sigma_G \]

(iii) Average wage rate
\[ = (AWR)_G = \overline{W}_G \]
(B) For the Industrial Sector of India as a Whole

(i) Upper wage rate limit
\[ (UWR) = \bar{W}_I + 3.6 \]

(ii) Lower wage rate limit
\[ (LWR) = \bar{W}_I - 3.6 \]

(iii) Average wage rate
\[ (AWR) = \bar{W}_I \]

The individual wage rates during the subsequent periods can be located in the wage rate diagrams (WRD) - i.e. diagram 4.1 for the industrial sector of Gujarat State and diagram 4.2 for the industrial sector of India as a whole. This will help to visualise the position of the actual wage rates comparison.

For the series of wages and salaries per manday (wage rate) for the industrial sector at state level, the mean, E.D., C.V. and range at current prices are 15.29, 6.60, 43.17 and 23.20 Rs. per manday respectively, but the same values at constant prices are 7.13, 0.5758, 8.09 and 2.09 Rs. per manday respectively. These values for the industrial sector at national level at current prices are 16.49, 7.56, 45.85, and 24.17 Rs. per manday respectively, while the same at constant prices are 7.49, 0.754, 10.06 and 2.30 Rs. per manday respectively.
From the above analysis it can be seen that the average wage rate for the industrial sector at national level is higher by about 8% at current prices, while the same at constant prices is higher by about 5% as compared to that in the industrial sector at state level.

From the series of wage rate in the industrial sector of Gujarat State at current prices, it can be observed that the wage rate has increased from Rs. 6.61 per manday in the year 1960-'61 to Rs. 14.67 per manday in the year 1970-'71. This shows an increase of about 122%, while at constant prices, it has increased by about 21% as compared to the base year. The wage rate for the industrial sector of India as a whole has risen from Rs. 6.52 per manday to Rs. 16.35 per manday at current prices during the years 1960-'61 to 1970-'71. This fact indicates that there is an increase of about 151% at current prices while the same value has increased by about 36% at constant prices. The maximum rise in the wage rate for the industrial sector of Gujarat State at current prices is about 351% in the year 1980-'81, while the same at constant prices has increased by about 25% in the year 1972-'73 as compared to the base year. The maximum rise in the wage rate for the industrial sector of India as a whole at current prices is in the year 1980-'81, which is about 371%, while the same at constant prices is about 36% in the year 1970-'71 as compared to the year 1960-'61.
The AGR of the wage rate for both the industrial sector at state and at national levels during the period 1960-'64 has gone up by about 5% per year and 0.54% per year at current and at constant prices respectively. The AGR during the year 1970-'74 for the industrial sector of Gujarat State has boosted by about 11% per year at current prices, but the same has gone up by about 1.5% per year at constant prices, while for the industrial sector of India as a whole, the AGR for the same period has gone up by about 10% per year and about 1.7% per year, respectively at current and at constant prices. The overall growth rate during the span of 21 years for the industrial sector at state level has gone up by about 17% per year at current prices, while it has gone up only by 0.11% per year at constant prices. The AGR during the year 1960-'61 to 1980-'81 for the industrial sector at national level has gone up by about 18% per year and 0.32% per year at current and at constant prices respectively. The compound growth rate (CGR) for the wage rate during the span of 21 years at constant prices has gone up only marginally, which is about 0.005% per year for the industrial sector at state level and 0.014% per year for the industrial sector at national level.
The trend values for the wage rate are also obtained here, using the moving average method with periodicity of four years. The trend values for both the industrial sectors are given in the table - 4.1. The trend values at constant prices are plotted in the diagram-4.3 for both the sectors. From the series of trend values for the wage rate in the industrial sector of Gujarat State, it can be observed that, it has increased by about 3.13 times in the year 1978-'79 at current prices, while the same at constant prices is about 1.15 times in the year 1971-'72 as compared to the year 1962-'63. The trend values for the wage rate for this sector at constant prices has reduced by about 3% during the years 1976-'77 and 1977-'78 as compared to the year 1962-'63.

The trend value for the industrial sector of India as a whole at current prices has increased by about 3.42 times in the year 1978-'79, but the same value has risen by about 1.25 times at constant prices in the year 1970-'71 as compared to the year 1962-'63. From the above analysis, it may be concluded that there is an increasing trend at current prices, for both the sectors of the economy as a whole, but these values at constant prices indicate more fluctuations in both the sectors of the economy. This might be due to the variations in the consumers' price index series.
From the above analysis for the wage rates in both the industrial sectors, it may be worthwhile to conclude that the overall growth rate at constant prices is very low in both the sectors of the economy, but there is a remarkably higher growth rate in wage rate at state level as compared to the same at national level. From the point of view of the co-efficient of variation (C.V.), it can be seen that the C.V. for the wage rate for the industrial sector of Gujarat State is less than the same for India as a whole both at current as well as at constant prices. Thus comparatively there are less variations in the wage rate at state level as compared to that at national level.
(ii) **Wages and Salaries per Rupee of Total Productive Capital Employed:**

In order to know what fraction of total productive capital (TPC) employed in the industrial sector as a whole goes to the total employees in the industries in the form of wages and salaries paid to them. This ratio is calculated for the industrial sector of Gujarat State and also for India as a whole, which can be denoted by $X_t$. It determines the share of labour in the TPC invested. This measure $X_t$ is computed from the formula:

$$X_t = \frac{S_t}{C_t} \quad (0 \leq X_t \leq 1)$$

where $t = 0, 1, 2, 3, \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (4.3)$

The indices of the above series is denoted by $I_t (X)$ and they are given by

$$I_t (X) = \frac{X_t}{X_0} \times 100$$

where $t = 0, 1, 2, 3, \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (4.4)$

For more realistic comparison at constant prices, the series of wages and salaries is deflated by the consumer price index for various years, which can be denoted by $X_t (d)$ and their indices are denoted by $I_t (X)$ by using the formulae (4.3) and (4.4) respectively.
The above series for both the industrial sectors are given with their indices in the table 4.2.

For the series of wages and salaries per TPC employed for the industrial sector of Gujarat State at current prices, the mean, S.D., C.V., and range are 0.1928, 0.5263, 27.30 and 0.2244 respectively, but the same values at constant prices are 0.1194, 0.0837, 70.13 and 0.3234 respectively. The above values for the industrial sector of all India at current prices are 0.1584, 0.0272, 17.20 and 0.1050 respectively, while the same values at constant prices are 0.0944, 0.056, 59.50 and 0.2102 respectively. It means that the share of labour in total productive capital employed for the industrial sector of Gujarat State and all India at current prices are on an average about 19% and 16% respectively, but the same values at constant prices are about 12% and about 9% respectively for the industrial sector at state and national levels. From this, it can be concluded that the total productive capital is not significantly utilized towards the wages and salaries in the industrial sector as a whole for Gujarat State as well as for all India. Hence, even though these industries are highly labour intensive, the share of TPC to wages and salaries are not adequate. Comparing the
The proportion of labour in total productive capital employed for the industrial sector of Gujarat State at current prices is the highest (about 35%) in the year 1960-'61 and it has reduced by about 19.5% in the year 1970-'71, which indicates the reduction of about 45% as compared to the year 1960-'61. In the year 1980-'81, this proportion was only about 14%, which shows the lowest share of labour in total productive capital employed. It means that there is a reduction of about 64% as compared to the year 1960-'61, while at constant price, this proportion in the year 1970-'71 was about 11% and it became about 3%, which is the lowest proportion in the year 1980-'81. It means that there is a reduction of about 70% and 92% respectively as compared to the base year.

The proportion of labour in TPC in the industrial sector of all India at current prices has reduced from about 24% in the year 1960-'61 to about 15% in the year 1970-'71. It means that there is about 27% reduction as compared to the base year. The lowest reduction in this series at current prices is about 44% in the year 1980-'81 as compared to the year 1960-'61, which is showing the lowest proportion of labour in total productive capital employed,
but the same at constant prices shows, a small proportion of 8% in the year 1970-'71 and about 3.5% in the year 1980-'81 as compared to 24% in the base year.

The AGR for this series during the first five years (1960-'64) for the industrial sectors of Gujarat State and all India at current prices, have gone down by about 8% per year and about 7% per year respectively. But at constant prices, the AGR has gone down by about 10% per year for both the sectors. The AGR during the period (1970-'75) for the industrial sector of Gujarat State, at current prices has gone down by about 2.7% per year, while the same at constant prices has gone down by about 9.53% per year. The AGR for the industrial sector of India as a whole, during the same period has gone up by about 2% per year at current prices, while the same has gone down by about 6.6% per year at constant prices.

The overall growth rate for the industrial sector of Gujarat State during the span of 21 years, has gone down by about 3% and 4.5% per year on an average respectively at current and at constant prices, while the same for the industrial sector of all India, has gone down by about 2% per year at current prices and 4% per year at constant prices. The compound growth rate (CGR) during the span of 21 years at current prices have gone down by 0.22% and 0.13% per year respectively for the industrial sector at state and national levels, whereas at constant prices, it has gone down by about 0.45% per year for both the
industrial sectors of the economy.

For the series of wages and salaries per T£C employed, the trend values are obtained for both the industrial sectors, at current as well as at constant prices. These values are given in the table - 4.2 and they are plotted in the diagram - 4.4 at constant prices. The trend values for the industrial sector of Gujarat State at current prices indicate the reduction of about 46% in the year 1978-'79 as compared to the year 1962-'63, but the same at constant prices shows the reduction of about 83% during the same year. The trend values for the industrial sector of all India showing the reduction of about 27% at current prices and about 74% at constant prices in the year 1978-'79 as compared to the year 1962-'63. As a whole there is a declining trend for both the industrial sectors at current as well as at constant prices.
(iii) Wages and Salaries per VAM

In order to know what fraction of VAM goes to wages and salaries in the industry, the ratios for different years for the industrial sector as a whole for Gujarat State and all India are calculated. This ratio is denoted by $Y_t$ and it is given by the formula:

$$Y_t = \frac{S_t}{V_t} \quad \text{where} \; t = 0, 1, 2, 3, \ldots, 20$$

\[\text{(4.5)}\]

The indices of these series are given by:

$$I_t(Y) = \frac{Y_t}{Y_0} \times 100 \quad \text{where} \; t = 0, 1, 2, 3, \ldots, 20$$

\[\text{(4.6)}\]

In order that one can compare the real earnings made by the employees, the above series is deflated at constant prices. Here the method of double deflation is used-i.e. wages and salaries are deflated by the consumer price index and the series of VAM is deflated by the wholesale price index. These deflated values of $Y_t$ series are denoted by $Y_t^{(d)}$. 
The indices for the above series are given by:

\[
I_t = \left( \frac{Y_t}{Y_0} \right)^{(d)} \times 100
\]

Where \( t = 0, 1, 2, 3, \ldots, 20 \)

\[\text{..........(4.7)}\]

The above series for both the industrial sectors are given in the table- 4.3.

For the series of wages and salaries per VAM, for the industrial sector of Gujarat State at current prices, the mean, S.D., C.V., and range are 0.5367, 0.0488, 9.084 and 0.2328 respectively, while the same values for the industrial sector of India as a whole are 0.5512, 0.034, 6.23 and 0.1328 respectively. The above values at constant prices for the industrial sector at state level are 0.5511, 0.088, 15.95 and 0.2782 respectively, but the same values for the industrial sector at national level are 0.5683, 0.041, 7.19 and 0.1818 respectively. The average values for this series indicates that, the industrial sector of Gujarat State is spending about 54 paisa at current prices and 55 paisa at constant prices per year on an average, per rupee of VAM, while the same for the industrial sector of India as a whole is spending 55 paisa and 56 paisa per year respectively at current and at constant prices.
From the series of wages and salaries per VAM for the industrial sector of Gujarat State, it is observed that the maximum rise at current prices is about 9.4% in the year 1968-'69, while at constant prices, it is about 17% in the year 1966-'67 as compared to the base year. The lowest reduction in this series is about 30% both at current and at constant prices during the year 1974-'75 and 1978-'79 respectively, as compared to the year 1960-'61. The maximum rise in this series for the industrial sector of India as a whole at current prices, is about 12% in the year 1968-'69, while at constant prices, it is about 18% in the year 1966-'67 as compared to the same in the base year. The lowest reduction in this series for the industrial sector of India as a whole at current prices, is about 10% in the year 1976-'77, whereas at constant prices, it is about 12% in the year 1979-'80 as compared to the base year.

The AGR for the series of wages and salaries per VAM, for the industrial sector of Gujarat State during the period (1960-'64) has gone up by about 1.1% per year and 0.2% per year at current and at constant prices respectively, while for the industrial sector of all India, it has gone down by 0.2% per year and 0.7% per year, respectively at current and at constant prices.
The AGR during the period 1975-'81 at current prices, has gone down by about 1% per year for both the industrial sectors, while at constant prices, it has gone down by about 2% per year and 0.7% per year for the industrial sector of Gujarat State and all India respectively. The overall growth rate during the span of 21 years for the industrial sector of Gujarat State has gone down by about 0.95% per year at current prices and about 1.15% per year at constant prices. The overall growth rate for the industrial sector of all India have gone down by about 0.34% and about 0.2% per year respectively at current and at constant prices. The CGR during the span of 21 years, has gone down by about 0.06% per year and 0.01% per year at constant prices, respectively for the industrial sector of Gujarat State and India as a whole.

The trend values are obtained for this series both at current as well as at constant prices. These are given in the table - 4.3. The trend values at constant prices are plotted in the diagram - 4.5, simultaneously for both the sectors. From the series of trend values for the industrial sector of Gujarat State, at current prices, it is observed that, it has increased by about 4.4% during the 1966-'67 and reduced by about 26% during the year 1978-'79 as compared to the year 1962-'63.
The trend value for the industrial sector of India at current prices has risen by about 8.5% during the year 1969-'70, and, it has reduced by about 8% during the year 1978-'79 as compared to the year 1962-'63. The trend values at constant prices have increased by about 5.5% during the year 1965-'66 and by about 6.3% during the year 1967-'68, respectively for the industrial sector of Gujarat State and India as a whole. The trend values at constant prices in the year 1978-'79 have declined by about 30% and 11% respectively for the industrial sector at state and the national levels. As a whole, the trend of this series is showing more or less declining pattern.

4.3 Concluding Remarks:

From the above analysis it may be concluded that the wage rate in the industrial sector of Gujarat State as well as the same for India as a whole, has not substantially increased. A dominant industry may follow a policy of paying higher wages and salaries due to the favourable impacts on productivity. It is doubtful how far wage increase can be considered to be responsible for price increase in the economy, but at constant price, it seems that the wages are not adequate to fulfill the
basic needs of the labour. All these indicate that we should expect the industrial earning structure to change considerably, but it is found that in the industrial sector at state and national levels, the structure of industrial earning has not changed considerably. The measure of wages and salaries per TPC at constant prices represent almost the declining trends. Similar facts are also observed in the case of the trends for wages and salaries per VAM. In general, it would be seen that real earnings per manday have not increased substantially in the industrial sector for Gujarat State as well as for India as a whole.