Chapter I

INTRODUCTION

For a long time the discussion on the problems of wages related to two[1] broad aspects. (1) General levels of money wage rates and the way in which the changes in them were related with the aggregative problems of inflation, depression or to the general problem of economic stabilisation in war time. (2) At a micro-level i.e. at individual firm level attention was concentrated on how the wage rates were determined for specific occupations or jobs. The aspects such as administered wages in a modern industry and the working of market mechanism for the determination of wage rates were debated and the role of institutional factors such as trade unions and management preferences were examined.

As compared to the above two aspects of the wage problem the analysis of the levels and movements of relative wage rates or what are called "wage structures" remained neglected. However in the post Second World War period the movements of relative wages have attracted special attention. The relative wage rates among different regions in industry and agriculture, inter-industry, occupational, skilled and unskilled workers wage differentials etc., have been examined by many studies in

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[1]Reynolds L.G. and Taft C.H. The Evolution of Wage Structure. New Haven, Yale University Press, 1956. pp.1-2.

the developed countries such as U.S.A., U.K. References to
these studies have been cited in the present study at appropriate
places and also listed in the bibliography. The special atten-
tion devoted to the examination of relative wage rates is not
without significance. The wage differentials (inter-sectoral,
inter-industry, geographical etc.) have a vital bearing on the
nature and functioning of the economic system of a country or
a region. These differentials ought to reflect certain concrete
economic facts such as the differences in capacity, skill and
effort of individual worker, differences in the cost of living
in different areas or relative supply and demand position for
particular type of labour. In other words these wage differen-
tials should reflect some economic rationale and must perform
the economic function of channelising labour into the needy
sectors, industries or areas. In an economy in which competi-
tive forces are not prominent sometimes the wage differentials
turn out to be what are called irrational disparities[2] devoid
of any functional role.

The study of these wage differentials has become all the
more important, as it has been suggested,[3] that the structure
of wage differentials in under-developed economies needs
elaboration at the lower end of the wage scale. Because the

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[2]Gadgil D.R. Wage Regulation and Other Problems of
Industrial Labour in India, Poona and Asia, Bombay, 1942.
pp.9-21.

[3]Turner H.A. Wage Trends, Wage Policies and Collective
Bargaining: The Problems of Under Developed Countries,
Cambridge University Press, 1965. p.61.

mass of the workers occupy an undifferentiated position at the bottom of the wage scale. In such circumstances measures like fixing minimum wage or improving the living standard of a few privileged groups of workers are not the steps which will ultimately help to improve the living standard of an average worker. What is required is the recognition and encouragement of individual effort, ability etc., among such mass of the workers so that the gap between them and the very limited number who at present enjoy relatively high earnings is narrowed down. It might also happen that the geographical wage structures in industry and in agriculture reveal different patterns both in terms of wage rates paid and regional concentration of workers.

In a country such as India, few attempts have been made to examine the structure of inter-industry and inter-state wage differentials and the findings in one have revealed a strikingly high geographical[4] differentials in industrial wage structure. Another study has shown the inter-industry wage structure in India to be more compressed[5] while Sawney[6] shows that inter-

[4]Bharadwaj V.P. and Papola T.S. "Inter-state wage differentials and the role of a central wage policy", a paper submitted to the Seminar on Union State Relations, Indian Institute of Advanced Studies, Simla, May 1969. Also Saradamoni K. "Inter-state differences in manufacturing workers' earnings, a study in money and real wages". Economic and Political Weekly, May 2, 1970. Vol.V, No.18.

[5]Papola T.S. and Bharadwaj V.P. "Dynamics of inter-industry wage structure, an inter-country analysis". The Economic Journal, March 1970. Vol.LXXX.

[6]Sawney P.K. "Inter-industry wage differentials in India". The Indian Economic Journal, July-September 1969, Vol.XVII, No.1.

industry wage differentials in Indian manufacturing have widened. These studies are at National level and show divergent findings. Hence it is difficult to arrive at any precise conclusions about the level and trend. Moreover only inter-industry and inter-state differentials of industrial wages are studied while the wage differentials between industry and agriculture i.e. inter-sectoral and geographical differentials in agricultural wages are not examined. It is in this context that the present study assumes special significance.

The Present Study:

The present study examines the levels and trends of various types of wage differentials in the state of Gujarat and in and among the smaller regional units like the districts within the state. The wage differentials which are examined are:

1. Geographical wage differentials in industry and agriculture. The geographical wage differentials in industry which are examined are of two types: (i) gross wage differentials among the districts i.e. differentials among the average gross industrial wage rates among the districts and (ii) pure wage differentials or regional wage differentials in industry. These are analysed with respect to eleven industries at "Three Digit" level.

2. Inter-industry wage differentials. The levels and trends of inter-industry wage differentials are examined for the state as a whole and also for the districts. An attempt has been made in this

connection to relate the wage differentials with
the degree of industrial development.

3. Inter-sectoral wage differentials.

The inter-sectoral wage differentials are the manufacturing
and agriculture wage differentials and they are analysed for
districts. They are calculated on the basis of the district
average gross industrial wage rates of workers (a) earning less
than Rs.200/- per month, (b) earning less than Rs.400/- per
month, (c) on the basis of the wage rates prevailing in certain
industries which are comparable to agriculture in terms of the
type of labour force employed, industries such as manufacture
of edible oils except the hydrogenated oils (Industry code
209a), Manufacture of grain mill products (Industry code 205)
and Stone dressing, crushing etc., (Industry code 339a).

The empirical evidence on the pattern of behaviour of
these wage differentials is set in the context of the theoreti-
cal pattern or hypotheses wherever possible. Moreover with the
help of the available data on economic variables at district
level, an attempt is made to explain the levels and patterns of
behaviour of these wage differentials. The period covered is
not uniform for all wage differentials. For instance to analyse
the differentials in agricultural wages we have mainly relied
on the period 1956-57 to 1967-68 and the analysis is pertaining
to 16 districts in the state. Wherever possible we have
extended the period to 1950-51. Similarly for industrial wage
differentials it was possible to rely mainly on the period
1960 to 1969.

This is perhaps the first attempt of its kind in India
covering these various types of wage differentials and that
too among the smaller regional units like the districts within
a state.

Most of the regional studies usually take state as the
unit of analysis. This is perhaps with an implicit assumption
that a single linguistic state is a fairly homogeneous unit and
disparities in the levels of development in units smaller than
the states either do not exist or are insignificant. At present,
however, there is growing realisation of the prevalance of
significant disparities among the regions within a state. It
is from this point of view that the studies of the smaller
regions within a state assume importance. For meaningful planning
at the state and the National level the studies of small
regional units like the districts have become essential and
their need is advocated.[7] Within the state of Gujarat there
are significant differences in the levels of overall development
as well as in industrial and agricultural development. Moreover
in some of the districts which are industrially and agricul-
turally relatively more developed, the wages of agricultural
labourers are lower than those in other districts which are not
so well developed. In some districts there are wide differences

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[7] Gadgil D.R. District Development Planning, R.R. Kale
Memorial lecture 1966, Gokhale Institute of Politics and
Economics, Poona. Also Planning Commission, Government of
India has laid down criteria to demarcate backward districts.
See: Report of the Working Group, Identification of Backward
Areas, Government of India, Planning Commission, 1969.

between the wage paid to labour in industry and in agriculture
while in others there is certain closeness. These inter-
sectoral wage differentials between industry and agriculture
have remained practically unexplored even though the subject
is of great practical interest. It is important to know as to
how the reward for labour has been changing in industry and
agriculture. According to the census of 1961 the agricultural
labourers accounted for 14.77 per cent of the working population
in the state. Moreover they are unevenly distributed among the
different districts within the state. For instance the vast
majority of agricultural labourers are concentrated in the
districts of Southern Gujarat. Similarly 6.33 per cent of the
working population was engaged in manufacuuring other than
household industry. The average daily employment in factories
submitting returns was 3,29,694 in 1960 which is 3.89 per cent
of total working population in the state. Most of the factory
workers in the state are concentrated in relatively more indus-
trialised districts of Ahmedabad, Surat and Baroda.

Thus considering the labourers engaged both in agriculture
and industry we find that they constitute a sizable proportion.
On the other hand they, particularly the agricultural labourers
are the most disadvantaged people in the society. This is all
the more so when adequate and gainful opportunities for work
are very limited and there exists a heavy pressure of population
on land. At the same time due to inflationary trends even the
meagre income gets eroded continuously. Hence it is of vital
interest to examine how the wages which are the main plank of

income of these wage earners, are related in different sectors, in different industries and regions and in what direction they have moved over time. From the point of view of balanced regional development such studies occupy prominent place.

Economy of Gujarat:

Since this study is concerned with the state of Gujarat and districts within the state, we have given an outline of the demographic and economic features of the state and the districts.

The state of Gujarat is situated on the West Coast of India between 20.1 and 24.7 degrees North latitude and 68.4 and 74.4 degrees East longtitude. The state is bounded by the Arabian Sea in the West, Pakistan and Rajasthan in North, Madhya Pradesh in the South East and Maharashtra in the South.

The state has an area of about 187 thousand square kilometers accounting for about 5.7 per cent of the total area of the whole country (except Sikkim). According to the census of 1971 the state had a population of 266,87[*] lakhs persons.

The state has been divided into 19 administrative districts and districts are further subdivided into Talukas. Map of Gujarat showing the districts is given at the agendix of this chapter.

On the basis of land the state can be divided into two zones: (i) Main land of Gujarat: It is mainly an alluvian plain

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[*] 1 lakh = 100,000.

due to the rivers like Sabarmati, Mahi, Narmada, Tapi, Rupen Saraswati, Banas. (ii) The second zone is mainly constituted, by peninsular Saurashtra. It is consisting of coastal land, the inland plains and the high lands. The Bhadar, the Shatrunji, the Machhu and the Bhogavo are the main rivers in this zone.

The average rainfall in the areas of the state varies from 13 inches to 60 inches. In South Gujarat, which includes Bulsar, Dangs, Surat, Broach, Baroda, Panchmahals and Sabarkantha districts the rainfall is between 30 inches to 60 inches. In some parts of Dangs rainfall is around 75 inches. In North Gujarat which includes Kaira, Ahmedabad, Gandhinagar, Mehsana and Banaskantha districts, the average rainfall ranges between 20 inches to 40 inches. While Saurashtra including six districts i.e. Junagadh, Amreli, Bhavnagar, Rajkot, Jamnagar and Surendranagar receives around 25 inches rainfall. Kutch district has semi-desert conditions with very low rainfall.

Of the total population of 206 lakhs in 1961 in the state, 84.75 lakh persons or 41.07 per cent were classified as workers as against the corresponding figure of 42.98 per cent in India. The distribution of working population in 9 industrial categories according to the census of 1961 was as under:

Table I-1

Distribution of Workers in 9 Industrial Categories

in Gujarat and India

Group	Gujarat (%)	India (except NEFA) (%)
1	2	3
1. Cultivators	53.32	52.80
2. Agricultural labourers	14.77	16.71
3. Mining, Quarrying, Livestock, Forestry etc.	1.24	2.77
4. Household Industry	6.56	6.38
5. Manufacturing other than household industry	6.33	4.22
6. Construction	1.06	1.09
7. Trade and Commerce	4.85	4.06
8. Transport, Storage and Communications	1.88	1.60
9. Other Services	9.99	10.37
Total Workers	100.00 (8474588)	100.00 (188675500)

Source: Handbook of Basic Statistics, 1965 and 1966, Bureau
of Economics and Statistics. Government of Gujarat.

It will be seen that agricultural workers (cultivators
plus agricultural labourers) accounted for 68.09 per cent of
the total workers in Gujarat and 69.51 per cent in India.
Proportion of agricultural labourers in the state is somewhat
lower than for the country as a whole, though about 15 per
cent of the total workers which are agricultural labourers is

by itself a sizable group. The proportion of workers engaged
in household industry and in manufacturing other than household
industry particularly in the latter, is higher in the state than
for the country as a whole. In Gujarat, 14 per cent of the
working population was engaged in the secondary sector (house-
hold industry, manufacturing other than household industry and
construction) as against 11.7 per cent in the country as a
whole.

The state income from major sectors and per capita income
at current prices during 1956-57 to 1967-68 were as under:

Table I-2

State Income from Major Sectors and Per Capita Income
at Current Prices during 1956-57 to 1967-68

Major heads	Year		
	1956-57	1960-61	1967-68*
1	2	3	4
1. Agriculture and allied industries	45.4	46.6	58.3
2. Mining, manufacturing and small entreprises	21.6	22.0	19.9
3. Banking, insurance, transport and commerce	16.5	15.7	10.8
4. Other services	16.5	15.7	11.0
5. Net domestic product at factor costs (Rs in crores)	538 (100.0)	694 (100.0)	1301 (100.0)
6. Per capita income (Rs.)	288	339	529

Source: Socio-Economic Review, 1969-70. Bureau of Economics
and Statistics, Gujarat State.

*Provisional.

The table shows that the state income contributed by agriculture has risen sizably. This rise seems to have come about at the cost of the secondary sector. The per capita money income has risen from Rs.288 in 1956 to Rs.529 in 1967 or by 83 per cent. However the real income (in terms of 1960-61 prices) has risen only by 8.9 per cent from Rs.334 in 1956-57 to Rs.364 in 1967-68.

Industries:

Gujarat state ranks third in industrialisation among the states in India. This is clearly shown by the fact that the secondary sector (mining, manufacturing and small enterprises) accounted for 22.5 per cent of the state[*] income in 1965-66.

There were 5094 working factories in the state in 1968 and the average daily employment in them was 4.05 lakhs. About 17.3 per cent of the total working factories at the end of 1968 belonged to the textile group and these factories alone employed about 45.6 per cent of the factory workers. Thus the industrial pattern in Gujarat is heavily dominated by textiles. The next group in respect of the working factories was food except beverages. This group accounted for 14 per cent of the total factories and it was followed by Machinery other than electrical, accounting for 11.9 per cent of the total factories. The group processes allied to agriculture was however second

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[*]In 1960-61 the percentage of state income contributed by secondary sector in Gujarat was 21.2 per cent. In West Bengal it was 23.2 per cent and Maharashtra 22.8 per cent. See: Distribution of National Income by States (1960-61), National Council of Applied Economic Research.

in respect of daily employment (10.4 per cent of average daily
employment in factories), the third groupb being Food except
beverages (7.4 per cent).

Over the period 1960-69 there have been many noteworthy
changes. For instance textile industry has fallen in importance
and many new modern industries have grown rapidly. The percen-
tage changes in the number of reporting factories, employment,
capital, gross output and net value added by manufacture in
1967 over 1961 in the major groups of industries in the state,
based on the census part of the Annual Survey of Industries
are shown below. 1961 is the first year and 1967 is the last
year for which the above mentioned data are available.

Table I-3

Percentage Changes in Reporting Factories, Employ-
ment, Productive Capital, Gross Output and Net
Value Added by Manufacture in the Major Groups of
Industries in Gujarat State: 1961-1967

Item	Major Industry Groups				
	Textiles	Chemi-cals	Cement	Machi-nery (Elect-rical and others)	All Indua-tries
1	2	3	4	5	·6
Reporting Factories	- 2.3	100.0	40.0	114.8	32.7
Persons employed	-18.1	69.2	33.3	133.3	4.8
Productive capital	19.4	318.6	112.2	489.0	172.5
Gross output	45.5	185.1	116.3	370.2	104.5
Net value added by manufacture	19.0	125.1	102.7	258.0	59.4

Source: Socio-economic Review: 1969-70, Bureau of Economics
and Statistics, Gujarat State.

Among the four major groups of industries, Textiles is a declining group. This is clearly shown by the fall in the number of factories, and average daily employment. Moreover the productive capital, gross output and net value added by manufacture in Textile group have risen at a slower rate than for all the other groups of industries. The percentage changes in all of the above shown indicators are faster in the remaining three major industry groups.

Agriculture:

In 1965-66, out of the total reporting area of 18532500 Hectares, 9688300 Hectares or approximately one half of the reporting area constituted net area sown. The area under the food crops (cereals and pulses, sugar crops, fruits and vegetables, condiments and spices, others) and non-food crops (oil seeds, cotton and other fibers, drugs and narcotics, fodder and others) is almost equally distributed in the state (50.05 per cent being under food crops and 49.95 per cent under non-food crops). Among the food crops cereals and pulses group occupies most of the area while among the non-food crops, oil seeds as well as cotton and other fibers occupy the large part.

The productivity of various crops has been rising in the state. However the productivity of all the major crops grown in the state except for wheat and Bajri is lower than in India. For instance the productivity of all cereals and pulses taken together (food grains) was 4.9 Quintals per hectare in

Gujarat as against 6.4 Quintals in India in 1965-66.

The state is backward in respect of irrigation. In the year 1965-66 percentage gross area irrigated to the gross cropped area was 10.52 in Gujarat as against 19.9 in India.

The economies of the districts also show wide variations in respect of levels of development of industry, agriculture, population pressure on land etc. A table highlighting the demographic and economic (both for industry and agriculture) aspects of districts is in the Appendix I-1.

Sources of the data and their limitations:

There are three main aspects on which the data are needed in the present study. These are:

1. Agricultural wage rate.
2. Industrial wage rate.
3. Data on explanatory variables for levels and changes in industrial and agricultural wages.

The data on daily agricultural wage rate for adult male casual worker are drawn from one basic source i.e. the Directorate of Agriculture, Government of Gujarat,Ahmedabad. These data are collected and consolidated with the help of the various appropriate agencies at the district level through the overall coordination of the main agency mentioned above. These are then published in a number of publications at the State and the National level. For instance at the state level "Gujarat Labour Gazette" which is a monthly publication of the Government

of Gujarat, published by the Office of the Commissioner of
Labour, Gujarat State, contain statements showing the agricul-
tural wages for particular months. "Basic agricultural
statistics of Gujarat State for the period 1949-50 to 1961-62"
is another publication which gives the data on the agricultural
wages. It is issued by the Directorate of Agriculture,
Gujarat State, Ahmedabad. At the National level these data are
published in "Agricultural wages in India" published by the
Directorate of Economics and Statistics, Ministry of Food,
Agriculture, Community Development and Co-operation, Government
of India. In other words all these publications contain data
which are at the source, collected and consolidated by the same
agency i.e. the Directorate of Agriculture, Gujarat State,
Ahmedabad. This has enabled us to to avoid the problem of
non-comparability which can crop up in using many sources. The
daily agricultural wage is the simple average of the wage rates
prevalent in different centres in a district during a particular
month. By using the same simple average method daily agricul-
tural wage during a particular year is calculated. Agricultural
wage is a simple average of "Field Labour" and "Ordinary
Labour" in agriculture. The specific limitations which might
be present are described at length in the beginning of the
next chapter.

The other data used in analysing the structure of agricul-
tural wage differentials are drawn from: (1) Handbook of
Basic Statistics, Gujarat State published by Bureau of Economics
and Statistics, Ahmedabad. (2) Statistics of Area, Production

and Yield Per Acre of Principal Crops in Gujarat State,
Directorate of Agriculture, Government of Gujarat. Further
latest information the data were copied from the office of the
Director of Agriculture, Government of Gujarat and Gujarat
State Fertilisers Company, Baroda.

The data on industrial wage rates are those collected under
the Payment of Wages Act of 1936. For the state as a whole the
data on mandays worked and total wages paid in different indus-
tries at "Four Digit" level industries are published in
"Annual Report Notes and Statistical Statements under the
Factories Act, 1948, Payment of Wages Act, 1936, and Maternity
Benefit Act", for each year. These Annual Reports are
published by the Chief Inspector of Factories, Government of
Gujarat.

However the data on the same aspects are not published
district-wise. Therefore the district-wise data on mandays
worked, total wages etc., for all the districts and for all
possible years i.e. year 1954 to 1969 were copied by the author
from the district-wise Registers available in the office of the
Chief Inspector of Factories, Government of Gujarat.

Under the Payment of Wages Act, authorities in each state,
collect annual returns from individual factories as defined in
section 2m of the Factories Act of 1948. All the factories,
coming under the perview of the Payment of Wages Act, do not
submit the primary returns to the state authorities, though it
is a statutory obligation on their part. Consequently the data

relate to the reporting units only. The coverage also varies
from year to year. Moreover the Payment of Wages Act is
applicable to employees earning less than Rs.400/- per month
only. However upto 1957 the data were collected for workers
earning less than Rs.200/- per month only. Between 1958 and
1964, separate data were collected for workers earning less
than Rs.200/- per month and those earning Rs.200/- per month
or more but less than Rs.400/- per month. Since 1965 the data
are collected for workers earning less than Rs.400/- per month
as a whole. Due to these reasons of procedural changes in the
methods and coverage of workers, the comparisons of wages over a
period have not been without limitations. In fact many alter-
native combinations had to be worked out in order to present a
time series analysis. Due to the paucity of data on many of
the explanatory variables at district level and the lack of
comparability of different sources it has not been possible to
analyse complete details in some respects. However it is hoped
that the findings of the study would stimulate thought and
would pave the way for further work at regional level.

Chapter Scheme:

Chapter II deals with the measurement of the inter-district
structure of agricultural wages. The problem is tackled with
the help of various statistical techniques and specific aspects
of these wage differentials i.e. level and trend are high
lighted.

Chapter III is devoted to the analysis of the factors
which account for the extent of inter-district wage differentials

as they exist say at a point of time and changes in the structure
over time. Regression analysis is used for examining precise
importance of particular factors in this respect.

The levels and behaviour of real agricultural wages are
examined and the changes in the inter-district structure of
agricultural wage rates are explained on the basis of the
behaviour of real wage rates.

An attempt is made to carry out dynamic analysis in terms
of the "shifts" in the factors influencing the demand for labour
and the supply of labour and their joint influence on the levels
and changes in district agricultural wage rates.

Chapter IV examines the extent and changes in the average
daily gross industrial wage rates among the districts. With the
help of various indicators we have highlighted the extent and
pattern of industrialisation of the districts of Gujarat. By
elaborate computations we have tried to explain the differences
in district industrial wage rates (as compared to the state
wage rate) in terms of the differences in industrial structures
and in wage rates. The details of the methodology used for the
above purpose and its limitations are explained by working out a
hypothetical example. We have also examined the relationship
between changes in factory employment in districts and changes
in district industrial wage rates. The changes in the inter-
district structure of industrial wages are explained in terms
of behaviour of district real industrial wage rates. Pure
geographical or regional differentials are then examined.

Regional wage differentials are examined for eleven industries
at "Three digit" level.

In Chapter V we have analysed inter-industry wage differen-
tials. These differentials are examined for the state as a
whole and also separately for districts. These are examined
in the context of hypothesis on the behaviour of inter-industry
wage differentials. We have made an attempt to relate the
changes in wage rates in industries with employment changes in
them. Employment significance of high and low wage industries
is also examined. Inter-industry wage structure changes
explained in terms of the behaviour of real wage rates in 30
"Three digit" industries. The relationship between productivity
and wage rate is also examined. The inter-industry wage
differentials in the districts are then compared with the extent
of industrial development in the districts.

Chapter VI is devoted to the study of the extent and
changes in the inter-sectoral wage differentials between industry
and agriculture in the districts. We have analysed aspects
such as the extent of inter-sectoral wage differentials and whether
they are excessive or not; trend in the inter-sectoral wage
differentials; distribution of industrial and agricultural labourers
among the districts with high and low inter-sectoral wage differen-.
tials etc. Inter-sectoral wage differentials are also computed
by taking wage rates of particular industries i.e. industries,
which in terms of labour employed, can be compared with agriculture.
At the end of Chapter VI we have given summary and conclusions of
the present study.

Appendix I-1

Demographic and Economic (Industrial and Agricultural) Features of 16 Districts of Gujarat

District	Total population (1971)	Density of population per kilometer (1971)	District per Capita income (in Rs.) (1959-60)	Agricultural income per person engaged in agriculture (in Rs.) (1959-60)	Agricultural workers (cultivators + agricultural labourers) per 100 acres of net sown area. (1961)	Agricultural labourers as percentage of agricultural population. (1961)	Net area irrigated as percentage of net area sown (1967-68)
1	2	3	4	5	6	7	8
Ahmedabad	31,05,814	75	571	503	1?	30	13.87
Banaskantha	12,65,257	100	195	37?	2?	8	12.68
Baroda	19,78,850	254	287	379	31	39	10.30
Broach	11,06,087	122	260	340	30	47	7.47
Kaira	24,44,323	340	212	372	38	24	21.38
Mehsana	20,91,907	232	244	430	28	15	24.32
Panchmahals	18,46,452	208	192	243	57	4	3.51
Sabarkantha	11,86,733	161	250	463	32	8	12.75
Surat	32,10,989	230	279	318	42	38	12.43
Amreli	8,47,908	125	206	335	18	20	6.65
Bhavnagar	14,23,058	128	305	677	18	34	8.79
Jamnagar	11,11,376	79	386	513	13	10	8.48
Junagadh	16,55,618	156	279	570	25	16	15.30
Kutch	8,49,245	19	290	734	12	19	6.49
Rajkot	16,23,418	145	346	687	16	13	11.03
Surendranagar	8,45,860	81	329	606	9	20	4.86
State	2,66,87,186	136	298	445	249	21	11.30

Note: Density of population in Bulsar district was 273 and in Gandhinagar district 309 persons per square kilometer.

Source:
1) Handbook of Basic Statistics, Gujarat State, 1965 and 1966. Bureau of Economics and Statistics, Government of Gujarat, Ahmedabad.

ii) Census of India 1971, Paper 1 of 1971 – Supplement Provisional Population Totals.

iii) "Regional Disparities in Income of Gujarat State", Quarterly Bulletin of Economics and Statistics, July-September 1963, Bureau of Economics and Statistics, Government of Gujarat.

iv) Directorate of Agriculture, Government of Gujarat.

Appendix I-1 (contd.)

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District	Area sown more than once as percentage of net sown area (1967-68)	Normal Rainfall (Milli-meters)	Area under cash crops as percentage of total cropped area (1967-68)	Area and Production of Major Crops: 1967-68					
				Foodgrain		Total Oil seeds		Cotton	
				Area 00 Hectares	Production 00 Hectares	Area 00 Hectares	Production 00 Hectares	Area 00 Hectares	Production 00 Hectares
	9	10	11	12	13	14	15	16	17
Ahmedabad	3.48	782.8	40.21	3437	2246	582	296	2020	1689
Banaskantha	10.85	750.7	30.26	6331	3596	342	141	248	180
Baroda	3.00	916.6	60.73	2107	1509	315	207	2445	2812
Broach	0.69	876.6	62.89	1664	1966	211	134	2245	2010
Kaira	11.22	769.5	35.87	3538	3585	501	396	637	661
Mehsana	10.19	613.0	34.72	4648	3435	768	431	789	818
Panchmahals	9.89	1026.5	19.40	3472	3029	707	499	276	201
Sabarkantha	10.85	794.2	50.08	2146	1847	1230	1128	1088	1054
Surat	5.77	1071.1	49.32	3816	3114	461	309	1341	780
Amreli	2.24	515.0	59.14	1993	1106	2552	1510	128	93
Bhavnagar	2.20	620.1	49.86	3161	1739	2155	1316	422	484
Jamnagar	6.08	466.1	63.46	2120	1096	3606	2792	170	123
Junagadh	9.76	843.7	71.53	2016	1693	3467	3290	332	440
Kutch	2.40	340.4	37.20	3582	1183	704	396	629	645
Rajkot	3.99	594.3	68.90	2503	1442	3808	2102	915	1133
Surendranagar	1.05	487.0	56.65	2817	835	813	306	2816	2059
State	6.31	-	-	49674	32624	22175	15254	16501	15182

Note: 1) Rainfall in Bulsar district is 1805.6 millimeters.

11) Area under Bash crops = Total cropped area - Area under Foodgrains.

Contd......

Appendix I-1 (contd.)

District	Factory employment per 1000 of total population (1960-61) [18]	Factory employment as percentage of total factory employment in the state (Annual Survey of Industries, Census part) (1965) [19]	Workers engaged in manufacturing sector as percentage of total workers (1961) [20]	Location quotients of Industries: 1969 — Industry Code Number							
				21	22	23	24	25	26	27	28
				01	20	23	31	33	34	35	36
Ahmedabad	77.00	49.51	26.5	0.23	0.15	1.62	0.30	0.28	1.02	0.70	0.81
Banaskantha	0.40	0.03	0.8	-	-	-	-	0.52	-	-	0.50
Baroda	21.00	16.48	7.0	1.79	0.26	0.32	3.14	1.41	1.40	1.15	2.21
Broách	6.00	2.26	3.1	6.90	0.06	0.56	0.33	0.32	-	0.22	-
Kaira	10.00	5.25	4.7	0.70	0.81	0.63	0.33	2.33	0.46	0.43	1.37
Mehsana	9.00	4.04	3.1	1.84	0.46	1.21	0.10	0.35	0.06	0.05	0.69
Panchmahals	3.00	1.43	0.7	1.09	2.09	-	0.35	2.28	0.70	-	-
Sabarkantha	5.00	1.00	1.2	7.98	1.37	0.14	-	0.40	0.29	-	-
Surat	16.00	9.65	6.9	0.91	0.73	1.02	1.22	1.47	1.29	1.57	0.67
Amreli	3.00	0.39	2.4	0.18	2.33	-	-	0.18	-	-	-
Bhavnagar	12.00	3.42	5.8	0.79	2.14	0.65	0.68	1.59	1.39	2.09	0.78
Jamnagar	13.00	2.94	7.6	0.31	5.02	0.22	2.17	2.11	0.76	5.59	0.56
Junagadh	7.00	2.47	3.7	1.11	5.03	0.35	2.65	2.08	-	0.56	0.18
Kutch	4.00	0.95	2.9	1.02	8.02	0.18	0.64	0.40	-	1.78	0.09
Rajkot	10.00	2.62	6.1	1.26	2.62	0.25	0.11	1.86	1.71	1.99	2.59
Surendranagar	16.00	3.56	6.6	3.27	2.08	0.32	2.04	2.03	0.47	0.65	1.46
State	17.00	100.00	6.3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: For location quotients, See: "District Profiles Towards Industrial Planning in Gujarat" by P.G. Pathak and Y.K. Alagh, Sardar Patel Institute of Economic and Social Research, Ahmedabad. The paper was read at the Second Gujarat Economic Conference held in Baroda in January 1971. It is to be published in the Conference Number.

Note: (iv) Location quotients for the districts of Bulsar and Gandhinagar were as under:

	Location Quotients							
DistRict	01	20	23	31	33	34	35	36
Bulsar	0.29	0.62	0.80	2.27	1.32	2.02	0.58	0.59
Gandhi-nagar	7.33	-	-	-	3.44	-	-	-

(v) Industry groups at "Two Digit" level:

01 - Process allied to agriculture.
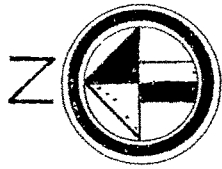20 - Food (except beverages)
23 - Textiles.
31 - Chemicals and chemical products.
33 - Non-metallic mineral products (except petroleum, coal products).
34 - Basic metal products.
35 - Metal products (except machinery and transport)
36 - Non-electric machinery.

DISTRICTS OF GUJARAT STATE