CHAPTER 3

Research Methodology

3.1 Objectives of the Study

3.2 Hypothesis of the Study

3.3 Research Design

3.4 Selection of Sample

3.5 Selection of Data

3.6 Sources of Data

3.7 Selection of Time

3.8 Analysis of Data

CHAPTER 3

Research Methodology

This chapter outlines research methodology of this study. The research methods were adopted as explained in this chapter. This research is aimed to study the economic issues in financing urbanization with respect to selected urban local government of Gujarat state. The main objectives of the study are as under.

3.1. Objectives of the study

(1) To analyze the changes in activities of urban local bodies in relation to urbanization in India.

(2) To analyses the changing expenditure pattern of selected urban local bodies (ULBs) in Gujarat state.

(3) To analyses the changing income pattern of selected urban local bodies (ULBs) in Gujarat state.

(4) To undertake a comparative analysis of finances of urban local bodies of five zones.

3.2. Hypothesis of the study

To achieve the objective of research study, the following hypothesis is carried out.

(1) The urbanization increases the financial activities of urban local bodies in India.

(2) The urbanization increases the gap between required and actual expenditure in Gujarat state.

(3) The income level and income sources of ULBs in Gujarat have keep increasing but still has not kept peace.

(4) The five zones have heterogeneous financial pattern, moreover there is variation in the financial pattern of developing and developed urban local bodies with the income requirement leading to increasing in deficit.

3.3 Research Design

The analysis of finance of Urban Local Bodies at India level has been undertaken in historical perspective. Similarly for state of Gujarat historical perspective based on secondary data was established. Gujarat is a heterogeneous state with regard to all economical and geographical parameter. Spatial study was conducted to analysis the finance of selected urban level bodies in Gujarat. The causal analysis was used to investigate the relationship between financial position of Municipality with respect to total population as well as total income.

The population figure of every year was available for the census years 1991 and 2001. Assuming the same growth rate of population, the population of each municipality was extrapolated for the year 2005-2009.

3.4. Selection of sample

Gujarat is highly urbanized state with 42 percent of urban population resides in the urban area according to 2011 census. It is state with high

income, more industrialization and rapidly urbanizing cities. Historically speaking, it is business state which has played important role in its development and it has long tradition of industrialization and urbanization. Hence, the state of Gujarat has been selected as sample of the study. Gujarat state was divided into five major zones according to geographical classifications, as per details given in Table 3.1 below.

Table 3.1: Selected Zones and Districts of Gujarat

Zone	Central	North	South	Kutch	Saurashtra
Districts	Ahmedabad	Banaskatha	Godhara		Jamnagar
	Kheda	Patan	Dahod		Rajkot
	Anand	Mehasana	Vadodara		Probanadar
		Sabarkatha	Bharchu		Junagadh
		Gandhinagar	Narmada		Amreli
			Surat		Bhavnagar
			Dang		Surendragar
			Valsad		
			Navasari		
			Tapi		
		Municipalities Selected			
	Nadiad	Patan	Bharuch	Bhuj	Jetpur
	Sanand	Chanasama	Songadh	Bachau	Vanthali

The criteria of developed and less developed municipalities were adopted based on classification of municipalities according to constitution.

3.5. Selection of Data

The data was collected through visit to various municipalities. The data source is mainly “varshik hisab” or “yearly financial account” of urban local government was collected and analyzed. The budget of local government is designed to facilitate the requirements of administrative and authorization of expenditure and revenue. The basic requirement for the analysis of the compositions of the urban local government budget is its classification.

3.6. Sources of Data

The main sources of data is

a) Yearly financial account of selected municipalities

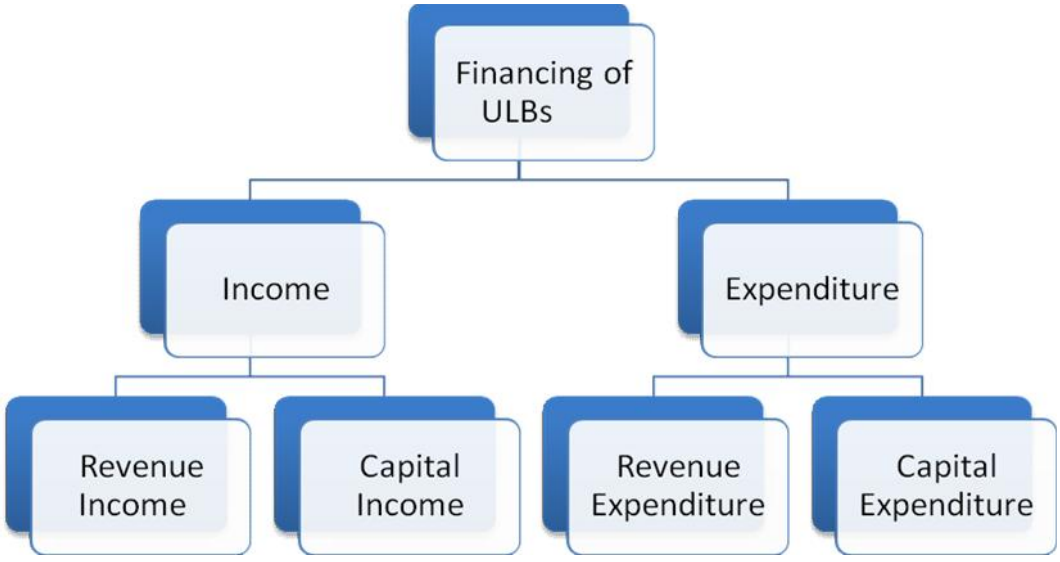
b) Ahluwalia's committee report on urban infrastructure and services

3.7. Selection of Time

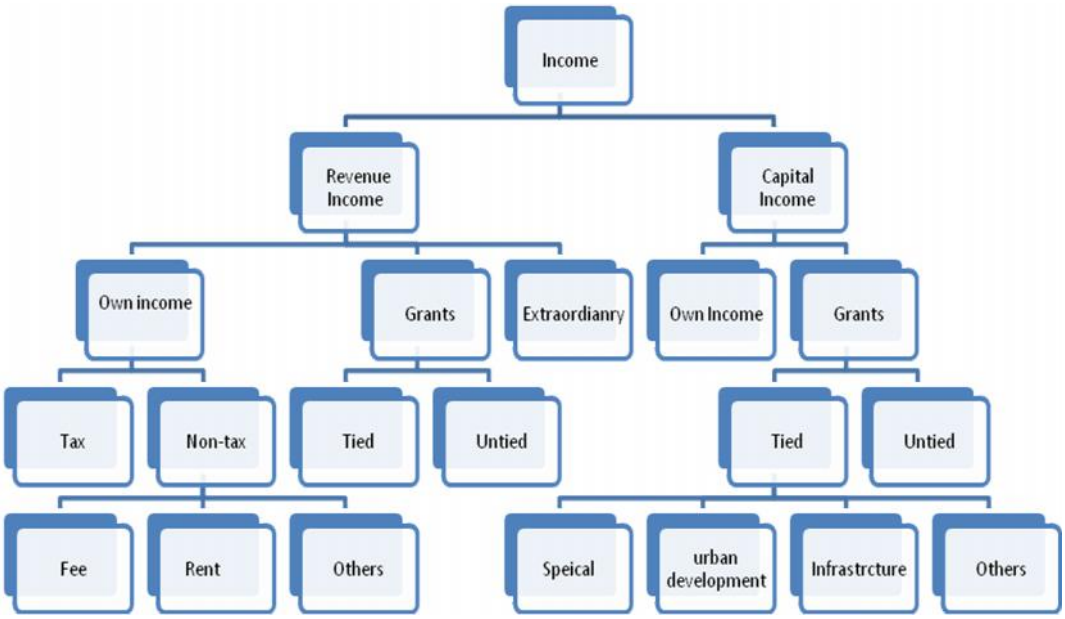
The time period selected was 2005-06 to 2009-10. The year 2005 was declared as "The Urban Year" by Government of Gujarat. Government of Gujarat provided special urban year grants for urban infrastructure and services in to the various urban local bodies. However the implementation and its effect can be observed only in later years.

3.8. Analysis of the data

The financial statement of selected municipalities was classified as below

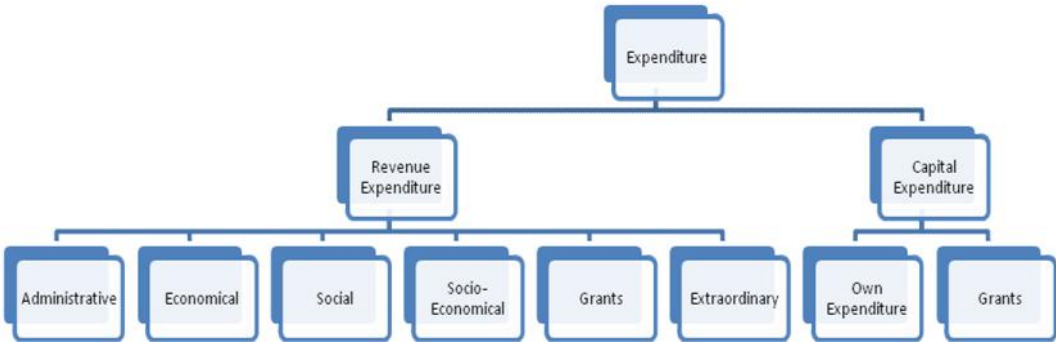


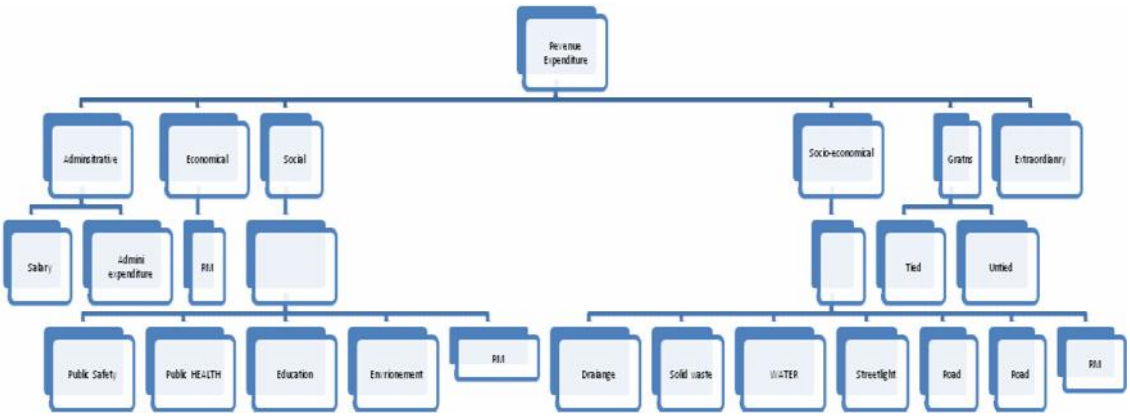
The total income of the municipalities was divided as



Note: Repair and Maintenance = R.M.

The total expenditure was divided as





The total income and expenditure are analyzed with change in percentage as well as growth percentage component wise. This helps to analyze the changes not only region wise but also how much is the changes in developed and developing municipalities. The comparative analysis of selected urban local bodies with respect to ideal bench mark of Ahluwalia report has been compared.

As indicated in selection of sample, Gujarat state is divided into five zones out of which two-two municipalities are selected hence to calculate the inter- zone analysis MANOVA is used. Income of municipality is not flexible which it receives in the form of taxes and grants. Out of total income both revenue and capital expenditure is made. Thus there are two dependent variables for single variable income, which makes MANOVA most suitable test in this condition. The study covered ten municipalities in five zones of Gujarat state, out of ten municipalities 5 were in developed category and 5 were in less developed category. MANOVA is used to test the following null hypothesis.

1) There is no relation between revenue expenditure and mean of capital expenditure.

2) There is no mean of developed municipalities are higher than developing municipalities

3) There is no inter-municipality difference in relation between income and expenditure of less developed municipalities.

MANOVA model has been give below.

$$Y_{ij}^{RE} + Y_{ij}^{CE} = \beta_{ij} X_i + \beta_{ij} Z_i + \varepsilon_{ij} \quad (1)$$

$$Y_{ij}^{RE} + Y_{ij}^{CE} = \beta_{0ij}X_1 + \beta_{1ij}X_2 + \beta_{2ij}X_3 + \beta_{3ij}X_4 + \beta_{4ij}X_5 + \beta_{5ij}X_6 + \beta_{6ij}X_7 + \beta_{7ij}X_8 + \beta_{8ij}X_9 \quad (2)$$

$$Y_{ij}^{RY} + Y_{ij}^{CY} = \beta_{ij}X_i + \beta_{ij}Z_i + \varepsilon_{ij} \quad (3)$$

$$Y_{ij}^{RY} + Y_{ij}^{CY} = \beta_{0ij}X_1 + \beta_{1ij}X_2 + \beta_{2ij}X_3 + \beta_{3ij}X_4 + \beta_{4ij}X_5 + \beta_{5ij}X_6 + \beta_{6ij}X_7 + \beta_{7ij}X_8 + \beta_{8ij}X_9 + \varepsilon_{ij} \quad (4)$$

$$Y_{ij}^{RD} + Y_{ij}^{CD} = \beta_{ij}X_i + \beta_{ij}Z_i + \varepsilon_{ij} \quad (5)$$

$$Y_{ij}^{RD} + Y_{ij}^{CD} = \beta_{0ij}X_1 + \beta_{1ij}X_2 + \beta_{2ij}X_3 + \beta_{3ij}X_4 + \beta_{4ij}X_5 + \beta_{5ij}X_6 + \beta_{6ij}X_7 + \beta_{7ij}X_8 + \beta_{8ij}X_9 + \varepsilon_{ij} \quad (6)$$

$Y_{ij}^{RE} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of revenue expenditure in developed and developing municipalities)

$Y_{ij}^{CE} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of capital expenditure in developed and developing municipalities)

$Y_{ij}^{RD} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of revenue deficit in developed and developing municipalities)

$Y_{ij}^{CD} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of capital deficit in developed and developing municipalities)

$Y_{ij}^{RY} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of revenue income in developed and developing municipalities)

$Y_{ij}^{CY} = Y_{ij}^{d} + Y_{ij}^{DI}$ (Where sum of capital income in developed and developing municipalities)

I = Five year period (from 2005-06 to 2009-10)

j = zone (1 = north, 2 = central, 3 = South, 4 = Kutch and 5 = Saurashtra)

β_{ij} = covariance constant

X_i = Developed municipalities of ith year

Z_i = Developing municipalities of ith year

X = Nadiad municipality of i^{th} year

X_1 = Bhuj municipality of i^{th} year

X_2 = Patan municipality of i^{th} year

X_3 = Bharuch municipality of i^{th} year

X_4 = Jetpur municipality of i^{th} year

X_5 = Sanand municipality of i^{th} year

X_6 = Bhachchau municipality of i^{th} year

X_7 = Chanasama municipality of i^{th} year

X_8 = Songadh municipality of i^{th} year

X_9 = Vanthali municipality of i^{th} year

One of the most important factor which has an impact on growing financial need of the municipality is population as well as income. To check the level of population and income has any significant impact on income, expenditure of municipality the following regression has been done.

Regression Equations are:

$Y_{ij} = b + b_{ij} X_{ij} + e_i$ ---- (7)

Where Y_{ij} = Total expenditure of i^{th} municipality and jth year.

X_{ij} = Total income of i^{th} municipality and jth year.

$B_{,}$ b_{1i} = Regression Constant

$Y_{ij} = b + b_{ij} X_i + e_i$ ---- (8)

Where Y_{ij} = Revenue income of i^{th} municipality and jth year.

X_{ij} = Total population of i^{th} municipality.

B, b_{1i} = Regression Constant

$Y_{ij} = b + b_{ij} X_i + e_i$ ---- (9)

Where Y_{ij} = Total Capital Income of i^{th} municipality and jth year.

X_{ij} = Total population of i^{th} municipality.

$b_{,}$ b_{1i} = Regression Constant

$Y_{ij} = b + b_{ij} X_i + e_i$ ---- (10)

Where Y_{ij} = Total Revenue Expenditure of i^{th} municipality and jth year.

X_{ij} = Total population of i^{th} municipality.

$b_{o,}$ b_{1i} = Regression Constant

$Y_{ij} = b + b_{ij} X_i + e_i$ ---- (11)

Where Y_{ij} = Total Capital Expenditure of i^{th} municipality and jth year.

X_{ij} = Total population of i^{th} municipality.

b, b_{1i} = Regression Constant

For all these models, the testing was done on null hypothesis: the population has no impact on income and expenditure of municipalities. The total income has no impact on total expenditure of municipality.