

## *METHODOLOGY*

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## **Chapter III**

### **METHODOLOGY**

A systematic and careful analysis of information is of primary importance in any research work. In order to obtain reliable results, it is essential to evolve scientific method of data collection and employ appropriate and reliable techniques for the analysis of information (Paul E.Green et. al. 1998). The methodology followed for the current study on, “An Analysis on the performance of women entrepreneurs in Coimbatore district” is discussed under the following heads:

- 3.1 Locale of the study.
- 3.2 Selection of the women entrepreneurs.
- 3.3 Sector-wise distribution of women entrepreneurs.
- 3.4 Period of the study.
- 3.5 Collection of data
- 3.6 Techniques of analysis and
- 3.7 Limitations.

#### **3.1. Locale of the study**

Coimbatore district is the third largest city in Tamilnadu and one of the fast growing cities of India. Surrounded by the Fairy Queen, the Nilgris- the Blue Hills by north, the revolutionary Western Ghat side of Kerala in the west, the tobacco and vegetable Dindigul district in the south and the highly agriculturally commercial turmeric Erode district in the east there lies this highly progressive, entrepreneurial and commercial district of Tamilnadu. This 7469 sq.km district has high concentration of small scale industries besides a number of medium and large industries. The city is well connected by road, rail and air. Coimbatore city is called the Manchester of South India as the city thrives on textile industries. With the innovative entrepreneurship of its people, the city has become a beehive for over forty thousand large, medium and small scale industries. Coimbatore is the second largest exporter, in India, of cotton hosiery, gold ornaments, textile machinery and spares and foundry products. The city is also gaining a name in medicare facilities and in the field of education.

# TAMIL NADU MAP INDICATING THE STUDY AREA

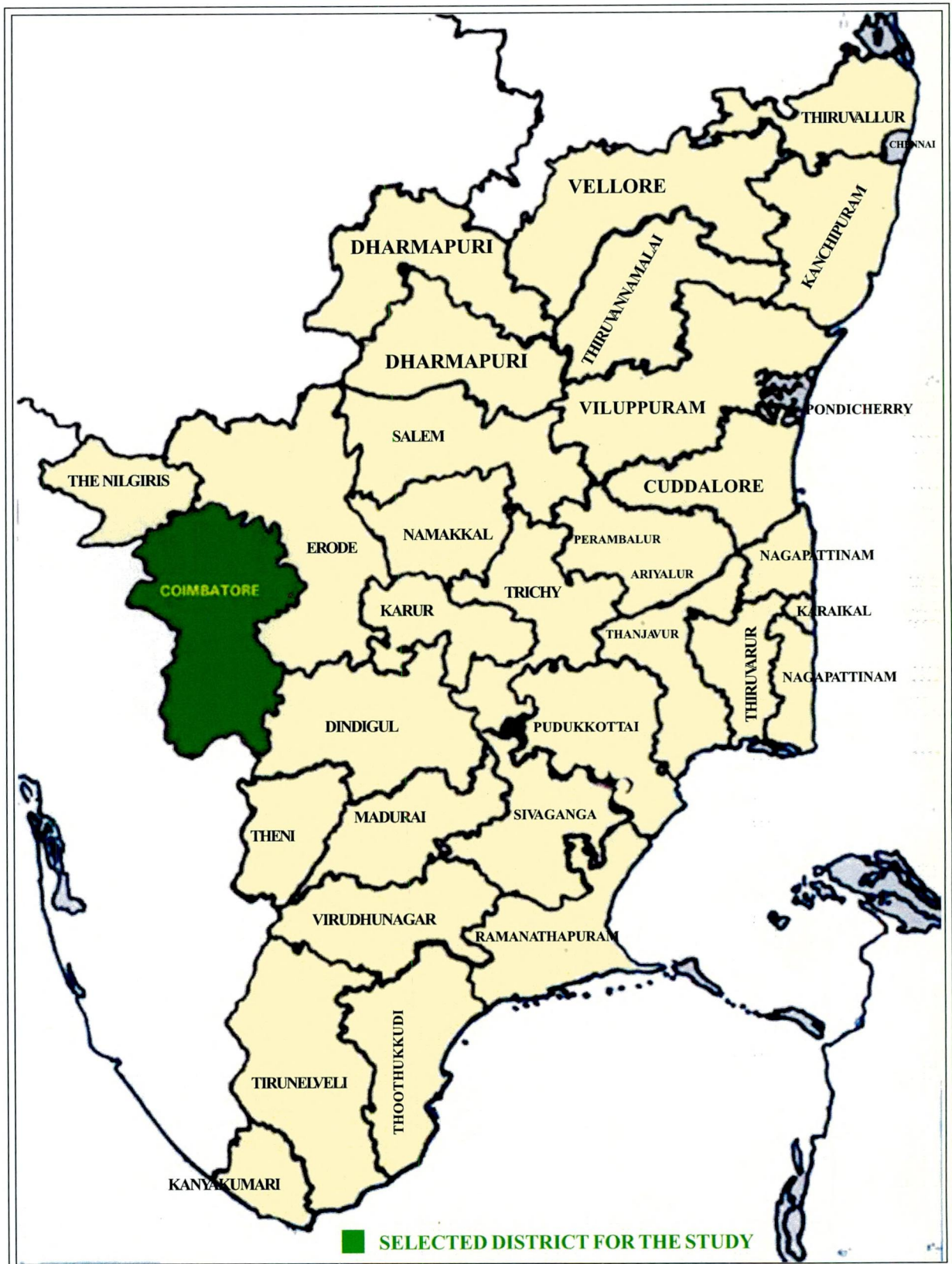


Fig. 3(a)

## COIMBATORE MAP – STUDY AREA

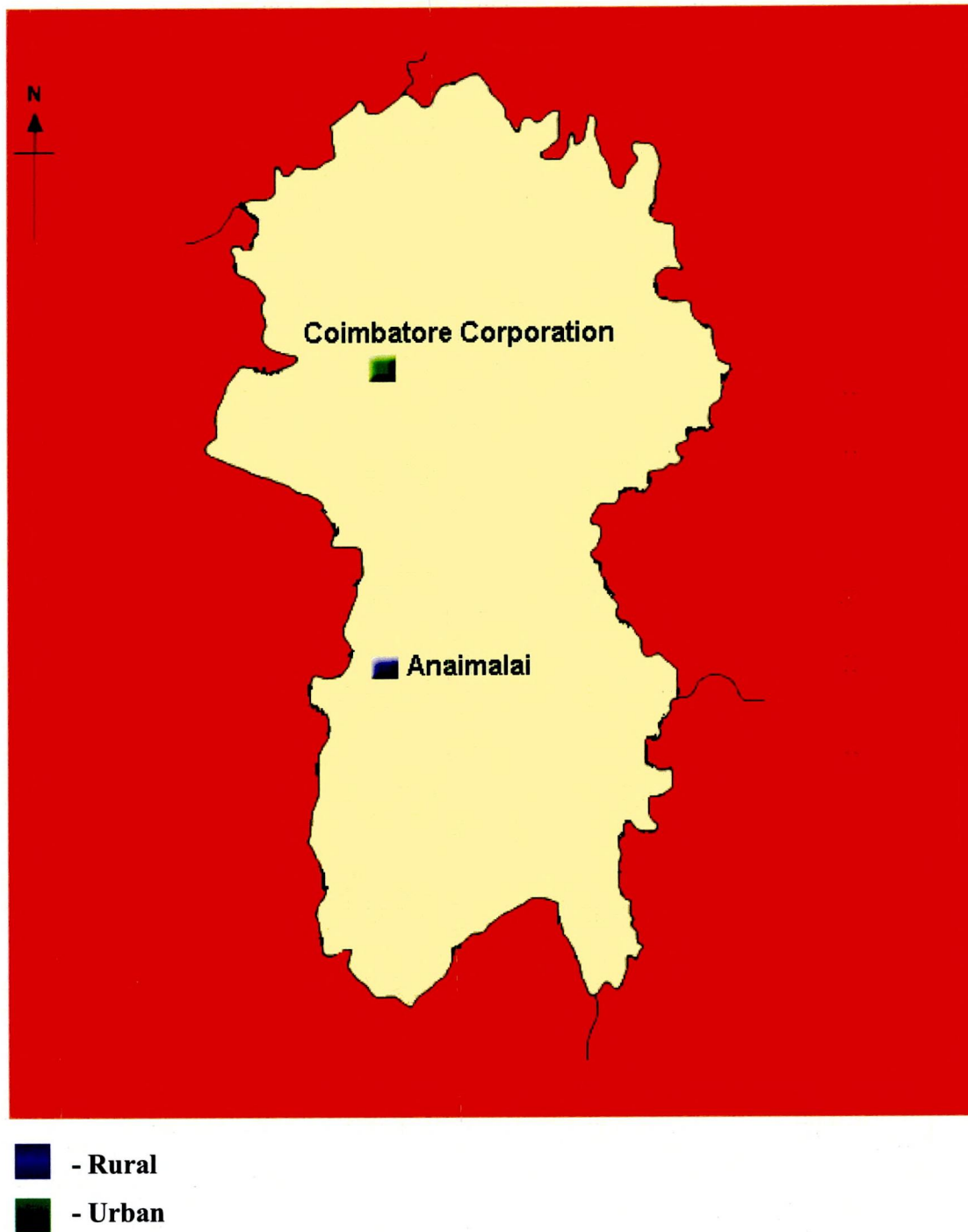


Fig. 3(b)

Added to this, a major chunk of Gulf money flowing to the adjoining Kerala state is pumped into Coimbatore for industrial, investment and commercial purposes. The investment potentials and opportunities are growing day by day there by encouraging more and more people from the other states also to venture in newer areas of industry, trade and commerce.

As per the 2001 Census Report the district has a population of 42,71,856 with 21,76,031 males and 20,95,825 females. There are 1,77,211 construction workers, 3,97,614 agricultural workers, 70,255 workers in household industries and 13,24,252 other workers. The work participation rate of males was 64.01% and that of females 28.49%. The 2001 Census Report shows that 71.51% of the female population in Coimbatore district is non-workers. The economic pressure combined with the urgency of maintaining the family and the satisfaction of basic needs compels them to search for work opportunities. The non-workers engage themselves in occupations according to their capacity, skill and aptitudes. At present in the district of Coimbatore, the energetic and enthusiastic women are coming out to take up entrepreneurship to prove themselves and to improve their standard of living (Annual Credit Plan, 2005–06). Hence the study with its empirical findings will provide meaningful contribution regarding the role of women entrepreneurs in the study area and would also help in making suitable policy decisions.

### **3.2 Selection of women entrepreneurs**

#### **3.2.1. Selection of women entrepreneurs – Rural**

Coimbatore district has 21 panchayat unions namely Palladam, Sulur, Annur, Tiruppur, Avinashi, Madukkarai, Sultanpet, Pongalur, Pollachi north, Thondamuthur, Gudimangalam, Udumalpet, Madathukulam, Pollachi south, Perur, Karamadai, Sarkarsamakulam, Kinathukadavu, P.N.Palayam, Valparai and Anaimalai.

Out of these 21 panchayat unions Valparai and Anaimalai were considered as white blocks with less than 65% of ground water exploitation. Both these blocks were highly irrigated area with fertile lands. Because of this the blocks are basically agriculture based with less industrial development.

Specifically, if one considers Anaimalai block there is no large scale industries and it has 62 small scale industries. The number of cottage/village household industries was 702. The block has 7 banks and the number of hospitals is 2, with 6 primary health

care centres. There is only one co-operative market operating in the block. The data pertaining to the literacy level of female population indicates that around 40% of the women in the block were illiterates (Glimpses of Anaimalai block, 1998).

Based on the above details the present study was carried out in Anaimalai block to elucidate the extent of women development and entrepreneurship promotion among them. The area of this block is 333 sq. kms. The total population of the block, as per the 2001 Census is 1,39,725 with 69,929 males and 69,796 females. This block has 4 town panchayats viz; Anaimalai, Kottur, Odayakulam & Vettaikaranpudur. It was decided to give equal representation to these four town panchayats in the selection of sample units.

Due to the absence of any data relating to women entrepreneurs, the researcher first approached the lead bank – State Bank of India in the area and obtained the addresses of the women entrepreneurs, who were financed by the bank under various developmental schemes of the government. Further, women entrepreneurs were also traced out with the help of a NGO officer who helped in arranging for a meeting with the woman entrepreneurs. With these, a preliminary list of women run enterprises was prepared and from the list, 200 women entrepreneurs who satisfy the following criteria and also who were willing to provide the necessary details were approached.

(1) There should be equity participation by the women entrepreneurs in the capital structure of the enterprise. (2) The women entrepreneurs must actively participate in the management of the enterprise. (3) The enterprise should have employed a minimum of one employee, and (4) Out of the total employees, atleast 51% of them should be female workers. There was no restriction laid down on the part of investment because the rural women entrepreneurs who were taken into consideration for the analysis had less investment when compared with the women entrepreneurs of urban areas.

From the four town panchayats in Anaimalai, giving equal representation to the four panchayats, 200 women entrepreneurs, who were willing and available to provide data were selected. The details are given in the following table-2:

**Table - 2**  
**NUMBER OF WOMEN ENTREPRENEURS SURVEYED IN RURAL AREA**

S.No.	Name of the town panchayat in Anaimalai block	Number of women surveyed
1.	Anaimalai	50
2.	Kottur	50
3.	Odayakulam	50
4.	Vettaikaranpudur	50
<b>Total</b>		<b>200</b>

Source: Field survey, 2005.

### 3.2.2. Selection of women entrepreneurs – Urban

Coimbatore Corporation consists of 11 revenue divisions as per the Survey Report prepared by the Slum Clearance Board, Coimbatore. They are Singanallur, Kuttai park, Sastrimaidanam, VOC park, Chintamani, Ukkadam, D.B. Road, Tatabad, Sungam, Peelamedu and Raja street. The list of women entrepreneurs who have registered their units with District Industrial Centre (DIC), Coimbatore after 1990 was obtained. As per the list maintained by the DIC, about 4,000 women entrepreneurs have registered since 1991. The women entrepreneurs were then listed based on the 11 revenue divisions. Many of the woman entrepreneurs were not found in the addresses given by the DIC. If available, either they were not willing to provide the necessary details or they were not pursuing business. Hence the researcher restricted her study only with those woman entrepreneurs who were doing business and willing to furnish the required data and details for the study. From each division 18 women entrepreneurs who were willing and available to provide data were selected. Only in two divisions, viz., D.B. road and Tatabad 19 sample units were selected. The details are given in the following table-3.

**Table - 3**  
**NUMBER OF WOMEN ENTREPRENEURS SURVEYED IN URBAN AREA**

S.No.	Division	Number of women surveyed
1.	Singanallur	18
2.	Kuttai park	18
3.	Sastrimaidanam	18
4.	VOC Park	18
5.	Chintamani	18
6.	Ukkadam	18
7.	D.B.Road	19
8.	Tatabad	19
9.	Sungam	18
10.	Peelamedu	18
11.	Raja street	18
<b>Total</b>		<b>200</b>

Source: Field survey, 2005.

### 3.3. Sector-wise distribution of women entrepreneurs

The previous studies on women entrepreneurs [Lalithrani (1993), Soundarapandian (1999), Dhameja (2004)] have distinguished women entrepreneurs as women belonging to manufacturing, trading and service sector. Based on this, as well as following the categorization of the occupation provided by the District Industrial Centre (DIC), the women entrepreneurs were classified as

- i. Women entrepreneurs in manufacturing sector.
- ii. Women entrepreneurs in trading sector and
- iii. Women entrepreneurs in service sector.

The women entrepreneurs who were classified as manufacturers were carrying out the production of following items: (1) preparing pickles, powder and pappad, (2) manufacturers of steel furniture, (3) making handicrafts, (4) preparing sweets & snacks, (5) running hotel & mess, (6) manufacturers of agro foods, (7) running coir industry, (8) making bricks and (9) preparing blue, phynoil, soap, shampoo etc.,. The number surveyed under each category is given in the following table-4.

**Table - 4**  
**NUMBER OF WOMEN ENTREPRENEURS AS MANUFACTURERS**

S. No.	Area		Rural	Urban	Total
	Activities				
1.	Preparing pickles / powders & pappad		23 (18.85)	15 (26.32)	38 (21.23)
2.	Manufacturing steel furniture		15 (12.29)	20 (35.09)	35 (19.55)
3.	Making handicrafts		24 (19.67)	0 (0.0)	24 (13.41)
4.	Preparing sweets / snacks		13 (10.65)	11 (19.29)	24 (13.41)
5.	Running hotel / mess		13 (10.65)	10 (17.54)	23 (12.85)
6.	Manufacturing agro foods		17 (13.93)	1 (1.75)	18 (10.06)
7.	Running coir industry		12 (9.84)	0 (0.0)	12 (6.70)
8.	Making bricks		3 (2.46)	0 (0.0)	3 (1.68)
9.	Preparing blue, phynoil, soap & shampoo		2 (1.64)	0 (0.0)	2 (1.11)
<b>Total</b>			<b>122</b> <b>(100.0)</b>	<b>57</b> <b>(100.0)</b>	<b>179</b> <b>(100.0)</b>

Source: Field survey, 2005.

Figures in brackets indicate percentage to column total.

Women entrepreneurs as traders were running the following shops: (1) grocery shop, (2) cloth shop, (3) fancy store, (4) medical shop, (5) hard wares, (6) gold covering,

(7) jewellery shop and (8) plant nursery. The number surveyed under each category is given in the following table-5.

**Table - 5**  
**NUMBER OF WOMEN ENTREPRENEURS AS TRADERS**

S. No.	Area	Rural	Urban	Total
	Activities			
1.	Grocery shop	18 (36.0)	10 (22.73)	28 (29.79)
2.	Cloth shop	16 (32.0)	9 (20.45)	25 (26.59)
3.	Fancy store	9 (18.0)	5 (11.36)	14 (14.89)
4.	Medical shop	3 (6.0)	8 (18.18)	11 (11.70)
5.	Hardwares	0 (0.0)	6 (13.64)	6 (6.38)
6.	Gold covering	2 (4.0)	3 (6.81)	5 (5.32)
7.	Jewellery shop	1 (2.0)	2 (4.54)	3 (3.19)
8.	Plant nursery	1 (2.0)	1 (2.27)	2 (2.13)
<b>Total</b>		<b>50 (100.0)</b>	<b>44 (100.0)</b>	<b>94 (100.0)</b>

Source: Field survey, 2005.

Figures in brackets indicate percentage to column total.

Women entrepreneurs carrying out service activities were engaged in the following activities (i) tailoring, (ii) beauty parlour, (iii) creche/play school, (iv) computer centre, (v) printing press/DTP centre, (vi) STD booth & xerox, (vii) micro financiers and (viii) travel agency/call taxi. Women surveyed under service sector are given in the following table - 6.

**Table - 6**  
**NUMBER OF WOMEN ENTREPRENEURS IN SERVICE SECTOR**

S. No.	Area	Rural	Urban	Total
	Activities			
1.	Tailoring	13 (46.43)	29 (29.29)	42 (33.07)
2.	Beauty parlour	7 (25.0)	19 (19.19)	26 (20.47)
3.	Creche/play school	1 (3.57)	13 (13.13)	14 (11.02)
4.	Computer centre	0 (0.0)	12 (12.12)	12 (9.45)
5.	Printing press / DTP centre	1 (3.57)	11 (11.11)	12 (9.45)
6.	STD booth/Xerox	3 (10.71)	6 (6.06)	9 (7.09)
7.	Micro financiers	3 (10.71)	6 (6.06)	9 (7.09)
8.	Travel agency/ call taxi	0 (0.0)	3 (3.03)	3 (2.36)
<b>Total</b>		<b>28 (100.0)</b>	<b>99 (100.0)</b>	<b>127 (100.0)</b>

Source: Field survey, 2005. Figures in brackets indicate percentage to column total.

The number of women entrepreneurs in each sector in rural and urban areas is as follows.

**Table - 7**  
**NUMBER OF WOMEN ENTREPRENEURS UNDER EACH SECTOR**

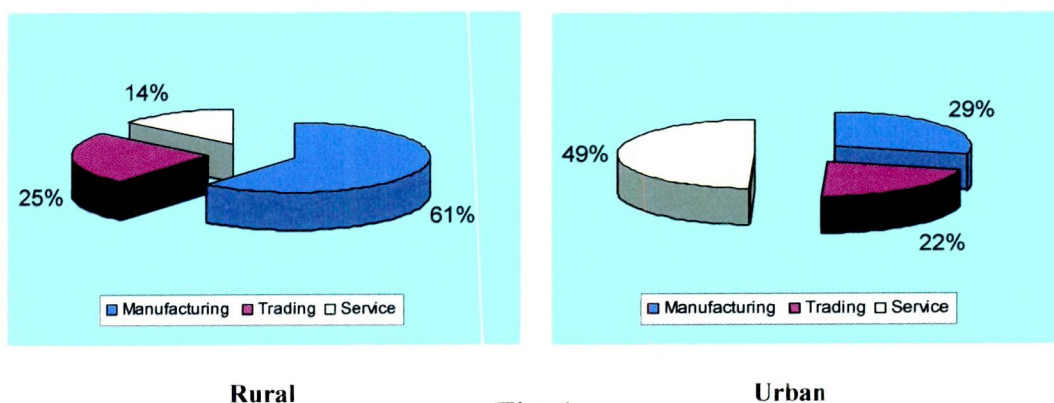
S. No.	Area	Rural	Urban	Total
	Sectors			
1.	Manufacturing	122 (61.0)	57 (28.5)	179 (44.75)
2.	Trading	50 (25.0)	44 (22.0)	94 (23.5)
3.	Service	28 (14.0)	99 (49.5)	127 (31.75)
<b>Total</b>		<b>200 (100.0)</b>	<b>200 (100.0)</b>	<b>400 (100.0)</b>

Source: Field survey, 2005.

Figures in brackets indicate percentage to column total.

The Pie diagram gives the sector-wise distribution of women entrepreneurs.

**SECTOR-WISE DISTRIBUTION OF WOMEN ENTREPRENEURS**



**Fig. 4**

Thus a total of 400 women entrepreneurs, 200 from rural and 200 from urban areas were selected for the study.

### 3.4. Period of the study

A detailed questionnaire was prepared covering the socio-economic profile, the motivational factors, opinions of entrepreneurs on their strengths, weaknesses, opportunities and threats and the various problems, faced by them. A pilot study was conducted for testing the first stage questionnaire with selected entrepreneurs of five from each group. Based on their responses necessary changes were made in the final questionnaire. The data for the study were collected from the sample units by administering the revised interview schedule to the women respondents during the period January 2005 to October 2005. The questionnaire is given in annexure - I.

### 3.5. Collection of data

Data pertaining to the study were directly collected by the researcher by personal interview method. The interview schedule consisted of questions relating to the socio-

economic background of women entrepreneurs, nature of their occupation, the factors that were responsible to take up entrepreneurship, the problems they faced in production and marketing and the strengths, weaknesses, opportunities and threats of each individual entrepreneur (Annexure – I).

### 3.6. Techniques of analysis

Data collected for the study were analysed using the following quantitative tools.

- 3.6.1 't' test
- 3.6.2 Multiple linear regression
- 3.6.3 Cobb-Douglas production function
- 3.6.4 Cost function
- 3.6.5 SWOT analysis
- 3.6.6 Garrett's rating scale
- 3.6.7 Scaling technique
- 3.6.8 Co-efficient of concordance
- 3.6.9 Spearman's rank correlation coefficient
- 3.6.10 Entrepreneurial performance
- 3.6.11 Chi-square test
- 3.6.12 Graphs

#### 3.6.1. 't' Test

To find out whether there is any significant difference in the monthly income/expenditure of the selected households, income of the entrepreneur with regard to investment and increase in the investment, 't' test was applied.

The formula used to find the value of 't' was

$$t = \frac{\text{Difference in means}}{\text{Standard error}}$$

#### 3.6.2. Multiple linear regression

To estimate the determinants of income, multiple linear regression equations were fitted using the ordinary least squares method. Step-wise regression was used. The analysis was carried out using SPSS 11 package. The equation estimated was of the form

$$y = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + U$$

y = monthly income,  $X_i$  = selected social, economic and demographic variables,

$\beta$ 's = parameters to be estimated, U = error term.

### 3.6.3. Cobb-Douglas production function

Cobb-Douglas production function of the following model was estimated.

$$Q = b_0 C^{b_1} W^{b_2} e^U$$

Where Q = Total production

C = Capital

W = labour

U = Error term

b's are the elasticities of production with respect to the specified variables. The production function was estimated using the SPSS 11 package.

### 3.6.4. Cost function

Cost functions were estimated using linear, quadratic and cubic functions. The estimated cost functions were

$$C = a + bQ + U$$

$$C = a + bQ + dQ^2 + U$$

$$C = a + bQ + dQ^2 + eQ^3 + U,$$

where C = cost of production, Q = total output produced.

The average cost C/Q and marginal cost dC/dQ were obtained. To find out the optimum level of output at which total cost was minimum, differentiation technique was applied. The first order condition for minimum cost was dC/dQ = 0, and the second order condition was d<sup>2</sup>C/dQ<sup>2</sup> > 0. Similarly, to find out the optimum level of output at which profit was maximum, the first and second order conditions of differentiation were applied.

### 3.6.5. SWOT analysis

SWOT analysis of the entrepreneurs under study was undertaken to enquire into the strengths, weaknesses, opportunities and threats of the entrepreneurs. From the earlier studies on women entrepreneurs, ten items of strengths, weaknesses, opportunities and threats of the women entrepreneurs were listed. The entrepreneurs were asked to rank these factors from 1 to 10, based on their priority in ascending order. The ranks were converted into scores using Garrett's ranking technique. Considering the average scores the ranks were assigned. The higher the average score the more was the priority for that item among the women entrepreneurs.

### 3.6.6. Garrett's rating scale

To find out the strengths, weaknesses, opportunities and threats of the selected sample groups, Garrett's rating scale technique was used. From the ranks assigned by the respondents, percent positions were calculated by using the formula.

$$\text{Percent position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

where  $R_{ij}$  is the rank given for the  $i^{\text{th}}$  item by the  $j^{\text{th}}$  respondent;

$N_j$  is the number of item ranked by the  $j^{\text{th}}$  respondent.

By using this formula, the result obtained is compared with Garrett's ranking table and scores are obtained. The total scores for each item are added and ranks are given according to its total value.

### 3.6.7. Scaling technique

Direct judgement method, a variant of quantitative judgement method was used to measure the reasons for starting the enterprise. Using the limited category response method, the respondents were asked to mark their preferences on a five-point scale as follows.

+2	Strongly agree
+1	Agree
0	Neutral
-1	Disagree
-2	Strongly disagree

Here the score ranges between +2 and -2. If the score is closer to 2, it indicates that the item is preferred very much by the respondents and if the value is closer to -2, it indicates their disagreement for the item. In the present study scaling technique was applied for the opinion based on the level of job satisfaction.

### 3.6.8. Coefficient of Concordance

The concordance co-efficient was found out for the ranks given by the women entrepreneurs on their strength, weakness, opportunity and threat. The concordance co-efficient (W) was calculated using the formula

$$W = \frac{\sum_{i=1}^{10} (X_i - \bar{X})^2}{m^2(n^3 - n)}$$

where,  $\bar{X} = \frac{m(n+1)}{2}$ ,

$X_i$  = sum of ranks allotted to  $i^{\text{th}}$  item by the women entrepreneurs  
 (  $i = 1,2,\dots,n$ )

$m$  – number of respondents,  $n$  – total no. of items.

The value of concordance co-efficient measures the degree of agreement between the entrepreneurs. A complete randomness in ranking leads to  $W = 0$ , on the one hand and perfect agreement among them results in  $W = 1$ , on the other.

### 3.6.9. Spearman’s rank correlation coefficient

To find out the correlation existing among the ranks assigned by the rural and urban women entrepreneurs of different sectors on each items of strengths, weaknesses, opportunities and threats, Spearman’s rank correlation was calculated using the formula

$$\rho = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

,  $d$  = difference on the ranks assigned,  $n$  = number of items.

### 3.6.10. Entrepreneurial performance

Entrepreneurial economic success status was assessed using the following criteria developed by Lalitha Rani (1996). Using this criteria based on the total investment and net profit earned, women respondents were termed as unsuccessful, successful and very successful entrepreneurs.

**Table – 8**  
**ENTREPRENEURIAL ECONOMIC SUCCESS STATUS**

<b>Success status</b> <b>Criteria</b>	<b>Very Successful</b>	<b>Successful</b>	<b>Unsuccessful</b>
Based on borrowed capital in relation to own capital	Can borrow or raise 8 times more than his/her own capital.	Can borrow or raise capital atleast equal to his/her own capital.	Can borrow or raise capital less than his/her own capital.
Based on profit in relation to investment	Can make a net profit (after tax and interest deduction) of 20% of total investment.	Can make a net profit (after tax and interest deduction) of 10% of total investment.	Can make a net profit (after tax and interest deduction) of less than 10% of total investment.

Source: Lalitha Rani (1996).

### 3.6.11. Chi-square Test

Chi-square test was applied to find out the level of association between selected socio-economic variables and success status of the women entrepreneurs,

$$\chi^2 = \sum (O_i - E_i)^2 / E_i$$

$O_i$  is the observed number of women entrepreneurs, falling in the  $i^{\text{th}}$  cell of the contingency table.

$E_i$  is the estimated number of women entrepreneurs in the  $i^{\text{th}}$  cell of the contingency table.

The calculated Chi-square was compared with the theoretical Chi-square value at 5 percent level for  $(r-1)(c-1)$  degree of freedom.

Where  $r$  is the number of rows in the contingency table,

$c$  is the number of columns in the contingency table.

### 3.6.12. Graphs

Besides the above mentioned mathematical tools, bar diagrams, pie diagrams and charts were used.

To carry out the above analysis SPSS 11 package was applied. The above techniques were elaborated in the Chapter "Results and Discussions".

### 3.7. Limitations

The study is an explanatory one, based essentially on the primary data. No proper census list of women entrepreneurs was available. Many of the woman entrepreneurs were not found in the addresses given by the DIC. If available, either they were not willing to provide the necessary details or they were not pursuing business. Hence the researcher has to restrict her study only with those woman entrepreneurs who were doing business and willing to furnish the required data. The women entrepreneurs were personally and individually contacted by the researcher. The women entrepreneurs expressed their unwillingness to respond to several questions. However, with great difficulty the responses could be obtained. There were constraints of time which resulted in limiting the scope of the study. The limitations pertaining to primary data are applicable to this study also.