CHAPTER 1

INTRODUCTION AND DESIGN OF THE STUDY

1.1 INTRODUCTION

The global market has become an overwhelming incentive for new investments and there occurred a veritable explosion of capacity in cotton based complexes, the most importantly in the Tamilnadu clusters. This has been much silent revolution: The phenomenal growth of the 1990s in cotton spinning in Tamilnadu has been the forefront of the Indian powerloom industry. The state ranked third, only after Maharashtra and Gujarat as regards the number of textile manufacturing units in organized and decentralized sector of the textile industry.

The powerloom industry in Tamilnadu provides direct and indirect employment to over 7 lakh workers and is reputable for its powerloom weaving. The state produces large volumes of powerloom items that find a market in every nook and corner of the country and also caters the fabric needs of the export manufacturing units located in Delhi, Mumbai, Chennai, Bangalore and other centres. Further, the performance of the powerloom sector in Tamilnadu presents a better picture as there is concentration of industrial
enterprise specializing on various stages of textiles manufacturer, right from ginning of cotton to spinning and garmenting of the end product.

The structure of powerloom sector in Tamilnadu differs from that observed in other states especially Maharashtra and Gujarat. It varies in respect of the production pattern, size of the units, concentration of powerloom centres etc. At present, it is estimated that there are 4,37,325 looms in this sector. The powerlooms in Tamilnadu are mainly concentrated in three districts of Salem, Erode and Coimbatore accounting together for 83% of the looms.

Keeping the interest of the powerloom industry as a whole, an effort has been made to explain briefly the Knowledge assessment and Management with special reference to powerloom entrepreneurs of Tamilnadu State.

1.2 NEED FOR THE STUDY

The Tamil Nadu Powerloom industry has comparatively lot of advantages in powerloom weaving over other regions of India. The most important reason behind the growth of the powerloom industry in the state is the region's historical involvement with textiles, which has been utilized and sustained very effectively in the past decades. There are two major dimensions of this involvement, handloom weaving as the main source of powerloom capital and labour, and a long engagement with cotton spinning and textile machinery. Powerloom industry is one of the largest providers of employment opportunity in Tamilnadu and grew mainly by means of cotton products exports. The state’s powerloom industry is heavily slanted towards export requirements and around three fourth of the production goes for direct and
indirect exports. This sector produces large varieties of textiles catering to the domestic market besides meeting fabric requirements of the readymade garment manufacturers for the export market.

The majority of the looms are located in rural part of Tamilnadu and occupy fairly an important place in the rural economic development of the country. The Central and State Government have been introducing a number of Powerloom Entrepreneurs Development Programmes from time to time to uplift the rural poor. But most of the programmes have not yet covered powerloom entrepreneurs to improve their standard of life. Powerloom industry provides direct and indirect employment opportunity in many ways. Hence, the Government announces different powerloom entrepreneurial developmental schemes to develop the industry. No doubt, the steps of the Government towards the development of powerloom industry have met considerable success. But in general the powerloom entrepreneurs’ awareness about those development schemes is very low.

An unpredictable market with fluctuating market conditions and inadequate modernization has contributed to the poor living conditions of powerloom entrepreneurs in Tamilnadu. The bulk of the looms in Tamilnadu are traditional powerlooms on which cotton is woven. In the last decade the powerloom industry in Tamilnadu was badly affected by various reasons like frequent power cut, non availability of quality cotton raw materials, sudden absence of labour and technical staff and absence of modernization. Loom owners sold off their looms because of inadequate demand for their products and rising stock of cloth. The reasons for the crisis could be traced to the liberalisation policy, Yarn prices shot up as huge quantities of cotton and yarn were exported; excise duty on cone yarn was raised and it is pushing up yarn
prices further; production of 10, 20, 25, 30 counts of yarns declined and removal of quantitative restrictions led to dumping of cheap imports from China and Thailand. As a result, the weaving costs soared and returns thinned which resulted in lack of interest and poor attention on running powerloom industries. Proper rejuvenating measures should be initiated to safeguard the powerloom industry, the second largest business sector of India.

1.3 STATEMENT OF THE PROBLEM

After the introduction of Liberalization, Privatization and Globalization (LPG) concept various manufacturing sectors were greatly affected including powerloom industries. The powerloom entrepreneurs in the study area were finding difficult to produce cotton based powerloom products on par with world class manufacturing. This is due to practice of old technology as well as low quality of raw materials. The changes in the monsoon affect the cotton production in Tamilnadu. Hence, it is very difficult to get expected first quality raw materials for powerloom industries. Simultaneously the exorbitant cost of chemicals and dyes forced the powerloom entrepreneurs to go for second quality chemicals and dyes. Government support for the development of powerloom entrepreneurs is much lacking and supporting services like energy, power are frequently disturbed which suspended continuous flow of manufacturing in powerloom industries. The above mentioned problem yield to vast variation in the quality of finished goods. The second aspect of major issue faced by the powerloom entrepreneurs is lack of timely availability of working capital from the banks. Due to this crisis, powerloom entrepreneurs becomes bankrupt. Though the powerloom entrepreneurs are having adequate knowledge in production, they are unable to market their products directly because of their dependency on brokers and agents. As a result they are unable to fix the right price for their products.
Logistic operations create nuisance to the powerloom entrepreneurs and the supply of raw materials is purposely delayed due to various reasons like demanding higher transportation cost, and the Bata (additional fringe benefits) demanded by drivers and cleaners. Labourers working in powerloom also frequently fail to attend the duty and the entrepreneurs are unable to take strict actions against the workers. Further, it is difficult to mobilize skilled labourers for efficient operations of powerloom industry and the powerloom entrepreneurs are forced to give higher wages to the skilled labourers. Based on the above issues the following questions are raised.

1. How to manage efficiently the powerloom industries with the available resources?
2. What are the remedial measures to solve Financial, Labour, Marketing, Production and Quality problems?
3. What strategy may be adopted for effective marketing of powerloom cotton based products?

1.4 OBJECTIVES OF THE STUDY

i) To study the origin and present status of Powerloom Industry.
ii) To analyze the knowledge of powerloom entrepreneurs on production and marketing of powerloom products.
iii) To analyze the factors that influenced to establish and operate the powerloom industries successfully.
iv) To identify the problems faced by the powerloom entrepreneurs at different phases of functional areas.
v) To suggest strategies to improve the performance of powerloom industries.
1.5 METHODOLOGY

The validity of any research mainly depends on the proper method of data collection and suitable techniques of analysis. Any estimate in the study generalized only when the design of the study is properly executed. In this chapter method of data collection and tools of analysis used in the present study are described.

1.5.1 Sampling Design

For the present study Tamilnadu state was purposively selected due to increase in powerloom industries. Tamilnadu state consists of five clusters Viz Erode, Coimbatore, Karur, Salem and Madurai concentrating in manufacturing cotton cloths. 600 sample respondents were selected by using stratified random sampling method from all these clusters. The selection of respondents was made in active consultation with the Joint director of textiles and the research supervisor. The respondents were selected randomly from the list maintained by the Association of powerloom owners of the above said clusters and sub clusters. The following table presents geographical representation of sample respondents.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Cluster</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Erode</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>Coimbatore</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>Karur</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Salem</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>Madurai</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>600</strong></td>
</tr>
</tbody>
</table>
1.5.2 Data Collection

1.5.2.1 Primary Data

The primary data were collected from the 600 powerloom entrepreneurs who are manufacturing cotton based products. The information was gathered through personal interview method from the selected textile entrepreneurs. Further, the details such as factors influenced to start the business, knowledge on textile business, the benefits enjoyed, the problems faced during operational stages in the functional area were gathered. A well structured Interview Schedule was prepared for the purpose.

1.5.2.2 Secondary Data

The primary data were supplemented by a spate of secondary sources of data. The secondary data pertaining to the study was gathered from the records published by the Ministry of textile industry Government of India, Powerloom service centre, SITRA, Textile committee Coimbatore. Latest information was gathered from well equipped libraries in Gujarat Ahmedabad, Chennai and PSG Learning Resource Centre, Coimbatore and from Internet web resources. Further, the secondary data were also collected from various leading journals. A number of standard text books were studied to obtain pertinent literature on migrated workers in unorganized sectors.

1.5.3 Discussions and Informal Interviews

In order to know the knowledge assessment on textile business recent changes in the textile manufacturing, benefits and problems, come acrosseed by the entrepreneurs, several rounds of discussion were held with
knowledgeable persons in the field of powerloom industries, and research supervisor.

1.5.4 Tools of Data Collection

By virtue of a mass of data obtained from research survey, as well as data from secondary sources collected and presented in the present report, descriptive and analytical research was considered most appropriate for the study. The research problems and the questionnaire were all framed accordingly. The suggestions offered in the final chapter of the present research report emerged from the inferences drawn from the study of the sample respondents’ information who are running powerloom industries in the study area. The researcher used closed-ended and open-ended questions in the Interview Schedule to collect primary data.

1.5.5 Construction of Interview Schedule

The key aspect of the present research was identified through the preliminary interviews (Pilot study) with some selected textile powerloom entrepreneurs. The interview schedule so drafted was circulated among some research experts, Joint Director of textiles, Coimbatore, Secretary of Tirupur textile committee, leading entrepreneurs and Research Scholars for a critical view with regard to wording, format, sequence and the like. The questionnaire was re-drafted in light of their comments.
1.5.6 Pre-test

The interview schedule meant for the respondents was pre-tested with 60 powerloom entrepreneurs. After pre-testing, necessary modifications were made in the interview schedule to fit in the track of the present study.

1.5.7 Frame Work of Analysis

The core of the study being ‘Knowledge assessment and managing powerloom industries in Tamilnadu’, the study centers around the dependent variable viz., the quantity produced with successful operation of powerloom industry and the relationship with the related independent variables.

1.5.7.1 Approach to the Extent of managing powerloom industries

The difference in the extent of managing powerloom industries by the entrepreneurs of different categories based on their Age, Gender, Educational qualification, Income level, Experience in powerloom industry, Marital status, Family Size, Wealth position, industry environment etc. were studied by means of Two-way tables, Percentages, Averages, Ranges and Standard Deviation.

1.5.7.2 Chi-Square Test

The degree of influence of the following independent variables pertaining to respondent’s successful operation of powerloom industries was studied by applying chi-square test.
(i) Respondents’ Age
(ii) Respondents’ Gender
(iii) Respondents’ Education
(iv) Respondents’ Income
(v) Respondents’ Experience in the industry
(vi) Respondents’ Marital status
(vii) Respondents’ Family size
(viii) Respondents’ wealth position
(ix) Respondents’ Type of company
(x) Respondents’ Number of partners
(xi) Respondents’ Working days per year
(xii) Respondents’ Nature of the company
(xiii) Respondents’ First Generation Entrepreneurs

In order to identify the factors influencing the successful operation of powerloom industry in the select clusters of the study area, a Chi-square ($\chi^2$) test was applied and the formula is given below.

$$\text{Chi–square test (} \chi^2 \text{)} = \sum \frac{(O - E)^2}{E}$$

With Degree of Freedom (D.F.) = (c-1) (r-1) where,

- $O =$ Observed frequency,
- $E =$ Expected frequency,
- $c =$ Number of Columns,
- $r =$ Number of Rows.
1.5.7.3 Multiple Regression Analysis

The regression is a statistical relationship between two or more variables. When there are two or more independent variables, the analysis that describes such relationship is the multiple regression. This analysis is adopted where there is one dependent variable that is presumed to be a function of two or more independent variables. In multiple regression, a linear composite of explanatory variables is formed, in such a way that it has maximum correlation with an active criterion variable. The main objective of using this technique is to predict the variability of the dependent variable, based on its co-variance with all the independent variables. It is useful to predict the level of dependent phenomenon through Multiple Regression Analysis models, if the levels of independent variables were given. The linear multiple regression problem is to estimate coefficients of $\beta_1, \beta_2, \ldots, \beta_j$ and $\beta_0$ such that the expression,

$$ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_j X_j $$

provides a good estimate of an individual $Y$ score based on the $X$ scores,

Where,

- $Y$ = Level of successful operation of powerloom industry
- $X1$ = Respondents’ Age
- $X2$ = Respondents’ Gender
- $X3$ = Respondents’ Education
- $X4$ = Respondents’ Income
- $X5$ = Respondents’ Experience in the industry
- $X6$ = Respondents’ Marital status
- $X7$ = Respondents’ Family size
\[ X_8 = \text{Respondents’ wealth position} \]

\[ X_9 = \text{Respondents’ Type of company} \]

\[ X_{10} = \text{Respondents’ Number of partners} \]

\[ X_{11} = \text{Respondents’ Working days per year} \]

\[ X_{12} = \text{Respondents’ Nature of the company} \]

\[ X_{13} = \text{Respondents’ First Generation Entrepreneurs} \]

and \[ \beta_0 + \beta_1 + \beta_2 + \ldots + \beta_j \] are the parameters to be estimated.

**1.5.7.4 Discriminant function analysis**

Discriminant analysis is a technique designed to characterize the relationship between a set of variables, often called the response are predictor variables, and a grouping variable with a relatively small number of categories. To do so, discriminant function creates a linear combination of the predictors that best characterizes the differences among the groups. The technique is related to both regression and multi-variate analysis of variants, and as such it is another general linear model technique. Discriminant attempts to find the linear combinations of the predictors that best separate the populations. The study assumes three predictor variables i.e., \( X \) are the high, \( Y \) are the medium and \( Z \) are the low. How do respondents are successful in operating powerloom industries? Does all the factors selected in the analysis differ among these groups? In general, what are all the variables which significantly discriminate the respondents of one group from other group. Discriminant function analysis answers these questions in three stages viz., 1. Construction of discriminant function 2. Classification 3. Interpretation.
1.5.7.5 Garrett Ranking Technique

This technique was used to rank the problems faced by the powerloom entrepreneurs in the study area. In this method the respondents were asked to rank the given problem according to the magnitude of the problem. The order of merit given by the respondents were converted into ranks by using the following formula.

\[ \text{Percentage Position} = \frac{100(R_{ij} - 0.5)}{N_j} \]

The percentage position of each rank thus obtained is converted into scores by referring to the table given by Henry Garrett. Then for each factor the scores of individual respondents were added together and divided by the total number of respondents for whom the scores were added. These mean scores for all the factors were arranged in order of ranks and the inference were drawn.

1.5.7.6 Factor analysis

Factor Analysis is used to study a complex product or service in order to identify the major characteristics or factors considered important by the respondent. The purpose of factor analysis is to determine the responses to the several numbers of statements, which are significantly correlated. Factor analysis is applied to assess the significance of the factors that are responsible for successful operations of powerloom industries.
1.5.7.7 Structural Equation Modeling (SEM)

Structural equation models (SEMs) report findings in three different ways. Understanding the way statistical significance is reported requires understanding the terminology of the model itself. Within the graphical display of the model there are boxes and arrows. Boxes represent observed data and the arrows represent assumed causation. Within the model a variable that receives a one-way directional influence from some other variable in the system is termed "endogenous", or is dependent (successful operation of the Powerloom Industry). A variable that does not receive a directional influence from any other variable in the system is termed as "exogenous", or is independent—in this case, Age, Education, Experience, Family size, Wealth, Type of Company, Number of Partners, Working Days, Nature of Company and First Generation Entrepreneurs. When interpreting SEMs the values attached to one-way arrows (or directional effects) are regression coefficients, whereas two-way arrows (nondirectional relationships) are correlation coefficients; regression coefficients and correlations comprise the "parameters" of the model. The regression coefficients and correlations measure the strength of the relationship between the variables. A regression coefficient of .70 or higher indicates a very strong relationship; .50 to .69 indicates a substantial relationship; .30 to .49 indicates a moderate relationship; .10 to .29 indicates a low relationship; .01 to .09 indicates a negligible relationship; and a value of 0 indicates no relationship.

Besides regression coefficients and correlations, SEMs also test the overall fit of the model. The narrative analyses use three measures of model fit to determine the overall quality of fit of the model. Another way of thinking about model fit is to view this as the test of model significance, thus, when the
values of significance are met for the tests all relationships within the model are significant, and it is then their relative strengths which decides if there is a relationship or not.

The first measure of model fit is the Goodness-of-Fit Index (GFI). The GFI measures the relative amount of variance and covariance in the Sample covariance matrix that is jointly explained by the Population covariance matrix. The GFI values range from 0 - 1, with values close to 1 being indicative of good fit.

A second type of Goodness-of-Fit index used in the analysis can be classified as incremental or comparative indexes of fit. As with the GFI, incremental indexes of fit are based on a comparison of the hypothesized model against some standard. However, whereas this standard represents no model at all for the GFI, for the incremental indices, it represents a baseline model (typically the independence or null model). Comparative Fit Index (CFI) is useful in that it takes sample size into account. The CFI values range from 0 to 1, but whereas .90 was considered a good fit for GFI, a revised cutoff of .95 has recently been advised for CFI.

The final set of fit statistics used in the analysis focuses on the Root Mean Square of Error Approximation (RMSEA). This fit statistic has only recently been recognized as one of the most informative criteria for use in covariance structure modeling. The RMSEA takes into account the error of approximation in the population and asks the question "How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?" This discrepancy, as measured by the
RMSEA, is expressed per degree of freedom, thus making the index sensitive to the number of estimated parameters in the model (i.e. the complexity of the model); values less than .05 indicate good fit, values between .08 and .1 indicate mediocre fit, and those greater than .1 indicate poor fit. It is also possible to use confidence intervals to assess the precision of RMSEA estimates; AMOS (the statistical program that is used to run the SEMs) reports a 90% interval around the RMSEA value.

Besides testing for model fit, SEMs also provide a measure of multicollinearity. In some cases, the model fits the data well, even though none of the independent variables has a statistically significant impact on the dependent variables. How is this possible? When two independent variables are highly correlated, they both convey essentially the same information. In this case, neither may contribute significantly to the model after the other one is included. But together they contribute a lot. If you removed both variables from the model the fit would be much worse. So the overall model fits the data well, but neither independent variable makes a significant contribution when it is added to your model. When this happens, the independent variables are collinear and the results show multicollinearity. With SEMs, a correlation of .80 between variables is indicative of multicollinearity.

If your goal is simply to predict that the independent variables will influence your dependent variables, then multicollinearity is not a problem. The predictions will still be accurate. If your goal is to understand how the various independent variables impact the dependent variables, then multicollinearity is a big problem. The primary problem is that the individual strength values can be misleading (a strength value can be low, even though the variable is important). The best solution is to understand the cause of multicollinearity and
remove it. Multicollinearity occurs because two (or more) variables are related they measure essentially the same thing. If one of the variables doesn't seem logically essential to the model, removing it may reduce or eliminate multicollinearity. It is also possible to find a way to combine the variables. For example, if education, occupation and income were collinear independent variables, perhaps it would make scientific sense to remove education, occupation and income from the model, and use socio-economic status (calculated from education, occupation and income) instead. You can also reduce the impact of multicollinearity by increasing sample size.

The structural equation modeling process centers around two steps: validating the measurement model and fitting the structural model. The former is accomplished primarily through confirmatory factor analysis, while the latter is accomplished primarily through path analysis with latent variables. One starts by specifying a model on the basis of theory. Each variable in the model is conceptualized as a latent one, measured by multiple indicators. Several indicators are developed for each model, with a view to winding up with at least three per latent variable after confirmatory factor analysis. Based on a large (n>100) representative sample, factor analysis (common factor analysis or principal axis factoring, not principle components analysis) is used to establish that indicators seem to measure the corresponding latent variables, represented by the factors. The researcher proceeds only when the measurement model has been validated. Two or more alternative models (one of which may be the null model) are then compared in terms of "model fit," which measures the extent to which the covariances predicted by the model correspond to the observed covariances in the data. "Modification indexes" and other coefficients may be used by the researcher to alter one or more models to improve fit.
1.6 HYPOTHESES OF THE STUDY

The formulation of hypotheses or propositions as to the possible answers to the research questions is an important step in the process of formulation of the research problem. Keen observation, creative thinking, hunch, wit, imagination, vision, insight, and sound judgment are of greater importance in setting up reasonable hypotheses. A thorough knowledge about the phenomenon and related fields is of great value in its process. The formulation of hypotheses plays an important role in the growth of knowledge in every science. The following hypotheses had been made for the research process.

Null hypothesis H₀: There is no significant relationship between age of the respondents and the successful operations of powerloom industries.

Alternative hypothesis H₁: There is a significant relationship between age of the respondents and the successful operation of powerloom industries.

Null hypothesis H₀: There is no significant relationship between gender of the respondents and successful operation of powerloom industries.

Alternative hypothesis H₁: There is a significant relationship between gender of the respondents and successful operation of powerloom industries.
Null hypothesis $H_0$: There is no significant relationship between educational level of the respondents and successful operation of powerloom industries.

Alternative hypothesis $H_1$: There is a significant relationship between educational level of the respondents and the successful operation of powerloom industries.

Null hypothesis $H_0$: There is no significant relationship between income level of the respondents and the successful operation of powerloom industries.

Alternative hypothesis $H_1$: There is a significant relationship between income level of the respondents and the successful operation of powerloom industries.

Null hypothesis $H_0$: There is no significant relationship between experiences of the respondents in the industry and the successful operation of powerloom industries.

Alternative hypothesis $H_1$: There is a significant relationship between experiences of the respondents in the industry and the successful operation of powerloom industries.

Null hypothesis $H_0$: There is no significant relationship between Marital Status of the respondents and the successful operation of powerloom industries.

Alternative hypothesis $H_1$: There is a significant relationship between Marital Status of the respondents and the successful operation of powerloom industries.
Null hypothesis $H_0$: There is no significant relationship between Family Size of the respondents and the level of satisfaction of migrated workers.

Alternative hypothesis $H_1$: There is a significant relationship between Family size of the respondents in the powerloom industry and the successful operation of powerloom industries.

Null hypothesis $H_0$: There is no significant relationship between Wealth position of the respondents and the successful operation of powerloom industries.

Alternative hypothesis $H_1$: There is a significant relationship between Wealth position of the respondents and the successful operation of powerloom industries.

1.7 SCOPE OF THE STUDY

This study would be of practical utility to provide guide-lines to the powerloom products manufacturers. The present research highlights the emerging trends in the growth of powerloom industry in the global scenario. This study would help to identifying the benefits and problems faced by the powerloom manufacturers in major clusters of Tamilnadu. None of the study has been made so far to analyse the opinion of the powerloom entrepreneurs in the angle of knowledge assessment, problems and prospects. The study will help the owners of powerloom industries to introduce new technology and cost reduction during manufacturing powerloom products. Further, it is suggested to the Government in formulating and enforcing regulatory measures and
enhancing the economic development through successful operation of powerloom industries.

1.8 PERIOD COVERED BY THE STUDY

The period of the study was confined from 2008 to 2011. With a view to gain an insight into powerloom industries in the region, a detailed study was conducted. The review of literature and conceptual frame work of the study took six months period. Preparation of the interview schedule and conducting the pilot study consumed six months. The Collection of Primary data from the powerloom manufacturers took one year of time. Six hundred powerloom entrepreneurs in five clusters were selected as respondents for this study. The analysis and interpretation of the data took another six months. The last six months period was used for rough drafting and final form of the thesis.

1.9 LIMITATIONS OF THE STUDY

This study is confined to the particular regions which concentrate on cotton based production centers viz., Erode, Coimbatore, Karur, Salem and Madurai Clusters of Tamilnadu state. Hence, the results arrived from the study may or may not be applied to other states. Further, survey method was adopted to collect data for this study, which has its own limitations. Certain respondents had given information about their economic back grounds like annual income, quantity of production and capital invested roughly as they had a fear of income tax and other departments like inspectors of factories. However, in order to make the result reliable, care had been taken to minimize the bias, through cross checks.
1.10 OPERATIONAL DEFINITIONS

1.10.1 Entrepreneur

An entrepreneur is one who brings resources, labour, materials and other assets into combinations that make their value greater than before, and also one who introduces changes, innovations and a new order.

1.10.2 Powerloom

Basically, they are weaving factories, which get yarn from spinning industries and produce various varieties of cloths. Typically, these are small firms and are neither household industry nor industrial units but they are a mixture of both.

1.10.3 Karur Textile Entrepreneurs Marketing Strategy

In order to avoid intruders other than Tamilnadu the Karur Marketing Association introduced a unique marketing strategy by inculcating new system of encouraging the market in the day time and not allowing the strangers in the name of businessmen in Karur District.

1.10.4 CMIN

CMIN is the minimum value of the discrepancy function between the sample covariance matrix and the estimated covariance matrix. CMIN is
distributed as chi-square with df=p-q. P is the probability of getting as large a discrepancy with the present sample.

1.10.5 FMIN

FMIN is the minimum fit function. It can be used as an alternative to CMIN to compute CFI, NFI, NNFI, IFI, and other fit measures. It was used in earlier versions of LISREL but is little used today.

1.10.6 GFI

GFI is the goodness-of-fit index and is equal to 1 – (chi-square for the default model/chi-square for the null model). GFI varies from 0 to 1 but theoretically can yield meaningless negative values. GFI can be large even for poorly specified models. Because of this and other problems noted below, GFI is no longer a recommended measure of goodness of fit and has been dropped by AMOS. Most researcher no longer report GFI. GFI cannot be interpreted as percent of error explained by the model. Rather it is the percent of observed covariance explained by the covariances implied by the model. That is, $R^2$ in multiple regression deals with error variance whereas GFI deals with error in reproducing the variance-covariance matrix.

1.10.7 RMR

RMR is the root mean square residual, also called RMS residual or RMSR, is the mean absolute value of the covariance residual, which reflect the difference between observed and model-estimated covariances. Specifically,
RMR is the coefficient which results from taking the square root of the mean of the squared residuals. The closer RMR is to 0, the better the model fit. One sees in the literature such rules of thumb as that RMR should be less than .10, or .08, or .06, or .05, or even .04 for a well-fitting model.

### 1.10.8 NFI

The normed fit index, also known as Delta1 ($\Delta_1$), was developed as an alternative to CFI, but one which did not require making chi-square assumptions. “Normed” means it varies from 0 to 1, with 1 = perfect fit. Defining the null model as the independence model, $\text{NFI} = (\text{chi-square for the null model} - \text{chi-square for the default model})/\text{chi-square for the null model}$. NFI reflects the proportion by which the researcher’s model improves fit compared to the null model (uncorrelated measured variables). For instance, NFI=.50 means the researcher’s model improves fit by 50% compared to the null model. Put another way, the researcher’s model is 50% of the way from the null (independence baseline) model to the saturated model. By convention, NFI values above .95 are good (ex., by Schumacker & Lomax, 2004:82), between .90 and .95 acceptable, and below .90 indicates a need to respecify the model.

### 1.10.9 IFI

IFI, also known as Delta2 and computer as IFI = (chi-square for the null model - chi-square for the default model)/(chi-square for the null model - degrees of freedom for the default model). By convention, IFI should be equal to or greater than .90 to accept the model. IFI can be greater than 1.0 under
certain circumstances. IFI is relatively independent of sample size and is favoured by some researchers for that reason.

1.10.10 CFI

CFI is similar in meaning to NFI but penalizes for sample size. CFI and RMSEA are among the measures least affected by sample size (Fan, Thompson, and Wang, 1999). CFI varies from 0 to 1 (if outside this range it is reset to 0 or 1). CFI close to 1 indicates a very good fit. CFI is also used in testing modifier variables (those which create a heteroscedastic relation between an independent and a dependent, such that the relationship varies by class of the modifier). By convention, CFI should be equal to or greater than .90 to accept the model, indicating that 90% of the covariation in the data can be reproduced by the given model. It is computed as $(1 - \max(\text{chisq-df}, 0)) / \max(\text{chisq-df}, \text{chisq-n-df}, 0))$, where chisq and chisq-n are model chi-square for the given and null models, and df and df-n are the corresponding degrees of freedom. Note Raykov (2000, 2005) and Curran et al. (2002) have argued that CFI, because based on noncentrality, is biased as a model fit measure.

1.10.11 RMSEA

RMSEA is the root mean square error of approximation. It is sometimes labeled RMS or RMSE or called the discrepancy per degree of freedom. RMSEA is a popular measure of fit, partly because it does not require comparison with a null model and thus does not require the author posit as plausible a model in which there is complete independence of the latent variables as does, for instance, CIF. It is one of the fit indexes less affected by
sample size, though for smallest sample sizes it overestimates goodness of fit (Fan, Thompson, and Wang, 1999). RMSEA is computed as \( \text{RMSEA} = \frac{\text{chisq}/((n-1)\text{df})-\text{(df}/((n-1)\text{df}))}{.5} \), where chisq is model chi-square, df is the degrees of freedom, and n is number of subjects.

1.11 CHAPTER SCHEME

The present empirical study has been divided into five chapters.

The **First Chapter** gives the intense and clear picture of research design, which includes Introduction, Need for the Study, Statement of the Problem, Objectives of the Study, Research Methodology adopted, Frame Work of Analysis, Scope of the Study, Period covered for the Study and Limitations of the Study.

The **Second Chapter** presents Review of the Literature.

The **Third Chapter** focuses on the overview of powerloom industry and entrepreneurs.

The **Fourth Chapter** highlights the data analysis and interpretation.

The **Fifth Chapter** presents the summary of findings, suggestions and conclusion.