1.1 INTRODUCTION

The poultry industry in India represents a major success story. What was largely a backyard venture before the 1960s has been transformed into a vibrant business with an annual turnover of Rs 30,000 crores. Today, India is the third largest egg producer in the world (after China and the United States of America), and the nineteenth largest broiler producer. Undoubtedly, this impressive growth is a result of several factors, such as active developmental support from the state and central government, research and development support from research institutes, international collaboration and private sector participation. A point worth mentioning here is that Indian poultry is self-sufficient, supported by a broad and strong genetic base in which the productivity levels of broilers and layers are equal to those achieved elsewhere (e.g. in the United States of America and the European Union). Undoubtedly, these achievements are quite significant. Today, however, globalization is posing greater challenges: namely, making the industry globally competitive and viable; and fulfilling the quite enormous potential for growth that is presented by changing food habits and preferences.

India’s animal wealth is huge in terms of its population of cattle (204.5 million), buffaloes (84.2 million), poultry (800 million), sheep (50.8 million), goats (115.3 million) and pigs (12.8 million). Compared with the rest of the livestock sector the poultry industry in India is more scientific; it is well
organized and progressing towards modernization. The Indian poultry industry’s success story is uniquely exceptional. From a backyard venture, it has made a quantum leap to emerge as a dynamic industry. Over the last three decades, there have been significant developments in the poultry industry with each decade focusing on different sectors. The seventies saw a spurt in egg production; the eighties an acceleration in broiler production; the nineties advances in poultry integration, automation and feed production (Fig.1.1). The present decade promises to exploit value added products and the global trade avenue. The growth of the poultry industry is so fast that authenticated statistics are irrelevant by the time they are published.

India is the third largest producer of eggs the world, producing 34 billion eggs (Mehta, 2002). Poultry sector in India has been growing at a much faster rate than other sectors of the Indian economy and accounts for 100 billion rupees to the Gross National Product (GNP). Despite such amazing growth in last two decades, annual per capita consumption of egg and poultry meat in India is disappointingly low with approximately 36 eggs and 0.7 kilograms of poultry meat in 2001. These levels are too low as compared to the world average of 147 eggs and 10.9 kilograms of poultry meat on a per capita basis (FAOSTAT). These low levels of per capita consumption of eggs and poultry meat have been mostly attributed to lower purchasing power. However, purchasing power of Indians is likely to grow at a much higher rate in the future due to strong economic growth, as a result of continued economic liberalization initiated in early 1990s.
Macroeconomic forecasters such as World Bank, and Standard and Poor’s DRI are now projecting average annual growth of 6 to 8 percent in India’s real GDP in the next decade. In addition to strong income growth, consumption pattern is also likely to be influenced by population growth, urban-rural population composition and other demographic variables. Although it is extremely important to understand the future consumption growth in poultry meat and eggs both from policy and industry perspective, it has received little attention from the researchers both in India and abroad (Sharma and Yeung, 1985). However, most of these studies have ignored how difference in the consumption behavior across income groups is likely to evolve in the future with the rise in income. Estimation of separate income elasticity for different income groups both in the urban and rural area were done; they didn’t extend their analysis in projecting future demand for livestock and its products. The Value of Output and Gross Domestic Product from Livestock Sector in India is estimated at Rs. 156.08 thousand crore and Rs. 120.94 thousand crore respectively. The share of livestock sector in the country's GDP remained more or less constant at around 5.5%> since 1995-96.
1.2 NEED FOR THE STUDY

In the last decades the livestock sector has been one of the fastest growing sectors in Indian agriculture, currently accounting for about 25 percent of agricultural GDP as compared to less than 14 percent in 1980 (GOI, 2006). These drivers include income growth and urbanization, advances in production and processing technology and improvements along the supply chain (Khan and Bidabadi, 2004; Pingali, 2007; Narrod et al., 2008). Within the livestock sector, poultry has been the fastest growing sub-sector: between 1985 and 2005 poultry egg production grew by about 15% per year, compared to an annual growth rate of 1.5 to 2% for beef, milk and mutton and lamb. At present, with an average annual consumption of 1.5 kg of poultry meat and 1.8 kg of eggs (35-40 eggs) per person, exclusive of milk though, poultry meat and eggs contribute almost 50 percent to the per capita consumption of animal protein (GOI, 2006).

FIGURE 1.2
PER CAPITA CONSUMPTION OF LIVESTOCK PRODUCTS (%),

Source: www.faostat.fao.org
Growth in India’s poultry sector stems mainly from growth of a limited number of large commercial producers, which have been expanding rapidly in Southern India, where climatic conditions are mild, and at a slower pace in the Western and Eastern States (Metha and Nambiar, 2007; Metha et al., 2003; Rabobank, 2008). According to USDA, the commercial poultry sector grew at 18.6 percent per year in the period 1997 to 2002 and is anticipated to continue its fast growth in the coming years (OECD-FAO, 2008).

The OECD-FAO Agricultural Outlook 2008-2017, which offers the most comprehensive assessment of trends in agricultural markets in both developed and developing countries, estimates that Indian demand for, and supply of, poultry products will grow at 4.8 and 5.2 percent per year over the decade, faster than for any other type of meat and milk (OECD-FAO, 2008). The Government of India is well aware of the growth opportunities of the national poultry sector, and the Eleventh Five Year Plan 2007-2012 sets a target growth rate for the sector at 10% per year, which is above the envisaged 9 percent annual growth rate for total GDP.

Increased production, however, needs to be accompanied by efficient marketing system that adds place, form, time, and possession utility to the product along the supply chain. The marketing system for local poultry in Tamil Nadu, particularly, in the study areas is poorly developed. This study was intended to analyzing poultry marketing system, business support services and their role, constraints and opportunities of the poultry sector and factors that affect poultry egg market participation and volume of poultry supplied to the market to generate information about the entire supply chain of poultry egg in the study area.
1.3 STATEMENT OF THE PROBLEM

Major egg producing states of India are Karnataka, Kerala, Tamil Nadu, Andhra Pradesh and Western region of Maharashtra which together accounts for more than 56 per cent of total national egg production and 60% of total broiler production in the country. Marketing systems play a decisive role in vibrant economies as mechanisms for both exchange (necessary for specialization and hence leads to higher economic growth) functions and the proper coordination of the exchange (through price signals) which reflect and shape producer and consumer incentives in supply and demand interaction. If small scale domestic producers are to take advantage of the projected domestic demand growth, then marketing systems in the supply chains linking producers to consumers must be able to support low cost production and timely delivery of the products.

Agricultural products particularly, livestock products like eggs can only be supplied to satisfy the demand through effective and efficient marketing system which links farm and non-farm communities. For a marketing system to successfully coordinate the interaction of the suppliers and consumers of goods and services must be accompanied by efficient marketing system. Both producers and consumers satisfy their conflicting goals regarding the pricing behavior of a marketing system through such efficient and competitive marketing systems. In parts of the world, rural people often say that one reason they cannot improve their living standards is that they face difficulties in accessing markets. Market systems do not, however, provide the only mechanisms for ‘coordinated exchange’. In advanced market economies hierarchical relations in organizations (government agencies, firms, and civil society organizations) play a major role both as channels for exchange and in providing institutional services necessary
for markets to work. However market transactions are normally voluntary (in that both sides have to perceive gains from trade), involve precise terms of exchange (with regard to quantity, quality, space and time), and require wider institutions supporting interaction between trading parties. Now a day the consumption pattern is changing both domestically and internationally toward high quality attributes. Livestock products particularly poultry eggs have skyrocketing demand throughout the world. It is widely recognized that an inefficient marketing system entailing substantial costs to consumers and less incentives to producers could not provide the mechanism to meet the accelerating demand for high quality food items.

In Tamil Nadu, information concerning the egg marketing system is lacking. Despite the high demand for poultry products, producers in Tamil Nadu are not market oriented and the production system practiced by them is as per the directions given by the poultry companies and the feeds supplied by them. This in turn leads to very small supply compared to the high demand in the prevailing market. Research efforts to increase egg production and productivity have been underway in Tamil Nadu. But review of past research works indicate that the research largely concentrated on the biological aspects of poultry production such as supplementary feeding and breeding.

The small poultry farm owners in the study area are taking more efforts to produce more quantity of eggs through constant feeding and regular veterinary health check up for the birds. This incurred an exorbitant cost to purchase high quality poultry feeds and high cost of maintenance. With all these efforts they have finds difficulty to achieve the expected production regularly. Simultaneously it is noted that the same poultry farm owners doesn’t have adequate knowledge to sell the product in the market. Due to the
poor literacy and fear of going to urban area, they are totally depends on middle man to market their products. Hence, a good portion of profit has been very easily swallowed by middle man, further it was noticed that the poultry farm owners suffering due to non-availability of regular transport facilities, to shift the eggs from the poultry farm to various markets located at different parts of the country. During the transit, there were more chances of getting damaged before reaching to market. With all these sufferings they also, drastically affected due to non availability of laboures. On the other hand, the poultry farm owners have obtained loan from banks and financial institutions are very much affected due to non availability of loans as well as working capital on time. Most of them were suffered because of refusal of bank loans or purposive delay in sanctioning the loan. Hence, they were approached private financiers with higher rate of interest and they were under the clutches and control of private financiers. Some of the farmers have engaged in a contract with big egg processing units and selling their eggs at very lower price during the contract period, even though the market price was high. Having witnessed all these problems faced by the poultry farm owners, the researcher initiated this research work in the field of poultry eggs production and marketing.

Based on the above issues, the researcher has probed the following questions.

a) How far the poultry farm owners were affected by the private financiers in the study area.

b) What were the major problems faced by the poultry farm owners during production and marketing of poultry eggs.

c) To what extent the poultry farm owners affected by logistic operations.
1.4 OBJECTIVES OF THE STUDY

7. To study the production and marketing of poultry eggs in the study area.
8. To critically review the current scenario of production and marketing of poultry eggs specifically from different levels of production (small, medium and high level)
9. To ascertain the factors that influenced the successful operations of poultry farms.
10. To analyze the methods of pricing and current marketing channels and key players in the poultry marketing system.
11. To identify the barriers to the efficient operation and possible opportunities associated with marketing and production of poultry eggs.
12. To develop strategies and technological intervention to enhance the production and better marketing chains.

1.5 RESEARCH METHODOLOGY

This section explains about sampling, data collection methods, instrument for data collection, pilot study and framework of analysis

1.5.1 Sampling Design

For the present study, Tamilnadu state was purposively selected due to increase in poultry industry. Tamilnadu state consists of four major poultry clusters Viz Namakkal, Pollachi, Rasipuram and Vellore Districts concentrating in producing poultry eggs. 523 sample respondents were selected by using stratified random sampling method from all these clusters. The selection of respondents were made in active consultation with the
National Egg Co-ordination Committee members and the research supervisor. The respondents were selected randomly from the list maintained by the NECC of the above said clusters and sub clusters. The following table presents geographical representation of sample respondents.

### TABLE 1.1
GEOGRAPHICAL REPRESENTATION OF SAMPLE RESPONDENTS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Poultry Cluster</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Namakkal</td>
<td>173</td>
</tr>
<tr>
<td>2</td>
<td>Pollachi</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Rasipuram</td>
<td>150</td>
</tr>
<tr>
<td>4</td>
<td>Vellore</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>523</strong></td>
</tr>
</tbody>
</table>

1.5.2 Data collection

The study used both primary and secondary data to ascertain adequate and relevant information related to poultry production and marketing.

1.5.2.1 Primary data

The primary data were collected from 523 poultry entrepreneurs who were producing eggs from their poultry farms. The information was gathered through personal interview method from the selected poultry entrepreneurs. Further, the details such as factors influenced to start the business, knowledge on poultry 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 Animal Husbandry industry Government of India, NECC, Poultry Journals. Latest information was gathered from well equipped libraries in Indian Institute of Management, Bangalore 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 poultry business, recent changes in the egg production, benefits and problems faced by the entrepreneurs, several rounds of discussion were held with knowledgeable and experienced persons in the field of poultry 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 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 doing poultry business 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 poultry entrepreneurs. The interview schedule so drafted was circulated among some research experts, NECC officials in Namakkal, veterinary Doctors, leading poultry 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 poultry 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 ‘Production and Marketing poultry eggs in Tamilnadu’, the study centers around the dependent variable viz., the
quantity of eggs produced with successful operation of poultry business and the relationship with the related independent variables.

1.5.7.1 Approach to the Extent of managing poultry industries

The difference in the extent of managing poultry business by the entrepreneurs of different categories based on their Age, Gender, Educational qualification, Income level, Experience in poultry industry, Marital status, Family Size, Wealth position, 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 poultry 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 farm ownership
(x) Capacity of birds in the farm
(xi) Source of feed to the farm
(xii) Type of labour engaged in the farm
(xiii) Number of workers in the farm
(xiv) Farm space available for business
(xv) Egg yield percentage
(xvi) service offered by the dealer

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

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

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 $\beta_1$, $\beta_2$, ..., $\beta_j$ 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 poultry business

$X_1$= Respondents’ Age

$X_2$= Respondents’ Gender

$X_3$= Respondents’ Education

$X_4$= Respondents’ Income

$X_5$= Respondents’ Experience in the industry

$X_6$= Respondents’ Marital status

$X_7$= Respondents’ Family size

$X_8$= Respondents’ wealth position
X9= Respondents’ Type of farm ownership  
X10= Capacity of birds in the farm  
X11= Source of feed to the farm  
X12= Type of labour engaged in the farm  
X13= Number of workers in the farm  
X14= Farm space available for business  
X15= Egg yield percentage  
X16= service offered by the dealer  

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

### 1.5.7.4 Garrett Ranking Technique

This technique was used to rank the problems faced by the poultry 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.
1.5.7.5 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 poultry business.

1.5.7.6 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 poultry business). 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 farm, occupation, Capacity of birds, source of feed to farm, type of labour engaged, farm space, egg yield percentage and service offered by the dealer. When interpreting SEMs the values attached to one-way arrows (or directional effects) are regression coefficients, whereas two-way arrows (non directional 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 0.80 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 $H_0$: There is no significant relationship between age of the respondents and the successful operations of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between age of the respondents and the successful operation of poultry business.
Null hypothesis H₀: There is no significant relationship between gender of the respondents and successful operation of poultry business.

Alternative hypothesis H₁: There is a significant relationship between gender of the respondents and successful operation of poultry business.

Null hypothesis H₀: There is no significant relationship between educational qualification of the respondents and successful operation of poultry business.

Alternative hypothesis H₁: There is a significant relationship between educational qualification of the respondents and the successful operation of poultry business.

Null hypothesis H₀: There is no significant relationship between monthly income of the respondents and the successful operation of poultry business.

Alternative hypothesis H₁: There is a significant relationship between monthly income of the respondents and the successful operation of poultry business.

Null hypothesis H₀: There is no significant relationship between experience of the respondents in the industry and the successful operation of poultry business.

Alternative hypothesis H₁: There is a significant relationship between experience of the respondents in the industry and the successful operation of poultry business.
Null hypothesis $H_0$: There is no significant relationship between Marital Status of the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between Marital Status of the respondents and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between Family Size of the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between Family size of the respondents and the successful operation of poultry business.

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

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

Null hypothesis $H_0$: There is no significant relationship between Type of farm ownership of the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between Type of farm ownership of the respondents and the successful operation of poultry business.
Null hypothesis $H_0$: There is no significant relationship between occupation type of the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between occupation type of the respondents and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between capacity of birds in the farm of the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between capacity of birds in the farm of the respondents and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between respondents source of getting feed and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between respondents source of getting feed and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between type of labourers engaged and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between type of labourers engaged and the successful operation of poultry business.
Null hypothesis $H_0$: There is no significant relationship between number of workers engaged and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between number of workers engaged and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between type of farm space occupied by the respondents and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between type of farm space occupied by the respondents and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between egg yield percentage and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between egg yield percentage and the successful operation of poultry business.

Null hypothesis $H_0$: There is no significant relationship between services offered by the dealers and the successful operation of poultry business.

Alternative hypothesis $H_1$: There is a significant relationship between services offered by the dealers and the successful operation of poultry business.
1.7 SCOPE OF THE STUDY

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

The result of the study is helpful for farmers, traders and service providers involved in the production and marketing of poultry eggs in the study area. This study also helps development planners and policy makers in designing appropriate policies for the production and marketing of poultry eggs to enable farmers and other participants benefit according to their marginal contribution so that they can stay in the business. Moreover, the information can be provided for potential investors and small and medium farms interested in the business so that medium and large scale poultry farms start to emerge.

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 poultry industry 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 poultry farms took one year of time. Five hundred and twenty three poultry entrepreneurs in four 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

There are several limitations are in this study. First, the instrument used in this study is multi choice; and the respondents found difficulty to select the appropriate answer. Whenever they strucked, necessary help was provided by the researcher. However, this limitation could be overcome by the same study where focus group discussion conducted would help the educators to answer their view freely without any barrier. This study involves purposive sampling among the poultry farm holders in Salem and Namakkal districts thus the study would not be representative of entire Tamil Nadu.

Thirdly, the present study is cross sectional in nature, which means that data collected at a particular point of time, thus this may not guarantee that the answers reported by the respondent would valid for longer period. To overcome this limitation, prospective studies or intervention studies are needed to further validate or prove the present results. Other factors such as time of day, recent conflicts, fatigue of the participants are outside the control of researchers which all could influence the response. Certain respondents had given information about their economic back grounds like annual income, egg yield percentage and capital invested roughly as they had a fear of income tax
and other commercial departments. 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 Poultry

Poultry means chickens, turkeys, guinea fowl, ducks, goose, quails, pigeons, pheasants, partridges, ostriches and emus reared or kept in captivity.

1.10.3 Poultry Farming

Rising of birds domestically or commercially, primarily for meat and eggs but also for feathers.

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 (Δ₁), 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, NFI = (chi-square for the null model – chi-square for the default model)/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 covariance variation in the data can be reproduced by the given model. It is computed as \(1 - \frac{\text{chisq}}{\text{df}} \), where \(\text{chisq}\) and \(\text{chisqn}\) are model chi-square for the given and null models, and \(\text{df}\) and \(\text{dfn}\) 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 to 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 \(\frac{\text{chisq}/((n-1)\text{df}) - \text{df}/((n-1)\text{df})}{0.5}\), where \(\text{chisq}\) is model chi-square, \(\text{df}\) 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.

**Chapter 1** present the introduction and design of the study, which gives a clear picture of research design, 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.

**Chapter 2** presents the review of the previous literature on poultry farming.

**Chapter 3** highlights on the overview of poultry industry and poultry entrepreneurs.

**Chapter 4** presents the data analysis and interpretation

**Chapter 5** recapitulate the summary of findings, suggestions and conclusion.