CHAPTER 4

FRAMEWORK OF THE PROPOSED ERP SYSTEMS

4.1 METHODOLOGY

This chapter deals with the methodology adopted for sustainable ERP implementation research. In order to fulfill the main objective and sub-objectives of the research, a detailed framework is drawn and the same is depicted in Fig. 4.1.

![Proposed Framework for Sustainable ERP Implementation](image)

Figure 4.1 Proposed Framework for Sustainable ERP Implementation
Review of Literature

Literature on various facts relevant to ERP software and issues pertaining to its implementation in the apparel industry have been studied and reviewed, which facilitated the construction of the questionnaire. Based on review of literature, a structured questionnaire had been designed to collect data from the apparel industries at Chennai, Tirupur and Bangalore. The Questionnaire covered general information such as Office information, Contact information, employees, production capacity and turnover are collected. Technical information relating to the ERP software and its features implemented are collected under broad categories such as status of ERP implementation, objectives, product selection, evaluation criteria followed for selecting the products were identified.

Technical information relating to ERP Implementation such as number of modules implemented, re-engineering of processes, managerial problems encountered, level of customization, benefits derived from implementation, people involved in the process, technical problems faced during the implementation were collected. Information related to benefits derived by the management such as reduction in operational expenditure, process time, fulfilment of the operational expectations, commitment from the management and time taken for implementation were also taken in to consideration. In-addition to this, information related to technology used in the ERP implementation such as integration of various units, number of licenses used, infrastructure and technology adopted were also obtained. Parameters such as expertise, experience, infrastructure and commitment followed in vendor selection were also covered. Information with regard to finance such as financial implications in the implementation, budget allocation and utilization of funds for the implementation were also brought in. Industry specific issues such as product costing, cost analysis, issues
related to warehouse and stock management were also documented. In order to ascertain a clear picture on ERP implementation, the questionnaire was designed accordingly.

➢ Construction of Questionnaire

Based on the review of literature, a structured questionnaire has been designed to collect data from the apparel industries located at Chennai, Tirupur and Bangalore. The Questionnaire consists of the following heads of information :-

❖ General Information about the respondents.
❖ Technical information on ERP products.
❖ Technical information related to the ERP implementation.
❖ Technical information related to benefits derived
❖ Technology related information on ERP implementation
❖ Vendor Selection
❖ Financial Management
❖ General information

ERP application is implemented in many organizations; However, success of the implementation is determined by various parameters such as time taken for implementation, investment made for the implementation, return on investment and benefits derived from the implementation against the expected results. Adequate precautions were taken before identifying the product, vendors and the implementation methodology.
➢ Questionnaire Survey

A pilot study was conducted with a sample of 21 companies and its results were analyzed. Based on the study, the questionnaire was further modified and developed to suit the above said objectives. Accordingly the revised version of the questionnaire was finally administered and sample questionnaire is given in Appendix – 1.

➢ Data Analysis

Data collected from the 117 industries through the questionnaire has been analyzed with the hypothesis framed and fulfill the stated objectives with the SPSS software. Statistical analysis techniques such as frequency distribution, percentage analysis, weightage arithmetic mean and standard deviation have been applied depending upon the nature of data collected from the respondents. Also to identify the Crux in the study to provide a suitable and sustainable solution for the successful ERP implementation. These findings are presented in Table A.1 to A.61 of the Appendix - 2.

➢ Results and Findings

The results and findings were arrived on the basis of the data analyzed which helped to identify various issues encountered by the apparel industries in the implementation of ERP application. Some of the issues faced by the industry are product selection, change management issues, falling short of expectations, project cost overrun, overshooting of implementation schedule, failing to deliver the expected results etc. The findings also revealed the need for a solution to calculate the actual profit or loss met with the style and cost analysis in-addition to the simple warehouse management solution for effective space utilization. Based on these Crux, a simple solution is
provided for an effective ERP implementation and sustainable ERP model for an apparel industry.

➢ **Road Map for the ERP Implementation**

In order to overcome the dependency level of the consultants, an effective solution for the successful ERP implementation, a road map is provided for the industries which are venturing for new ERP projects.

➢ **Road Map for Sustainable ERP implementation**

In order to overcome the dependency level of the software vendor, a suitable road map for sustainable model is proposed to overcome issues related to the post-implementation through cost analysis model and warehouse management model.

✧ **Cost Analysis Model**

Based on the Crux, a cost analysis model is propounded to find out the actual profit or loss made in each style. The analysis further supports to find out the deviations in the component of manufacturing cost by using a mathematical model.

✧ **Warehouse Management Model**

Based on the crux identified, a simple warehouse management solution is provided to cater to the requirements for retail and export business and to manage the warehouse space. The tool also helps to identify the dead stock over a period of time to ascertain the real value of the stock available in the warehouse.
Performance Analysis

Performance analysis was carried-out to check the efficiency of the proposed models. A Simple linear and a Multiple linear regression is used on the cost analysis model to compare the traditional model and the classical cost analysis proposed model. Performance analysis is carried-out to verify the effectiveness of the warehouse space utilization and stock management as well.

4.2 SUMMARY

In order to fulfill the research objectives, the use of ERP application in the apparel industry, a questionnaire was administered to collect information on ERP used in the apparel industries at Bangalore, Chennai and Tirupur. Data collected from the respondents are discussed in detail and the results and findings arrived based on the analysis were showcased in chapter 5. Based on the findings a detailed road map is provided for successful ERP implementation for the industries which are going in for automation. Another solution is also provided to make ERP sustainable for the industries already implemented ERP. Based on the crux arrived from data analysis, an add-on solution is also designed for Garment cost analysis and Warehouse Management and is showcased in Chapter 5.