PREFACE

Integrated Mother and Child services for tribal population in East Godavari District is part of a Rural Development Programme envisaged by the State Government of Andhra Pradesh. It will be providing a package of integrated services covering tribal children and their mothers of East Godavari District of Andhra Pradesh. This plan of action on Rural Development will centre around the most apparent lacunae in the present Social Services and infrastructure of the agency area viz Health and nutrition, Pre-School Services, Education, Women's activities, drinking water supply and Sanitation.

The field work for the Baseline study has been carried out during April-June 1980. The study has been carried out not only among tribal households but also among their welfare institutions viz Ashram Schools, SNP Centres, Anganwadi Centres, Teacher-Depots and PHC's. This Research thesis presents the detailed findings of the Survey Carried out among Child and Mother Welfare Institutions viz SNP Centre, Anganwadi, Balwadi and Creche Centre, and also the statistical techniques used for the analysis of data.

Scheduling problems are quite common in nature. They arise whenever there is a need to plan the execution of various operations over time. Like many other real life problems such as inventories, networks, queues etc., almost all the scheduling problems can be represented by appropriate mathematical models. The theory of scheduling is a discipline which deals with the construction of suitable mathematical models for scheduling problems and their analysis. Scheduling theory came into prominence after Johnson (1954) had published his work on a flow shop scheduling problem.

The current research work carried out in this research thesis in analysing the data is mainly in scheduling theory and it can be classified into two types: (1) on deterministic models and (2) on non-deterministic (stochastic) models. A large number of deterministic models that have been designed to represent various scheduling problems are combinatorial in nature. Unfortunately, the available mathematical tools are not sufficient to deal with such combinatorial models efficiently. For this reason, we presently depend upon branch and bound and heuristic methods, which are not efficient.
to solve these models. Some of the scheduling problems can be formulated as standard models like integer programming but the magnitude of such formulations will be quite large.

Recently, researchers like Gittings, Glazebrook, Nash, Pinedo, Weber, Weiss etc., have been formulating the scheduling problems with random processing times as stochastic models. The tools and techniques required for analysing these stochastic models are different from those of deterministic models. Quite often, the theory of semi-Markov decision processes is found useful in analysing the stochastic models which represent the scheduling problems.

In this thesis, we mainly deal with the mathematical aspects of deterministic as well as stochastic scheduling problems in analysing the data.