CHAPTER : - V

SUGGESTIONS FOR FURTHER STUDY

5.1. INTRODUCTION

The aim of this chapter is to summarise in brief previous chapters of this dissertation and to describe briefly scope for further study and possible extensions of this work. Section-5.2 consists summary of the results derived in this dissertation and in the last section of this chapter we point out further scope for research and possible extensions that can be thought from the results obtained in this dissertation.

5.2. SUMMARY OF RESULTS

We have given the result due to Atwood(1984) regarding the approximate expected coverage of the proposed tolerance interval in Chapter II which gives the general theory of constructing β-expectation tolerance interval. Chapter III of this dissertation consists discussion based on Mee(1989). Here, also, we have given the detailed proof of the result due to Mee. We have obtained the expected coverage by using FORTRAN PROGRAMMING and coverage values are tabulated. It is found that the expected coverages obtained are coincide with the expected coverages given by Mee. Mee has suggested correction factor to increase the expected coverage in case of extreme values of β.

In this chapter we have suggested a new method for obtaining the expected coverage based on the regression analysis. It is also observed that expected coverages obtained by this method are closer to required one than that of method based on correction suggested by Mee.

Chapter IV of this dissertation consists of our own work. Here we have a method for obtaining the β-expectation tolerance limits from the stratified random samples when the characteristic of interest is exponentially distributed within each stratum. The approximate expected coverage of the proposed tolerance interval is obtained by using Atwood(1984) method. We have presented a paper "One-sided β-expectation tolerance intervals for exponential distribution based on a stratified random samples" in "National Seminar on Statistical Methodology and New Applications" organised by Depatrtment of Statistics, Bangalore University, BANGALORE.

5.3. POSSIBLE EXTENSIONS AND SCOPE FOR FURTHER STUDY

We discuss here possible extensions of this work and point out some scope for further study on the topic.

(1) In the spirit of this dissertation it is desirable to obtain β-expectation tolerance limits when underlying family is a finite mixture, say, Normal or Exponential etc. one can construct β-expectation tolerance intervals for the

entire production run or separate intervals for the individual strata. If strata represents production lots that will remain separate, then the limits for the individual strata are applicable. That is, one may construct simultaneous tolerance intervals for individual strata (eg. production lots). Mee(1988) has discussed the simultaneous tolerance interval for normal population with common variance.

(2) It is necessary to study extensively β-content tolerance interval which are useful than that of β-expectation tolerance interval.

(3) One can extend Mee's work based on a stratified random samples when the units within the strata are normaly distributed with unequal variances.

(4) In case of exponential distribution one can try for construction of tolerance intervals based on a stratified random sample when location parameter is non-zero

(5) It may be of interest to obtain tolerance intervals for exponential family based on a stratified random sample .

(6) It is necessary to obtain optimal tolerance limits, that is, most stable tolerance limits. It is also necessary to give a proper definition of asymptotically

most stable tolerance   intervals and derive methods to ensure asymptotic optimality.

(7) It may be of interest to obtain tolerance intervals based on incomplete data such as type-I or type-II censoring.

(8) It is essential to consider construction of tolerance limits for various families of distributions ocurring in reliability such as IFR(DFR) distributions, NBU-distributions etc.

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