Conclusion and direction of future work
Chapter 10

Conclusion and direction of future work

CONTENTS

10.1 Conclusion

10.2 Direction of future work
10.1 Conclusion

In this thesis two piece distributions are considered for truncated normal distribution and truncated lognormal distribution. The idea of two piece normal distribution is extended for bivariate normal distribution, bivariate lognormal distribution, multivariate normal distribution and multivariate lognormal distribution. Doubly and singly truncated two piece bivariate binormal distribution and bivariate bilognormal distribution are considered as an extension of truncated two piece normal and truncated two piece lognormal distribution respectively. Further, truncated two piece multivariate normal and truncated two piece multivariate lognormal distribution are also considered as a generalization of truncated two piece normal and truncated two piece lognormal distributions.

In conclusion it may be noted that the estimators of parameters of two piece normal distribution and two piece multivariate normal distribution surprisingly have same forms except matrix notation in multivariate case. The p.d.f. of truncated two piece normal distribution and the p.d.f. of truncated two piece lognormal distribution have also the same forms except a random variable $x$ is replaced by $\log x$ in earlier distribution. This similarity of p.d.f. representation also surprisingly occur for two piece bivariate normal and two piece bivariate lognormal as well two piece multivariate normal and two piece multivariate lognormal distribution. The structure of m.l.e.'s of parameters for two piece
normal distribution and two piece lognormal distribution are observed to be same except the summation ($\sum x$) for normal distribution is replaced by $\sum \log x$ for lognormal distribution. The same change is also observed in the recurrence relation for doubly truncated two piece bivariate normal distribution and doubly truncated two piece bivariate lognormal distribution and in the estimators of the parameters of these two distributions also.

10.2 Direction of Future work

The work done in this is mostly connected to two piece - normal, lognormal, bivariate normal, bivariate lognormal, multivariate normal, multivariate lognormal distribution.

One can derive all this results for normal – lognormal (semi-lognormal) distributions as well as for three parameter lognormal distribution (defined by Crow, E.L. and Shimizu, K. (1988)). The two piece distribution of inverse complex normal distribution, truncated complex normal distribution can be tackled.