

## SUMMARY

In this study we used a real dataset obtained by Saddiqa *et al* (2012) to compare different methods to estimate survival function. The complete dataset contains 138 patients having one or more than one event at a time; we further reduced this dataset such that it contains only one event at a time. The reduced data set contains 35 patients with only one event at a time, which was obtained using random number generator from binomial distribution with 25%, 50% and 75% success rate to reduce the original data to maintain 25%, 50% and 75% censoring rates in the data respectively. The various methods defined in equations (3.1), (3.5) and (3.6) were applied to these datasets taking censoring with three levels 25%, 50%, and 75% to find the estimates of survival function, standard errors and survival curves. We compared survival estimates of three methods Kaplan Meier method, Inverse probability censoring weights method and weighted Kaplan Meier method.

Chapter No. 1 comprises of the introduction to these methods. Chapter No. 2 includes the literature review of the methodology of these methods and censoring. Chapter No. 3 includes the methodology of methods mathematical expression of methods and pros and cons of these methods.

Chapter No. 4 includes analysis and interpretation of the results. It presents a complete comparison of different methods of estimation in the presence of different levels of censoring and single or more than one event at a time. We compared the survival estimates and their standard errors to observe that Weighted Kaplan Meier performed relatively better with different amount of censoring in the data.