Acknowledgement

I am always thankful to the God Almighty, the source of all wisdom, for giving me the strength and presence of mind to complete the work successfully and I humbly solicits the Almighty’s blessings.

The work presented in this thesis would not have been possible without my close association with many people who were always there when I needed them the most. I take this opportunity to acknowledge them and extend my sincere gratitude for helping me make this Ph.D. thesis a possibility.

I am indebted to my guide and supervisor Dr. K. K. Jose, Principal, St. Thomas College, Pala (former Professor and Head, Department of Statistics), who with infinite patience and understanding, guided me through the intricacies of research. His reassurances have gone a long way in instilling confidence and his thoughtful suggestions have helped in improving the quality of this thesis. He patiently went through each word I wrote and guided me at each stage of my work. I feel privileged to be associated with a person like him during my life.

I sincerely remember the unstinting support and encouragement that I received from Dr. Joy Jacob, the Head of the Department of Statistics, Dr. K.M. Kurian, Dr. Seemon Thomas and all my teachers in the Department.

I record my sincere thanks to all authorities of St. Thomas College Pala for providing me with all the facilities necessary for doing my research. I would like to thank the librarian and library staff for their services and owe a lot to the staff of St. Thomas College Pala.

The DST INSPIRE Fellowship awarded to me to carry out research is gratefully acknowledged here. My sincere thanks are extended to DST for the timely disbursal of the grant.

I am full of fond memories of my fellow researchers especially Sr. Josephine David CHF, Soumya Tom, Technical assistant, Department of Statistics, St. Thomas College Pala and Guest faculties in the Department who have made these years vibrant and rewarding. My heartfelt thanks for their special interventions. I extend my sincere thanks to my senior researchers for their help, support and advices.
I am extremely grateful to Professor K.J. Mathai, Head, Department of Statistics, K.E. College Mannanam for the support and encouragement I received from my graduate days. A lot of gratitude is due to Dr. Rani Sebastian, my first teacher in Statistics for all the help and concern extended to me. She was like an elder sister to me and inspired me a lot to continue my studies in Statistics. She was always with me during the happy and hard moments to push me and motivate me.

I would like to acknowledge all the teachers I learnt from since my childhood, as I would not have been here without their guidance, blessing and support.

I do not have the words to express my thanks for the wholehearted and selfless support given to me by my father Thomas and my mother Cicily. Their prayers, sacrifices, care and consolations always extended a strong emotional support to me and guided me in the right path even in the face of adversities and gave me liberty to choose what I desired. My brother Mathew Thomas was always there to motivate and encourage me. I consider myself the luckiest to have such a supportive family, standing behind me with their love and support.

I cannot forget the support and prayers of my relatives and friends at this juncture but I am unable to mention all their names here.

Last but not least, I express my heartfelt gratitude to the countless people who have helped and blessed me in numerous ways in completing this work.

Manu Mariam Thomas