Acknowledgement

First and foremost, I express my thanks and gratitude to my supervisor Prof. Munindra Borah for his precious proposals, continuous supportive gestures and for being an infinite source of motivation and inspiration. I thank my Doctoral Committee Members Prof. Nayandeep Deka Baruah, Dr. Dhiren Kumar Basnet and Dr. Santanu Dutta, Department of Mathematical Sciences, Tezpur University.

I thank and acknowledge the assistance and support of head of the Department of Mathematical Sciences, Tezpur University for his inspiration and providing all the necessary facilities required for my work. Also, I am thankful to all other faculty and staff members of the Department of Mathematical Sciences, Tezpur University, for their help and support.

I am grateful to Dr. Rajan Sarma, Associate Professor, Department of Statistics, Darrang College, Tezpur for his help.

I owe thanks to a very special person, my husband, Dimpal for his continued and unfailing love, support and understanding during my pursuit of Ph.D degree that made the completion of thesis possible.

I am fortunate to have friends Suparna, Pearl, Jayanta, Zakir, Munmi, Junali, Mami, Nilufar, Krishna Ram, Sougat, Parama, Ajay, Deeepak, Porinita ba, Sangita ba, and Jutirekha ba, Dr. Biju Kumar Dutta, Assistant Professor, Kaziranga University. I express gratitude toward them for their support.

Words cannot express how grateful I am to my Ma, Deta, Koka (Lt. Rajani Saikia), Aita, Uncle (Mr. Probin Saikia), Aunty (Mrs. Purabi Saikia), elder brother (Manish) for all of the sacrifices that you've made on my behalf and sincere regards to all my family members for their encouragement and moral support during my work. My heart felt regard goes to my father in law, mother in law for their love and moral support. At last but not least, I am expressing gratitude toward to all my well-wishers about whom I have not been able to mention here.

I thank the Almighty for giving me the strength and patience to work through all these years so that today I can stand proudly with my head held high.

Date:

Place:

(Pallabi Saikia)