ACKNOWLEDGEMENTS

Writing a D.Phil. thesis is a long way. Despite a lot of moments of solitude when the markov chains did not converge, I never walked alone on this way. Therefore, it was possible.

Firstly I am indebted to my supervisor Prof. Anoop Chaturvedi, Professor, Department of Statistics, University of Allahabad, Allahabad, who guided me, encouraged me and simply allowed me to write this thesis and related research. His guidance and continuous support helped me in all the time of research and writing to this thesis. It is whole-heartedly express that his advices for my research proved to be a landmark effort towards the success of my thesis. I would also like to pay my regards for his personal and moral support throughout the duration of research work without which this work could not have been completed.

I wish to present my special thanks to Prof. S. Lalitha, Professor and Head, Department of Statistics, University of Allahabad, Allahabad and Prof. G. S. Pandey for their valuable contribution.

My warmest thanks is addressed to Dr. R. K. Tyagi for his inestimable encouragement, constructive criticism and excellent contribution to computing resources in the analysis phase of the model. He was always able to find good solutions to persistent problems without even being asked for.

I am quite unable to find appropriate words as to express my deepest sense of gratitude to my aunties Mrs. Sunita Chaturvedi and Mrs. Jyotshana Tyagi, for her love and care, which gives me confidence during the period of research work.

My many thanks are addressed to my colleague and friend Ms. Tanuja Sriwastava for their tremendous support, enriching knowledge and guidance without whom the thesis would not have become a successful one. I am also thankful to Dr. Jitendra Kumar, Dr. Arvind Shrivastava, Dr. Manish Dubey, Dr. Anupma Singh, my friend Mohit
Srivastava and my loving juniors Avadhesh Mishra and Nishant Mishra for their support.

Finally my deepest sense of gratitude go to my family, my beloved mother Smt. Ragini Mishra, my Nana ji Shri Prem Narayan Mishra, my Nani ji Smt. Indira Mishra, my sister Priya and my brother in law Mr. Chandra Shekhar Pandey and my nephew Vishwas. They are pillars towering strength to during the whole duration of research work.

Last but not least my grateful thanks to my almighty Lord Tirupati Ji, who help in successful completion of my thesis and showing me the right path to lead for my future.

Date: (Sandeep Mishra)

Place: Allahabad