## Heknowledgements

First and foremost, I would like to express my sincere gratitude to my guide Dr. K. Muralidharan, Former Head and Professor of Department of Statistics, The Maharaja Sayajirao University of Baroda, for every bit of guidance, inspiration, and continuous support to my Ph.D. study. I am very grateful for his fruitful suggestions, patience, enthusiasm, and immense knowledge that helped me in all the time of research and writing of this thesis. He made the whole Ph.D. process a journey full of endeavors, learning experience and feeling of accomplishments. It has been an honor being his student.

I am very thankful to Dr. V. A. Kalamkar, Head, Department of Statistics, Faculty of Science, The Maharaja Sayajirao University of Baroda for providing me with adequate facilities generously, in the department.

My gratitude extends to Professor Dr. M. Shreehari, Retired Professor, Department of Statistics, Faculty of Science, The Maharaja Sayajirao University of Baroda for the constructive and comprehensive exchange of ideas, valuable comments, and suggestions.

My deep sense of gratitude to Dr. Ashok Shanubhogue, Head, Department of Statistics, Vallabh Vidyanagar for his unconditional support, guidance, and help extended during this research. I am also thankful to Professor Dr. B. I. Dave, Department of Mathematics, Faculty of Science, The Maharaja Sayajirao University of Baroda for his valuable suggestions and help.

I would like to express my special appreciation and thanks to Dr. Rupal Shah,

Assistant Professor, Department of Statistics, Faculty of Science for helping in R

programming, and Dr. Rajnikant Patel, Research Officer of Population Research

Centre, The Maharaja Sayajirao University of Baroda for his unstinted and timely

effort to extract NFHS-3 data for my Ph.D. thesis.

I grab this opportunity to thank all the faculty members and non-teaching staff

members of the Department of Statistics for their encouragement and co-operation

during the entire period of my research.

I fondly express my sincere thanks to my loving family members. Their prayers

and blessing for me were very useful for sustaining the entire journey of my Ph.D.

study.

I am also indebted to my spouse, Manish Bavagosai for his tolerance, unfailing

support and continuous encouragement throughout my years of study and writing of

this thesis. To my beloved daughter Ayushee, I would like to express my thanks for

being such a good girl always cheering me up. This accomplishment would not have

been possible without them.

Above all, I bow before the grace of Almighty.

Date: November 2018

Bavagosai Pratima