Decomposition Methods in Demography

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Decomposition Methods in Demography

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Preface

The adventure of decomposition methods is the most challenging responsibility that I have encountered so far. I accepted this formidable task because, I believe, it is the key idea of all the methods founded in the core of demography. Decomposition theory is based on the simple principle of separating demographic measures into components that contribute to an understanding of the phenomena under study. Most of the decompositions presented here refer to changes over time in demographic variables. For this reason, this research contributes to the understanding of population dynamics. The principle of decomposition methods is not only applicable to demography, however. All sciences, in one or other way, use decomposition as a research tool. As such, other social and natural sciences could benefit from the results presented in this book.

My background in actuarial science and population studies provided me with the skills to learn, develop and enjoy the decompositions presented here. The formulas are simple but they explain the fundamental relations existing among demographic variables. An understanding of differential equations and algebra and an interest in population phenomena are useful in understanding the power of decomposition.

I had special interest in looking at the developments of different decomposition methods and finding out which questions these methods could help answer. From reviewing previous methods, insight was gained into the desired properties of decomposition methods and progress in decomposition theory was made.

Stimulated by the early work of James Vaupel on decomposition methods, I began studying the research carried out in this field. As I became familiar with the state of the art in decomposition analysis, I was inspired with many ideas for future developments of Vaupel's formulas. Advice from Frans Willekens in other areas of demography helped me further develop my work. I am grateful to both James Vaupel and Frans Willekens for their roles as "Doktorvaters". Their guidance and friendship was very valuable during the process of this Ph.D. I am particularly grateful to James Vaupel because his dedication and enthusiasm for formal demography were very inspiring for me. I particularly enjoyed those demographic lessons on the ferry from Rostock to Denmark. I am particularly grateful to Frans Willekens because his suggestions and encouragement allowed me to expand my research to a broader area of study. I was delighted when the meetings were held at his house and included the wonderful hospitality of Maria Willekens.

This Ph.D. was carried out as a collaborative work between two institutions. I came to the Max Planck Institute for Demographic Research in Rostock, Germany, as the first Sergio Camposortega Cruz Ph.D. Fellow in 1999. As a member of this institution, I had the opportunity to meet many well-established demographers, as well as the promising future generation of demographers. Exchanges with all these people who are dedicated to demography were very stimulating for my work. My appreciation of support goes to Gunnar, Sara, Jan, Vladka, Roland, Michaela, Dirk, Lena, Annette B., Rasmus, Iliana, Hans Peter, Jonathan, Ines, Konstantin, Edlira, Nika, Alexia, Heiner, Gunde, Rainer, Ulrike, Patricio, Elizabetha, Francesco, Nadege, Jutta, and many others.

During my time in Rostock, I also had the chance to participate in courses of the International Max Planck Research School for Demography, first as a student and later as a lecturer. Concerning these courses, I would like to thank the students for their patience and for their

feed-back. The courses of this School provided me with the opportunity to visit my second host institution, the University of Groningen. During my Ph.D. studies I had several extended visits to the Population Research Centre (PRC) in Groningen, which also provided me with a scholarship for my final year. I enjoyed the stimulating international environment of the PRC. My gratitude for support goes to Stiny, Karen, Mamun, Moury, Sarbani, Hideko, José, Maaike, Luisa, Ajay, Zula, Elda, Marloes, Andrea, Susan, Vanessa, Rob, Miriam, Bettina, Thomas, Inge, among many others. Mrs. Marijke Steenstra, my Dutch host, also deserves special thanks for letting me feel at home.

Both institutions were very welcoming and I enjoyed the homely environment, especially among friendly colleagues who contributed with their energetic spirit to create perfect places for developing new ideas. I have reached this far, in academic terms and in distance, thanks to the education received in my former universities in México the UNAM and FLACSO. Thank you to all of you, dear Demographers. Finally, I wish to thank the Consejo Nacional de Ciencia y Tecnología of México for supporting me with a complementary scholarship.

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Before closing this preface I would like to acknowledge all those who were at all times in my thoughts and helped me through the difficult times when days were too short and work too intense. All my admiration goes to my friends, some far some near - I keep on learning from your delight for life. All my love goes to my family who has taught me how to keep smiling in hard times. In those hard cold days, when even the demographic spirit was giving up, a warm hug from a loved one reminded me my compromise with life, Thanks Annettita.