OMAR KARLSSON, PHD

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SUMMARY

- Expertise in demography, global health, data analysis, and scientific writing
- Seven years of quantitative research experience following PhD completion
- Author of 38 peer-reviewed articles, including 24 as lead author
- Delivered 11 invited seminars and 8 conference presentations
- Supervised three master's theses
- Research topics include mortality, child health, population aging, living standards

SKILLS

Methods: Demographic methods, econometrics, parallel computing, generalized linear models, decomposition techniques, multilevel models, small area estimation, time series analysis, survival analysis, nonparametric regressions

Tools: Expert in Stata; experienced in JavaScript (D3.js), GitHub, Excel; working knowledge of Python; familiar with SPSS, R

Data: Large-scale datasets, data integration, household surveys, life tables, geospatial data, data visualizations, dashboard design

Communication and collaboration: Scientific and grant writing, literature reviews, public speaking, interdisciplinary and international collaborations, mentoring graduate students

ACADEMIC APPOINTMENTS

Visiting Research Fellow August 2022–*present*
Duke University Population Research Institute, USA
Center for Policy Impact in Global Health, Duke Global Health Institute, USA

Postdoctoral Fellow January 2020–*present*
Centre for Economic Demography, Lund University, Sweden

Takemi Research Fellow September 2019–August 2022
Department of Global Health and Population, Harvard T.H. Chan School of Public Health, USA

EMPLOYMENT AND CONSULTANCIES

External Consultant October 2020–September 2021
UNICEF, Programme Division, Nutrition Section, USA

Researcher October 2018–August 2019
Centre for Economic Demography, Lund University, Sweden

EDUCATION

PhD in Economic History September 2014–September 2018
Lund University, School of Economics and Management, Sweden
- Dissertation title: *Growth and Survival: Child Health Disparities and Early Life Adversity in Sub-Saharan Africa*
- Supervisors: Martin Dribe (primary), Therese Nilsson (secondary)
- Selected coursework: Supervising Master's Theses, Advanced Econometrics, Multivariate Analysis, Statistical Methods for Econometrics, Advanced Development Economics
- Included one year as a visiting student at Harvard T.H. Chan School of Public Health

MSc in Economic Demography September 2012–July 2014
Lund University, School of Economics and Management, Sweden
- Selected coursework: Epidemiology and Biostatistics, Econometrics, Applied Microeconometrics, Advanced Time Series Analysis, Population and Living Standards, Advanced Topics in Economic Demography—Health and Mortality, Advanced Topics in Economic Demography—Marriage and Fertility, Causes of Demographic Change, Consequences of Demographic Change
- Included three-month internship at the Estonian Institute for Population Studies

GRANTS

Jan Wallander and Tom Hedelius Foundation December 2020
Wallander Scholarship (three-year postdoctoral scholarship)

Swedish Research Council December 2019
International Postdoc (three-year postdoctoral funding)

Jan Wallander and Tom Hedelius Foundation March 2016
Hedelius Scholarship (one-year visiting student scholarship)

MAIN PROJECTS

Lancet Commission on Investing in Health
The Lancet Commission on Investing in Health is an interdisciplinary research initiative composed of 49 global experts and provides a roadmap for halving premature mortality by 2050 with targeted investments in health systems and interventions.
- Developed an online interactive dashboard to visualize key metrics enabling commissioners to explore data layers and generate displays as needed
- Managed ad-hoc data needs from commissioners requesting tailored summaries or visualizations to aid in concept development and presentation of results to stakeholders
- Led research quantifying the contribution of specific causes of death to changes in life expectancy over time and differences across locations using life table decompositions
- Used time series analysis and multilevel models to study trends and rates of change in various health metrics
- Authored five peer-reviewed articles, including two as lead author
- Presented findings at three seminars, a lecture, and a conference

UNICEF: When it Matters Most
The project examined age patterning of various nutrition-dependent child health outcomes and explored programmatic implications, especially for vitamin A supplementation, aiming to maximize benefits of interventions under resource scarcity.
- Met with the UNICEF team to understand goals and information needs

- Led customized data analysis to provide actionable insights for program strategy
- Used synthetic cohort probabilities method to estimate the age distribution of deaths
- Used kernel-weighted local-mean regressions to estimate the age patterning of stunting
- Used Poisson regression models to estimate prevalence ratios for child wasting by age
- Led authorship of four reports, all later published in peer-reviewed journals
- Designed and conducted a seminar for UNICEF staff and stakeholders on data interpretation to build capacity for program planning

Household Technology and Human Development
The project studied whether and in which contexts household appliances (e.g., refrigerators, washing machines) can improve nutrition, reduce infections, and reduce child labor, thereby improving child health and education in low- and middle-income countries.
- Served as principal investigator
- Implemented high-resolution Coarsened Exact Matching to enable comparisons of outcomes across closely matched groups
- Designed falsification tests using negative control exposures (i.e., placebo tests) to assess residual confounding
- Led authorship of three articles published in peer-reviewed journals
- Presented the project and findings at a seminar at Harvard University

Disparities in Childhood Mortality in Southern Sweden, 1815–1967
Historical demography research on differences in age-specific under five mortality rates across father's occupational groups in 19th and early 20th century Sweden.
- Managed data from a unique historical economic and demographic database containing all vital events and occupations within a region in southern Sweden
- Conducted survival analysis using Cox proportional hazard models
- Co-authored a peer-reviewed journal article

Advanced Insights in Anthropometric Health Metrics
This project investigated how child growth and maternal height—indicators central to research on early-life conditions and global health policy—relate to health in low- and middle-income countries.
- Developed a spatiotemporal indicator of adversity (e.g., epidemics, food scarcity) during infancy within 50 km of birthplace using geocoded birth histories
- Used sibling fixed effects models to assess the impact of adversity on child growth
- Combined Mundlak fixed effects and Gelbach decomposition to quantify the impact of unobserved half-sibling-level factors on the association between mother's height and health
- Designed and tested a health metric: maternal height standardized prevalence of stunting
- Led authorship of five peer-reviewed journal articles
- Presented results at four seminars and five conferences
- Contributed to debates on the appropriate use of anthropometrics in policy setting

MENTORSHIP

Co-supervised three MSc students in Economic Demography at Lund University, 2016–2018. Advised on thesis topics and provided feedback on research design, data analysis, and written drafts. Two theses received the highest grade.

SEMINARS AND LECTURES

The German Association for Health Economics, dggö-Talk, online, May 2025. *Global Health 2050: The path to halving premature death by mid-century* (with Marko Schäferhoff).

Prince Mahidol Award Conference, Side Meeting, Bangkok, Thailand, January 2025. *Global Health 2050: Leveraging technological advances to halve premature deaths by 2050* (with Angela Chan and Saeda Makimoto).

Duke Global Health Institute, Guest Lecturer in Gavin Yamey's course *Global Health Policy: Transforming Evidence into Action*, Durham, NC, USA, March 2025. *Global Health 2050: The 3rd Report of the Lancet Commission on Investing in Health (CIH 3.0).*

Duke University Population Research Institute, Seminar Series, Durham, NC, USA, December 2024. *Global Health 2050: The path to halving premature death by mid-century.*

Korea University, International Symposium on Precision Public Health, online, May 2023. *Differences in child mortality and morbidity across the first five years in low- and middle-income countries.*

UNICEF, Nutrition Master Class, online, November 2021. *To what extent is child mortality and wasting prevalence concentrated before age two? Implications for nutrition and health programs.*

Harvard Center for Population and Development Studies, Friday Luncheon Seminar, Cambridge, MA, USA, February 2020. *Household technology and child health.*

Lund University, Development Research Day, Lund, Sweden, October 2017. *Maternal Height and Child Development in Sub-Saharan Africa: Mechanisms and Interventions.*

Harvard T.H. Chan School of Public Health, Landmark Meeting, Boston, MA, USA, August 2017. *Temporal Changes in the Association between Parental Education and Child Health: Evidence from 86 Demographic and Health Surveys from 43 Low- and Middle-Income Countries.*

Harvard T.H. Chan School of Public Health, Landmark Meeting, Boston, MA, USA, November 2016. *Influence of Disease Environment in Infancy on Child Health and Education in Sub-Saharan Africa.*

Lund University, Department of Economic History Research Seminar, Sweden, March 2016. *Intergenerational Transmission of Capabilities: Mothers and Children in Sub-Saharan Africa.*

CONFERENCE PRESENTATIONS

Consortium of Universities for Global Health Annual Conference, Los Angeles, CA, USA, March 2024. *Life expectancy deficits by cause of death: a life table decomposition.*

Population Association of America Annual Meeting, New Orleans, LA, USA, April 2023. *Anemia severity and school attendance among 251,401 adolescents aged 15–18 years: a nationally representative household fixed-effects study in India.*

European Population Conference, Brussels, Belgium, June 2018. *Influence of Disease Environment in Infancy on Childhood Health and Education in Sub-Saharan Africa.*

Population Association of America Annual Meeting, Denver, CO, USA, April 2018. *Religion and Child Health in Sub-Saharan Africa: Religious Affiliation and Community-Level Religious Composition.*

Population Association of America Annual Meeting, Chicago, IL, USA, April 2017. *Influence of Disease Environment in Infancy on Child Growth in Sub-Saharan Africa.* **[Poster]**

Population Association of America Annual Meeting, Washington, DC, USA, April 2016. *Influence of Disease Exposure in Infancy on Childhood Health and Education in Sub-Saharan Africa.* **[Poster]**

Africa Population Conference, Pretoria, South Africa, November 2015. *Intergenerational Transmission of Capabilities: Mothers and Children in Sub-Saharan Africa*.

Population Association of America Annual Meeting, San Diego, CA, USA, April 2015. *Intergenerational Transmission of Capabilities: Mothers and Children in Sub-Saharan Africa.*

PEER-REVIEWED JOURNAL ARTICLES

Karlsson O, Jamison D, Yamey G, Bolongaita S, Mao W, Chang AY, Norheim OF, Ogbuoji O & Verguet S (forthcoming). Global Disparities in Premature Mortality: Progress Relative to the Lowest Mortality Frontier. *JAMA Health Forum.*

Chang AY, Bolongaita S, Cao B, Castro M, **Karlsson O**, Mao W, Norheim OF, Ogbuoji O & Jamison DT (forthcoming). Epidemiological and demographic trends and projections in global health 1970–2050: Analysis from the 3rd Lancet Commission on Investing in Health, Global Health 2050. *The Lancet*.

Karlsson O, Chang AY, Norheim OF, Mao W, Bolongaita S, Jamison DT (2025). Priority Health Conditions and Global Life Expectancy Disparities. *JAMA Network Open,* 8(5): e2512198.

Karlsson O, Pullum TW, Kumar A, Kim R & Subramanian SV (2025). Age Decomposition of Mortality Rates Among Children Younger Than 5 Years in 47 LMICs. *JAMA Pediatrics*, 179(5): 540–549.

Karlsson O, Kumar A, Kim R & Subramanian SV (2025). Trends in low birth weight across 36 states and union territories in India, 1993–2021. *BMJ Global Health*, 10(6): e016732.

Narayanan M, **Karlsson O**, Kumar A, Pullum TW, Kim R & Subramanian SV (2025). Prevalence of severe and moderate anthropometric failure among children in India, 1993–2021. *Maternal & Child Nutrition*, 21: e13751.

Jamison DT, Summers LH, Chang AY, **Karlsson O**, Mao W, Norheim OF, Ogbuoji O, Schäferhoff M, Watkins D, Adeyi O, Alleyne G, Alwan A, Anand S, Nigatu Belachew R, Berkley S, Bertozzi S, Bolongaita S, Bundy D, … & Yamey G (2024). Global health 2050: the road to halving premature death by mid-century. *The Lancet*, 404(10462): 1561–1614.

Norheim OF, Chang AY, Bolongaita S, Barraza-Lloréns L, Fawole A, Gebremedhin LD, González Pier E, Jha P, Johnson E, **Karlsson O**, Kiros, M, Lewington S, Mao W, Ogbuoji O, Pate M, Sargent J, Tang X, Watkins D, Yamey G, Yip W, Jamison D & Peto R (2024). Halving premature death and improving the quality of life at all ages. *The Lancet*, 404 (10470): 2437–2446.

Karlsson O & De Neve JW (2024). Washing machine ownership and girls' school attendance: A cross-sectional analysis of adolescents in 19 middle-income countries. *The Journal of Economic Inequality*, 22(3): 735–755.

De Neve JW, **Karlsson O**, Rai RK, Kumar S & Vollmer S (2024). Relationship between adolescent anemia and school attendance observed during a nationally representative survey in India. *Communications Medicine*, 4(1): 112.

Karlsson O, Kim R & Subramanian SV (2024). International Trends in Zinc Treatment for Diarrhea. *Pediatrics*, 154(5): e2024066701.

Karlsson O, Rajpal S, Johri M, Kim R & Subramanian SV (2024). Prevalence and Trends of Not Receiving a Dose of DPT-Containing Vaccine Among Children 12–35 Months: An Analysis of 81 Low- And Middle-Income Countries. *Journal of Epidemiology and Global Health*, 14(4): 1490–503

Karlsson O, Benski C, Kapoor M, Kim R & Subramanian SV (2024). Association between neonatal mortality and births not weighed among 400 thousand institutional deliveries in 32 low- and middle-income countries. *Journal of Public Health*, 46(4): e614–22.

Karlsson O, Kim R & Subramanian SV (2024). Prevalence of Children Aged 6 to 23 Months Who Did Not Consume Animal Milk, Formula, or Solid or Semisolid Food During the Last 24 Hours Across Low- and Middle-Income Countries. *JAMA Network Open*, 7(2): e2355465.

Karlsson O & Subramanian SV (2023). Refrigerator ownership and child health and nutrition in low- and middle-income countries. *Global Food Security*, 37: 100698.

Karlsson O, Kim R, Moloney GM, Hasman A & Subramanian SV (2023). Patterns in child stunting by age: A cross-sectional study of 94 low-and middle-income countries. *Maternal & Child Nutrition*, 19(4): e13537.

Karlsson O & Dribe M (2022). Maternal height and child health and schooling in sub-Saharan Africa: Decomposition and heterogeneity. *Social Science & Medicine*, 315: 115480.

Karlsson O (2022). Scarring and selection effects on children surviving elevated rates of postneonatal mortality in sub-Saharan Africa. *SSM - Population Health*, 19: 101160

Dribe M & **Karlsson O** (2022). Inequality in early life: Social class differences in childhood mortality in southern Sweden, 1815–1967. *Economic History Review*, 75(2): 475–502.

Egbewale BE, **Karlsson O** & Sudfeld CR (2022). Childhood Diarrhea Prevalence and Uptake of Oral Rehydration Solution and Zinc Treatment in Nigeria. *Children*, 9(11): 1722.

Karlsson O, Kim R, Hasman A & Subramanian SV (2022). Age Distribution of All-Cause Mortality Among Children Younger Than 5 Years in Low- and Middle-Income Countries. *JAMA Network Open*, 5(5): e2212692.

Karlsson O, Kim R, Guerrero S, Hasman A & Subramanian SV (2022). Child wasting before and after age two years: A cross-sectional study of 94 countries. *EClinicalMedicine*, 46: 101353.

Karlsson O, Domingue BW, Kim R & Subramanian SV (2022). Estimating heritability of height without zygosity information for twins under five years in low- and middle-income countries: An application of normal finite mixture distribution models. *SSM - Population Health*, 17: 101043.

Karlsson O, Kim R, Hasman A & Subramanian SV (2022). Consumption of Vitamin-A-Rich Foods and Vitamin A Supplementation for Children under Two Years Old in 51 Low- and Middle-Income Countries. *Nutrients*, 14(1): 188.

Karlsson O, Kim R, Bogin B & Subramanian SV (2022). Maternal height-standardized prevalence of stunting in 67 low- and middle-income countries. *Journal of Epidemiology*, 32(7): 337.

Karlsson O, Kim R, Sarwal R, James KS & Subramanian SV (2021). Trends in underweight, stunting, and wasting prevalence and inequality among children under three in Indian states, 1993–2016. *Scientific Reports*, 11(1): 14137.

Karlsson O, Dribe M & Subramanian SV (2021). Changing speed of reduction in under-5 mortality rates over the 20th century. *Journal of Epidemiology and Community Health*, 75(1): 36–39.

Li Z, **Karlsson O**, Kim R & Subramanian SV (2021). Distribution of under-5 deaths in the neonatal, postneonatal, and childhood periods: a multicountry analysis in 64 low- and middle-income countries. *International Journal for Equity in Health*, 20(1): 1–11.

Thoma B, Sudharsanan N, **Karlsson O**, Joe W, Subramanian SV & De Neve JW (2021). Children's education and parental old-age health: Evidence from a population-based, nationally representative study in India. *Population Studies*, 75(1): 51–66.

Teufel F, Geldsetzer P, Manne-Goehler J, **Karlsson O**, Koncz V, Deckert A, Theilmann M, Marcus ME, Ebert C, Seiglie JA, Agoudavi K, Andall-Brereton G, Gathecha G, Gurung MS, Guwatudde D, Houehanou C, Hwalla N, Kagaruki GB, Karki KB … De Neve JW (2020). Analysis of Attained Height and Diabetes Among 554,122 Adults Across 25 Low- and Middle-Income Countries. *Diabetes Care*, 43(10): 2403.

De Neve JW, **Karlsson O**, Canavan CR, Chukwu A, Adu-Afarwuah S, Bukenya J, Darling AM, Harling G, Moshabela M, Killewo J … Berhane Y (2020). Are out-of-school adolescents at higher risk of adverse health outcomes? Evidence from 9 diverse settings in sub-Saharan Africa. *Tropical Medicine & International Health*, *25*(1): 70–80.

Kitara DL & **Karlsson O** (2020). The effects of economic stress and urbanization on driving behaviours of Boda-boda drivers and accidents in Gulu, Northern Uganda: a qualitative view of drivers. *The Pan African Medical Journal*, 36(1).

Karlsson O, Kim R, Joe W & Subramanian SV (2020). The relationship of household assets and amenities with child health outcomes: An exploratory cross-sectional study in India 2015–2016. *SSM - Population Health*, 10: 100513.

Subramanian SV, **Karlsson O**, Zhang W & Kim R (2020). Geo-mapping of COVID-19 Risk Correlates Across Districts and Parliamentary Constituencies in India. *Harvard Data Science Review*, (Special Issue 1).

Karlsson O (2019). Religion and Child Health in West and Central Africa. *Population and Development Review*, *45*(4): 707–738.

Karlsson O, De Neve JW & Subramanian SV (2019). Weakening association of parental education: Analysis of child health outcomes in 43 low- and middle-income countries. *International Journal of Epidemiology*, *48*(1): 83–97.

Karlsson O, Kim R, Joe W & Subramanian SV (2019). Socioeconomic and gender inequalities in neonatal, postneonatal and child mortality in India: A repeated cross-sectional study, 2005–2016. *Journal of Epidemiology and Community Health*, *73*(7): 660–667.

De Neve JW, **Karlsson O**, Coetzee L, Schröder H, Subramanian SV, Bärnighausen T & Vollmer S (2018). Antiretroviral therapy coverage associated with increased co-residence between older and working-age adults in Africa. *AIDS*, *32*(14): 2051–2057.

JOURNAL CORRESPONDENCE AND COMMENTS

Watkins DA, Chang AY, **Karlsson O**, Mao W, Norheim OF, Ogbuoji O, Schäferhoff M, Yamey G & Jamison D (2025). Reflections on the Lancet Commission on Investing in Health's Global Health 2050 report – Authors' reply. *The Lancet*, 406(10498): 31–32. **[Correspondence]**

Subramanian SV, Khailkar A & **Karlsson O** (2023). Should India adopt a country-specific growth reference to measure undernutrition among its children? *The Lancet Regional Health - Southeast Asia*, 9: 100107. **[Comment]**

Subramanian SV, **Karlsson O** & Kim R (2022). Using height-adjusted stunting prevalence will fail disadvantaged children worldwide, authors reply. *The Lancet Global Health*, 10(5): e621. **[Correspondence]**

Subramanian SV, **Karlsson O** & Kim R (2022). Revisiting the stunting metric for monitoring and evaluating nutrition policies. *The Lancet Global Health*, 10(2): e179–e180. **[Comment]**

Subramanian SV, Chatterjee P & **Karlsson O** (2020). Lessons from COVID-19 pandemic for the child survival agenda. *Journal of Global Health*, 10(2): 020357. **[Comment]**