Tankiso Abiel Lefeta

De Werf 1, 2 Gateway Street, Western Cape, 7103
Nationality: Mosotho
Website: https://tankisolefeta.owlstown.net/
Phone: +27 65 6561 617
email: 22341439@sun.ac.za
Alternate email: tankisolefeta@gmail.com

PROFESSIONAL SUMMARY

I am a PhD candidate in Economics at Stellenbosch University and an applied econometrician specialising in environmental health economics. I am currently incorporating my supervisor's feedback and finalising my dissertation for submission. My research examines how environmental conditions during gestation and early childhood shape health, human-capital formation, and inequality. Combining theoretical modelling with causal econometric methods, I trace pathways from early-life air-pollution exposure to birth outcomes, early childhood health outcomes, and subsequent child-development trajectories. I focus on developing-country settings, particularly highly unequal contexts such as South Africa, where pollution levels are high and households differ markedly in their exposure, resources, and the capacity to protect themselves, and by studying these unequal environmental and biological conditions, I provide causal evidence on how early-life disadvantage persists and shapes intergenerational mobility. I am passionate about using economics to understand — and help address — these disparities, and after nine years of postgraduate study at Stellenbosch University I have developed strong analytical and critical-thinking skills and a commitment to rigorous, policy-relevant research. My work draws on geospatial and satellite data and advanced empirical methods to study the formation of health capital and defensive capacity before formal schooling and labour-market feedbacks become the dominant margins.

EDUCATION

PhD Candidate in Economics **2022 - 2026**
Stellenbosch University – Western Cape, South Africa

PhD dissertation: The biological penalty of pollution: Early-life environmental shocks, housing policy, and the formation of human capital in South Africa

- In the first empirical chapter, I instrument prenatal NO_2 exposure with thermal inversions, exploiting short-run atmospheric variation that is plausibly independent of household sorting conditional on province, urban/rural status, season, and year-of-trimester fixed effects. In this study, I recover trimester-specific average causal responses of birth weight (a proxy for the health endowment at birth) to instrument-induced variation in measured exposure.
- In the second empirical chapter, I use the same instrument within an instrumental-variable Recentered Influence Function framework (RIF-IV), and then estimate instrumented unconditional quantile effects to test whether the causal prenatal-exposure response is concentrated at the lower tail of the birth-weight distribution. I then use RIF-IV to recover the IV-UPE of prenatal NO_2 exposure on the Concentration and Erreygers Indices of low birth weight. Lastly, I apply a reweighted RIF decomposition to a seasonal exposure contrast to partition the low-birth-weight gap into composition and structure components.
- My final chapter evaluates whether a large-scale South African housing subsidy (RDP housing) shifts postnatal growth trajectories at a policy-relevant margin. The estimand in this final empirical chapter is the fuzzy regression discontinuity complier-local average treatment effect of housing receipt on child growth outcomes at the eligibility threshold. More importantly, the estimate provides a policy-relevant test of whether the postnatal health stock responds to a major change in the living environment.

Master's Degree in Economics **2019 - 2020**
Stellenbosch University – Cape Town, South Africa
Master's Thesis: Underlying Determinants of Preventative Behaviour and HIV-AIDS Patterns among Men and Women in Lesotho

Bachelor of Commerce Honours in Economics (Specialisation in Finance) **2018 - 2019**
Stellenbosch University – Cape Town, South Africa
Honours Thesis: Collateral and Moral Hazard in Debt-Financing

Bachelor of Arts in Economics with a Minor in Statistics **2013 - 2017**
National University of Lesotho – Maseru, Lesotho

EXPERIENCE

Air Quality Data Analyst – Building Healthier Communities **Feb 2021 – 2023**
Stellenbosch University – Cape Town, South Africa

- Building Healthier Communities is a long-term, multidisciplinary research project that examines the impact of environmental factors on child stunting in South Africa, including air pollution.
- Successfully trained fieldworkers in study communities on the use of low-cost air monitoring devices, conducting interviews, and gathering household information (e.g., cooking and heating practices).
- Analysed air pollution data and presented findings at the end of each project phase.

Research Assistant – Prof. Ronelle Burger **Feb 2021 – Present**
Stellenbosch University – Cape Town, South Africa

- Assisted in research work for two published articles:
  - **Burger, R., Köhler, T., Golos, A.M., Buttenheim, A.M., English, R., Tameris, M. & Maughan-Brown, B. (2022).** Longitudinal changes in COVID-19 vaccination intent among South African adults. *BMC Public Health*, 22(1). DOI
  - **Burger, R., Du Plessis, L., Gangaldzo, T. & Wills, G. (2022).** Priority areas for reducing stunting in South Africa. *ECD Working Paper Series Ilifa Labantwana & Resep.* Report
- Conducted in-depth literature reviews for both articles.
- Acknowledged for research assistance work in both articles.

Researcher – Affordability of Electricity Tariffs by Poor Rural Households in Lesotho Mar 2017 – July 2017
National University of Lesotho – Maseru, Lesotho

- Conducted a study with 19 other data collectors on the role of accessibility of energy on consumption by rural households.
- Successfully interviewed about 20 rural households in 3 villages in Lesotho to capture ground-level experiences.
- Personally responsible for interviewing study participants and inserting responses in Microsoft Excel.
- Received a certificate of completion for pioneering this crucial research topic.

SKILLS

- **Proficiency in econometric and empirical quantitative analysis in:** Python-based programming
- **Research expertise:** Environmental health economics, geospatial and satellite data analysis, and advanced econometric techniques, specifically concerning the analysis of air pollution (both indoor and ambient air pollution) and housing impacts on early childhood health and developmental inequalities
- **Academic writing**: essays (Clarifying concepts and articulating arguments), research papers (Exploring a topic, presenting results, and deriving conclusions), dissertation (conducting original research), literature reviews (Integrating information from diverse sources to offer a comprehensive overview of a subject)
- **Software for Document Preparation:** LaTeXfor writing research papers, and building clean professional presentations
- **Languages:** Sesotho (Native), English (Professional Level)

REFERENCES

Prof. Dieter Von Fintel
Senior lecturer at Stellenbosch University in the Department of Economics and main-PhD supervisor.
Email: dieter2@sun.ac.za

Prof. Ronelle Burger
Senior lecturer at Stellenbosch University in the Department of Economics and co-PhD Supervisor.
Email: rburger@sun.ac.za

Dr. Gideon Du Rand
Senior lecturer at Stellenbosch University in the Department of Economics and Honour's Supervisor.
Email: gideondurand@sun.ac.za