

Institution: Oxford Brookes University		
Unit of Assessment: 17, Business and Management Studies		
Title of case study: Providing empirical evidence to support improvements in global education and health outcomes		
Period when the underpinning research was undertaken: October 2014 to December 2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Rozana Himaz	Senior Lecturer in Economics	[text removed for publication]
Period when the claimed impact occurred: 2014-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact <p>Himaz's research uses large surveys and statistical methods to provide underpinning evidence to support evidence-based reforms to social policy. This case study provides two examples of the impact of her research. (1) Directly contributing to the evidence base that led to the World Bank's decision to commit USD100 million towards the General Education Modernisation (GEM) project in Sri Lanka, 2018-2024, by providing rigorous empirical evidence to show that an extra year of education significantly improves household welfare particularly among the poor in the country. GEM enhances the quality of education of around five million school students per year. (2) Influencing a change in the post-infancy growth debate by showing empirically that growth faltering, particularly among girls in India, can occur during adolescence even if they were not stunted before. This has led agencies including United Nations International Children's Emergency Fund (UNICEF) to include adolescent nutrition as a key priority in policy direction in order to reach the United Nations' Sustainable Development Goals 3 and 5 on good health and wellbeing and gender equality, respectively.</p>		
2. Underpinning research 2.1. Investing in education <p>The underpinning research should be seen in the context of earlier empirical research during 2010-2011 conducted by Himaz as an external consultant for the World Bank in collaboration with the Education Lead at the World Bank (Sri Lanka). The earlier research showed that an extra year of schooling had a positive return for the individual and that the more able tended to stay on in school rather than leave to join the labour market as seen in countries such as Thailand. Additional research since 2014, when Himaz joined Oxford Brookes University, used several rounds of survey data to identify that an extra year of schooling on the part of the most educated member of the household increases household welfare on average by 3.8% (measured using real per capita consumption spending). Most importantly, the poor benefit more from an extra year of schooling than the rich [R1]. Thus schooling can promote social equity and inclusion in the Sri Lankan context. The research uses quantile instrumental variable estimation methods, accounting carefully for the complicated issue of endogeneity of schooling that arises in estimations that can bias results. Further collaborative work using panel data for schools, teachers, students and their households [R2], shows that there are significant gender-based inequalities in attainment</p>		

disfavouring boys. This result stands in sharp contrast to what is observed in other South Asian countries such as India, when education-based biases generally favour males. The study used difference-in-difference methods to explain the gap, arguing that asymmetries in the labour market favouring men may have a recursive effect in setting lower expectations for boys at the school-level. Because there is little awareness of this issue or gender sensitivity in teaching or learning, the paper recommends increasing awareness in this area at the community level.

2.2. Investing in child health

In contrast to the Sri Lankan situation described above, gender biases follow a more conventional pattern of disfavouring females in other South Asian countries such as India. For example, **R3** explores empirically patterns of growth faltering during childhood and adolescence. An original feature of the work is the use of height-for-age difference along with the more conventional height-for-age z-scores as the former is the more appropriate measure when using longitudinal data. The study shows that significant growth faltering can occur, especially among girls in India during adolescence even if they have never been stunted before. This has negative impact on the girls' non-cognitive outcomes, such as peer relationships. It also has negative effects that persist across generations, with offspring being significantly thinner and shorter. The publicly-available longitudinal data for this research comes from four waves of Oxford University's *Young Lives* Project that followed 12,000 children across four countries over 15 years from 2002 to 2016. Himaz was a researcher for the project from 2007-09, involved in the third wave of data collection. Since leaving the project in 2009 she has been an external user of the data. Himaz (2018) was based on research conducted since 2015 when wave four of the data became publicly available. Himaz's 2018 findings suggest that there is a window of opportunity during adolescence to intervene with regard to child growth catch-up or to prevent growth faltering beyond the first 1,000 days following conception. This has implications for targeting nutritional interventions – for example, not just during early childhood or during pregnancy but during a female's adolescent years [**R3**].

3. References to the research

The following studies are described in this impact case:

R1. Himaz, R. and H. Aturupane (2017). Schooling and household welfare: The case of Sri Lanka from 1990-2006. *Review of Development Economics*, 22(2), 592-609. DOI: 10.1111/rode.12355

R2. Himaz, R. and H. Aturupane (2019). Why are boys falling behind? An enquiry into gender gaps in education in Sri Lanka. CSAE Working Paper Series, Economics Department, University of Oxford, CSAE WP-2019-14. Available at: <https://www.csae.ox.ac.uk/papers/why-are-boys-falling-behind-explaining-gender-gaps-in-school-attainment-in-sri-lanka>, (forthcoming in *World Development*)

R3. Himaz, R. (2018). Stunting later in childhood and outcomes as a young adult: Evidence from India, *World Development*, 104, 344-357. DOI: 10.1016/j.worlddev.2017.12.019

4. Details of the impact

The impact of Himaz's research is described in relation to two main groups of beneficiaries:

4.1. Providing evidence to support the World Bank's USD100 million commitment towards the General Education Modernisation (GEM) Project in Sri Lanka, 2018-2024

Himaz's research on education provided evidence that underpinned the decision of the World Bank to commit USD100 million towards the GEM project, as well as supporting aspects of the

GEM project design. The World Bank Sri Lanka Team Leader for education has said *'The merging of my expertise at the Bank ... together with [Himaz's] expertise in conducting rigorous econometric analysis based on large household datasets helped co-create research that has made an important contribution to the development of further World Bank investment in education through the GEM project in Sri Lanka...and the design of this investment'* [E1]. The project enhances quality and strengthens stewardship of the general education system through the implementation of various components. Backed by the finding that the poor benefit more from schooling, one key component of the GEM project involves promoting social equity and inclusion through offering extra investments to the poorest schools in the country particularly in Mathematics and English language [E2]. Another component is the implementation of community-based school management initiatives. These efforts now use Himaz's findings to increase community awareness of the importance of gender-sensitivity in the delivery of education.

The impact of the decision to invest in the education of the poorest is far reaching. The benefits of the Sri Lankan Ministry of Education's implementation of the decision between 2018 and 2024 will reach around 5,000,000 school students per year coming from 10,000 schools across the country from primary grades 1-5 and secondary grades 6-13. Beneficiaries also include school staff and, over the medium term, technical and vocational training institutions and higher education institutions who will receive better prepared entrants. The higher accumulation of human capital will eventually contribute to poverty reduction and shared prosperity [E2, page 13].

4.2. Influence on post-infancy growth discourse and practices

The scale of global undernutrition continues to be immense with over 150 million children stunted according to UNICEF's 2018 Global Nutrition Report. This is a key concern in meeting the UN's Sustainable Development Goal 3 of good health and wellbeing and Sustainable Development Goal 5 of gender equality. Conventional approaches to deal with this issue have focused mainly on the first 1,000 days of life and nutritional interventions during this period. However, Himaz's research on growth faltering in adolescence has contributed to the ground-breaking finding emerging from *Young Lives* that there is scope to intervene to support growth catch-up beyond the first 1,000 days of life as corroborated in an email sent by the Director of *Young Lives* in 2018 stating, *'your work on growth faltering during adolescence, and specially the evidence around girls and the negative consequences for other aspects of young people's development formed an important part of our evidence on post infancy growth dynamism... I have also cited findings from your paper as one of the reasons why attention to gender in adolescence is one of the key priorities for agencies who are focused on achieving SDG 5 targets'* [E3]. Thus, the findings of R3 were used in *Young Lives*' presentation on 'Adolescence as a window of opportunity to catch up on growth' at the International Fund for Agricultural Development (IFAD) conference in Rome on 'Leaving no one behind: Making the case for adolescent girls' in October 2018 and *Young Lives* publications, like 'Tracing the consequences of child poverty' (2019) [E4]. This in turn has influenced international agencies' discourse on adolescent nutrition. For example, Himaz's research was used in the summative report written by *Young Lives* 'Early is best but it's not always too late: Evidence from the *Young Lives* study in Ethiopia, India, Peru and Vietnam' (2018) [E5], which was in turn used by the UNICEF in their 2018 Global Nutrition Report [E6] to support one of three priority issues in 'critical need of attention':

'More data has revealed the importance of investing in adolescent nutrition, particularly for girls and young women. The amount of attention being paid to adolescents as a nutritionally vulnerable group with unique nutritional needs in the life cycle is growing, but they are still frequently overlooked.'

UNICEF and the International Food Policy Research Institute (IFPRI) have further acknowledged the significance of Himaz's work by making **R3** directly available to policy-makers as a recognised resource paper on adolescence [E7, E8].

5. Sources to corroborate the impact

- E1.** Testimonial by the Team Lead (World Bank) for the GEM project, 4 October 2018.
- E2.** Project Appraisal Document on a proposed credit US\$100 million equivalent to the Democratic Socialist Republic of Sri Lanka for a General Education Modernisation Project. World Bank document for official use only.
- E3.** Email correspondence with the Director of *Young Lives* detailing the contribution of Himaz's research to the post-infancy growth discourse, 6 November 2018.
- E4.** Boyden et. al. (2019) Tracing the Consequences of Child Poverty: Evidence from the *Young Lives* study in Ethiopia, India, Peru and Vietnam. Policy Press, available under CC-BY_NC licence [here](#)
- E5.** Benny, L., Boyden, J., & M. Penny (2018) Early is best but it's not always too late: *Evidence from the Young Lives study in Ethiopia, India, Peru and Vietnam, Summative Report*. Oxford: *Young Lives*, available [here](#)
- E6.** UNICEF 2018 Global Nutrition Report, available at <https://globalnutritionreport.org/reports/global-nutrition-report-2018/>. See in particular Spotlight 3.6 on page 70 'Bringing in adolescent voices: innovations in research, programmes and policies to tackle malnutrition in adolescence'.
- E7.** Recognised by UNICEF as a resource paper on adolescent nutrition, Innocenti Research Digest: Adolescence, 9, April 2018.
- E8.** Recognised as a resource paper by Partnerships and Opportunities to Strengthen and Harmonise Actions for Nutrition in India (POSHAN) led by the International Food Policy Research Centre (IFPRI), available [here](#)