

Institution: University College London		
Unit of Assessment: 16 Economics and Econometrics		
Title of case study: Designing and implementing scalable early childhood development interventions for low and middle-income countries		
Period when the underpinning research was undertaken: 2008-2019		
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:
Orazio Attanasio	Professor of Economics	1995-2019
Period when the claimed impact occurred: 2014-2021		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact (indicative maximum 100 words)		
<p>Poor Early Childhood Development (ECD) in low and middle-income countries is a major public problem, affecting an estimated 250 million children under 5 years. Attanasio's research has provided the model for a scalable ECD programme which has been replicated, adapted, and implemented by governments in Latin-America (Colombia, Peru, Ecuador) and the largest Education NGO in India to improve ECD and cognition for an estimated 100,000+ children between 2014-2021. The Inter-American Development Bank and World Health Organisation have endorsed the model in published guidance, providing access to Attanasio's leading ECD research to >17,000 policymakers worldwide.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>Since 2008, Orazio Attanasio's research has focused on the design, implementation and evaluation of a scalable programme to support children to reach their developmental potential. An estimated 250 million children under 5 years old in developing countries fail to reach their developmental potential due to poverty, poor nutrition, and a lack of 'psychosocial stimulation' (the visual, auditory, tactile and emotional stimulation provided via an affectionate caregiver-child bond). Research funding has been provided by a grant from the ESRC, the World Bank, the Inter-American Development Bank (IADB), and the International Growth Centre (IGC).</p> <p>Research Methodology</p> <p>Attanasio's research [R1] designed, implemented, and evaluated the benefits of 'psychosocial stimulation' home visits. From 2010-2011, home visits were delivered weekly for 18 months for 1420 children aged 12-24 months, across 96 municipalities in central Colombia. Locally-appointed female community leaders delivered home visits, where they demonstrated play activities which mothers could replicate for their children, using low cost or homemade toys, picture books, and form boards. The aims of the home visits were to improve the quality of maternal-child interactions, and to assist mothers to participate in developmentally-appropriate learning activities, often centred around daily routines, which they could easily replicate. The effectiveness of these visits was evaluated based on randomized control trials.</p> <p>A key novel feature of the programme design and evaluation was its scalability: the programme of 'psychosocial stimulation' home visits in [R1] covered a larger scale (an area approximately the size of California), targeted a more general poor population (drawn from the poorest 20% of a nation's population), and obtained a markedly larger sample size (1420 children) than comparable research on early child development (ECD) intervention programmes. The scalability of the programme was achieved by integrating it into existing national welfare programmes: the 1420 beneficiaries were all eligible recipients of the well-established Colombian national welfare programme 'Families en Accion' (FAO). FAO is a Conditional Cash Transfer Programme (CCT), first established in 2002, which has provided the poorest 20% of households in Colombia with payments in exchange for their compliance with childhood healthcare and educational-attendance requirements. Female community leaders were recruited for the delivery of early-childhood interventions: the weekly 'psychosocial stimulation' home visits were designed to be delivered by local women with no prior specialist early-childhood development experience. In Colombia, every</p>		

50-60 beneficiaries of the Families en Accion CCT elect one woman as a 'Madre Lideres' (Mother Leader) to serve as their own representative. All home visitors were drawn from this local network.

Research Findings

The design, implementation, and evaluation of research provided a strong evidence base for a scalable ECD intervention programme. Results published in the British Medical Journal, paper [R1], showed that after 18 months the children in the stimulation program in Colombia had significantly higher cognitive skills. The home visits increased "household investment in the quality of the home" as measured against UNICEF's family care indicator, with significant increases in the variety of play materials and play activities between the primary caregivers and children (0.53 SD and 0.54 SD, both $P < 0.01$). Research published in the American Economic Review [R2] established that the intervention achieved its impact through changes in parental behaviour. Research [R1/R2/R3] provided the evidence base to show that ECD intervention programmes could successfully be delivered at scale as part of an existing welfare programme. The high compliance rate for home visits, with 81% of scheduled visits taking place, showed the effectiveness of recruiting local female community leaders, in this instance via the FAO CCT, to deliver the psychosocial-stimulation home visits.

A subsequent 2-year ECD intervention in India during 2013-2015 [R4/R5] adjusted the model to be delivered in partnership with Pratham, the largest education NGO in India. It showed that group sessions (costing USD38 per child per year) produced equal outcomes to home visits (costing USD135 per child per year). This represented a significant enough increase in the return on investment (3.5x) to broaden the scale in low and middle-income countries. In India, 1,449 mothers with children aged 7-16 months participated in the study, and developmental impacts materialised for children in the first year of the two-year intervention.

Orazio Attanasio was awarded the 2016 Klaus J. Jacobs Research Prize (endowed with one million Swiss Francs) on the basis of this research, for having "pushed research frontiers by using economic models in combination with field experiments to assess and shape health and education policies in early childhood development in low-income and middle-income settings". The award was used to fund research in India [R4/R5].

3. References to the research (indicative maximum of six references)

- R1.** "Using the infrastructure of a conditional cash transfer programme to deliver a scalable integrated early child development programme in Colombia: a cluster randomised controlled trial" (with C. Fernández, E. Fitzsimons, S. M Grantham-McGregor, C. Meghir and M. Rubio-Codina), *British Medical Journal*, 2014; 349:g5785 (Published 29 September 2014)
<https://doi.org/10.1136/bmj.g5785>
- R2.** "Estimating the Production Function for Human Capital: Results from a Randomized Control Trial in Colombia" (with S. Cattan, E. Fitzsimons, C. Meghir and M. Rubio-Codina), *American Economic Review*, Vol 110 (1), January 2020, pp 48-85.
- R3.** "Mediating pathways in the socio-economic gradient of child development: Evidence from children 6–42 months in Bogota" (with M. Rubio-Codina and S. Grantham McGregor), *International Journal of Behavioral Development*, November 2016, Vol 40(5), pp. 483-491
- R4.** "Effects of a scalable home-visiting intervention on child development in slums of urban India: evidence from a randomised controlled trial" (with A. Andrew, B. Augsborg, S Grantham McGregor, C Meghir, M Rubio-Codina), *Journal of Child Psychology and Psychiatry*, 2020, Volume 61(6), pp 644-652.
- R5.** "Group Sessions or Home Visits for Early Childhood Development in India: A Cluster RCT" (with Sally Grantham-McGregor, Akanksha Adya, Britta Augsborg, Jere Behrman, Bet Caeyers, Monimalika Day, Pamela Jervis, Reema Kochar, Perna Makkar, Costas Meghir, Angus Phimister, Marta Rubio-Codina and Karishma Vats), *Pediatrics*, 2020, Volume 146 (6), December 2020.

Grant Details

- i. ESRC Professorial Fellowship ES/K010700/1. “The accumulation of human capital in developing countries” (2013-2015). Amount: GBP706,926. **[R1/R2/R3]**
- ii. ESRC Research Grant ES/G015953/1: “Early Childhood Development: Identifying Successful Interventions and the Mechanisms behind them”. (2009-2012). Co-Investigator. Amount: GBP715,982. **[R1/R2/R3]**
- iii. ERC Advanced Grant AdG – 695300 on “Human Capital Accumulation in Developing Countries: Mechanisms, Constraints and Policies” (2016-2021). Amount: EUR1781278. **[R1-R5]**
- iv. 2016 Klaus J. Jacobs Research Prize. Award: CHF1,000,000 used for ECD research in India. Amount: CHF1000000. **[R4/R5]**

4. Details of the impact (indicative maximum 750 words)

Poor Early Childhood Development (ECD) in low and middle-income countries is a major public problem, affecting an estimated 250,000,000 children under 5 years, who fail to reach their developmental potential due to poverty, associated lack of poor nutrition, and a lack of psychosocial stimulation (visual, auditory, tactile and emotional stimulation provided via an affectionate caregiver-child bond). Attanasio’s research **[R1]** has provided a scalable ECD model which has been replicated, adapted, and implemented by governments in Latin-America (Colombia, Peru, Ecuador) to improve the childhood development and cognition of 100,000+ children between 2014 and 2021.

Establishing and expanding a scalable cost-effective ECD programme in Colombia

In 2014-2016, following research [leading to the publication of **R1, R3]** Attanasio adapted his ECD intervention strategy to integrate it into FAMI (Familia, Mujer e Infancia) a public large-scale parenting support service for vulnerable families in rural Colombia) for the Colombian government. The Director of Monitoring and Evaluation of Public Policies in the National Planning Department in Colombia describes how Attanasio contributed to FAMI’s aim of “seek[ing] to promote the integral development of girls and boys in early childhood” through the design of an “intervention that is by construction scalable” which led to evaluation to evidence “impact on cognitive knowledge and nutritional status for the most disadvantaged children” **[A]**. They further attest that Attanasio’s research **[R1/R2/R3]** has “contributed to date to the policy debate in Colombia and the policy decision-making” around early-childhood development **[A]**.

In June 2017, policy-makers cited **[R1]** in a report by the Early Childhood Workforce Initiative, noting that “stimulation reduced the cognitive gap between poor and wealthy children by nearly one-third” in Colombia **[B]**. Attanasio’s research contributed to the Colombian government taking an evidence-based approach to ECD policy dialogues and decision-making. In 2018-2019, the Colombian Government included 8 studies conducted by Attanasio in an “evidence map” on ECD, specifically created to inform policy **[C]**. For Colombia’s National Planning Department, Professor Attanasio’s work and its inclusion in the evidence map “has been important and used to generate helpful information” which “helped policy stakeholders make decisions based on evidence” including interventions that have “positive effects on cognitive development and health, as [those] evaluated by Professor Attanasio in Colombia have show[n]” **[A]**.

Latin American governments’ adoption of the ECD model reaching 100,000+ children

The Inter-American Development Bank (IADB) promoted Attanasio’s model for scalable early-childhood interventions **[R1/R2/R3]** in Latin American countries, leading to further replication. The Principal Economic Advisor at the IADB attests to the success of the scalability of the model [from **R1/R2**]: “Professor Attanasio’s research on a home visiting program in Colombia, published in the *American Economic Review* and the *BMJ*, has been decisive in the scale-up of these programs in many countries in the region where the IADB provides financial and technical assistance, including Brazil and Peru, where they now benefit hundreds of thousands of poor children and their families” **[D]**.

The IADB promotion of Attanasio's scalable model led to the Peruvian government launching an ECD intervention programme which reaches 93,000 children from disadvantaged rural families. To implement the programme, the Peruvian government created a home visit service called Servicio de Acompañamiento Familias (SAF). A 2015 evaluation of the programme (jointly prepared by the IADB and the Peruvian Ministry of Finance) cited [R1] several times and evidenced the significance of the SAF intervention upon children as being "equivalent to closing the socioeconomic gap in cognitive performance by 18% and the communication gap for boys and girls in the study sample by 35%" [E].

Since 2018, the IADB has supported the government in Ecuador to strengthen home visitation services, incorporating lessons from Attanasio's research in Colombia [R1-R3, FAMI]. The Principal Economic Advisor for the Social Sector at IADB credits Attanasio's research with influencing the design and focus of services: "[m]any features of the design of these programs—for example, with regard to the hiring of local women as home visitors, the desirability (or not) of including a nutritional component in home visits, and the curriculum — build directly on Professor Attanasio's papers. [...] The Ministry of Economic and Social Inclusion of Ecuador is currently revising the technical and operational guides that define childcare provision in public childcare centres for children younger than 36 months-of-age to improve their quality. The curricular content is also being revised to highlight the importance of interactions between caregiver and child, a critical element of process quality, as shown by Professor Attanasio's research" [D].

Global expansion of ECD interventions via engagement with NGOs, the IADB, and WHO.

Scalable ECD intervention models are especially needed in India, where in 2016, 63,400,000 children aged under 5 were reported as being at risk of not reaching their developmental potential, more than any other country. Attanasio's research, in partnership with Pratham, India's largest education NGO, expanded the scalability of the ECD intervention model to enable NGO-government partnerships, and proved the efficacy of group interventions. Pratham Education Foundation's Advisor emphasized the importance of Attanasio's research in designing scalable cost-efficient interventions in India: "a detailed cost-analysis of the intervention shows that a lower-cost model is feasible, facilitating intervention at scale" and commented on the possibility of "partnerships with state governments or large-scale community programs in India, potentially impacting millions of children" that Attanasio's adjusted ECD model have created [F].

Between publication in September 2014 and 6 October 2020, [R1] has been downloaded 14,587 times [G] and frequently cited in reports by policymakers [H]. In 2015 the IADB published the open-access book *The Early Years: Child Well-Being and the Role of Public Policy*. Explicitly directed at an audience of policymakers, the book "offers suggestions for improving public policy in this critical area" [I]. In the preface, Luis Alberto Moreno, the president of IADB, argued that "Governments can – and should – make a major positive difference [...] An investment in a well-crafted government program, using the tools that we know today can be highly effective, can have a huge development impact" [I, p. xvi]. The IADB consulted Attanasio on "the scope of this publication" and 5 separate outputs by him are cited, including [R1] [I, p. ix]. The World Health Organization (WHO) cited [R1] in their 2017 report, 'An evidence map of social, behavioural and community engagement interventions for reproductive, maternal, new-born and child health', which was downloaded 2400 times between April 2020 and September 2020. Publications by the IADB and Inter-American Development Bank citing [R1] have been downloaded over 15,000 times, providing access to leading ECD research to policymakers and medical professionals worldwide'.

5. Sources to corroborate the impact (indicative maximum of 10 references)

- A. Testimony from the Director of Monitoring and Evaluation of Public Policies in the National Planning Department in Colombia.
- B. DNP - Sinergia | Mapas de evidencia, available at: <https://sinergiapp.dnp.gov.co/#MapasEvidencia> [R1] is cited within DNP - Sinergia | Ficha Técnica Paper, available at: <https://sinergiapp.dnp.gov.co/#/FichaTecnicaPaper/375/6>.
- C. Citation data relating to [R1].

- D. Testimony from the Principal Economic Adviser for the Social Sector at the InterAmerican Development Bank (IADB).
 - E. Resultados de la evaluación de impacto del Servicio de Acompañamiento a Familias del Programa Nacional Cuna Más, Documento preparado para el Gobierno del Perú, Link: https://www.mef.gob.pe/contenidos/presu_publico/ppr/eval_indep/informe_resultados_cuna_mas.pdf.
 - F. Testimony from Advisor, Pratham Education Foundation and Head, Social Sector Unit, ASER Centre.
 - G. “A Snapshot on the Quality of Seven Home Visit Parenting Programs in Latin America and the Caribbean”, Inter-American Development Bank, 2016. “WHO guideline: use of multiple micronutrient powders for point-of-use fortification of foods consumed by infants and young children aged 6–23 months and children aged 2–12 years”, WHO, 2016.
 - H. Armstrong, Attanasio et al, “A home-visiting programme for disadvantaged young children: final report for the feasibility study”, The Institute for Fiscal Studies, 2019. Leer et al.
 - I. Early Childhood Workforce Initiative Report, “Supporting The Early Childhood Workforce at Scale: The Cuna Mas Home Visiting Programme in Peru”, June 2017.
- Other evidence available on request:
- J. *The Early Years: Child Well-being and the Role of Public Policy*, ed. by Samuel Berlinki and Norbert Schady (IADB, 2015).