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Research Study to Inform Quality Improvement at Scale in Early Childhood Development Interventions in Low and Middle-Income Countries

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Abstract

The evidence is clear: investing in the first five years of life is among the most effective strategies to ensure that children thrive, particularly those living in vulnerable contexts. Yet translating this evidence into at-scale policy remains a major challenge. While many interventions demonstrate promising impacts in small pilots, their effectiveness often diminishes as programs expand. This is in part because of the many obstacles for ensuring process quality at scale and the limited number of impactful monitoring strategies.

Dr. Florencia Lopez Boo has spent the past decade and a half building a broad research agenda aimed at understanding these challenges and investigating ways to overcome them. One key study within her portfolio is *The Importance of Quality for Scaling Up Early Childhood Development Services: Experimental Evidence from Nicaragua* (Lopez Boo et al., 2025), which provides one of the first experimental evaluations and cost–benefit analyses of a publicly provided, national home-visiting parenting program serving highly vulnerable children in Nicaragua, one of the poorest countries in Latin America. The program was an opportunity to rigorously examine process quality and cost-effectiveness under a community monitoring approach. The study's pioneering innovation is the shift from a focus on coverage alone to how services should be implemented to achieve impacts. It is important because it demonstrates that quality measurement and monitoring are essential for sustaining impacts as programs expand. Methodologically, it combines a randomized controlled trial (RCT) with carefully designed observational approaches, ensuring causal identification and understanding mechanisms linking quality to child outcomes. Building on this evidence, Lopez Boo has impacted large-scale early childhood policy reforms by introducing quality monitoring tools in seven Latin American countries. More broadly, this study contributes to her work positioning process quality as a central pillar of early childhood development programs in low- and middle-income countries.

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Research Study to Inform Quality Improvement at Scale in Early Childhood Development Interventions in Low and Middle-Income Countries

Background

Supporting children to thrive in the first five years of life helps increase societies' productivity, reduce poverty, and promote equality (Shonkoff and Phillips 2000; Black et al. 2017). In this sensitive period, children need learning opportunities and responsive, emotionally-supportive, and stimulating interactions—in addition to adequate health, nutrition, and safety—to ensure learning, good health, and wellbeing throughout the life course. Yet, in Low and Middle Income Countries (LMIC) millions of children still lack access to the stimulating high-quality environments needed to support them to thrive. Policies that improve the quality of care children receive, either at home or in care settings, can boost Early Childhood Development (ECD) outcomes, educational achievement, and future productivity, especially for disadvantaged children.

It is widely recognized that investing in ECD interventions is one of the most cost-effective social policies (Heckman et al., 2010; Lopez Boo and Garcia Balus, 2025). For children aged 0-5, such interventions typically fall into two categories: parenting programs and early childhood care and education programs (ECCE). Parenting programs often use home visits, group sessions, or both to improve caregiving practices. ECCE programs tend to be split between childcare centers for children aged 0-3 and preschools for children aged 3-5. In both cases, classroom settings are designed to provide different combinations of age-appropriate care, education, learning through play, nutrition, and sometimes healthcare. Large-scale, high-quality implementation of these modalities thus has the potential to improve learning and, consequently, reduce poverty and inequality in the future. Though the required investments to deliver such ECD services at scale and to a high quality are substantial, the cost of inaction is far greater (Richter et al., 2017; Nores et al., 2024).

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The challenge of scaling up high-quality ECD programs

Delivering parenting programs for children 0–3 years old at scale is a major policy challenge (IDB, 2024; Schady et al., 2023). The difficulty of delivering quality programs at scale is clearly exemplified by efforts to adapt and scale a successful home-visiting parenting program from Jamaica to several other LMIC. The original program was designed in the 1970s-1980s and aimed to build parenting skills of families with children 6-24 months of age to promote better ECD outcomes. An initial evaluation in Jamaica showed an impressive 0.88 standard deviations (SD) short-term impact on overall child development (Grantham-McGregor et al., 1991). These impacts translated to better academic attainment, reduced depression, less violent behavior, and earnings that were around 25% higher when participants were 22 years old and 43% higher at age 31 (Gertler et al. 2021; Gertler et al. 2014; Walker et al. 2011) with an Internal Rate of Return (IRR) of around 12% (Lopez Boo and Garcia Balus, 2025).

However, when this model was adapted to other countries, positive impacts decreased with scale (Figure 1) and had limited sustainability. In Colombia, this home visit model was piloted with 1,440 children in 96 municipalities (720 in the treatment arm) and built into the existing national conditional cash transfer program *Familias en Acción* to enable scaling. After 24 months, the impact on cognitive skills was 0.26 SD, roughly one-third of the original Jamaica trial (Attanasio et al., 2014). However, these effects disappeared two years later (Andrew et al., 2018). Similarly, the model was later adapted for nationwide implementation in Peru across 360 communities. The Peruvian adaptation reached 67,000 vulnerable pregnant women and children under age three in rural areas. Impacts on cognitive development were 0.10 SD after two years of intervention (Araujo et al., 2021), or about one-tenth of the original Jamaica evaluation. Nicaragua, the country of the study subject of this application, also attempted to introduce some elements of this program with similar attenuated results at scale.

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For parenting programs to be effective at scale, they require fidelity, sufficient dosage, and take-up. Low take-up and low actual intervention dosage were documented in evaluations of home-visiting parenting programs in Peru, Nicaragua, and Brazil, where impacts at scale were less than those seen during pilots (Lopez Boo, Ferro, and Carneiro, 2025). Inversely, higher dosage has been associated with larger impacts on ECD outcomes in Colombia (Attanasio et al. 2020). High family-to-facilitator ratios, high staff turnover, and delays in program implementation due to logistical difficulties (e.g., transportation, distribution of materials) limit take-up and dosage in real-life programs impacting program fidelity.

Programs also require maintaining quality for effectiveness. And preserving *process quality* is particularly challenging at scale. By "quality", we refer both to *structural quality* (infrastructure, learning materials, and caregiver-to-child ratios) and *process quality* (quality of interactions between caregivers and children). Yet process quality has been shown to be *the* necessary condition to achieve larger ECD impacts at scale (IDB, 2024). Workforce limitations, insufficient training, and lack of supportive work conditions can undermine both process quality and implementation fidelity and thus program effectiveness.

(Cost-effective) monitoring strategies might act as a quality assurance mechanism

Community-based monitoring of service delivery had positive effects in numerous health and primary education programs. For example, it reduced teacher absenteeism (Pandey, Goyal, and Sundararaman, 2009), improved student test scores (Pradhan et al., 2014), and improved health-care service delivery and health outcomes (Björkman Nyqvist, De Walque, and Svensson, 2017). However, there are no studies that examine community monitoring in the context of an ECD program, which could offer a promising avenue for maintaining quality in large-scale parenting and other early childhood programs.

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Importantly, at scale interventions must remain cost-effective. Even highly effective ECD interventions must contend with hard budget constraints. This is especially true in resource-constrained environments such as LMIC. Traditional approaches to quality assurance, which typically involve intensive supervision, are often financially and logistically infeasible at scale and in resource-constrained settings. This has prompted growing interest in lower-cost accountability and feedback mechanisms that help to monitor and support implementation quality without substantially increasing per-child costs.

My study[1] "*The Importance of Quality for Scaling Up Early Childhood Development Services: Experimental Evidence from Nicaragua*" (Lopez Boo et al., 2025), provides one of the first experimental evaluations and cost-benefit analyses of a publicly provided national home-visit parenting program for children younger than 3 that used community monitoring to ensure quality in an LMIC. The twice-monthly home visiting program *Amor para los Mas Chiquitos*[2] reached 33,190 children ages zero through three in 400 communities in the first years of implementation[3], achieved intent-to-treat (ITT) impacts of 0.11 SD on child development (LATE estimate=0.26 SD) and raised the likelihood of preschool completion by 7 percentage points (18 percentage points for those who received home visits) which implied closing 40% of the socioeconomic gap between the program beneficiaries.

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[1] For this recent study, I was the team leader of the Inter-American Development Bank loan (IDB) supporting the scale up and design of the Amor para los Mas Chiquitos home-visit program, and therefore responsible for the design and supervision of implementation. For the research, I led the conceptualization of the experimental evaluation, and research questions, firm selection and supervision of data collection as well as coordination of managing the research team (which included my two co-authors), as well as conducting and guiding data analysis and interpretation. From here on, we refer to this study as Lopez Boo et al. (2025).

[2] The Amor para los Mas Chiquitos home-visit curriculum focused on language, cognitive, and social emotional development, and emphasized the importance of consistent caregiving while also encouraging nutrition practices (e.g. breastfeeding) and later attendance to ECCE services (see Figure 2, Panel A as an example of the poster used to disseminate the home visit program with home visitors that includes some of the curriculum emphasis).

[3] After a few years the program was reaching 150,000 children.

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This research moves beyond prior work by measuring quality within national data systems for the first time in an LMIC and providing the first national experimental evaluation of quality improvement in home visiting. The few causal evaluations of quality improvement in ECD are in the ECCE area and are generally not at national scale (IDB, 2024). The study shows that implementation quality relates to child development and preschool completion, while also experimentally examining how to support quality at scale by means of a process quality-focused and novel community-led monitoring examining community-led process of engagement that may be useful for similarly resource-constrained governments facing a trade-off between quality and scale. In addition, this study is the first to examine this community monitoring approach in the context of an ECD program.

1. Innovativeness

My research in Lopez Boo et al. (2025) introduces several innovations in measuring, monitoring, and improving ECD program quality at scale. It is indeed pioneering in both governance and research terms to examine community-led processes of engagement and monitoring ECD programs. Although school-based management has been adopted in many public education systems, its effects have been mixed. Moreover, meaningful and feasible approaches to engaging community stakeholders have not been developed and rigorously evaluated in the context of home-visiting /parenting programs, making this study one of the first to systematically test such mechanisms in this setting and in the context of ECD programs. In doing so, we address an urgent gap in the early childhood policy literature regarding how to effectively monitor quality and provide adequate accountability mechanisms when going to scale (Richter et al., 2017; List, Suskind, and Supplee, 2021).

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Process Quality Measurement and Monitoring. Three specific innovations of my study in this area support the development of new practices for ECD policies in LMIC. First, the systematic measurement of process quality through in situ observations using a validated checklist that captures interactions between home visitors and families (e.g., "home visitor encouraged caregiver questions," "home visitor models activities," "home visitor asked caregivers for feedback," "home visitor used the program booklet"). This level of detailed, observational data on implementation quality is rare in both policy and research. Most evaluations of ECD interventions in LMIC either do not assess quality directly or use less reliable retrospective reports from participants or program supervisors (Goldfeld, Price, and Kemp, 2018). Second, these observations are conducted by technical specialists from the government, demonstrating that it is feasible to monitor and ensure the quality of service delivery even under complex conditions (diverse geography and very vulnerable and heterogeneous populations). [4] Third, the collected quality measures are embedded into administrative data systems, creating a sustainable mechanism for tracking, evaluating, and improving program implementation at scale.

Solid quality measurement therefore advances scientific understanding of what exactly drives developmental gains (beyond service access) and informs the design of more effective ECD policies on quality monitoring and supervision, potentially enabling policy makers to identify gaps in implementation, target professional development, allocate resources more efficiently—even in highly resource-constrained settings—and design feasible data-driven supervision systems.

The role of implementation quality is a recurring theme in early childhood literature, but quantifying the contribution of quality remains elusive, mostly due to a lack of data (Araujo, Dormal, and Rubio-Codina, 2018). In Lopez Boo et al. (2025), we provide novel evidence on the role of implementation quality in driving positive impacts (0.10-0.12 SD) on child development, behavior, and preschool completion; with most domains of home-visit quality (i.e. home visitor–caregiver relationship quality, use of materials and preparation, and visit content) correlating positively with child development (Table 1).

[5] Nicaragua is the second poorest country in the Americas (see Social Data, IDB).

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Structured community-led monitoring is an innovative quality assurance mechanism when expanding home-visit programs. In 2014, Leer et al. (2016) used the above-mentioned checklist to observe 40 home visits across seven LAC programs (including *Amor para los Mas Chiquitos*) and found that while rapport was strong, home visitors often failed to explain the importance of activities in relation to child development, neglected to bring necessary materials, and did little to encourage caregiver dialogue. This study pointed to a critical issue: quality was low and centralized (unstructured) monitoring was not adequately addressing this issue, which directly motivated the innovation examined in my research. The innovation in our study relates to the program leveraging an existing platform of community governance to pilot a community monitoring (CM) strategy of the program quality, particularly process quality. Aside from the modality of monitoring, the CM system had a different approach than the institutional monitoring visits to local communities which consisted of phone calls and occasional visits (roughly twice a year) from centralized government officials to local supervisors and home visitors to review the status of home-visit implementation (e.g. the number of families receiving home visits, the frequency of home visits, the number of home visitors active in the community). Inspired by Björkman and Svensson (2009) in the CM approach, families' feedback on home visit quality was collected and shared bi-monthly by trained council members and youth volunteers in community-wide meetings that included home visitors, caregivers, and local leaders. The meetings were a mechanism to strengthen accountability and home visit quality by establishing localized feedback loops and providing a social incentive for home visitor performance, in line with prior evidence on CM (e.g., Björkman and Svensson 2009; Björkman Nyqvist, De Walque, and Svensson 2017).

The curriculum content for professional development, frequency, and emphasis of monitoring visits was different in both modalities. In CM communities, local *Gabinetes de Familia, Comunidad y Vida* (long-existing community councils) received one-day training on how to systematically collect, analyze, and act on families' feedback regarding home-visit quality to make sure the process was implemented consistently and could be replicated in a variety of settings within Nicaragua (Pacifico, Central, and Caribbean Regions) and in LAC. Training included sessions explaining the purpose of home visits, the expected standards for quality and frequency of service delivery, and the mechanisms through which community feedback would be used to improve implementation.

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Half of the treatment communities received the standard institutional monitoring, while the other half participated in this novel, low-cost CM initiative (in addition to receiving the standard phone calls and visits that were part of institutional monitoring). Community-level assignment was randomized. Treatment families provided feedback using printed forms, with simple text, icons, and images, to rate key dimensions of visit quality, including content, materials, duration, and the quality of interactions between home visitors and caregivers (see Figure 2, Panel B). These tools were intentionally developed to be low-cost, intuitive, and adaptable, making them suitable for diverse literacy levels and therefore apt for scaling. To ensure inclusiveness, families could also provide oral feedback to designated members of the *Gabinete*, which was then recorded following standardized procedures. The entire process was documented to provide a replicable model of community-led quality assurance that can be adopted by ECD programs seeking to embed continuous improvement mechanisms into large-scale service delivery.

2. Importance

This study provides rare experimental evidence on a government-run home visiting program for caregivers of children aged 0-3 implemented at scale in an LMIC country, addressing critical gaps in understanding how to achieve improvement in child development outcomes beyond small pilots. The program served highly vulnerable populations in rural Nicaragua—including indigenous communities—who typically lack access to early childhood services. Importantly for the feasibility and sustainability of implementation in budget-constrained settings, at just $100 per child per year, the program demonstrated that investing in quality implementation through community-based monitoring can be highly cost-effective, generating a benefit-to-cost ratio of five to twelve while relying on locally available resources.

Novel experimental evidence on how to improve child development outcomes of government-run home visit programs implemented at scale. With only a few exceptions, most research to-date comes from small or medium pilots, or else from non-experimental studies; therefore, the importance of this paper lies in being among the first to provide experimental evidence of a government-run home-visit program implemented at scale in an LMIC. Policies such as home visits are increasingly critical in the post-pandemic era, given the dramatic losses to child development and increases in caregiver stress (Gassman-Pines et al., 2022) due to disruptions in early

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childhood services (Abufhele et al., 2022). As described in the section "Innovativeness", this paper also documents the importance of implementation quality for achieving impact on child development at scale and demonstrates that community monitoring may be a cost-effective way to ensure quality.

Focus on underserved and highly vulnerable populations. The Home Visit Program aimed to address disparities in the provision of early childhood services by targeting high-poverty rural areas without access to center-based early childhood programs[5]. Participating mothers had, on average, around seven to eight years of education and faced high socioeconomic vulnerability. Many were from indigenous communities (Miskito and Rama, among others), representing one of the most marginalized populations both within Nicaragua and the wider LAC region. Building on this same home visiting program and its reach among highly marginalized families, in the *Child Development* journal Leer, Lopez Boo, and Norman (2023), we examined an additional, largely overlooked dimension of vulnerability: exposure to political violence during the 2018 conflicts in Nicaragua that coincided with the follow up of the evaluation of Home Visiting Program presented in this document. We used a novel quasi-experimental design to assess how political violence relates to child and caregiver outcomes, and whether participation in the program mitigated these risks. While we found that exposure to political violence was strongly associated with increased use of harsh discipline (0.33 SD), there was no evidence of moderation by program participation. Given that more than 25% of children globally are exposed to political violence, this study highlights the scarcity of rigorous evidence on how early childhood interventions can support positive adaptation among conflict-affected and underserved populations. This focus on generating policy-relevant evidence for underserved and crisis-affected populations remains central to my research agenda as Director of NYU Global TIES for Children, where projects advance equitable ECD, learning, and other outcomes for children living in poverty, displacement, and humanitarian settings through close partnerships with governments and practitioners.

Cost-effectiveness. The program's design relied on locally available human resources, community-based monitoring, and simple but structured tools to ensure quality, making large-scale delivery feasible in low-resource settings, and making it highly cost-effective. Program costs included stipends for home visitors and technical

[5] In a similar timing of the home visit program, a childcare program was being scaled in urban areas. The evaluation of that program also shows positive impact for mothers and children and a cost-effective delivery (Hojman and Lopez Boo, 2022).

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specialists at the municipal and central levels, a one-time training for home visitors, technical specialists, and central staff, and low-cost materials for home visitors (including a curriculum booklet, child development poster, and take-home materials for families). Together, these inputs amounted to just $100 per child per year—one-quarter the cost of a comparable large-scale home visiting program in Peru (Araujo et al., 2021). Despite its low cost, the Nicaraguan program generated meaningful improvements in child development (0.11 SD ITT estimate and a LATE of 0.26 SD) and preschool completion, which translated into substantial cost-benefit ratios. Even under conservative assumptions linking early development gains to future earnings, the estimated benefit-to-cost ratio is 5, with preferred estimates from comparable contexts (i.e. using the wage returns from the Jamaica study rather than US-based estimates) approaching 12, demonstrating the program's financial viability, potential sustainability and therefore replicability.

3. Methodological Rigor

Lopez Boo et al. (2025) has recently been published in the high-impact *World Bank Economic Review (WBER).* As per their website, the WBER "is one of the most widely read scholarly economic journals in the world. It is the only journal of its kind that specializes in quantitative development policy analysis. Subject to strict refereeing, articles examine policy choices and therefore emphasize policy relevance rather than theory or methodology. This journal publishes studies with the most up to date research methods." In line with the journal's emphasis on policy relevance and methodological rigor, this research relies on a Randomized Controlled Trial (RCT) and carefully designed observational approaches as the gold standard for evidence generation. These methods allow for credible identification of causal effects, ensuring that estimated impacts reflect true program effects rather than selection or confounding, and produce findings that are directly informative for policy design and scale-up. The use of validated and culturally adapted observational tools ensured the study captured the constructs intended to be evaluated, the results were unbiased, and the specific mechanisms of impact and areas for program improvement were identified with greater precision.

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RCT design (home visits vs. no intervention): The evaluation includes 205 randomly assigned communities, stratified by municipality, with a high-response baseline census of households with children under six. Follow-up data were collected five years later from 3,808 households, capturing detailed information on child development, preschool completion, and parenting behaviors[6].

The empirical strategy leverages the random assignment of communities to treatment and control conditions to estimate the intent-to-treat (ITT) impact of home visits on child outcomes, controlling for baseline child development, household and community characteristics, and municipality fixed effects, with standard errors clustered at the community level. We also report local average treatment effects (LATE), modeling the causal effect of actually receiving home visits among compliers (Tables 3, 4, and 5 in Lopez Boo et al. 2025).

In addition, to examine the role of quality, community-level home-visit quality scores are aggregated (i.e. computing within-sample standardized measures of home-visit quality across treatment communities) because the data on home-visit quality does not include individual child- or family-level identifiers. We then regress child development and preschool outcomes at follow-up on mean standardized community-level home-visit quality, controlling for baseline child development outcomes, revealing which domains of quality, such as caregiver–home visitor relationships and use of materials, drive impacts (Table 1).

Experimental design within the treatment arm of the RCT (community-based quality monitoring vs. institutional monitoring): Finally, to explore what explains variation in home-visit quality across treatment communities, we take advantage of the experimental community- based monitoring initiative implemented by the Nicaraguan Government within the treatment arm based monitoring initiative implemented by the Nicaraguan Government within the treatment arm of the RCT (Table 2).

[6] Our analytic sample focuses on the 1,324 children who were eligible for the Denver II measure of child development at follow-up. See Figure S2.1 of the Supplemental Materials in Lopez Boo et al, 2025 for more details on attrition.

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Validated observational measurements: Beyond data on household characteristics (age, sex, education, and health status of all household members, as well as household assets, economic activity), preschool completion, and caregiver-reported Child Behavior using the Spanish version of the Strengths and Difficulties Questionnaire for parents of 4- to 17-year-olds (SDQ; Goodman 1997, Gaete et al, 2018), we used three sets of observational or direct measurements for parenting practices, child development and home visit quality.

Parenting behaviors: Data was collected through caregiver self-report and direct observation, with items drawn from the Home Observation for Measurement of the Environment (HOME) (Caldwell et al. 1984) and Family Care Indicators developed for UNICEF's Multiple Cluster Indicator Survey (Kariger et al. 2012).
Child development: We used two assessments that have been previously adapted and validated in the Nicaraguan context (Macours, Schady, and Vakis 2012), and include multiple domains of development. The Denver Developmental Screening Test II (Frankenburg et al.1992) is a developmental screening test that evaluates developmental delays in children 0–59 months old. The Denver has demonstrated reliability and concurrent validity in LMIC (Rubio-Codina et al., 2016). It measures fine motor, gross motor, personal-social, and language; and it includes 125 items total, but the total number of items depends on the child's age and ability. We computed a continuous score equal to the sum of the items successfully completed. We assumed that the child could successfully complete all of the items that precede the starting item, according to the child's age group. We then standardized scores within our sample in two-month age intervals (i.e., we group children according to age and then compute z-scores within age bins of two months).

The Peabody Picture Vocabulary Test-III (PPVT; Dunn and Dunn, 1981) measures receptive vocabulary. The words used in the PPVT were adapted to the Nicaraguan context with the permission of the publisher. Similar to the Denver II, there are 192 items total, but the total number of items administered depends on the child's age and ability. The PPVT is designed for children aged 2.5 years and older. We computed a continuous score equal to the sum of words successfully identified and standardized within two-month age intervals.

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Home-visit quality: We leverage a unique administrative dataset of in situ observations of home visits conducted by technical specialists from the Ministry of Family. Participating families and home visitors provided consent to be observed, but the observations were unannounced. The data set of home visit quality includes 4,913 observed home visits (we included only communities that have at least 15 home-visit observations with which to estimate average community-level quality -results are similar using alternative minimum thresholds for the number of visits observed per community). Each home visitor was expected to receive four unannounced observations per year, and the technical specialists who conducted the observations were expected to provide home visitors with feedback immediately following the observation. However, in practice, there was some heterogeneity across communities in terms of the frequency of observations and type of feedback provided (MIFAN 2019). Observers scored relational and content domains using a validated 20-item checklist adapted from the Jamaican home-visit study, capturing interactions between home visitors and caregivers as well as the use of materials and coaching strategies. Prior research has found high rates of interrater reliability using the checklist, with Kappas ranging from 0.80 to 0.90 (Leer et al. 2016). This approach minimizes social desirability bias, provides objective and replicable measures, and integrates systematic quality monitoring within government systems, an uncommon feature in LMIC research for ECD.

4. Impacts

This study forms part of my work over more than a decade to bring the issue of process quality to both parenting and ECCE programs in LAC. In addition to the tools developed to measure home-visit quality based on the Jamaican instrument (see Leer and Lopez Boo, 2019, assessing the quality of home-visit parenting programs in seven LAC countries, conducted in collaboration with the University of the West Indies) which were then evaluated as part of the Nicaragua study, I have also developed simple checklist instruments to measure childcare quality (see my book Lopez Boo, Araujo, and Tome, 2017). By developing and validating feasible observational measures for national use, likelihood of government take-up is increased and subsequent quality improvement systems are more likely.

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By building on this process, it is more feasible that insights from the research will be applicable to similar populations and contexts elsewhere. The process usually involves countries further adapting process quality tools used elsewhere (such as adapting language and changing items to be culturally relevant); processes of stakeholder, ministry, agency engagement to assure country-led contextualization and takeup; and ultimately the development of quality assurance toolkits to improve adult–child interactions, strengthen program delivery, and monitor quality in real time.

Accordingly, having developed many quality monitoring tools in the study described here and in other work, I have led large-scale reforms that integrated these process-quality checklists—previously absent from evaluation systems—into the monitoring frameworks of seven countries. The ECCE checklists (initially validated in Ecuador, as reported in Lopez Boo, Dormal, and Weber, 2019) are currently being used in some form at the national level by childcare services in Uruguay, Nicaragua, Panama, and Argentina. They are also used to inform human resources strategies in Mexico and Brazil, and are informing revised laws on quality standards in Panama. For instance, the first randomized evaluation of a nationwide childcare program in a LMIC (also in Nicaragua) that I led generated novel evidence showing that high-quality public childcare can simultaneously improve child development and maternal outcomes, influencing the Nicaragua government to further expand the program and strengthened its quality assurance and monitoring systems, showing how rigorous evidence can shape national practice.

Because the tools and methods are cost-effective, easy to implement, and rigorously tested across diverse contexts, the insights and materials are highly applicable to similar populations and settings seeking to strengthen their early childhood systems. And effectively, this evidence-based approach has supported decisions on program scale-ups, redesigns, and strategic investments, contributing to the expansion of the Inter-American Development Bank's ECD lending portfolio to become the largest lender for ECD among all multilateral and regional development banks during the last decade. And in particular, the community-led monitoring approach may be an important innovation that could be applied to other ECD programming (e.g. ECCE) and in other LAC ECD programs.

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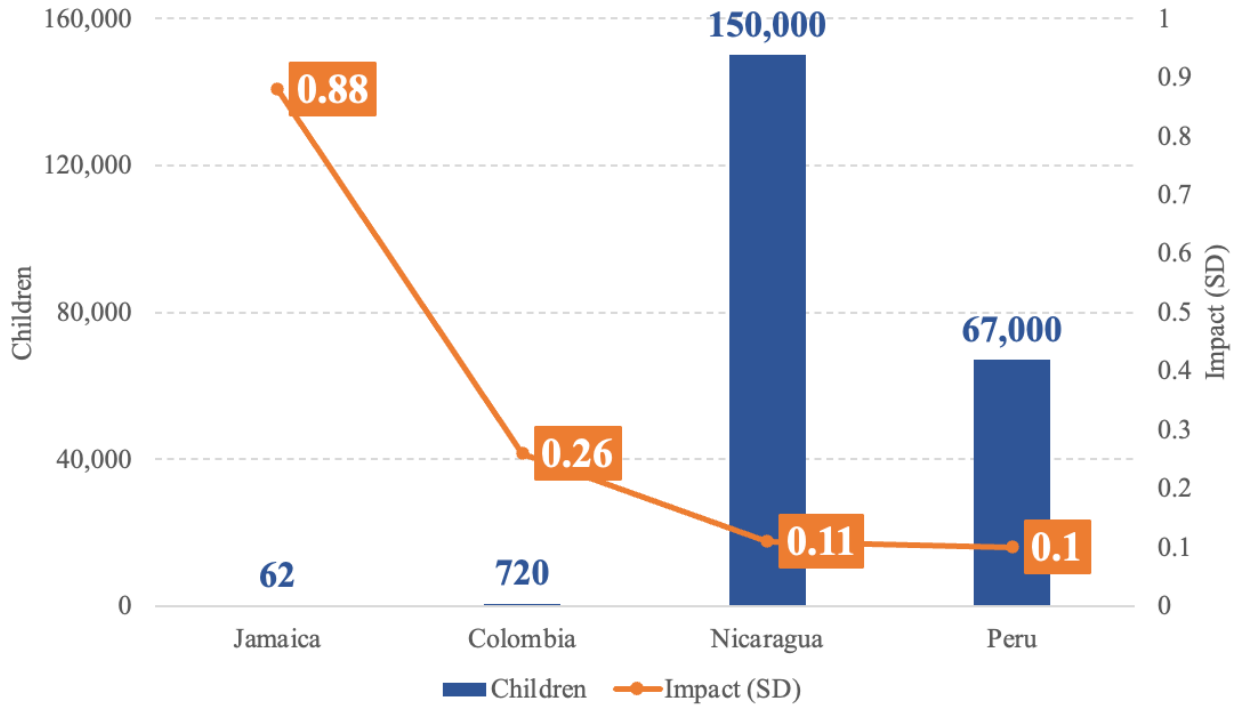
To conclude, most of my research work has not only been influential on quality improvement practice but also more broadly informed policy and system-level reforms from Nicaragua to Latin America to LMICs elsewhere. For instance, findings of my research have contributed to the adoption of ECD indicators in national surveys (Chile, Uruguay, Argentina), inclusion of ECD in G20 priorities, and the reform of national systems and childcare quality standards such as *Chile Crece Contigo*. Having spearheaded large-scale, paradigm-shifting policy reforms, program scale-ups, scale-downs, or redesigns in partnership with governments to address some of the most pressing social problems in LMIC countries, I am proud that following my tenure at the IDB, half a dozen countries now incorporate observational (different from UNICEF MICS ECDI measurement which are self-reported) and valid measures of children's development into nationally representative longitudinal surveys. And as stated earlier seven countries now embed checklists for measuring process quality in their evaluation systems, an aspect no country in the region was paying attention to before. In particular, the Nicaragua study was ground breaking not only in that it was one of the first RCTs to jointly examine implementation quality and community monitoring within a national-scale parenting program, but also because it proved that quality monitoring and improvement need not be costly to be effective. By pushing the evidence forward and making the case for community monitoring as a means to ensure program quality, we are supporting governments on cost-effective ways of implementing high-quality ECD policies.

More broadly, this research advances a shift in how early childhood programs are designed and evaluated, placing process quality, local accountability, and cost-effectiveness at the center of policy decisions about scale. By generating rigorous evidence alongside practical, low-cost tools that governments can embed within existing systems and frameworks, this work contributes not only to the academic literature but to real-world capacity of countries to deliver high-quality early childhood programs at scale. In doing so, this study becomes a critical feature of my body of work—generated over the past decade and a half — to position process quality as a central pillar of parenting and ECCE programs, and redefining what is possible for early childhood policy in LMIC.

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Figures and Tables

Figure 1. Program Scale and Impact in 4 LAC home visits programs



Source: Author's elaboration based on Grantham-McGregor et al. 1991, Attanasio et al. 2014, Lopez Boo et al. 2025, Araujo et al. 2021.

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Figure 2. Program Materials for the Home Visiting Program in Nicaragua

Panel A. Home Visit Poster



Panel B. Community Monitoring Poster



Source: Lopez Boo et al., 2025.

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Table 1. Relation Between Different Domains of Observed Home-Visit Quality, Child Development, and Preschool Completion: Community-Level Regressions

	Child development	Language	Fine motor	Receptive vocabulary	Behavior	Preschool completion
Panel A: Home visitor–caregiver relationship						
Coefficient	0.12**	0.11**	0.09**	0.04	−0.09	0.04
(SE)	(0.05)	(0.05)	(0.04)	(0.04)	(0.08)	(0.04)
RW p-value	—	[0.12]	[0.18]	[0.96]	[0.96]	—
Adjusted R^2	0.24	0.08	0.1	0.37	0.02	0.29
Panel B: Use of materials and preparation						
Coefficient	0.11*	0.13***	0.07	0.02	−0.08	0.04
(SE)	(0.06)	(0.05)	(0.05)	(0.05)	(0.1)	(0.04)
RW p-value	—	[0.26]	[0.61]	[0.95]	[0.95]	—
Adjusted R^2	0.24	0.08	0.1	0.37	0.02	0.29
Panel C: Visit content						
Coefficient	0.10*	0.09**	0.08*	0.03	−0.08	0.06*
(SE)	(0.05)	(0.05)	(0.04)	(0.04)	(0.08)	(0.03)
RW p-value	—	[0.10]	[0.30]	[0.90]	[0.90]	—
Adjusted R^2	0.24	0.08	0.1	0.37	0.02	0.29
Panel D: Focus on caregiver						
Coefficient	0.07	0.09*	0.02	0.02	−0.06	0.05
(SE)	-0.06	-0.05	-0.05	-0.04	-0.09	-0.04
RW p-value	—	[0.41]	[0.93]	[0.75]	[0.98]	—
Obs.	488	506	506	490	504	506
Adjusted R^2	0.24	0.08	0.1	0.37	0.02	0.29

Source: Table 6, Lopez Boo et al., 2025. Observations correspond to averages at the community level.
SE=Standard Error. RW=Romano Wolf.

Table 2. Effect of Community Monitoring Assignment (within the treatment arm of the RCT) on Home-Visit Quality

	Overall quality	Home visitor–caregiver relationship	Use of materials and preparation	Visit content	Focus on caregiver
Assignment to community monitoring	0.12**	0.13**	0.09*	0.13**	0.09*
	(0.06)	(0.06)	(0.05)	(0.06)	(0.05)
Observations (N home visits)	4,913	4,913	4,913	4,913	4,913
Adjusted R^2	0.32	0.31	0.27	0.28	0.22

Source: Table 7, Lopez Boo et al., 2025. Visit quality standardized by year. The model includes supervisor and year fixed effects. Standard errors clustered at the home visitor level in parentheses.

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