

## TC Document

### I. Basic Information for TC

▪ Country/Region:	ECUADOR
▪ TC Name:	Sustainability of the IDB financed longitudinal randomized control trial “Closing Gaps”
▪ TC Number:	EC-T1582
▪ Team Leader/Members:	Cruz Aguayo, Yyannu (SCL/LMK) Team Leader; Perez Vincent, Santiago (IFD/ICS) Alternate Team Leader; Kaplan, David Scott (SCL/LMK); Castro De Souza Marotta, Luana (SCL/EDU); Centeno Lappas, Monica Clara Angelica (LEG/SGO); Zaroni Lopez, Wladimir (CAN/CEC); Rivera Herrera Sergio Andres (SCL/LMK); Oliveri, Maria Laura (SCL/LMK); Araujo, Maria Caridad (SCL/GDI); Lagos, Francisco (SCL/GDI); Hernandez Montenegro Daniel Alberto (SCL/LMK); Argueta Joya Nancy Elizabeth (SCL/LMK); Ferrin Gaston (SCL/LMK); Gonzalez Herrera, Beatriz Maria (SCL/LMK); Elacqua, Gregory Michael (SCL/EDU); Van Der Werf Cuadros, Cynthia (SCL/MIG)
▪ Taxonomy:	Research and Dissemination
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	24 Aug 2024.
▪ Beneficiary:	Ecuador
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	OC SDP Window 2 - Social Development(W2E)
▪ IDB Funding Requested:	US\$300,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months (which includes Execution period)
▪ Required start date:	November 2024
▪ Types of consultants:	Individuals, Firms
▪ Prepared by Unit:	SCL/LMK-Labor Markets
▪ Unit of Disbursement Responsibility:	SCL/LMK-Labor Markets
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2024-2030:	Social inclusion and equality; Productivity and innovation; Institutional capacity and rule of law; Gender equality

### II. Objectives and Justification of the TC

2.1 **The Bank’s “Closing Gaps” (CG) project<sup>1</sup> is a unique longitudinal randomized control trial** involving two cohorts of children entering kindergarten (in 2012 and 2013, respectively), totaling more than 28,000 students. These students were randomly assigned to different classrooms within approximately 200 public schools in Ecuador. For the 2012 cohort, children were then randomly reassigned to classrooms in each grade from kindergarten through 6<sup>th</sup> grade. Compliance with the assignment rule has

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<sup>1</sup> By “project” throughout this document, the team refers to the Closing Gaps knowledge program, which began in 2012 and that has been developed in several stages, funded by a series of Technical Cooperations (TCs) and Economic and Social Work (ESWs).

been nearly perfect, and attrition rates have remained minimal. At the end of each grade, comprehensive data has been collected on the students. This includes assessments in math, language, and “executive function” (EF), which measures a child’s ability to regulate her thoughts, actions, and emotions, all of which are central to the learning process, and are well-rewarded in the labor market thereafter. Additionally, rich data on teachers has been gathered, including their years of experience, education, and contract status, as well as teacher IQ, personality, and socioeconomic information. Teachers were also filmed teaching a class for an entire school day, with the videos coded using the Classroom Assessment Scoring System (CLASS) protocol to assess the quality of teacher-students’ interactions. Furthermore, at the end of kindergarten, household data was collected, including parental assessments of teacher quality, household investment in child development and learning (such as the availability of books, and toys), and parental behaviors (such as whether parents read to or played with their children). By 6<sup>th</sup> grade (in 2018), the project expanded to include non-cognitive measures, such as depression, self-esteem, grit and information about the children’s friends and network.

- 2.2 **The objective of this TC is to ensure the long-term sustainability and continued relevance of the "Closing Gaps" project** by maintaining updated participant information, gathering new data on critical social and economic topics, and generating policy-relevant research on the impact of educational quality on labor market outcomes and crime-related attitudes and behaviors.
- 2.3 **The specific objectives of the TC are:** (i) Ensure the sustainability of CG. The importance to the Bank of ensuring that this project is sustained for the foreseeable future stems from the unique information that the project can provide, on the impact of classroom characteristics in elementary school on medium- and long-term variables, and the correlations over time among a vast number of characteristics of vulnerable children, adolescents and young adults along their lifetime. Having this information places the Bank in an inimitable position to provide policy-relevant evidence for Ecuador and the broader Latin American and the Caribbean region. (ii) Collect new information on key topics related to labor market participation, exposure/participation in crime activities, risky behaviors, migration, domestic violence and teen pregnancy. (iii) Conduct research to address critical questions regarding the impact of classroom quality, and other correlates, on medium- and long-term outcomes, including initial labor market conditions (e.g. first job or initial wages) and exposure or participation in criminal activities.
- 2.4 **Participant retention is critical for minimizing biases and maintaining statistical power in longitudinal studies.** Effective retention strategies include maintaining continuous and consistent relationships with participants and their families, ensuring multiple contacts during a year, and using user-friendly data collection methods. Additionally, providing incentives and tangible rewards, as well as conveying clear information on the relevance of the participants continuous involvement in the project, have been proven internationally to increase participation in longitudinal studies.<sup>2</sup>

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<sup>2</sup> Sixt, M., Goy, M., & Besuch, G. (2016). The Concept of Individual Retracking in NEPS—Approach, Practice, and First Empirical Evidence From Starting Cohorts 3 and 4. In *Methodological Issues of Longitudinal Surveys: The Example of the National Educational Panel Study* (pp. 111-132). Wiesbaden: Springer Fachmedien Wiesbaden.

- 2.5 New data collection and merging with administrative records. As the participants traverse from childhood into their teenage years, is relevant to collect information on their development and behaviors.** As relevant as collecting new data is the merging of the CG data with administrative records, this merge will enhance the depth of the research by providing an even more comprehensive view of participants' characteristics and their correlated variables. In 2021, the Bank signed a memorandum of understanding (MoU) with Ecuador's national institute of statistics (Instituto Nacional de Estadísticas y Censos, INEC) which grants access to national databases, enabling more robust findings and contributing to the formulation of evidence-based policy recommendations.
- 2.6 Youth unemployment and informal work present persistent challenges.** Despite increased access to education, many young people in Ecuador and across the LAC region struggle to find stable, formal employment. In Ecuador, the unemployment rate for individuals aged 15-24 was 8.4% for 2023, significantly higher than the national average of 3.3%. Moreover, only 18.9% of the employed youth (15-24 years old) contribute to social security, compared to 36.1% of adults aged 25-64.<sup>3</sup> These disparities indicate the precarious nature of youth employment and highlight the barriers young people face in transitioning from their school years and into the formal labor market.
- 2.7 Educational quality impacts first job conditions and early career development.** Cognitive skills, particularly in areas such as math, play a critical role in securing higher-quality apprenticeships and better earnings. This underscores how educational quality significantly shapes early career trajectories.<sup>4</sup> Given the lasting effects of initial labor market conditions on future earnings, labor supply, and broader social outcomes, early interventions to improve educational quality are essential to promoting long-term success in the labor market.<sup>5</sup>
- 2.8 Rising youth violence is a critical concern for Ecuador and the LAC region.** The LAC region remains the most violent globally, with Ecuador experiencing a particularly sharp rise in homicides among young males. Between 2018 and 2022, homicides among males aged 15 to 17 increased sevenfold.<sup>6</sup> This surge in violence is closely linked to unemployment, limited educational opportunities, and organized crime, making it imperative to address these issues through targeted interventions.
- 2.9 Teacher quality may help reduce youth crime and risky behaviors.** While teacher's role on educational outcomes including achievement, absenteeism, and college attendance is well-documented, their effects beyond academics has been underexplored, particularly in LAC. The CG project provides an opportunity to investigate whether improvements in classroom quality, particularly through more effective teachers, can reduce crime and risky behaviors among at-risk youth. This research aims to fill a crucial gap and inform policies that enhance both labor market outcomes and social development.

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<sup>3</sup> Inter-American Development Bank (2024). Data and Indicators from Latin America and the Caribbean. <https://iadb.org/en/knowledge-resources/data/social-data> [Harmonized Household Surveys of Latin America and the Caribbean].

<sup>4</sup> Gholami, M., & Muehlemann, S. (2024). Math Skills, Selection in Training Firms, and Post-Training Wages (No. 0212). University of Zurich, Department of Business Administration (IBW).

<sup>5</sup> Wachter, T. V. (2020). The persistent effects of initial labor market conditions for young adults and their sources. *Journal of Economic Perspectives*, 34(4), 168-194.

<sup>6</sup> United Nations Office on Drugs and Crime (2024). Intentional homicide data.

- 2.10 **Key insights from the CG project to date.** The CG project has demonstrated that teacher quality is a critical determinant of student success. Effective teachers can substantially improve student outcomes, and consistent exposure to high-quality teaching over time leads to long-term academic gains. Despite this, early socioeconomic and gender disparities in educational outcomes remain, particularly in math, where children from lower-income families and girls face additional challenges, although these gaps can be reduced when mothers have higher educational levels. Several studies have been conducted using the data collected from the CG project, particularly leveraging its longitudinal and randomization design. These studies contribute to understanding how causal relationships between teaching, learning and other educational variables in the early grades influence later outcomes.<sup>7</sup> Simultaneously, the design of the CG project in Ecuador makes it essential to collect data on labor market participation, crime (exposure, attitudes), risky behaviors and teen pregnancy for the young people who have participated over the course of the project. This data will broaden the project's scope, making its findings more comprehensive, and directly beneficial to policy makers and practitioners in Ecuador and the wider LAC region.
- 2.11 **Policy recommendations informed by CG insights have shaped educational reforms in the region.** The findings from the CG project have been used by the Bank while advising governments across Latin America and the Caribbean (LAC) on key educational policies. In Ecuador, Uruguay, Colombia, Peru, and other countries, evidence from the project has contributed to discussions on improving teacher quality, addressing learning disparities, and optimizing resource allocation in public schools. Policy dialogues facilitated by the IDB have used CG data to advocate for enhanced teacher training programs, curriculum adjustments that emphasize cognitive skills, and targeted interventions aimed at reducing educational inequalities. The policy-relevant evidence generated by the CG project has also been presented in regional forums, influencing national strategies on education, labor market integration, and social protection. Finally, the evidence produced by the CG project was used to directly design a loan to the Government of Ecuador (3726/OC-EC).
- 2.12 **Strategic alignment.** The TC is consistent with the IDB Group Institutional Strategy: Transforming for Scale and Impact (CA-631), mainly aligned with the objectives to: (i) reduce poverty and inequality; and (ii) bolster sustainable regional growth by generating innovative data products that can be sustained over time and can be used to assess the effectiveness of a project or group of projects in various topics such as education, labor market, risky behaviors and criminal activities. The TC is also aligned with the operational focus areas of: (i) Gender Equality and Inclusion of Diverse

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<sup>7</sup> 1. Araujo, M. Caridad, et al. *Teacher quality and learning outcomes in kindergarten*. The Quarterly Journal of Economics 131.3 (2016): 1415-1453.; 2. Cruz-Aguayo, Y., Ibararán, P., & Schady, N. (2017). *Do tests applied to teachers predict their effectiveness?* Economics Letters, 159, 108-111.; 3. Carneiro, P., Cruz-Aguayo, Y., Intriago, R., Ponce, J., Schady, N., & Schodt, S. (2022). *When promising interventions fail: Personalized coaching for teachers in a middle-income country*. Journal of Public Economics Plus, 100012.; 4. Carneiro, P., Cruz Aguayo, Y., & Schady, N. R. (2018). *Mothers, teachers, peers, and the gender gap in early math achievement* (No. IDB-WP-00939). IDB Working Paper Series.; 5. Carneiro, P., Cruz-Aguayo, Y., & Schady, N. (2019). *Experimental estimates of education production functions: Sensitive periods and dynamic complementarity*. Institute for Fiscal Studies, University College London.; 6. Carneiro, P. M., Cruz-Aguayo, Y., & Schady, N. R. (2017). *Where the girls are not: households, teachers, and the gender gap in early math achievement* (No. IDB-WP-807). IDB Working Paper Series.; 7. Cruz-Aguayo, Y., Fuertes, N., & Schodt, S. (2019). *Classroom Quality and Teacher Characteristics in Ecuador* (IDB-TN-01755). IDB Technical Note.

Population Groups; (ii) Institutional Capacity, Rule of Law, and Citizen Security; and (iii) Social Protection and Human Capital Development. Finally, the TC is particularly aligned with one of the five core elements considered by the IDB Group to maximize the delivery of value and results: Knowledge. The robust dataset and longitudinal component of CG enable the Bank to produce high-quality knowledge products that inform policies and programs, thus enhancing the Bank's impact.

- 2.13 The TC is consistent with the IDB's Sector Framework Documents (SFD) for: (i) Labor (GN-2741-12); (ii) Skills Development (GN-3012-3); (iii) Early Childhood Development (GN-2966-7); (iv) Social Protection and Poverty Action (GN-2784-12); (v) Citizen Security and Justice (GN-2771-12); and (vi) Framework to Support Populations in situations of Fragility, Conflict, and Criminal violence, 2024-2027 (GN-3199-2), as the ability to track long-term outcomes provides unique opportunities to understand and generate instrumental insights for policy-making both in Ecuador and across the LAC region in the multifaceted issues outlined in these SFDs.
- 2.14 The TC is also consistent with the IDB Country Strategy with Ecuador (2022-2025) (GN-3103), particularly in Priority area III: "Strengthening of social progress, with emphasis on gender". By tracking and analyzing long-term data on students' educational achievements, labor market outcomes, and social behaviors, the TC helps identify gaps and develop targeted interventions to enhance the social and economic well-being of these groups.
- 2.15 The TC also aligns with priority area 5: Inclusive Social Development within the Ordinary Capital Strategic Development Program (OC SDP W2E) as established in GN-2819-14.
- 2.16 **Lessons Learned.** The Bank has developed experience with longitudinal studies to collect relevant information and generate evidence and knowledge to contribute to discussions and policy in the region. The CG project, having operated since 2012, presents several lessons regarding maintaining consistent contact with participants and the collection of data under sensitive conditions. These lessons have been identified during several TCs (ATN/OC-17106-EC, ATN/KP-16213-EC, and ATN/OC-16118-EC) and are instrumental in shaping components of this Technical Cooperation. We have found that: (i) developing a system to periodically update participant and family contact information is essential for longitudinal studies, as it facilitates consistent follow-up and reduces attrition bias; (ii) adaptation of data collection protocols to the socio-economic environment, ensuring participant safety and data privacy, while being aware that the socio-economic environment can alter the project timeline and affect fieldwork, requiring flexible planning to maintain data integrity and participant trust; and (iii) strong coordination and cohesion between all stakeholders (local ministries and entities, participants and their families, fieldwork personnel, the Bank, etc.) that are essential to keeping a positive working relationship and ensuring a smooth project execution and precise data collection.

### III. Description of activities/components and budget

- 3.1 **Component I: Design a systematic process to regularly update contact information (US\$150,000).** The main objective of this component is to design and implement a systematic and cost-effective process for regularly updating the contact information of project participants and their parents/guardians. This includes developing a needs assessment of the current process of contact information, designing a retention strategy that maintains positive relationships with participants,

utilizing incentives, as well as developing and implementing a user-friendly update information method that minimize attrition bias and guarantees its effectiveness.

- 3.2 The expected result of this component is a robust and operational system ensuring ongoing participant engagement and accurate data collection, minimizing attrition bias and maintaining statistical power over time.
- 3.3 **Component II: Data collection research (US\$90,000).** The main objective of this component is to gather new data on critical topics such as labor market participation, educational attainment, crime (exposure, attitudes), risky behaviors (alcohol and drug use), migration, domestic violence, and teen pregnancy, following the Principles of the Personal Data Privacy Policy (AM-361 and GN-3030). This component will also include: i) the evaluation of the sample used in the survey and analysis of its representativeness with respect to the broader universe of CG participants; and ii) the coordination with national entities to merge CG data with administrative records such as social security contribution data, medical records, crime records, and standard national evaluations while ensuring compliance with agreements such as the MoU with INEC.
- 3.4 The expected result of this component is a comprehensive dataset that should be the main input for the following research and econometric modeling from Component III. This dataset will include labor market, crime-related, and other social factors, providing a thorough analysis report on the collected data, and ensuring sample representativeness for informed policy recommendations.
- 3.5 **Component III: Data analysis and research (US\$60,000).** The main objective of this component is to conduct research to assess the impact of classroom quality on medium- and long-term outcomes. This involves processing and analyzing large datasets to examine how classroom quality affects initial labor market conditions (e.g., first job, initial wages) and future crime exposure or involvement, while leveraging the RCT design of the CG project for rigorous causal impact estimation. Complementarily, exploiting the longitudinal nature of the CG, the component will advance descriptive research on risk and protective factors associated with youth crime-related outcomes.
- 3.6 The expected result of this component is a published technical note, in the Bank’s technical note series, with evidence-based policy recommendations on the effects of classroom quality, informing strategies to improve labor market outcomes and reduce crime exposure based on the rigorous analysis of the data.
- 3.7 The total cost of the TC will be US\$300,000, financed entirely by the OC SDP Fund Window 2 - Social Development (W2E). The disbursement period (which includes the execution period) will be 36 months. These funds will be used in the following components:

**Indicative Budget**

Activity/Component	Description	IDB (W2E)	Total Funding
<b>Component I</b>	Design a systematic process to regularly update contact information	<b>\$150,000</b>	<b>\$150,000</b>
<b>Component II</b>	Data collection	<b>\$90,000</b>	<b>\$90,000</b>
<b>Component III</b>	Data analysis and research	<b>\$60,000</b>	<b>\$60,000</b>
<b>Total</b>		<b>\$300,000</b>	<b>\$300,000</b>

- 3.8 The Team Leader of the TC, Senior Economist of the Labor Markets Division (SCL/LMK), will carry out the supervision of this TC with the appropriate support from the specialists and consultants from the Bank's different sectors involved in the operation, and the Country Office in Ecuador (CAN/CEC) as needed. Adequate planning of transactional budgetary resources to guarantee the monitoring and fulfillment of activities and products included in this TC, will also be the co-team leaders' responsibility.
- 3.9 All knowledge products generated as part of this technical cooperation will be the property of the Bank and may be made available to the public.

#### **IV. Executing agency and execution structure**

- 4.1 This is a R&D TC that has as its objective to develop and disseminate knowledge, as such, is an initiative led by the Bank. The Inter-American Development Bank (IDB), through the Labor Markets and Social Security Division in the Social Sector Department (SCL/LMK), will be the Executing Agency, in coordination with the Country Economist in Ecuador, IFD/ICS, SCL/EDU, SCL/GDI, and SCL/MIG.
- 4.2 This execution is justified given: (i) the Bank, through SCL/LMK has technical expertise in research on human capital formation and labor markets; (ii) administrative burdens can be reduced on the government, particularly in the identification and contracting of international experts; and (iii) the Bank has the necessary technical, operational, and institutional capacity to duly and timely execute the activities proposed under this TC. The supervision of this TC will be carried out by the Team leader and Team members.
- 4.3 The activities programmed for this TC need to be carried out in strict adherence with the existing methodology employed throughout the past 12 years of the Closing Gaps project, in which the Bank has also been the Executing Agency using the same executing structure.
- 4.4 Acquisitions and financial management: All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines. All Knowledge products derived from this TC will be the intellectual property of the Bank.

#### **V. Major issues**

- 5.1 The risks in executing and achieving the TC objectives are considered low/medium for this TC and are as follows: (i) some questions in the survey focus on household sensitive information. Participants may feel uneasy sharing personal information about their finances or behavior, potentially affecting the quality and completeness of the data collected; and (ii) delays in completing fieldwork due to unforeseen internal or external factors, such as logistical challenges or socio-economic disruptions, which might impact the timeline and data collection process.
- 5.2 To mitigate these risks, the following activities and considerations will be implemented: (i) the survey will be designed and presented in a clear, respectful, and sensitive manner. Special attention will be given to the phrasing of sensitive questions to ensure that participants feel comfortable and less apprehensive when answering; and (ii) based on prior data collection experiences for the project, contingency protocols have

been developed to address potential delays. These protocols will be employed to manage both internal and external disruptions, ensuring that fieldwork can continue as planned, or adjusted without compromising the objectives of this TC.

**VI. Exceptions to Bank policy**

6.1 None.

**VII. Environmental and Social Aspects**

7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

**Required Annexes:**

[Results Matrix\\_27797.pdf](#)

[Terms of Reference\\_69052.pdf](#)

[Procurement Plan\\_27756.pdf](#)