Incentives for Learning RCT: Pre-Analysis Plan

September 6, 2026

This pre-analysis plan describes the analytical strategy for the RCT of the Incentives for Learning (IfL) program. The IfL program introduces a commercially viable loan product that uses financial incentives to motivate low-fee private schools (LFPS) in Kenya to improve learning outcomes in primary grades. The program is being designed and managed by Global Schools Forum and the IDP Foundation, implemented by two Kenyan financial institutions (Jackfruit Finance and Premier Credit), and funded by the Waterloo Foundation and the Michael and Susan Dell Foundation. We at IDinsight are leading the evaluation.

We are conducting an RCT to assess the impact of the IfL program on student learning and related outcomes. In July 2025 we conducted a benchmarking exercise in a sample of LFPS to pilot the assessment protocol and establish reward thresholds for the program. Following the benchmarking exercise, eligible LFPS in the portfolios of the two participating financial institutions were identified and randomly assigned to receive offers of IfL loans (treatment), or to continue receiving offers of traditional loans (control). In February 2026 we assessed students in participating treatment schools to determine the first batch of financial rewards. In September 2026 we will conduct assessments in treatment and control schools to estimate the 1-year impacts of the program and determine financial rewards for treatment schools with active IfL loans.

This pre-analysis plan was posted on the AEA's Social Science Registry on September 6, 2026, prior to endline data collection.

1. The IfL program

i. Motivation and background

Low-fee private schools (LFPS) in Kenya are expanding rapidly, serving a growing proportion of primary school students, particularly in urban and peri-urban areas. Despite this growth, student learning outcomes in many LFPS remain stagnant, with schools struggling to translate enrollment gains into meaningful improvements in foundational literacy and numeracy skills. The Incentives for Learning (IfL) program addresses this gap by embedding financial incentives into school loan structures, making student performance a business priority for school proprietors.

The program operates through two financial institutions (FIs), Jackfruit Finance and Premier Credit, that offer incentivized loans to eligible treatment schools in their portfolios. Schools that take out IfL loans can earn financial rewards for demonstrated improvements in student learning outcomes. The reward amount is based on the amount of the school's loan and interest rate and is administered by applying the reward against the outstanding balance on their loan. By linking financial returns to educational performance through a tiered reward system, the program aims to

sustainably raise education quality while supporting the financial viability of FIs and participating schools.

ii. Program design

IfL introduces a commercially viable loan product that uses financial incentives to motivate school owners to improve learning outcomes. When schools achieve targeted learning levels, they receive reduced capital costs as rewards.

A school participates in the IfL program through the following sequence of activities:

1. Eligible schools are identified by FIs. The current eligibility criteria for a private school to receive an IfL loan include: (i) the school must be a client in good standing with one of the participating FIs; (ii) the school must be registered with the Kenyan government through KPSA or APBET and use the national curriculum; (iii) the school must charge between $30-150 tuition per term; (iv) the school must serve primary grades; (v) the school must be in operation for at least 3 years to demonstrate sustainability.
2. Loan officers market the IfL loan to the school.
3. Schools sign up for a 6-to-18 month IfL loan, committing 1% of the loan amount to buy-in. Schools may pay the 1% fee through either up front cash payment, deduction from a savings account, or capitalized onto the loan principal.
4. The IfL loan is disbursed, and the school makes regularly monthly pay-back installments.
5. An independent assessor[1] selects a representative group of students from the school's enrollment register to sit for foundational literacy and numeracy tests. The independent assessor also interviews school proprietors and teachers to elicit predictions of each student's test performance.
6. Schools are graded based on student performance and teacher prediction accuracy. We describe in detail how school composite scores are calculated in this memo (which defines the composite score formula for new IfL schools being assessed for the first time in the program) and in this memo (which defines the composite score formula for schools taking on top-up IfL loans). Based on these scores, schools are allocated to a reward tier: Diamond, Gold, Silver, Bronze, or None.
7. Rewards are disbursed based on the school's reward tier. Rewards range in size from the equivalent of 35% of the interest on the loan (Bronze) to 100% of the interest on the loan (Diamond).
8. Along with the reward disbursement, schools are given a report card that describes their performance in the recent assessment round and, if it is the school's 2nd or later IfL loan, growth since the previous assessment round. The school also receives access to an online resource hub that contains evidence-backed, locally-validated free or low-cost resources for how to improve learning outcomes in their schools.
9. Schools decide whether to take on follow-on IfL loans, which will each require the 1% sign-on fee, and which will make them eligible for further rewards depending on

[1] During the current pilot of the IfL program, IDinsight is leading both the external evaluation and the independent assessments for the program.

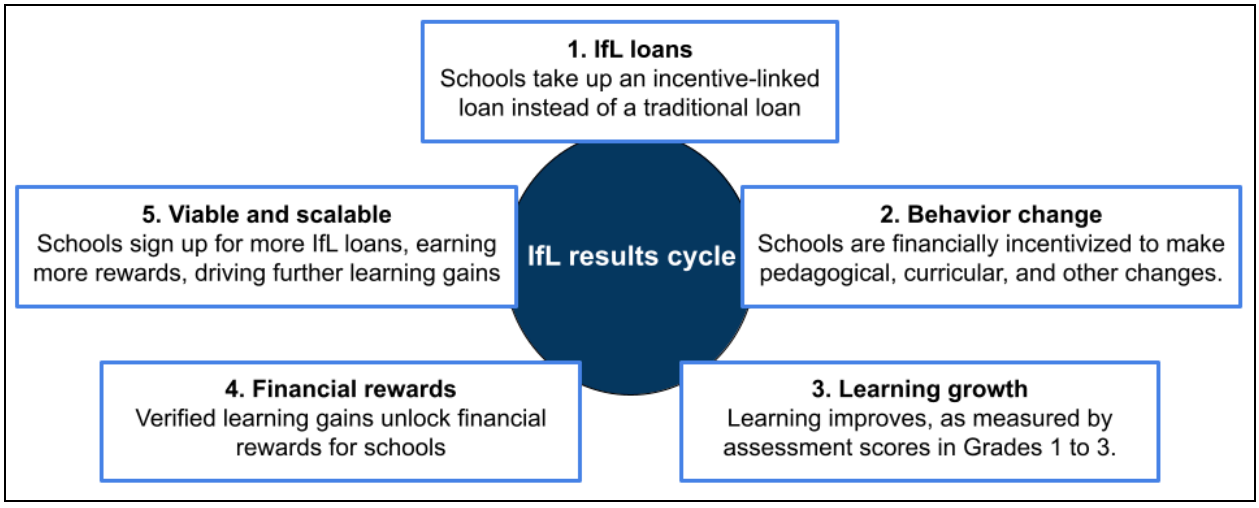
performance in the next assessment round. (After the first assessment round, learning growth is included as a component in the school's composite score.)

The IfL program is currently being piloted for the first time, during the 2025 and 2026 Kenyan school years. This pre-analysis plan describes the RCT design for evaluating this pilot.

iii. Theory of change

The following schematic from IfL program materials visualizes how IfL loans are expected to lead to learning gains.

Figure 1: Theory of change from IfL program materials



This ToC relies on various assumptions, which we will pressure-test using data from loan uptake records, school proprietor interviews, and feedback from program stakeholders.

1. FIs market IfL loans to eligible schools.
2. Schools are willing to pay the 1% sign-up fee.
3. The tiered interest reward creates meaningful incentives for schools to sign up and improve learning outcomes.
4. Access to assessment results and a resource hub helps schools identify and adopt low-/no-cost interventions to improve learning outcomes
5. Improved learning outcomes drive positive changes in the school, such as more loyalty and demand from parents, higher student attendance, and lower student and teacher churn. Schools take out further IfL loans to meet ongoing and growing needs for capital.
6. (In the long-run) IfL drives organic demand for financing from schools, lowering marketing/operational costs and improving profitability for financial institutions through a growing loan portfolio.

2. Study objectives

i. Research questions

We categorize research questions for our study according to: (a) impacts on learning outcomes, (b) uptake of IfL loans, and (c) mechanisms of impact.

a. Impact on learning outcomes

We will use student learning data to answer the research questions in this section.

First we list our primary research questions, which are causally identified through the randomized study design:

1. (Intention-to-treat): What is the impact of offering incentivized IfL loans to low-fee private schools on learning outcomes, compared to schools that are offered only traditional loans?
2. (Treatment-on-the-treated): What is the impact of schools actually taking on IfL loans on learning outcomes?
3. (Subgroup analyses): How does the impact of IfL loans differ for various subpopulations of interest, including:
    a. Schools in each FI's portfolio
    b. Schools that charge below-median vs above-median fees
    c. Students in Grades 1 vs 2 vs 3
    d. Male vs female students

In addition to our primary research questions, we will examine several questions that we label 'exploratory' since causality is not strictly identified; schools were not randomly assigned to each of the following conditions. Instead we will interpret results as indicative of potential impact channels:

4. How does the impact of loans on learning outcomes vary for the following three types of treatment schools:
    a. (Sustained impact of initial behavior change & rewards): Schools that took on initial IfL loans and received rewards (pre-midline), but did take on follow-on IfL loans
    b. (Impact of incentives alone): Schools that did not take on IfL loans pre-midline, but took on IfL loans before endline, and are eligible for rewards but have not yet received any rewards.
    c. (Combined effect of rewards and incentives): Schools that took on initial IfL loans and received rewards (pre-midline), and took on a second IfL loan (post-midline)
5. What is the impact of providing information about student performance alone, without any financial incentives? (comparing control & treatment schools who were assessed during the benchmarking exercise and received a report card but never took on an IfL loan vs control & treatment schools that never took on an IfL loan and were not assessed until endline)

6. What is the impact of financial incentives on top of providing information? (comparing treatment schools who were assessed during the benchmarking exercise and received a report card but did not take up an IfL loan vs treatment schools who took up an IfL loan and were assessed at midline)

b. Uptake of IfL loans

A key condition for impact and scalability is that schools who are offered IfL loans take them up. We will use a combination of FI records, school proprietor interviews, and feedback from FIs to answer these questions:

- What proportion of eligible schools are willing to pay the 1% sign-up fee for IfL loans?
- How does IfL loan uptake vary across different types of schools, including schools in each FI's portfolio, low-fee vs high-fee schools, and schools in different counties?
- What types of schools are more or less likely to take on repeat IfL loans? In addition to the characteristics listed in the previous question, does the reward tier for the initial loan predict future uptake?
- What factors do school proprietors identify in their decision to take on an IfL loan? Do proprietors report valuing other schools taking on IfL loans as a factor in their decision (demonstration effect)?

c. Mechanisms of impact

The IfL program theory of change assumes that IfL loans will motivate school proprietors to improve learning outcomes, and that this motivation will trickle down from school proprietors to school leaders and teachers, leading to meaningful changes in teacher behavior, classroom practices, and school management. We will examine this mechanism partly by comparing learning outcomes for schools that took on IfL loans initially vs later (described above as exploratory analysis), and partly through a combination of data from school proprietor surveys and teacher predictions about student learning levels. Our specific research questions related to mechanisms of impact include:

- Do financial incentives linked to learning outcomes lead to measurable shifts in school management practices and/or teaching methods, including:
    - Shifts in administrative practices and investment, including improved student teacher ratio, access to teaching/learning materials, data-driven decision making , teacher training, infrastructure & access to technology
    - Teacher's awareness of learning levels and access to new knowledge resources
    - Accountability mechanisms with parents, through PTAs, signaling performance of the school to the community
- To what extent are school proprietors and/or head teachers motivated to implement new practices in their schools to improve learning gains, and to what extent are they able to implement those practices?
- How do IfL loans affect school proprietors' investment decisions, such as the allocation between infrastructure improvements and other learning-focused expenditures?

- By making learning outcomes a business priority for schools, does participation in the IfL program improve teacher awareness of student learning levels, as measured by alignment between teacher predictions and assessment results?

d. Cost-effectiveness

If the IfL program has a statistically significant impact on learning outcomes, we will attempt to estimate the cost-effectiveness by comparing learning impacts (in standard deviations) to the cost of the program. To estimate the steady-state cost of the program, we will collect disaggregated costs from program management. We will exclude costs that were incurred for the purposes of the evaluation, and costs incurred to set up and design the program, including design workshops, the benchmarking exercise, research design and analysis, and others. We believe that this analysis will result in a conservative estimate of cost-effectiveness, as program and assessment costs are likely higher during this small-scale, highly-monitored pilot, than they will be if the program is implemented at scale.

ii. Outcomes

a. Student learning

Our primary outcomes for measuring the impact of the IfL program on student learning are foundational literacy and numeracy skills.

We assess reading and numeracy using abbreviated versions of the self-administered EGRA (SA-EGRA) and self-administered EGMA (SA-EGMA). The SA-EGRA/EGMA were examined during the benchmarking exercise and determined to be reliable assessments of reading and numeracy within this population.[2] Specifically, performance on the Spelling subtask of the SA-EGRA was highly predictive of oral reading fluency, and the SA-EGMA subtasks and scores closely aligned with analogous subtasks on the traditional EGMA. To minimize assessment time, we will limit the SA-EGRA to the Spelling and letter recognition subtasks, but we will administer all subtasks for the SA-EGMA.

For the purposes of assessing school performance, we align SA-EGRA/EGMA scores with KNEC's national curricular grade-level benchmarks, and report the proportion of students in each school who are meeting, approaching, or below expectations. For the purposes of this RCT, we will report several alternative metrics of learning gains, including raw scores on the SA-EGRA/EGMA and standardized effect sizes.

b. Student enrollment and attendance

During the endline assessment, we will collect data on student enrollment and the previous week's attendance from the school's registers. We also use the enrollment lists to select a representative sample of students for assessment.

[2] GSF_IFL Benchmarking and Assessment Selection_14 August 2025

c. Teacher knowledge and behavior

We will ask teachers to predict each sampled student's performance on the literacy and math assessments (below, approaching, or meeting expectations, as defined by KNEC grade-level benchmarks). This data is a proxy for teachers' awareness of student learning levels and needs, which is a key condition for improving outcomes. In treatment schools, teacher prediction accuracy is a component of the school's overall performance score; we believe including teacher predictions acts as a counter balance to overall school performance, weakening the incentive for schools to attempt to cherry-pick better-performing students, or discouraging students with learning challenges or home circumstances that impede their attendance from enrolling or attending on the day of the exam.

We will also survey school proprietors on teacher behavior and classroom practices in their school.

d. School proprietor knowledge and behavior

The school proprietor survey will include items related to the proprietor's activities to improve learning outcomes during the most recent term, as well as questions related to school infrastructure and the availability of learning resources.

3. Study design

i. School eligibility

Schools within the two FI portfolios were eligible for IfL loans, and for this study, if they met the following criteria:

- The school is within the following counties: Nairobi, Kajiado, or Machakos
- The school charges per-term fees between $30 and $150, per FI documentation
- The school enrolls at least 80 students, per FI documentation
- The school offers at least grades 1 through 3
- The school does not have active loans with both FIs

ii. Randomization

Schools were randomly assigned to receive an offer of an IfL loan or to the control group, which received the traditional loan offerings from their FI.

Randomization proceeded in three batches between September to December 2025. The reason for three rounds of randomization was because, following the first round of randomization (Batch 1, N = 360), FIs identified some schools in the randomization sample that were not eligible for IfL loans, due to payment history, school closures, and other reasons. Thus, the FIs provided lists of additional eligible schools in November (Batch 2, N = 114) and December (Batch 3, N = 76), which were then randomized into treatment and control groups.

In Batch 1, schools were assigned to one of 12 strata, defined by which FI's portfolio they fell in, whether the school had baseline assessment scores from participating in the benchmarking exercise, whether the school's baseline reading performance was above or below the median school's performance, and whether the school's average per-term fee was above or below the median school. In Batches 2 and 3, due to the smaller number of schools and the absence of baseline data, strata were only defined by FI portfolio. Within each stratum, 50% of schools were randomly assigned to the treatment group and the remainder to the control group.

This process resulted in a study frame of 510 schools (255 treatment, 255 control).

iii. School sampling for endline assessment

We faced two challenges with including all 510 schools in our endline sample. First, take-up was lower than expected.[3] In our sample size calculations, we assumed that take-up would be at least 70%. However, by July 2026, only 48% of treatment schools had taken on an IfL loan. With 48% take-up, minimum detectable effects are roughly twice as large as when take-up is 100%. Since we believe that even modest impacts from IfL loans on learning outcomes are important to identify, this reduction in precision was unacceptable. Second, our budget assumed that we would conduct assessments in 300 schools. We do not have the resources to accommodate a larger sample.

Given these challenges, we sought to remove schools from our sampling frame such that the resulting treatment sample would have higher take-up, without undermining the integrity of random assignment. Below is the list of steps that we followed to do this:

1. Compiled all schools across all randomization rounds (N = 510)
2. Identified treatment & control schools that were ineligible for the IfL program for reasons exogenous to treatment, including:
    a. Duplicates in the list (N = 4)
    b. Schools that closed (N = 5)
    c. Schools that did not have students enrolled in primary grades (N = 11)
    d. Schools that did not qualify for IfL loans due to FI policy (N = 67). These were flagged as ineligible after the initial round of randomization, which prompted Rounds 2 & 3 of sampling and randomization. These flags predated any treatment outreach, and thereby avoided potentially endogenous cases of treatment schools being marked not qualifying if they showed little interest in an IfL loan. Critically, nearly the same number of treatment schools (N = 33) were flagged as control schools (N = 34), so this filter was applied consistently across treatment and control.
    e. The above criteria filtered out 87 schools, leaving N = 423.
3. Identified additional schools to drop to further reduce the endline sample and increase take-up rates in the final sample.

[3] We believe that low initial uptake was at least partly due to poor marketing and communication, rather than lack of interest in IfL loans, as schools reported during spot checks that they were never being told about the product from their loan officers.

a. During randomization, all 510 schools were assigned to one of 17 strata, and within each stratum schools were assigned equally to treatment and control. Essentially each stratum is its own mini-RCT. We can drop a stratum from the study without disrupting the overall treatment/control balance or introducing selection bias. We searched across all 17 strata and calculated the take-up rates among schools assigned to treatment within each strata. We then identified the strata with the lowest take-up: Strata 4, Strata 7, Strata 8, Strata 12. Collectively there were N = 156 schools in these 4 strata, which we flagged to drop from our endline sample.

This process resulted in **267 schools remaining for our endline assessment**. These 267 schools are well-balanced across treatment/control overall and within each FI subsample: PC treatment: N = 62, PC control: N = 62; JF treatment: N = 72; JF control: N = 71. Critically, the 134 treatment schools in our endline sample have higher take-up rates (70%), as of July 2026, than the original 255 schools assigned to treatment (48%). We will attempt to conduct assessments in all of these schools; however, based on our experiences during the benchmarking exercise and midline, we expect that a few schools may refuse to participate.

iv. Student sampling

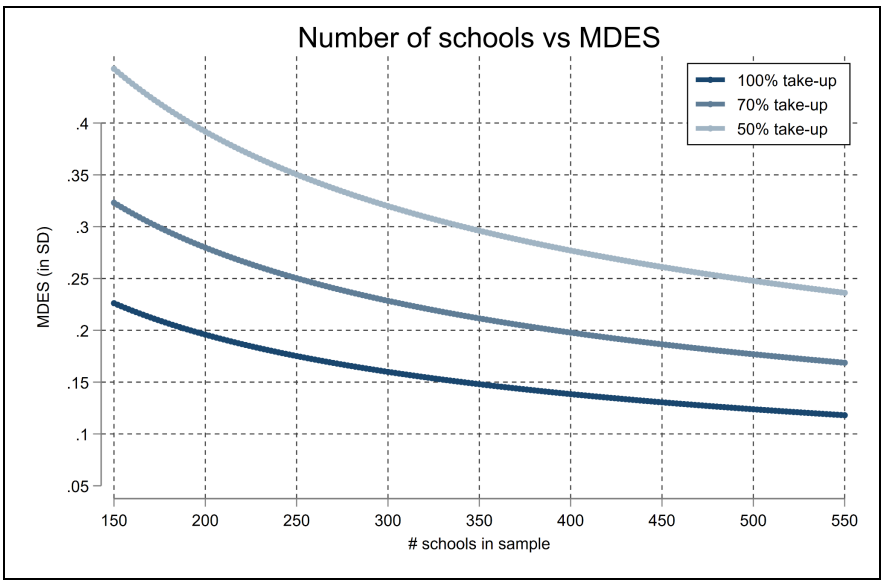
We will assess 18 Grade 1 to 3 students per school, or six students from each grade, following the same protocol that we used for selecting students during the benchmarking exercise and during the midline assessment in treatment schools. This protocol is intended to select a representative sample of students in the school while minimizing the chances of teachers or other school staff from 'cherry-picking' higher-performing students.

When enumerators reach each school, they request the class register for each grade, and record all the names into an electronic survey, and generate an ID for each student. The survey then randomly selects the names and IDs of 6 students per grade (or all students, if there are fewer than 6 students in a grade). If a selected student is not available for assessment, they will be recorded as absent and a 'mop-up' visit will be scheduled to assess the student on a different future date. Children and parents will have the option of refusing to assent to the exercise, in which case selected students will be replaced with another student from the class register.

v. Power calculations

With our endline sample of 267 schools and 18 students assessed per school, we project that our design will enable us to detect moderate effects (0.20 to 0.25 sd) of the IfL program on learning outcomes. Our power calculations assume a moderate level of intra-school correlation in assessment scores at endline (ICC = 0.20), which we believe to be a conservative assumption since ICC values for learning outcomes were significantly lower among schools during the baseline benchmarking exercise (ICC = 0.07) and during the midline assessment in treatment schools (ICC = 0.02).

A key parameter in our power calculations is school uptake, which is why we have filtered our endline sample to include strata with relatively higher uptake. The figure below shows how statistical power varies with different take-up rates. If take-up among treatment schools were 100%, then the study sample frame of 510 schools would be sufficient to detect effect sizes of 0.12 SD. With a take-up rate of 48%, the minimum detectable effect size (MDES) falls to 0.26. In a sample of 300 schools, as in the initial design, a take-up rate of 48% would imply MDES = 0.33 SD; in other words, we would not be able to detect moderate impacts on learning outcomes. By filtering the sample to N = 267 with 70% take-up, we achieve MDES = 0.24 SD; higher precision than if we had assessed all 510 schools at endline.



4. Data collection

i. Data collection timeline

Year 1 (2025): Program design and IRB approval (Q1); school recruitment, assessment tool piloting, and the initiation of baseline data collection (Q2); conclusion of baseline data collection in July (97 schools), final assessment tool selection, and benchmark development (Q3); development and launch of the school performance data dashboard (October), three rounds of randomization extending through December, and the initiation of IfL loan marketing (Q4).

Year 2 (2026): Continued IfL loan marketing and disbursement to remaining eligible treatment schools (Q1); Midline data collection (February 2026); initial reward distribution to qualifying schools (Q2); continued school implementation and support (Q2-Q3); Assessment 2/Endline data collection (September 2026); and final reward distribution and program conclusion (Q4).

ii. Data collection instruments

Drafts of the data collection instruments, including the student learning assessment, a short student survey, the teacher predictions instrument, and the school proprietor survey, can be found here: [external] GSF Midline Surveys

iii. Ethical approval

We have obtained ethical approval to conduct this study from the Amref Ethics and Scientific Review Committee (Research Protocol No. P1860-2025).

5. Analytical model

We will estimate the effect of IfL loans with the following regression model:

$$Y_{1ij} = \beta_1 T_j + \beta_2 Y_{0j} + \beta_3 Y^{miss}_{0ij} + X'_{ij}\gamma + \alpha'_s + \varepsilon_{ij}$$

Where:

- Y_{1ij} denotes the learning outcome for student i in school j at endline.
- Y_{0j} denotes the average learning outcome for students in school j at baseline, if the school participated at baseline. (Since independent samples of students are selected during each assessment round, we do not have panel data at the student-level)
- Y^{miss}_{0j} is a binary variable equal to 1 if school j is missing baseline scores and 0 otherwise. For schools that were not assessed at baseline, their baseline score value is set to 0, and this binary variable applies an equivalent adjustment to all students missing baseline scores. This term effectively ensures that schools missing baseline scores are included in the regression (and in the estimation of treatment effects) without making any assumptions about what baseline performance might have been.
- T_j denotes the treatment status of school j (1 for treatment group; 0 for control group). β_1 is the estimated treatment effect of schools assigned to the treatment group, i.e. assigned to receive an offer of IfL loans during the study period.
- X'_{ij} is a vector of student-level, including student grade and student sex. γ is a vector of coefficients for the included covariates.
- α'_s is a vector of categorical factors corresponding to the school strata, which effectively controls for FI, baseline enrollment (if available), and baseline fee structure (if available).
- ε_{ij} denotes the error term, clustered at the school-level j to reflect the randomization process.

We will conduct this analysis for the pooled sample and separately for subgroups defined above.

We will estimate intention-to-treat (ITT) effects, comparing students in schools that were randomized to receive an offer of an IfL loan in the treatment group versus the control group. We will also estimate treatment-on-the-treated (TOT) effects based on which schools actually take-up IfL loans during the study period. To estimate TOT effects, we will run an instrumental variables (IV) regression, where we will instrument take-up with treatment assignment.

6. References (for internal use)

- GSF_IfL_Endline School Sample
- [Shared] GSF IfL End of Year 1 Report.docx
- GSF_IFL_Assessment 1 Report
- GSF_IFL Benchmarking and Assessment Selection_14 August 2025
- GSF_IFL_Randomization and Analytical Approach_September 2025
- [Shared] GSF_IFL_School Performance Updated Tiers
- GSF_IFL_Proposed Rewards Formula and Tiers with Growth
- [external] GSF Midline Surveys
- IncentivesforLearning_Proposal_Final_20241115