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IGATE
Improving Gender Attitudes, Transition and Education Outcomes

World Vision

Value for Money Analysis

IGATE-T Endline Evaluation

Prepared by: Limestone Analytics
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Cover sheet

Project name	Improving Gender Attitudes, Transition, and Education (IGATE-T) Value for Money Analysis
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Limestone Analytics

Limestone Analytics (Limestone) is a consulting firm specializing in the evaluation of international development projects and social programs. The firm is recognized for combining academic rigour, state of the art methods, and international development experience to provide customized evaluation and economic analysis services and to help its clients incorporate evidence to improve the design, financing, and implementation of their programs and projects. Information about its current and past projects can be found at: www.limestone-analytics.com.

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About the report

This report complements the analysis conducted in the IGATE-T endline evaluation, completed by the same evaluation team at Limestone Analytics in September 2021.

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Acronyms list

Acronym	Meaning
BL	Baseline
CBE	Community-Based Education
CLC	Community Learning Circles
COVID-19	Coronavirus Disease of 2019
CPC	Child Protection Committee
EE	External evaluator
EL	Endline
FCDO	Foreign Commonwealth and Development Office
FM	Fund manager
GBP	British Pound Sterling
GEC	Girls' education challenge
GEC-T	Girls' education challenge - transition
IGATE-T	Improving Gender Attitudes, Transition, and Education Outcomes
ML	Midline
MoPSE	Ministry of Primary and Secondary Education
MTR	Medium-Term Response
NPV	Net Present Value
OOS	Out of school
VfM	Value for Money
WSD	Whole School Development

Executive summary

This report reviews the Improving Gender Attitudes, Transition, and Education (IGATE-T) project through the lens of "Value for Money" (VfM). We use a narrative approach based on evidence from the IGATE-T endline evaluation to discuss the project's VfM in terms of its economy, efficiency, effectiveness, and equity. This is supplemented with a rigorous cost-benefit analysis (CBA) model to connect the project's input costs to the project's impacts.

We estimate an average cost of approximately £376 per direct beneficiary, or £125 per indirect beneficiary, which is on par or slightly lower than other comparable GEC projects. The project's design emphasized interventions that were easy to scale, which kept the project's input costs low and increased the project's efficiency in converting these inputs to outputs for most intervention channels.

The effectiveness of the project is evident both quantitatively—in its impact on learning outcomes—and qualitatively—in its impact on community support and improved safeguarding outcomes for vulnerable girls in IGATE-T communities. The learning gains achieved are equivalent to 0.56 equivalent years of additional schooling in the absence of the program. In both leadership and learning outcomes, the project's impact is quantitatively larger after midline. Although there is some evidence that some of the interventions and adaptations introduced after midline were particularly effective, the modest impacts observed by midline—and the associated implementation costs needed to set up and establish the interventions—were likely necessary for the larger changes that took place between midline and endline. The interventions targeted towards out of school youth also appear to have been particularly effective in offering marginalized students a way to achieve financial independence and gain more respect within their communities.

The project was effective in adapting its interventions to respond to challenges that girls and communities were facing, including the economic crisis and COVID-19. The project's response to COVID-19 provides a good example of how the project's interventions are also designed with equity in mind. The project used innovative interventions to ensure learners could continue their education during school closures. The project was designed to address the needs and barriers faced by the communities it was implemented in, both before and after the COVID-19 pandemic and school closures.

All of these findings suggest a relatively good value for money in terms of the project's economy, efficiency, effectiveness, and equity. In terms of cost-effectiveness, the CBA model finds that the project's Benefit-Cost Ratio, which represents the return on every British pound invested, is above 1 (1.67). This means its costs are lower than its benefits, and the project had a net positive economic impact. **Overall, these findings indicate that the project offered relatively good value for money overall.**

1. Introduction

The Improving Gender Attitudes, Transition, and Education (IGATE-T) project supported 123,333 girls and boys in 9 districts in Zimbabwe between 2017 and 2021. The project was implemented by World Vision and its implementing partners Care International, SNV, Open University, World Bicycle Relief, Emthonjeni Women's Forum, Udaciza, and the Ministry of Primary and Secondary Education Zimbabwe.

The program consists of four channels of impact, all of which were adapted to respond to the Coronavirus Disease of 2019 (COVID-19) as part of the IGATE-T medium-term response (MTR) plan to support girls and communities during the pandemic and lockdowns.

- **Whole School Development**: Before the COVID-19 pandemic, this included professional development where teachers undertook new classroom activities, supported by teacher development resources and tools, with reflections and experience-sharing as a school team. In response to the pandemic and associated lockdowns, the project adapted these interventions to include engagement on WhatsApp to support schools in designing back-to-school plans, and connecting learners with alternative learning platforms.
- **Community Learning Initiative**: Before the pandemic, this included a Community Based Education (CBE) program targeting learners who were out-of-school to provide literacy, numeracy, financial literacy, and vocational training. In response to the pandemic, this was adapted to support students who could not attend school due to lockdowns in Zimbabwe. This involved the establishment of Community Learning Circles (CLCs) to provide informal instruction to students. Guided by community volunteers and teachers, students were provided with workbooks to continue their education during school closures.
- **Leadership Skills Development**: The IGATE-T project trained mentors and peer leaders to support community learning, identify at-risk learners and help connect them to supportive structures, promote back to school campaigns, and lead small group activities for life skills development and resilience. The program also implemented leadership clubs and camps while schools were operating.
- **Community Champions Network**: These networks involved the establishment of the Child Protection Committees (CPC) and other efforts intended to make community members more aware of barriers girls face. These networks were maintained and expanded during the pandemic, particularly to enhance child protection efforts during lockdowns. This also involved working with peer leaders to identify community issues, and working with volunteers to support community learning.

The project was evaluated to assess the impact of these interventions on learning, transition, sustainability outcomes as well as intermediate outcomes including teacher quality and community attitudes. The endline evaluation of the IGATE-T project was

completed in September 2021 and used a mixed-methods approach. This value for money analysis is based on the findings of that evaluation, which was conducted by the same research team at Limestone Analytics.

1.1 Value for money approach

This report reviews the IGATE-T project through the lens of "Value for Money" (VfM). VfM is a framework that is commonly used across the Foreign Commonwealth and Development Office (FCDO) and other institutions to understand the value of investments. The FCDO government emphasises four dimensions of value for money for analysing projects in the social sector. These are commonly referred to as the "4Es", and refer to the following factors:[1]

- **Economy** - "Minimising the cost of inputs"
- **Efficiency** - "Achieving the best rate of conversion of inputs into outputs"
- **Effectiveness** - "Achieving the best possible result for the level of investment"
- **Equity** - "Services are designed to help people according to their need"

These are related to the inputs, processes, outputs, outcomes, and impacts as described in the following diagram.

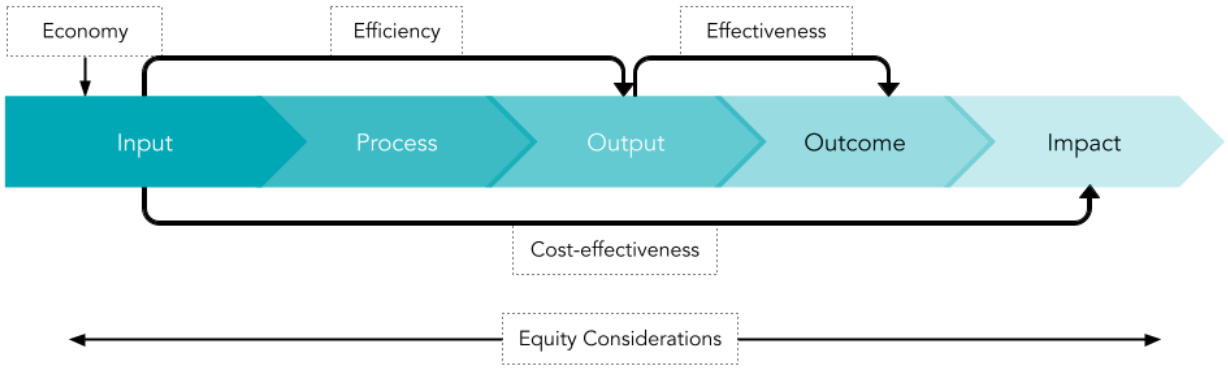

Figure 1.1 VfM framework adopted by FCDO (formerly DFID)

To comment on the overall VfM of IGATE-T, we will first examine each of the 4E categories, which focus on the relative value of the project's inputs and outputs within the context of the project's outcomes. This will be done by taking a narrative approach, as recommended by the FM, which will comment on the relationships between the project's economy,

[1] ICAI. "DFID's Approach to Value for Money in Programme and Portfolio Management." Accessed July 26, 2021. https://icai.stage.govpress.com/html-version/dfids-approach-to-value-for-money-in-programme-and-portfolio-management/.

efficiency, and effectiveness.[2] We also consider equity by focusing on the project's ability to reach those with the greatest need.

[2] Additional analysis taking a "cost-effectiveness" approach, which explicitly models the assumptions between costs and impacts is beyond the scope of this report, but is part of a separate study done for World Vision by Limestone Analytics.

2. Value for money analysis

2.1 Economy

The total cost of the IGATE-T program up until March 2021 was approximately 15.4 million GBP.[3] The majority of this was allocated to the "project delivery" parent category, with local/international fees and accommodations representing the largest cost types. The following figure shows disaggregated costs split into three parent categories.

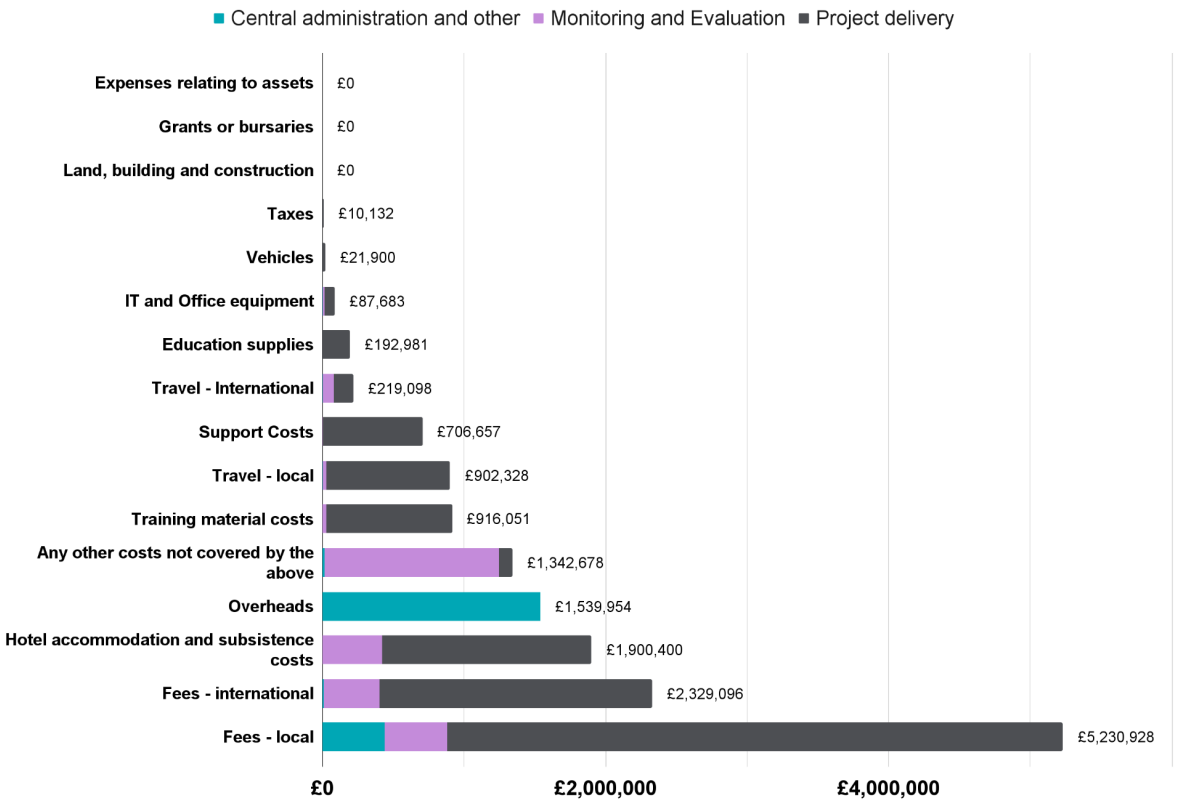

Figure 2.1 IGATE-T Program costs, end of March 2021 (Q16)

The IGATE-T model ensured that learner materials provided by the project were distributed to schools directly through the Whole School Development interventions. This approach was also scalable since once the modules were developed their content could be easily disseminated and did not rely on local experts, which could inflate the costs. In general, the "whole school" approach taken by the project also made these

[3] Costs have been presented up to March 2021 to align with the evaluation timeline. The evaluation data that the outcomes and results come from was collected in April 2021, so this allows for comparability between the costs and outcomes.

interventions more economical since resources could be shared within a school or community learning group. This kept the project's inputs economical from a cost perspective, while also improving the efficiency of its inputs by making it easier for the inputs to be translated into outputs.

The tailored approach adopted for some community learning initiative interventions—particularly the vocational training offered in the CBE program—made it difficult for the project to achieve economies of scale with these inputs. This intervention also had more variation in terms of input quality since the types of vocational training offered and the available infrastructure for these initiatives varied significantly.

While there were challenging tradeoffs in terms of volunteer engagement—including some discontent among some volunteers—overall, the reliance on volunteer inputs helped keep the financial costs of the project's inputs lower across all four intervention groups. While the use of volunteers reduced the required implementation budget, the volunteers' time should still be considered part of the project's overall economic or social costs, and are considered as part of the cost-benefit analysis. The project's emphasis on decentralizing dissemination and engaging local partners like Udaciza also helped the project keep its costs low while still effectively reaching marginalized girls and communities. However, the economic crisis in Zimbabwe meant that some of the project's smaller partners faced capacity issues later in the project.

2.2 Efficiency

Within the current VfM framework, efficiency represents the conversion of inputs into outputs. The following table shows the outputs of the program within the four program areas. This is accompanied by a graph, which shows the cost of each output.

Table 2.1: IGATE-T Outputs, end of Q12

Output	Quantity
Output 1: Whole School Development	
Teachers trained under WSD[4]	1,717
Head-teachers trained	319
Output 2: Community Learning Initiative	
CBE facilitators oriented and trained	1,202
CBE centres established	326
CLCs established	758
Output 3: Leadership Skills Development	
Mentors trained in school	753
School-based clubs	314
Community-based clubs	299
Output 4: Community Champions Network	
CPCs supported	298
CLC volunteers recruited and supported	638
School communities engaged in back to learning work	266
Children supported (direct)	**40,928**
Children supported (direct and indirect)	**123,333**

The project supported 40,928 beneficiaries directly, and as many as 123,333 benefited indirectly through investments in teaching and infrastructure. Since the outputs vary significantly across the four output types, comparing the "cost per output" is not particularly informative at the sub-output level. However, the following graph shows the cost per entire output domain (WSD, Community Learning Initiative, etc). **WSD is the most expensive component in absolute terms; however, it has also been one of the largest programs in terms of the number of outputs (teachers and headteachers trained, and students exposed to teachers with training). Output 3 (Leadership Skills Development) was the least expensive in absolute costs.**

[4] Note that in practice, every teacher in each school participated regardless of their grade.

Output 4 (Community Champions Network) cost slightly more than Leadership Skills. Although there are fewer tangible outputs associated with this output group, this is to be expected given the design of Output 4, which emphasizes advocacy. Output 2, which included the CLCs and CBE program costs, is about three-quarters of the WSD program in terms of absolute cost and was associated with a large number of CBE and CLC centres being established.

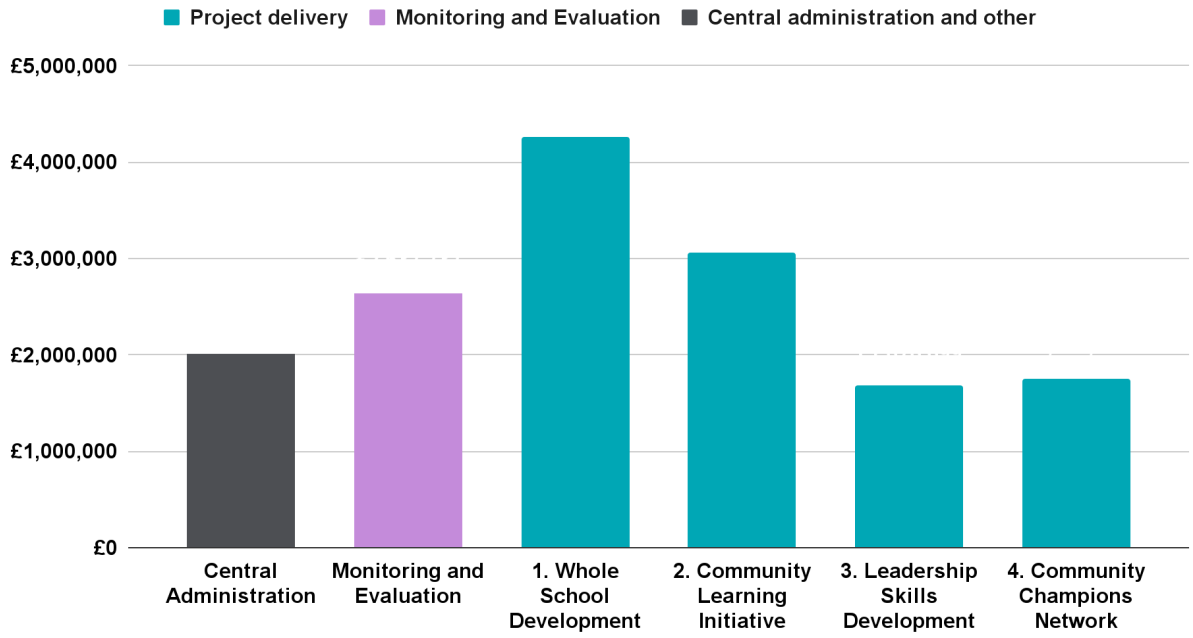

Figure 2.2: Cost per Output Category

Given the disparity in the types of outputs across the four output areas, for efficiency measures, the most relevant output for VfM is the number of beneficiaries. When comparing the total program costs and outputs, **we estimate an average financial cost of approximately £376 per direct beneficiary or £125 per indirect beneficiary.** This cost would be expected to decrease over time as future students benefit from the improved teaching that is expected to continue after the life of the project. Again, these only included direct financial costs, without accounting for social or economic costs. Additional economic costs are considered in section 2.5, which presents the findings from the economic model.

2.3 Effectiveness

This analysis of the project's "effectiveness" compares the total outputs of the program to the impact achieved. We can compare the effects of the program in terms of learning achievements and transition rates to the overall costs of the program. **We find evidence that the IGATE-T intervention had a positive effect (0.174 standard deviations across all**

students between baseline and endline; 0.173 standard deviations between midline and endline) on literacy scores overall.[5] This is significant for the youngest girls, as shown in the following figure. Changes in numeracy are not significant between baseline to endline, but significant positive changes in numeracy were observed between midline to endline. At both midline and endline, **the largest gains are coming from the most foundational skills**. The results are consistent with the project's theory of change and design, which has focused heavily on improving foundational literacy and numeracy skills.

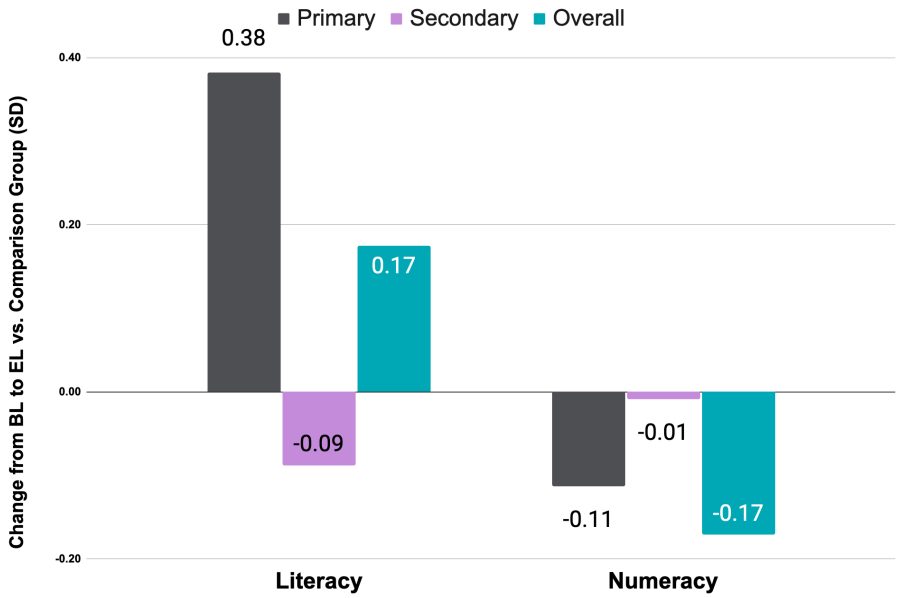

Figure 2.3: Test Score Changes, Baseline (BL) to Endline (EL)

In qualitative interviews, learners, community members, headteachers, and caregivers attributed these improved learning outcomes for the participants to the CLCs and training offered through the WSD programs. For example, in the endline evaluation for the IGATE-T project, it was also observed that CLC participants have higher test scores than non-participants in the treatment group. This cannot be interpreted as causal since learners may select into the CLCs, however, when we consider this within the context of the broader qualitative findings, this is suggestive evidence that the CLCs and WSD training was effective in improving learning outcomes. Although these are the most expensive outputs, they are also the most strongly associated with learning outcomes.[6]

[5] Literacy impacts were only statistically significant for the midline to endline findings for the overall sample.
[6] Note it is not possible to attribute causality to these individual outputs since all of the treatments are implemented simultaneously, in all locations. However, quantitative and qualitative evidence suggests these specific components being particularly important for the learning outcomes that were achieved.

We do not find evidence that the project had a significant impact on transition, as defined by in-school girls remaining in school. Out-of-school girls and young women did have meaningful positive transition outcomes if we consider their skills, income, and resilience. The test score changes are shown in the following figure.

The IGATE-T interventions were effective in expanding community capacity to support learning. While the project acknowledges that this community-centred approach may have some quality tradeoffs, the decentralized network that IGATE-T has developed means that educators are now closer in proximity and better connected to the girls, and are therefore aware of what would be contextually relevant. These local role models and educators are in a better position to find what works for girls in their communities. Although some volunteers were frustrated by the lack of direct or in-kind compensation for their time (as discussed in the Endline Evaluation report and CBE Study), the project did engage hundreds of volunteers, many of whom participated in more than one intervention. The project also maintained a high retention rate among its volunteers, which indicates the project's efforts were effective in engaging community members and encouraging community support of girls' education. This was one of the project's intended outcomes and the project's reported show of volunteer support is an indication that the project was effective in this area.

Note that quantitative data is available on learning only for the in-school beneficiaries and not for the OOS sample; however, qualitative reports also suggest that this was effective in improving literacy and numeracy outcomes for some OOS learners.

Another important consideration when it comes to the effectiveness of the interventions in contributing to the overall changes observed in learning is that the "whole school" approach was integrated with the community learning initiatives so the participants could be exposed to these activities in several environments. This increases the likelihood that the lessons are absorbed by students. According to case studies that the project and its partners conducted as part of ongoing monitoring efforts, this approach was effective in improving learning outcomes.

For OOS students, **the CBE program (part of output 2) has been particularly effective. By providing girls with a path to financial independence, the CBE program is expected to have a lasting impact on its participants.** For example, after participating, the majority of participants earn more income and are better able to manage their finances following a CBE program. The effectiveness of this particular set of interventions is evident in the demand for the intervention. There was very high demand for the vocational training, as well as the financial literacy training. The CBE model has been particularly effective for older girls and mothers, who tended to use the earnings from their IGAs to support their households to pay for children's school fees.

The project also had a significant impact on youth leadership scores between baseline and endline of about 1.0 points, and 1.5 points between midline and endline.[7] According to the theory of change, leadership clubs would be the primary contributors to this. These were the least expensive outputs (likely because of the model's decentralized and module delivery approach). However, after the midline and COVID-19 pandemic began, the project shifted its focus to peer leadership and actionable ways girls can apply their leadership competencies (such as in the CLCs).

In both leadership and learning outcomes, we find that the project's impact is quantitatively larger after midline. The post-midline evaluation period also coincided with COVID-19 and associated lockdowns. Although there is some evidence that some of the interventions and adaptations introduced after midline—like the CLCs—were particularly effective, we also find significant evidence that the modest impacts and changes observed at midline were necessary for the larger changes that took place between midline and endline. For example, at midline it was evident that those who had been struggling on learning assessments the most at baseline were more likely to have better transition outcomes at midline. We also find at endline that the foundational skills improvements observed at midline allowed for greater learning gains by endline. At endline, we observed that learners who had been struggling most at baseline saw the greatest improvements in test scores by endline (as shown in the following figure) and that this was the case for the IGATE-T treatment group but not the counterfactual group.

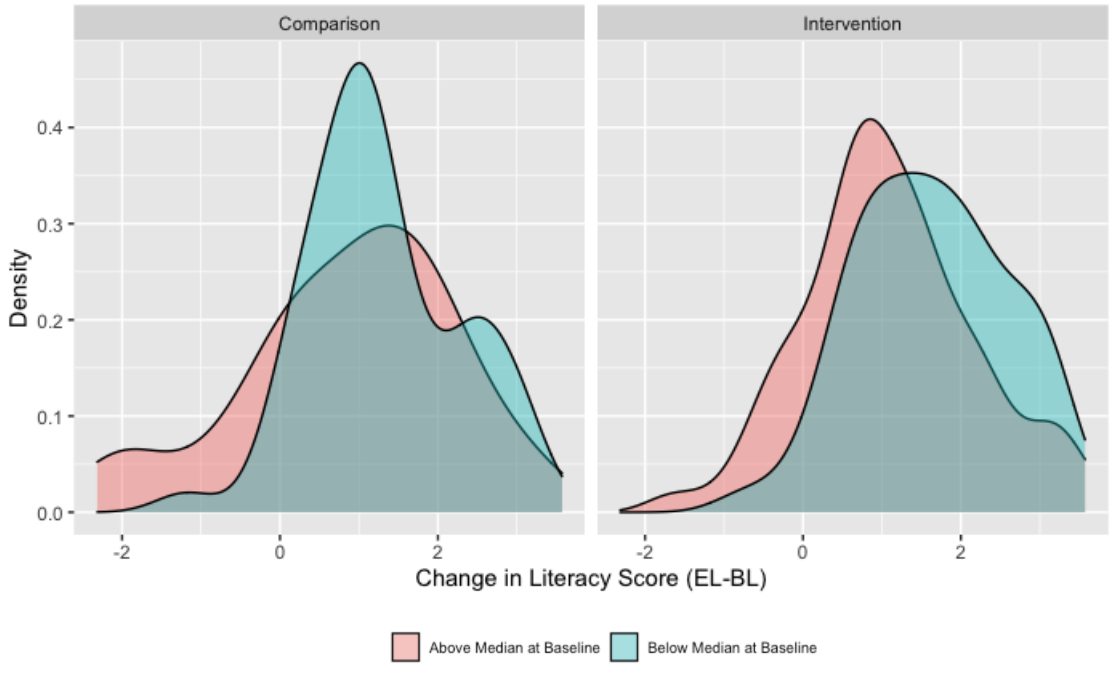

Figure 2.4: Distribution of literacy score changes based on baseline literacy scores

[7] This is based on a difference in differences analysis that compares intervention and comparison scores over time.

This "snowball" effect in impacts is important to be aware of when comparing the effectiveness of the program across time. It is evident that the investments that took place before midline provided a foundation to facilitate greater impacts over the entire project. This is consistent with the project's implementation model, which also emphasized decentralized, modular approaches that involved high set up costs—for example, setting up the WSD modules, developing the Adolescent Development Manual, establishing relationships with communities—but then had lower costs once these initial efforts were established. This is evident in the implementation cost timeline as well, as shown in the following figure.

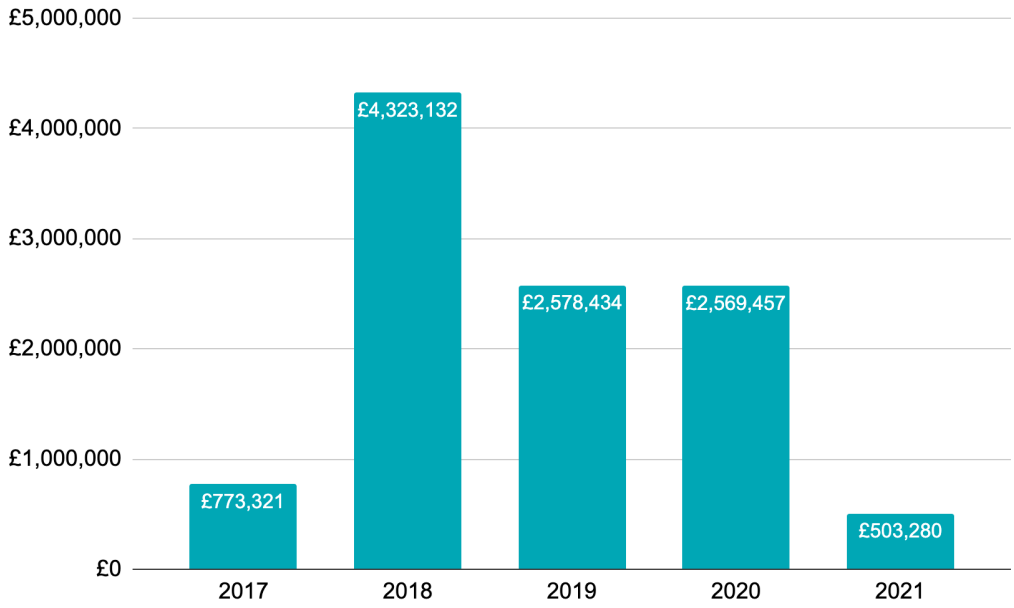

Figure 2.5: Project implementation costs per year

One other indicator of the project's effectiveness is the Ministry of Primary and Secondary Education's (MoPSE) interest in continuing IGATE-T interventions after the project ends. The MoPSE has recently secured additional resources from the FCDO to continue these interventions. The Ministry of Youth is also in the process of continuing the CBE curriculum in future programs and offering a bespoke certification to students who complete the CBE modules. The IGATE-T Catch-up Teacher Guide, the Catch-up Community Learning Champions Guide, and the project's Reading and Numeracy Cards are now going to every school in the country. The TPD modules are also now included in the National Catch-Up Implementation Framework.

2.3.1 Equivalent years of schooling

Based on the Girls' Education Challenge VfM guidelines, we use the findings from the endline evaluation to estimate the equivalent years of schooling gain for the treatment group by calculating the average annual literacy gains for the control group over the life of the project. As seen in the table below, literacy gains were roughly 0.31 standard units in the control group annually (or 1.26 over 4 years) which implies that the 0.17 unit improvement observed in the treatment group would equate to nearly 0.56 equivalent years of additional schooling in the absence of the program.

Table 2.2: Effectiveness Estimates for IGATE-T

Metric	Value
4-year control group literacy score change	**+1.26**
1-year control group literacy score change	**+0.31**
4-year treatment group minus control group literacy score change (DiD)	**+0.174**
4-year treatment effect (EYOS)	**+0.56**
Project cost per direct/indirect beneficiary (£)	**£376/£125**
Project cost per direct/indirect beneficiary ($)	**$508/$168**
EYOS per $100 spent on direct beneficiaries	**+0.11**

Overall, this is consistent with the broader finding that the project was effective in adapting its interventions to respond to challenges that girls and communities were facing, including the economic crisis and COVID-19. Despite not having any significant impact on transition rates, the magnitude of learning gains may be sufficient for the program to demonstrate good VfM. Improvement in literacy achieved by the program is expected to benefit beneficiaries through higher lifetime earnings, as reported in studies of returns to education.[8] The project's adaptability, in addition to its emphasis on participatory methods of engagement—particularly when it came to establishing community support networks—appears to have been essential in its ability to effectively improve learning and community support.

2.4 Equity

IGATE-T has reached some of the world's most marginalized children. Nearly a quarter of IGATE-T students live without either of their parents, and more than two-thirds of households report difficulty in affording girls education. The majority of households report

[8] Snilstveit et al. (3ie), "The Impact of education programmes on learning and school participation in LMICs", May 2019

being unable to meet basic needs, and roughly 40% of students report often going to sleep hungry. This is in line with the project's theory of change, suggesting IGATE-T succeeded in reaching significant marginalized populations.

The interventions have been specifically tailored to address the needs and barriers faced by the project communities. The project has been efficient in improving education as it facilitated community-based initiatives to improve the learning for girls in its own communities through both the CLC and CBE models.[9] This provided more access to a group that is typically hard to reach. By endline 41% of the IGATE-T sample came from Apostolic households. Girls in these communities face significant barriers to education, and the project's emphasis on using community-led initiatives has allowed it to make significant progress in reaching girls that would otherwise be difficult to reach.

By focusing on foundational literacy and numeracy skills development, the project's WSD and community learning initiatives have successfully improved overall literacy and numeracy skills. Since baseline, we also find that the greatest learning gains have come from those who were the poorest performers at baseline on literacy tests (as shown in Figure 2.4, above).

The CBE program also provided essential financial literacy and vocational skills to students who would most benefit from such training. Evidence from the CBE study and endline evaluation also suggests that particularly vulnerable groups such as mothers benefited most from this program. **By providing OOS youth with tangible skills to begin income-generating activities the project has provided a particularly marginalized group (OOS youth) with a meaningful way to achieve financial independence, as well as important life skills.**

The project's response to COVID-19 provides another example of how the project's intervention approach allowed it to reach the most vulnerable children. **Although many responses to COVID-19 emphasized online learning, IGATE-T was quick to respond using more "low-tech" approaches including WhatsApp and the CLCs.** These were more accessible to learners in IGATE-T communities, where access to more formal online learning options was limited and allowed students in these areas to stay engaged with their education during a particularly vulnerable time. Many learners that accessed CLCs would otherwise have no alternative to engage in learning due to limited access to services such as private tutoring. In the endline report, the outcome harvest found that for some learners this response kept some vulnerable students from dropping out because they were more confident in their abilities when schools reopened.

[9] For example, by working with Udaciza, an organization that is well connected within these communities, the project could work with the Apostolic community.

2.5 Cost-Effectiveness

This section presents the findings from an economic model developed to assess the economic feasibility of the IGATE-T interventions. The approach taken here, which is consistent with the cost-effectiveness approach from the VfM framework presented in Figure 1.1, uses rigorous cost-benefit analysis (CBA) modelling techniques to connect the direct and indirect costs of the project's inputs to the project's *impacts*. The benefits (impacts) included in this model are based on the project's theory of change and the findings of the IGATE-T endline impact evaluation results. In this case, the benefits focus on the increased lifetime earnings associated with improvements in learning.

Based on the theory of change, other outcomes—like improvements in teaching quality/attendance—are *channels* that lead to learning outcomes so explicitly modelling their impacts might lead to double-counting some of the benefits. Other benefits, such as decreased chore burdens, are other possible benefits. These could be monetized by estimating the time savings associated with this. However, in this case, these would not represent a time savings in an economic sense since these chores are being shifted to other individuals. This would make them a "transfer", which has no economic value.[10]

Other "time savings" benefits have also been assessed. For example, if the project decreased commute times from increased bicycle use then we could monetize the value of the time saved as an additional benefit. However, we do not have any evidence that the project had an impact on commute times so this has not been included.

The economic model takes a conservative approach, focusing on quantifiable impacts. The effectiveness and efficiency sections highlight possible additional benefits (eg. improvements in well being from improved youth leadership and reduced gender-based violence) which have not been explicitly modelled to maintain a defensible CBA methodology. For this reason, our model provides a conservative estimation of the net benefits of the program and should be viewed as just one piece of the overall project's value for money. As discussed in the CBE report, to the extent that the IGATE and IGATE-T program highlighted the benefits and need for education reform and contributed to the passage of the Education Reform Act of 2020, the benefits of the program may also be more extensive than can be measured through an analysis of the direct beneficiaries of the program alone.

The model also includes an estimate of the "opportunity costs" associated with time contributed by volunteers, evaluation participants, and the program participants to

[10] It is possible that the shift in chore burdens could reflect in more equitable outcomes for students. However, without evidence about who chores are shifting to, this analysis does not make this assumption.

account for the value of the time they spent contributing to the project. However, these costs do not meaningfully change the results of the model.

2.5.1 Economic model

The full CBA specification has been included in Annex 1, with the model itself being included as an accompanying attachment to this report.

Benefit 1: Increased lifetime earnings from improvements in learning

IGATE-T supported 40,928 direct and 123,333 indirect beneficiaries in rural Zimbabwe between 2018 and 2021. The project consists of four channels of interventions, all designed to remove barriers to girls' education and ultimately improve literacy, numeracy, and transition for these girls.

Improved learning outcomes are estimated in terms of test scores improvements for each beneficiary. We assume that the improved learning outcomes observed in the IGATE-T endline evaluation are representative of the impact that the IGATE-T program has had on all beneficiaries. This improvement was measured as the change in literacy test scores.

We convert the estimated improvements in test scores to equivalent years of schooling (EYOS) using the methodology put forth in the Girls' Education Challenge Value for Money Guidelines. We then convert years of schooling to expected lifetime earnings (LTE) via a Mincerian estimate of returns to schooling in Zimbabwe conducted by Kwenda and Ntuli (2014), which is based on wage profiles in Zimbabwe between 1995 and 2003. This is expected to be a conservative estimate of wage premiums from an extra year of education. To use more recent estimates for uneducated wages, the baseline wage estimate (ie. uneducated wage estimate) comes from a USAID (2016) analysis of wage rates in different sectors in Zimbabwe.

Cost 1: Implementation costs

The IGATE-T intervention was implemented over four years between 2017 and 2021. Each year, the project incurred direct costs, as well as indirect costs. These indirect costs included monitoring and evaluation as well as central administration costs.

Cost 2: Opportunity costs of volunteer time

Implementation of the IGATE-T interventions depends on the inputs provided by volunteers. Although these volunteers are not paid for the time they spend volunteering for the project, the value of their time can be accounted for by applying the average daily wage for Zimbabweans working outside the public sector, to the total number of days volunteers have dedicated to the IGATE-T project.

Cost 3: Opportunity costs of evaluated individuals' time

Evaluation of the IGATE-T interventions depends on qualitative and data collected by thousands of individuals. Although these individuals are not paid for the time they spend responding to the evaluation questions or interviews, the value of their time can be accounted for by applying the average hourly wage for Zimbabweans working outside the public sector to the total number of hours respondents have spent answering IGATE-T surveys or participating in interviews.

2.5.2 Economic model findings

Overall, the model shows that the present value of the benefits for direct beneficiaries exceeds the present value of the costs. In economic analysis, this is typically consolidated by the project's "net present value" (NPV), which is the difference between the present value of the benefits and the present value of the costs. Present values are calculated by discounting future costs or benefits by a constant discount rate, which in our base scenario is equal to 10%. When the NPV falls below zero, it is implied that the benefits estimated in the model are less than the total sum of costs measured for the project. The NPV for the IGATE-T project is estimated to be 7,153,808 GBP.[11]

As shown in the following table and figure, the costs are predominantly implementation costs, with the opportunity costs of volunteers and evaluation comprising less than 1% of the total costs.

Table 2.3. CBA Model Outputs

Estimate	Value	Unit
B1 Increased Lifetime Earnings from Improvements in Learning	£17,754,336	GBP
C1 Implementation Costs	£10,516,986	GBP
C2 Opportunity costs of volunteer time	£53,381	GBP
C3 Opportunity costs of evaluation	£30,161	GBP
Project NPV	7,153,808	GBP
Project BCR	1.67	#

[11] An alternative investment criteria is the Benefit Cost Ratio (BCR) which represents the present value of benefits as a proportion of the present value of the project's cost. A BCR above one suggests the value of the benefits are greater than the costs. In this case, the BCR is 1.67, which leads to the same conclusion that could be reached through the NPV.

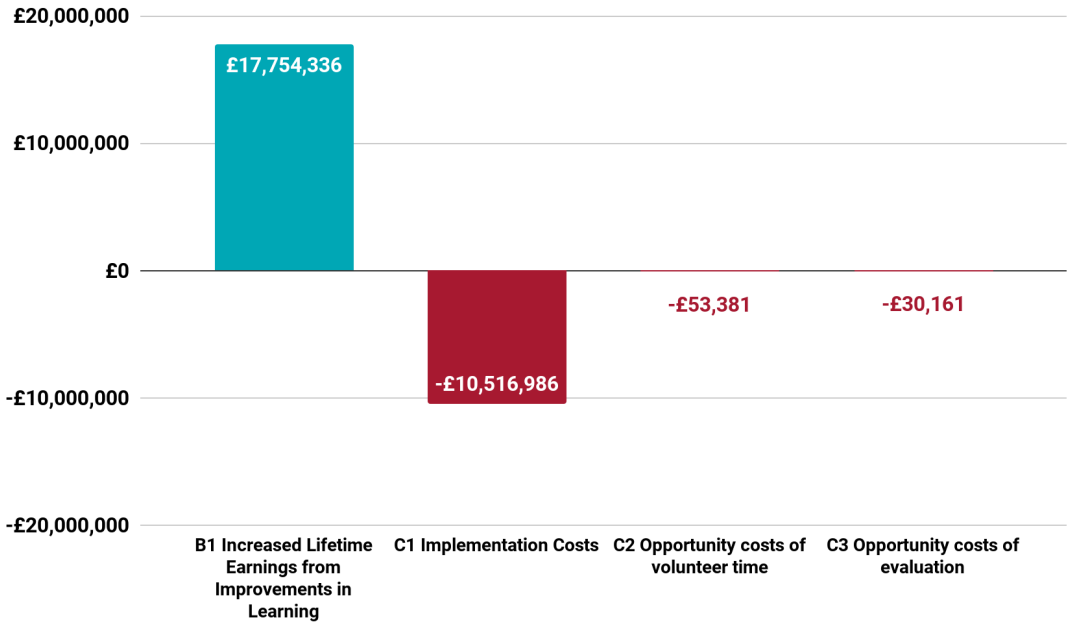

Figure 2.6: IGATE-T benefits and costs

This CBA model takes a conservative approach to estimating the cost-effectiveness of the IGATE-T project, focusing on benefits that can be quantified using rigorous evaluation methods. For this reason, the default model results are based on estimates using the number of direct beneficiaries, rather than the number of indirect beneficiaries. The impact evaluation did not include members from non-cohort grades that are included in the indirect beneficiary counts, meaning the impact evaluation provides an estimate of the impact of the project on *direct* beneficiaries. Given the nature of the program, it is likely there is also an impact on indirect beneficiaries as well, so this has been included in the sensitivity analysis.

Benefits such as improved safeguarding networks and improved sense of empowerment have not been included in the model, due to a lack of quantifiable data or evidence to show the project's impact on these types of benefits in the project's evaluation. To include these types of benefits in a cost-effectiveness analysis, future evaluations should identify metrics that could be measured to show impact on these types of impacts. Unlike cost-benefit analysis methods, cost-effectiveness approaches can report the effectiveness in reaching non-monetized outcomes, which may be relevant for outcomes such as safeguarding and developing a sense of empowerment, which are not typically monetized in the economic analysis literature. **When we consider the findings of the economic model within the greater value for money analysis, it seems likely that the benefits of the IGATE-T project are larger than what can be monetized in the economic model.**

2.5.3 Sensitivity analysis

To determine the assumptions most critical to the benefit stream, the team conducted some basic sensitivity analyses, which are reported in the tables below. The tables contain the discounted Net Present Value (NPV) and Benefit-Cost Ratios (BCR) when alternative input values are assumed. The alternative scenarios are based on alternative evidence sources that could be used. For example, the range assumed for the wage premium is based on alternative measures of estimated wage premiums in Zimbabwe. The value used in the base model ("current scenario") reflects the estimate that is most similar to the IGATE-T beneficiaries.

Table 2.4. Sensitivity of NPV and BCR to expected wage premium

Scenario	Estimated wage premium from additional year of schooling	Project NPV (£)	Benefit Cost Ratio
Current	3.4%	7,153,808	1.67
Alternative 1	2.7%	3,498,504	1.33
Alternative 2	4.8%	14,464,417	2.36
Alternative 3	6.9%	25,430,331	3.40
Alternative 4	9.2%	37,440,617	4.53

The results are sensitive to the estimated wage premium and the increase in EYOS per SD improvement on test scores with both NPV and BCR varying substantially. The EYOS alternatives reflect the confidence interval of estimates from the IGATE-T interventions, where the lower bound of the estimate predicts there is exactly zero impact on literacy test scores.

Table 2.5. Sensitivity of NPV and BCR to increases in EYOS

Scenario	Increase in EYOS per one SD improvement on standardized test	Project NPV (£)	Benefit Cost Ratio
Current	0.56	7,153,808	1.67
Alternative 1	0	-10,600,528	0
Alternative 2	0.19	-4,576,735	0.57
Alternative 3	0.37	1,130,016	1.11
Alternative 4	0.77	13,811,684	2.30

The monthly wage does affect the results but in a much smaller magnitude than the other inputs.

Table 2.6. Sensitivity of NPV and BCR to monthly wage

Scenario	Monthly Wage (USD)	Project NPV (£)	Benefit-Cost Ratio
Current	340	7,153,808	1.67
Alternative 1	250	2,454,131	1.23
Alternative 2	393	9,921,396	1.94
Alternative 3	446	12,688,984	2.20
Alternative 4	500	15,508,790	2.46

The discount rate has a significant effect on the results which is the result of future lifetime earnings being heavily influenced by compounding the discount rate over a long time.

Table 2.7. Sensitivity of NPV and BCR to discount rate

Scenario	Monthly Wage (USD)	Project NPV (£)	Benefit-Cost Ratio
Current	10%	7,153,808	1.67
Alternative 1	3%	83,482,737	8.03
Alternative 2	5%	43,457,661	4.79
Alternative 3	8%	15,925,791	2.46
Alternative 4	12%	1,938,134	1.19

The Model outputs are sensitive to the total number of beneficiaries in a linear fashion. If we expect all 123,333 indirect beneficiaries to have benefited as much as the direct 40,928 beneficiaries (Alternative 4 in the table below), the benefits modelled are more than five times greater than the costs.

Table 2.8. Sensitivity of NPV and BCR to number of beneficiaries receiving increased wages

Scenario	Beneficiary Count	Project NPV (£)	Benefit-Cost Ratio
Current	40,928	7,153,808	1.67
Alternative 1	20,000	-1,924,641	0.82
Alternative 2	60,000	15,427,134	2.46
Alternative 3	100,000	32,778,909	4.09
Alternative 4	123,333	42,900,634	5.05

3. Conclusions

IGATE-T supported 40,928 direct and 123,333 indirect beneficiaries in rural Zimbabwe between 2018 and 2021. The project consists of four channels of interventions, all designed to remove barriers to girls' education and ultimately improve literacy, numeracy, and transition for these girls. This report reviews the IGATE-T project through a VFM lens. We use a narrative approach based on evidence from the IGATE-T endline evaluation to discuss the project's VfM in terms of its economy, efficiency, effectiveness, and equity. This narrative is supplemented with rigorous CBA modelling techniques to connect the direct and indirect costs of the project's inputs to the project's impacts.

Overall, the project's "whole-school" approach, which emphasized the creation of easily scalable modules and materials, improved the **economy** and **efficiency** of its inputs and outputs, respectively. The **effectiveness** of the project is evident both quantitatively—in its impact on learning outcomes—and qualitatively—in its impact on community support and increased safeguarding outcomes for vulnerable girls in IGATE-T communities. In terms of **equity**, the project's interventions were designed to address the need and barriers faced by the communities it works in, both before and after the COVID-19 pandemic and school closures. This has allowed the project to reach some of the world's most marginalized children, and make improvements where they are most needed—for example, in its targeting of foundational skills and its COVID-19 response, which prioritized low-tech approaches to reach learners who did not have access to more the common online learning options. All of these findings suggest a relatively good value for money in terms of the project's economy, efficiency, effectiveness, and equity. **We estimate an average cost of approximately £376 per direct beneficiary, or £125 per indirect beneficiary, which is on par or lower than other comparable GEC projects.**

In terms of cost-effectiveness, the CBA model developed for this analysis finds that the project's Benefit-Cost Ratio, which represents the present value of benefits as a proportion of the present value of the project's cost, is greater than 1 (1.67). This means the overall project costs are less than the project's benefits when we include the social and economic costs in the analysis of the project's value for money. The CBA model takes a conservative approach to estimating the cost-effectiveness of the IGATE-T project, focusing on benefits that can be quantified using rigorous evaluation methods, and assuming benefits only accrue to the direct beneficiaries in the base scenario. **When we consider the findings within the context of the other VfM findings, this seems to suggest that the project offered good value for money compared to comparable GEC projects.**

Annex 1: CBA Model Specification

B1 Increased Lifetime Earnings from Improvements in Learning

Narrative

IGATE-T supported 40,928 direct and 123,333 indirect beneficiaries in rural Zimbabwe between 2018 and 2021. The project consists of four channels of interventions, all designed to remove barriers to girls' education and ultimately improve literacy, numeracy, and transition for these girls.

Improved learning outcomes are estimated in terms of test scores improvements for each beneficiary. We assume that the improved learning outcomes observed in the IGATE-T endline evaluation are representative of the impact that the IGATE-T program has had on all beneficiaries. This improvement was measured as the change in literacy test scores.

We convert the estimated improvements in test scores to equivalent years of schooling (EYOS) using the methodology put forth in the Girls' Education Challenge Value for Money Guidelines. We then convert years of schooling to expected lifetime earnings (LTE) via a Mincerian estimate of returns to schooling in Zimbabwe conducted by Kwenda and Ntuli (2014), which is based on wage profiles in Zimbabwe between 1995 and 2003. This is expected to be a conservative estimate of wage premiums from an extra year of education. To use more recent estimates for uneducated wages, the baseline wage estimate (ie. uneducated wage estimate) comes from a USAID (2016) analysis of wage rates in different sectors in Zimbabwe.

Timeframe

Benefits accrue year 5 (Flag $FB1_t$)

Inputs		Estimate	Unit	Source of verification
β	Increase in EYOS per one SD improvement on standardized test	0.56	EYOS	IGATE-T impact evaluation results
B	Number of IGATE-T beneficiaries	40,928 (direct) or 123,333 (indirect)	#	IGATE-T project estimates
M	Monthly wage	340	USD	USAID 2016
Ret	Estimated wage premium from an additional year of schooling	3.4%	%	Kwenda and Ntuli (2014)
g	Average historical annual growth rate in Zimbabwe	2.70%	%	World Bank
n	Number of years worked with wage premium	42	Years	Difference between age of graduation and age 60.
d	Delay in benefit accumulation	6	Years	IGATE-T Endline Evaluation (difference between average age at baseline and age 18)

$Months$	Number of working months per year	12	#	Author assumption
r	Discount rate	12%	%	Author assumption
$FX^{GBP/USD}{}_{2017}$	2017 GBP/USD exchange rate	0.78	#	Bloomberg

Calculation

Benefit:

$$B1_t = B \times \beta \times \gamma_t$$

Where:

Change in discounted lifetime earnings per additional year of schooling in year t:

$$\gamma_t = \frac{NPV(r, LTE_{t+d}{:}LTE_{t+d+n})}{(1+r)^{d-1}}$$

Lifetime Earnings Premium Projections

$$LTE_t = W_t \times Ret$$

Wage Growth Estimates

$$W_t = W_{t-1} \times (1 + g)$$

2017 Wage Estimate

$$W_0 = M \times FX^{GBP/USD}{}_{2017} \times Months$$

C1 Implementation costs

Narrative

The IGATE-T intervention was implemented over four years between 2017 and 2021. Each year, the project incurred direct costs, as well as indirect costs. These indirect costs included monitoring and evaluation as well as central administration costs. The average CBE costs are removed from the existing costs since CBE benefits are not included in the model.

Timeframe

Costs accrue during implementation period (Flag $FImp_t$)

Inputs		Dimensions	Estimate	Unit	Source of verification
D_t	Project implementation costs	Time	-	GBP	IGATE-T Expenditure Report
ME_t	Monitoring and evaluation costs	Time	-	GBP	IGATE-T Expenditure Report
A_t	Central administration and other costs	Time	-	GBP	IGATE-T Expenditure Report
CBE	CBE costs	-	=	GBP	Based on discussions with project staff

Calculation

Cost: $C1_t = (D_t + ME_t + A_t) - \frac{CBE}{5}$

C2 Opportunity costs of volunteer time

Narrative

Implementation of the IGATE-T interventions depends on the inputs provided by volunteers. Although these volunteers are not paid for the time they spend volunteering for the project, the value of their time can be accounted for by applying the average daily wage for Zimbabweans working outside the public sector, to the total number of days volunteers have dedicated to the IGATE-T project.

Timeframe

Costs accrue during implementation period (Flag $FImp_t$)

Inputs		Dimensions	Estimate	Unit	Source of verification
V	Number of volunteer days	-	1,397	#	IGATE-T project
M	Monthly wage	-	340	USD	USAID 2016
D	Monthly workdays	-	22	#	Author assumption
$FX^{GBP/USD}$	2017 GBP/USD exchange rate	-	0.78	#	Bloomberg

Calculation

Cost: $C2_t = V \times \frac{M}{D} \times FX^{GBP/USD_{2017}}$

C3 Opportunity costs of evaluated individuals' time

Narrative

Evaluation of the IGATE-T interventions depends on qualitative and data collected by thousands of individuals. Although these individuals are not paid for the time they spend responding to the evaluation questions or interviews, the value of their time can be accounted for by applying the average hourly wage for Zimbabweans working outside the public sector to the total number of hours respondents have spent answering IGATE-T surveys or participating in interviews.

Timeframe

Costs accrue during implementation period (Flag $FImp_t$)

Inputs		Dimensions	Estimate	Unit	Source of verification
E_t	Total person hours spent in interviews in period t	Time	-	#	IGATE-T evaluation
W	Hourly wage for unskilled labour in Zimbabwe	-	1.93	USD	USAID 2016
$FX^{GBP/USD}$	2017 GBP/USD exchange rate	-	0.78	#	Bloomberg

Calculation

Cost: $C4_t = E_t \times W \times FX^{GBP/USD_{2017}}$

Timeframe (Flag)

Narrative

The model uses flags to control the timing of cost and benefit accrual.

The timing assumptions for the costs and benefits are as follows:

Inputs		Estimate	Unit
Y_0	Start year	2017	Year
Imp^B	Implementation period start year	2018	Year
Imp^L	Implementation period length	4	Years
Vol^B	Volunteer period start year	2018	Year
Vol^L	Volunteer period length	4	Years
$B1^B$	Benefits accrual start year	2021	Year
$B1^L$	Benefits length	1	Years
Y_{BL}	Baseline evaluation year	2017	Year
Y_{ML}	Midline evaluation year	2019	Year
Y_{EL}	Endline evaluation year	2021	Year

Calculation

Periods:

t is a time index corresponding to the number of complete years elapsed since the start year

$$Y_t = Y_0 + t$$

Flags:

Benefit 1 Flag

$$FB1_t = if(Y_t >= B1^B, if(Y_t < (B1^B + B1^L), 1, 0), 0)$$

Implementation Flag

$$FImp_t = if(Y_t >= Imp^B, if(Y_t < (Imp^B + Imp^L), 1, 0), 0)$$

Sources

Kwenda, Prudence, and Miracle Ntuli. "Private returns to education, migration and development policies: The case of Zimbabwe." African Development Review 26, no. 4 (2014): 535-548.

Nathan Associates Inc. “Wage Structure and Labour Costs in Zimbabwe: An Analysis of Flexibility, Competitiveness, and Equity.” USAID Strategic Economic Research and Analysis (2016)