



Baseline Report – Strategic Partnerships Window

Final Version

Evaluation Manager Girls' Education Challenge Fund -
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Evaluation Manager Girls' Education Challenge Fund
Final Report

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Evaluation Manager Girls' Education Challenge Fund
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Partners

- RTI International
- Opinion Research Business

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- Quality management
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- Performance Management and Monitoring and Evaluation (M&E)

Ben Ward, Project Director

Signature:

A handwritten signature in blue ink, appearing to read "Ben Ward", written over a horizontal line.



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Abbreviations and Acronyms

BL Report	Baseline Report
DFID	Department for International Development
EGMA	Early Grade Math Assessment
EGRA	Early Grade Reading Assessment
EM	Evaluation Manager
ENGINE	Educating Nigerian Girls in New Enterprises
FCT	Federal Capital Territory
FGM	Female Genital Mutilation
FM	Fund Manager
GEC	Girls' Education Challenge
ICT	Information and Communications Technology
IW	Innovation Window
JSS	Junior Secondary School
LGAs	Local Government Areas
M&E	Monitoring and Evaluation
MDP	Multidimensional Poverty
MDPI	Multidimensional Poverty Index
OSG	Out-of-School Girls
ISG	In-School Girls
ORB	Opinion Research Business
PTA	Parent-Teacher Association
PwC	PricewaterhouseCoopers
RCT	Randomised Controlled Trial
RTI	RTI International
SCW	Step Change Window
SPW	Strategic Partnerships Window
SSS	Senior Secondary School
ToC	Theory of Change
US	United States

ABBREVIATIONS AND ACRONYMS

USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WPM	Words per minute

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Executive Summary

Background to the GEC Strategic Partnerships Window

In 2012, the Department for International Development (DFID) launched the £355 million Girls' Education Challenge Fund (GEC), which intends to support up to a million of the world's most marginalised girls to improve their lives through education. The GEC will provide this support through three separate funding windows: (1) the Step Change Window (SCW); (2) the Innovation Window (IW); and (3) the Strategic Partnerships Window (SPW).

The Strategic Partnerships Window (SPW) contributes to the same high level GEC outcomes of improving attendance in education and learning for marginalised girls. But it has a specific and distinct focus on achieving these outcomes by building strategic partnerships with the private sector. The SPW was designed to identify and develop partnerships with the private sector that combine the social and commercial business cases for delivering sustainable education outcomes for marginalised girls.

The first phase of the SPW was launched in October 2013. There are four SPW projects: (1) Coca-Cola Company's Educating Nigerian Girls in New Enterprises (ENGINE) programme covering four states in Nigeria; (2) Discovery Communications' Girls project working in schools in Ghana, Nigeria and Kenya; (3) Avanti Communications' i-Mlango project working across four counties in Kenya; and (4) Ericsson's Connect to Learn project in Burma.

This baseline report covers the first three projects that were able to provide baseline reports and data for us to synthesise and analyse at the window level. Ericsson had not yet completed their baseline data collection when this report was written. However, Ericsson will be included in any relevant actions arising from recommendations proposed in this report.

Purpose of the SPW baseline report

DFID has appointed Coffey, in partnership with RTI International and ORB as the Evaluation Manager (EM) of the GEC. The purpose of this baseline report is to benchmark and capture, at the programme level, the scale and nature of educational marginalisation before activities were implemented. We have assessed current education outcomes of girls targeted by the three SPW projects with respect to attendance, enrolment, retention and learning outcomes. We have also assessed and reviewed: the extent to which SPW projects have been successful in targeting educationally marginalised girls; the barriers found to affect girls' education; the evidence that projects have been effectively targeting the marginalisation factors that they found; and their capacity to evidence and evaluate these effects.

Research approach

For the SPW, our evaluation design primarily relies on the baseline research and analysis conducted and reported by the SPW partners. While SPW partners were developing their M&E frameworks, we provided technical support and guidance to ensure that projects' data collection activities were fit for purpose, representative and proportionate, and to enable a meta-analysis and synthesis of the findings at the SPW level.

The SPW is different from the other two GEC windows. SPW partners had greater flexibility in the design of their M&E frameworks. As a result, we have not been able to analyse outcomes and barriers in the same way as projects in other GEC windows. The subsequent higher level of inconsistency and gaps in evidence reported should not be systematically interpreted as a flaw but more as result of the flexibility provided to projects in this window.

Three sources of data have mainly informed our baseline analysis: (1) project baseline reports; (2) outcome spreadsheets; and (3) project datasets. We systematically extracted data and information from the project baseline reports to enable us to conduct a synthesis of their findings to respond to the baseline research questions that we set. This was complemented by a reanalysis of quantitative data submitted by each of the partners. The reanalysis sought to cross-check and verify the figures and findings presented in project baseline reports.

Key findings

Learning outcomes were generally poor across most target populations at baseline. Most notably, a significant proportion of both primary and secondary school-age girls across SPW projects could not read any words in literacy tests.

Performance in literacy in some project areas was much worse than average. There was a sharp divide between girls who could not read at all compared to girls who achieved mid to high scores in literacy tests. With the possible exception of girls in Avanti's project areas, the reanalysis of project data shows that a significant proportion of girls in each area had very low levels of literacy.

A similar pattern emerged in numeracy tests, although scores were slightly higher on average. A large proportion of girls presented low numeracy test scores and did not have competences in basic skills such as addition, subtraction, multiplication, and division. Similar to literacy, some project areas performed much worse than average, and within some project areas there were significant disparities between high and low performing students. While this evidence supports the assumption that girls targeted by SPW projects are educationally marginalised in general, it also suggests that there are significant differences in outcomes between project areas and between sub-groups. In some project areas, educational systems are entirely failing to educate girls. In others, certain groups of girls are being left behind. However, we lacked adequate data to be able to systematically identify the most marginalised sub-groups and the extent to which these are marginalised compared to their communities. While project samples include the major categories of target groups required, data relating to social sub-groups within these categories is sometimes missing – for example, girls from disadvantaged castes or ethnic minorities. With respect to educational sub-groups, data on the number and characteristics of girls at risk of dropping out and girls at risk of poor learning is not available.

Attendance rates are roughly in the range of 70% to 90%, which is broadly consistent with the baseline findings in the Step Change Window (SCW) and Innovation Window (IW). There was less variation between and within project areas compared to levels of learning.

It is difficult to draw definitive conclusions about girls' attendance because of the lack of sufficiently precise data. Those projects that measured attendance through different surveys show inconsistencies between rates reported by girls or caregivers and school reports, with the latter tending to show lower attendance rates. Because of the sampling strategies used by the SPW implementing partners, it was not possible to calculate enrolment and retention rates for any of the projects.

Overall, most of the projects found some level of evidence to support their assumptions about barriers to girls' education, although their intensity tended to differ across projects. Barriers with the highest levels of supporting evidence relate to school-based and poverty-related factors.

School-based factors were found to be the most important barriers to girls' education. Evidence was systematically found by Discovery and Avanti but not by Coca-Cola. Pathways through which girls' education was directly affected in school primarily relate to: poor quality of teaching (methods and practices); inadequate provision of teaching materials; inadequate provision of qualified teachers; inadequate provision of schools and facilities; and long distances to travel to and from schools.

Poverty-related factors are the second most important barriers to education found by SPW partners. While it was not always elaborated by projects, these factors included material deprivation, limited resources and financial issues faced by families forcing them to apply coping strategies that affect girls' education. SPW projects assumed that the cost of schooling would be an important barrier to girls' education. However, girls' household commitments and their engagement in income generating activities were found to affect girls' education as negatively as the cost of schooling itself.

SPW projects found that attitudes and behaviour-related factors were the third most important barriers to girls' education. Pathways through which girls' education is affected primarily relate to deeply entrenched beliefs about marriage and the role of women. These types of factors were also described in terms of parents not providing sufficient guidance or support to girls for their education. Contrary to what Coca-Cola and Avanti had assumed prior to their baseline research, evidence was not found or reported relating to negative attitudes towards girls' non-religious education, post primary education or a general perception that education was irrelevant.

Barriers relating to pregnancy and early marriage were not anticipated by Avanti and Discovery. However, these factors were prevalent among target groups across all projects making this an important finding that may not have been accounted for in the design of projects' interventions.

All of the SPW partners designed their evaluations as randomised control trials (RCTs) and as a result should be able to reliably compare outcomes between intervention and control groups. SPW projects also achieved a reasonable level of representation of target girls in their baseline data. However, some of the initial, pragmatic type of criteria used to select girls means that the schools, areas and girls in the intervention and control groups are not likely to be representative of wider populations. From an external validity perspective, this suggests that at endline, the findings and lessons learned will be most relevant to the groups targeted rather than generalisable across a broader context, which potentially limits their usefulness for informing future programming.

All of the SPW partners designed their evaluations as RCTs, which means that they randomly assigned schools either to participate in project activities (intervention group) or to act as a control group. Because assignment to these groups was random, comparing the outcomes of intervention schools to those of control schools provides a plausible counterfactual against which the impact of each project can be measured.

Each of the SPW partners developed a sampling methodology to ensure their surveys were representative of their target populations. However, none attempted to gather data that would be representative of all households in their target countries or even sub-national regions (counties or districts). Rather, they used various criteria to define what schools or individuals were eligible to participate in their programme and then attempted to form a representative sample within that group. Since each partner used a mix of programmatic and pragmatic criteria to establish their sampling frame, it is difficult to make a general assessment of what population their school-level surveys represent. It appears that every project intended to cover schools in areas poorer than national or regional averages. Because of other screening criteria, such as having access to electricity, having secure storage for ICT equipment or having government records available, this could mean that the projects ultimately selected schools that were unusually well-resourced, or may demonstrate some bias toward more densely populated areas. The key underlying issue is about targeting rather than sampling strategies. Projects' sampling strategies are generally in accordance with their targeting strategies. But the ways in which schools, areas and girls were selected means the findings and lessons learned will be most relevant to the targeted communities rather than the wider populations.

Conclusions and Recommendations

The evidence available seems to indicate that most girls fall significantly behind international benchmarks in literacy and numeracy. Overall, it is unclear whether the girls targeted by SPW projects are educationally marginalised in terms of their attendance. The ways in which SPW projects have designed their targeting strategies, sampling strategies and research instruments has prevented them from reporting on school enrolment and retention rates for their target populations. Similarly, no age or grade-level data was available at a sufficient level of disaggregation to enable analysis of school phases and learning trajectories. Only attendance in school (for in-school girls) and learning of in-school girls were measured across the SPW.

The limitations of the projects' baseline research pose challenges for the evaluation of the SPW overall – **key limitations** are:

- an inability of projects to assess the learning trajectories of girls and to place them in their broader contexts in terms of levels of marginalisation and learning;
- the absence of reliable measurements of outcomes relating to girls being in school at the community level (implying an inability to assess changes in enrolment and retention between baseline and endline); and
- an absence of sub-group analysis that allows for an assessment of levels of educational marginalisation of these different subgroups.

In order to overcome these challenges and minimise their effect on the programme evaluation we recommend that the EM and FM should meet with SPW partners in January 2016 to discuss the endline evaluation and research implications for each of the partners. Key areas that will be discussed are:

- Potential improvements in the quality of the data collection;
- Potential improvements the content of their research /survey instruments to address missing variables wherever possible; and
- Potential opportunities to boost or amend samples to address deficiencies in the coverage or representativeness of their baseline samples, while keeping as much continuity as possible from baseline.

These meetings should result in an agreed set of revisions to each of the partner’s M&E frameworks to ensure that they are in the best position possible to fully capture the effects of their interventions through their endline evaluations. These discussions should also help SPW partners absorb the key lessons learned from our baseline analysis and understand any potential implications for the design of their interventions and whether any adjustments may be necessary or beneficial.

It is recommended that there are no further changes to this baseline report to take into account the completion of Ericsson’s data collection and project baseline report, which is still work in progress. However, Ericsson should be included in all of the follow-up discussions resulting from this report to ensure that the project benefits from the lessons learned and the additional support that will be provided to all SPW partners to prepare for their endline evaluations.

Projects used significantly adapted international standard learning tests, and in some cases, different tests were administered to each grade level without highlighting a clear progression of level of difficulty. This will pose a challenge to understanding the magnitude of the impacts of SPW projects. We recommend that when endline data is collected, **partners should use international standards where possible (words per minute tests), and convert non-standard Uwezo scores to standard Uwezo scores to capture specific competencies.** This will enable us to use endline analyses to compare results across interventions and assess projects’ impacts in a more robust way.

Most of the barriers anticipated by projects were supported by evidence presented as part of their baseline findings. Projects also found numerous unanticipated barriers to education in their targeted areas, which suggest some factors affecting education were underestimated prior to baseline. Projects (especially Coca-Cola), failed to report on some of the barriers that they assumed existed prior to baseline research. Generally, projects found that school-related factors were the primary reason why girls do not learn in school. Poverty-related barriers were found to be the second most important factors affecting girls’ education. Attitudes, pregnancy, early marriage and violence-related barriers were also reported as limiting girls’ ability to stay in school and learn.

In spite of a wealth of evidence, SPW projects presented the barriers they found in a descriptive way and did not always clearly assess the linkages between barriers and their effects on education outcomes, their target communities, and girls’ and parents’ behaviours and decision-making processes.

SPW projects may need to proactively consider barriers to education that were found but not anticipated before their designs were finalised. Projects should make sure that these barriers are continuously monitored throughout the lifetime of the project, and that interventions are appropriately modified and adjusted to address these barriers. Additionally, projects’ endline research and research instruments should be designed in a way that allows them to capture all barriers to education including unanticipated ones.

Projects need to ensure that M&E frameworks are able to thoroughly assess the link between barriers to education and girls’ education outcomes. M&E systems should be in place to enable projects to collect data and conduct analyses providing a reasonable and reliable level of understanding of the complexity that many of the targeted girls face in achieving education outcomes. We recommend that projects regularly review and refine their theories of change (ToC) and, if necessary, adjust their M&E strategies. This will allow projects with an inconclusive evidence base or insufficient data about targeted girls or barriers to education to gain a deeper understanding and continuously adapt their interventions to improve the probability of achieving a sustainable impact.

A potential recommendation for DFID for future programming relates to the extent to which the purpose of the baseline research should be more specifically defined. Projects generally sought to obtain data that was representative of their target groups. Projects should be able to evaluate the impact on the intervention groups compared to the control groups. But, the ways in which both groups (i.e. the whole population) were initially selected means that neither of these groups may be representative of the wider population. This potentially limits the external validity and usefulness of the findings from policy and programming perspectives.

During the baseline research, SPW projects generally managed to identify and measure the groups they had aimed to target as part of their designs. In the case of out-of-school girls, for which purposive samples were drawn, the data did not allow the EM to assess whether these were marginalised compared to other groups (especially in-school girls) in target communities.

Evidence was generally supportive of projects' initial assumptions about their design. However, more evidence is needed to assess the extent to which projects' target populations are actually marginalised, and to refine their definitions of marginalisation. Nevertheless, for the purpose of identifying the specific needs of targeted girls, the baseline research was successful to the extent that it confirmed and deepened projects' knowledge of their target populations.

All three SPW projects analysed in this report targeted regions, which they thought, had particularly poor educational outcomes, and all of them targeted a subset of schools in the regions they chose to work in. This selection was non-random (i.e. was based on programmatic and logistical criteria) and was often restricted to safety concerns, as projects had to drop a number of schools from their original sample, especially in northern Nigeria. Therefore, it is not clear how marginalised girls sampled were compared to girls in other locations or within targeted communities. This means that target groups are not representative of the wider population of the regions covered by the projects.

We recommend that projects use external data sources (such as Oxford multidimensional poverty index reports and the UN Human Development Index) to compare their findings about the selected schools and students within their wider contexts. This would allow projects to better identify what type of sub-populations their samples represent. While this will not necessarily allow results to be generalised from the project to the broader population, it will provide a clearer idea of what the findings from any one particular target group mean in the wider context of each project.

1 Introduction

1.1 Purpose of this baseline report

This report presents the baseline findings at the Strategic Partnerships Window (SPW) level of the Girls' Education Challenge Fund. This report is based on the baseline research of the SPW projects and its main purpose is to:

- assess the levels of enrolment, retention, attendance and learning found by SPW projects at baseline;
- assess the extent to which SPW projects have been successful in identifying target girls who are educationally marginalised, in terms of their access to education and learning;
- assess the extent to which projects' initial assumptions of the barriers that girls face in accessing education are evidenced in their baseline findings; and
- review how projects have defined marginalisation, identified their target groups and whether the baseline evidence supports their targeting strategies;

1.2 Background to the GEC Strategic Partnerships Window

In 2012, the Department for International Development (DFID) launched the £355 million Girls' Education Challenge Fund (GEC). The GEC intends to support up to a million of the world's most marginalised girls to improve their lives through education. The GEC will provide this support through three separate funding windows:

- the Step Change Window (SCW);
- the Innovation Window (IW); and
- the Strategic Partnerships Window (SPW).

All GEC projects work towards the same high-level GEC outcomes of improved enrolment, retention, attendance and learning for marginalised girls. However, each window has distinctive features and a specific focus.

This report will focus on the SPW. Its aim is to build partnerships with the private sector that combine social and business approaches to support girls' education in a sustainable way. The SPW aims to test new approaches and generate evidence about public-private partnerships, in addition to improving the lives of marginalised girls through education.

The total budget of the SPW projects is about £60 million, with the GEC providing about £30 million of match funding to support strategic partnerships that have the potential to transform learning opportunities for marginalised girls in Africa and Asia. Together, the SPW projects aim to support 130,000 marginalised girls across four DFID priority countries: Ghana; Kenya; Nigeria; and Burma.

1.3 Overview of GEC Strategic Partnerships Window projects

DFID officially launched the GEC in May 2012. However, the launch of each funding window was staggered, starting with the Step Change Window in May 2012, followed by the Innovation Window in July 2012 and lastly the Strategic Partnership Window.

The first phase of the SPW began in October 2013, with the announcement of a partnership with Discovery. The second phase launched in July 2014 with the announcement of a partnership with Avanti. All GEC projects, including the strategic partnerships are due to end in March 2017.

SPW projects were allowed to move to implementation once the Fund Manager had approved their Project Baseline Report. All funding windows have taken longer than expected to contract partners or organisations (and consortium leads), who in turn encountered delays in completing their M&E frameworks and baseline research.

Intervention types across the GEC and the Strategic Partnerships Window

The SPW has a distinct focus on developing partnerships with the private sector to find opportunities where there is an overlap between the social and business cases to address barriers to girls' education. This report includes baseline data and findings from three SPW projects: Coca-Cola, Avanti Communications and Discovery Communications. We did not include the fourth SPW project, Ericsson, as it had not yet conducted baseline data collection at the time of writing this report. The three SPW projects included in this report are:

- **Coca-Cola Company’s ENGINE programme:** as part of Coca-Cola’s ‘5by20 initiative’, the ENGINE programme seeks to support both in-school and out-of-school girls (OSGs) in four states of Nigeria to acquire new skills and increase their incomes as a result. This will be achieved by offering specialised tutorial courses to groups of in-school and out-of-school girls, building their basic literacy and numeracy while providing entrepreneurial and life skills. Ultimately, the aim is to help girls enter the job market, including Coca-Cola and d.light value chains.
- **Discovery Learning Alliance’s project:** working in schools across Northern Ghana, Northern Nigeria and Kenya, Discovery Communications seeks to improve education for girls by training teachers to improve the teaching methods they use, and providing educational videos (and necessary hardware) for them to use as part of their curriculum. Additionally, Discovery seeks to change attitudes about girls’ education through nationwide talk shows highlighting the value of education for girls.
- **Avanti’s iMlango project** aims to improve marginalised girls’ ability to go to school and learn across four counties in Kenya. The iMlango project will do this by introducing information and communications technology (ICT) – enabled learning tools to strengthen teaching, providing financial stipends to incentivise attendance, developing life skills and building the capacity of teachers to use ICT.

1.4 Governance of the GEC evaluation

DFID appointed Coffey, in partnership with RTI International (RTI) and Opinion Research Business (ORB), as the Evaluation Manager (EM) of the GEC. We are responsible for designing and implementing a rigorous monitoring and evaluation (M&E) framework to assess the effectiveness and impact of the GEC. [Table 1](#) below shows the roles and responsibilities of all EM partners.

We work closely with the Fund Manager (FM), a consortium led by PwC, to make sure that projects generate high quality data, and report results with a reasonable level of consistency across the window. The FM is responsible for the day-to-day operation of the GEC, including managing relationships with partners. The FM has played a key role in the following M&E activities:

- ✓ developing M&E processes and requirements at the project level (e.g. defining required sample sizes, target setting, and offering methodological guidance on measuring key outcomes);
- ✓ providing support and capacity-building to strengthen the M&E designs of projects;
- ✓ formally signing-off project M&E Frameworks and logframes;
- ✓ developing reporting tools (including the outcome spreadsheet);
- ✓ working with partners to rectify data inconsistencies and methodological issues.

Project data is the intellectual property of DFID. Partners are responsible for anonymising data and making it available to DFID in a suitable format. At baseline, partners uploaded their data to a SharePoint site hosted by the EM on behalf of DFID.

Table 1: Role and responsibilities of the EM consortium partners

Consortium Partner	Role and key responsibilities
Coffey (Consortium Lead)	<p>Coffey leads the EM consortium and is responsible for:</p> <ul style="list-style-type: none"> ✓ designing and delivering the overarching GEC Evaluation Strategy; ✓ providing M&E support to the Fund Manager and individual partners; ✓ analysing and reporting findings from EM primary data for the Step Change Window; ✓ conducting meta-analyses and reporting of secondary data for the Innovation Window and Strategic Partnerships Window; and ✓ sharing key findings and lessons learned.
ORB International	<p>ORB International manages the EM fieldwork and is responsible for:</p> <ul style="list-style-type: none"> ✓ training interviewers and piloting research tools; ✓ overseeing and managing local research partners in qualitative and quantitative data collection in Step Change Window countries;

Consortium Partner	Role and key responsibilities
	<ul style="list-style-type: none"> ✓ conducting quality assurance and data verification; and ✓ collecting, processing and cleaning data.
RTI	<p>RTI leads the design of the learning assessment tools (EGRA and EGMA) and are responsible for:</p> <ul style="list-style-type: none"> ✓ designing and adapting EGRA and EGMA learning assessment research instruments; ✓ training interviewers in the use of EGRA/EGMA tests; ✓ processing and cleaning learning assessment data; and ✓ conducting the peer review and quality assurance of the EM analysis (led by Coffey).

1.5 GEC evaluation strategy for the Strategic Partnerships Window

The overall objective of the programme evaluation of the SPW is to assess whether current interventions are working. The evaluation should gather reliable evidence that DFID, the FM and partners can use to improve activities during their lifetime and influence wider policy change. As such, the GEC evaluation seeks to:

- measure the results DFID delivers through the GEC;
- improve DFID’s understanding of what works and why in supporting girls’ education; and
- produce evidence for different audiences, including governmental, private sector and donor organisations.

Partners undertook baseline research as the first stage of the evaluation process. A key purpose of the research was to test the assumptions underpinning projects’ theory of change and design (in particular, their definitions of target groups, their understanding of the barriers to girls’ education and levels of learning and attendance). Partners are expected to use the findings to refine their designs, as well as their attendance and learning targets, which will be used as a benchmark during the next round of research at endline.

We provided technical support and guidance to ensure that data collection activities were fit for purpose and proportionate to projects’ needs. Partners were required to commission independent evaluators to conduct their baseline research. The baseline research involved collecting primary data from intervention (and control) areas and reporting on the findings before starting implementation. All three SPW projects included in this baseline report conducted their baseline research from March 2014 to January 2015 and reported their findings at the end of their inception phases.

1.6 Structure of this baseline report

The SPW baseline report aims to answer a range of research questions, listed in [Table 2](#) below.

Table 2: Key baseline research questions

Key Baseline Research Questions	Report Sections addressing Questions
1. To what extent are target girls educationally marginalised?	Section 3 – Educational outcomes at baseline
1.1 To what extent are girls attending school?	
1.2 What are girls’ current learning outcomes?	
1.3 Does the evidence confirm target girls are educationally marginalised?	
2. What are the barriers to girls attending school and learning?	Section 4 – Barriers to girls’ education at baseline
2.1 What are the barriers to girls’ education?	
2.2 What did the projects assume to be the barriers to girls’ education in target areas?	
2.3 Does the evidence confirm the expected barriers?	
2.4 Are there any unanticipated barriers that projects found in their targeted areas?	

Key Baseline Research Questions	Report Sections addressing Questions
3. Does the evidence support project targeting and project design?	Section 5 – Project targeting
3.1 How have the projects defined marginalisation (social and educational)? 3.2 How have the projects defined their target groups?	
4. Does the evidence support effective project evaluation?	Section 6 – Projects' evidence and effective evaluation
4.1 Which challenges did the projects face during baseline? 4.2 Will projects' evidence support counterfactual analysis of impact?	

The report structure is organised around the research questions as follows:

- **Section 2** presents the approach and methodological challenges to synthesising and aggregating findings from the baseline research conducted by SPW projects and further analysis undertaken by the EM using project data sets.
- **Section 3** focuses on the extent to which girls targeted by SPW projects are educationally marginalised. It presents a synthesis of the levels of enrolment, retention, attendance and learning found by projects at baseline.
- **Section 4** provides an in-depth analysis of barriers to girls' education. It presents projects' pre-baseline assumptions about barriers to education, and discusses whether the evidence confirms the expected barriers.
- **Section 5** reports on the evidence found by SPW projects on targeting.
- Finally, **Section 6** discusses the challenges faced by projects during the baseline phase and the extent to which projects' evidence supports counterfactual analysis of their impact.

We also include the following Annexes:

- **Annex A:** Conversion of Literacy and Numeracy Uwezo Scores;
- **Annex B:** Terms of Reference for the GEC Evaluation Manager; and
- **Annex C:** List of Documents.

2 Methodology

2.1 Synthesis methodology for SPW baseline findings

2.1.1 Purpose of the synthesis approach

This report was produced by systematically reviewing and analysing project documents and data. Its aim is to analyse levels of enrolment, retention, attendance and learning found by SPW projects through the baseline research conducted by their external evaluators. We also seek to identify the most prevalent barriers to girls' education across the Strategic Partnerships Window.

We have taken this synthesis approach to ensure that the findings presented in this report are reliable. Our approach involved assessing the consistency of project data and findings with standard criteria used across the SPW. We also assessed the quality of the data and findings against quality assurance criteria defined by individual partners, the FM and the EM (Figure 1). We used the following process:

- We mapped project documents and data available (project baseline reports, outcome spreadsheets, datasets, proposals and M&E frameworks);
- We systematically extracted the data and analysis from project documents, including datasets;
- We synthesised the evidence base provided by projects at baseline to make sure the findings were consistent and of good quality; and
- We answered our baseline research questions using the evidence base provided by SPW projects.

Figure 1: Purpose of the synthesis approach



2.1.2 Data sources and systematic extraction process

SPW projects' baseline research

The GEC Evaluation Strategy required all SPW projects to carry out quantitative baseline research. All three projects included in this report contracted external evaluators to conduct surveys. The EM and FM reviewed both the questionnaires and sampling frameworks used during the development of the project M&E Frameworks. All three projects tested the literacy and numeracy skills of girls in their target communities. In addition, projects were encouraged to conduct qualitative research and to draw on existing sources of secondary data to triangulate and strengthen their findings. Our approach to evaluating the SPW was similar to that taken for the IW, which is based on our reanalysis of SPW projects' quantitative data and our analysis and synthesis of their qualitative analysis and findings.



SPW projects could adapt the household survey tools and sampling designs (either using a randomised household survey, or sampling girls within schools). As a result, they may have taken different approaches concerning quantitative and qualitative data collection.

While quantitative data (project datasets) was shared with the EM along with projects' baseline reports, differing tools were used by projects. As a result, quantitative findings are not uniformly comparable. Additionally, qualitative data was not submitted to the EM. As a result, the qualitative findings presented in this report are based solely on SPW projects' analysis.

Projects documents their baseline research through three different formats:

- **Project Baseline Reports:** these present evidence, key findings, and lessons learned, based on the analysis led by projects and their external evaluators. The Baseline Reports focus on testing projects' ToC and assumptions about target groups, educational outcomes and barriers to education. In their M&E frameworks, projects committed to achieving high levels of representativeness, statistical power and analytical quality. However, reporting against indicators was not consistent across interventions and did not always reflect the range of indicators of interest for GEC baseline analysis at the programme level.
- **Outcome spreadsheets:** projects used these to report baseline levels of attendance and learning. They are a way of consistently capturing key outcome data and reporting on progress against targets for learning and attendance for all projects. The outcome spreadsheets report data by grade levels, but not by age. In particular, learning data are reported only for cohort girls: Primary 4 for Discovery; Junior Secondary School 1 to Senior Secondary School 2 and OSGs for Coca-Cola; and Primary 3 for Avanti.
- **Project datasets:** these compiled raw data from household surveys and/ or in-school surveys. We have carried out an independent, renewed analysis of this data for all key outcomes where the relevant information was available, documented and comparable. This "reanalysis" aims to cross-check and verify the figures and findings presented by the projects in their baseline reports. Projects used a variety of quantitative tools including school and household surveys. This variation made it more difficult for us to conduct consistent and comparable reanalysis of project data at the sub-group level (such as rural/ urban populations, disabled groups and socio-economically disadvantaged groups) or for specific barriers (including poverty, violence and early marriage).

Systematic extraction of the data from project Baseline Reports

We based the inclusion/ exclusion criteria for extracting data on the baseline research questions. This required us to extract and collate the following information from project baseline reports:

- overview of project and baseline activities;
- definition of marginalisation and project target groups;
- assumptions, expectations and findings related to baseline outcome measures (enrolment, attendance, retention, learning outcomes for literacy and numeracy);
- assumed and actual barriers found at baseline for attendance and learning;
- information related to intervention types and activities;
- challenges faced during baseline research;
- changes to project design and M&E frameworks as a result of baseline findings; and
- any additional data collected related to poverty, disability, violence, early marriage and sub-groups.

Reanalysis of project datasets

The reanalysis aimed to cross-check and verify the figures and findings presented by the projects in their baseline reports. Our approach was to use, compile and analyse available data across sources and to attempt to further investigate findings. We looked at findings that were reported by projects in a non-standard way (such as different indexes or non-comparable measures), or appeared to present contradictions or measurement issues. Two general limitations of the project datasets presented significant challenges to the quality of the data used in this report.



School-based sampling strategies limits our ability to measure enrolment or retention: *Two SPW projects (Coca-Cola and Discovery) sampled girls in school, and then conducted household surveys of the sampled girls' households. This means that the household survey is not representative of their larger community. Avanti randomly selected households in target areas but the survey questionnaire did not include questions on girls' enrolment and retention. As a result, it is not possible for SPW projects to calculate 'global' enrolment or retention rates in their target communities (the number of girls enrolled as a percentage of the total eligible girls in the community; or the number of girls enrolled in the previous year who have dropped out of school). Coca-Cola and Discovery surveyed OSGs separately, which helps us understand the characteristics of these girls and their families. But, as mentioned above, they do not provide a representative sample to calculate enrolment and retention rates.*

Projects used various adaptations of Uwezo¹ to report literacy and numeracy scores: Traditionally, Uwezo is scored using a seven-point scale, based on existing international literature (refer to [Section 3.2](#)). Both Avanti and Discovery significantly adapted the Uwezo tool, changing the content and difficulty of questions and using non-standard scoring scales. These adaptations were necessary to ensure that the assessments were relevant to the context of the country and project, but they limit comparability between the two projects. Once endline data is collected, we will be able to analyse changes in scores, which are less dependent on the specific content and scoring system of the test.

All three SPW projects that have completed baseline data collection submitted their datasets. [Table 3](#) lists project datasets that we used for further investigative analysis. The number of datasets we received is included, although it may simply indicate that SPW projects submitted their data in different files. We also outline limitations to these datasets.

Table 3: Reanalysis of project datasets and project-by-project limitations

		# Datasets	Being-in-school outcomes			Learning outcomes	
			Enrolment	Attendance	Retention	Literacy	Numeracy
Discovery	Ghana	6		✓		✓	✓
	Kenya	6		✓		✓	✓
	Nigeria	6		✓		✓	✓
	Total	18	No enrolment or retention data because sampling was school-based			Administered adapted Uwezo	
Coca-Cola	Nigeria	5		✓		✓	✓
			No enrolment or retention data because sampling was school-based			Administered adapted EGRA/EGMA for secondary-level students	
Avanti	Kenya	5		✓		✓	✓
			No enrolment or retention data because related questions are missing in the questionnaire			See notes below	

Notes: Avanti and Discovery administered an adapted Uwezo assessment. Although in Avanti's case different tests were administered to each grade level, they did not feature a clear progression of difficulty. In addition, subtask scores were not available, so we only had access to aggregate scores.

2.1.3 Approach to synthesising SPW baseline findings

There is no definitive source of data on project target groups, educational outcomes or barriers. There are multiple sources of information available, drawn from the projects' own research and research conducted by external evaluators. **In our report, we are not replacing the projects' own baselines. Rather, we are presenting a synthesis of the evidence found by projects, and ensuring that the evidence found is of sufficient quality and consistency.**

We sought to mitigate the potential biases derived from relying only on project reporting and to make sure that the reported evidence met a set of *consistency criteria*. We did this by systematically reviewing SPW project baseline reports and triangulating findings from different sources (outcome spreadsheets, project datasets) prior to the analysis stage. Our analysis of project data focused on the comparability of measurement tools used and consistency in reported measures across baseline reports, outcome spreadsheets and datasets.

In addition to employing consistency criteria for quality assurance of evidence, the projects applied their own *quality criteria* to the data they collected. This posed some limitations to our interpretation of project data, which we explain in [Section 2.5](#).

¹ Uwezo is a learning test that measures children's ability to perform literacy and numeracy tasks at a level of difficulty that is typical for Primary Grade 2 assignments. Ability is then reported as the level of tasks that the child can perform comfortably. See [Table 3.4](#) for more details.

2.2 Discussion of SPW baseline findings

Once project evidence had been synthesised, we assessed whether baseline findings were challenging GEC assumptions relating to educational outcomes and barriers to girls' education.

This assessment of SPW baseline findings involved:

- exploring situations where projects found higher educational outcomes than expected at baseline;
- reviewing the barriers expected by projects at inception and design stages in light of the barriers found by baseline research; and
- assessing the extent to which the evidence supports project targeting strategies and designs.

2.2.1 Triangulation process

We have not carried out any systematic triangulation of baseline results with secondary data sources. Accurate and consistent attendance figures at the national and local level in the countries of interest were not available. As regards to learning outcomes, it was difficult to compare data with external sources because none of the SPW projects used standard tests, but instead adapted them to their own evaluation context. Although we provided international EGRA benchmarks for Coca-Cola learning tests, these only offer an indicative guide and are not directly comparable with observed literacy scores. We discuss literacy benchmarks and their limitations more extensively in [Section 3.2](#) on Learning Outcomes.

However, we have included data where possible from external resources to contextualise the analysis and findings, rather than provide systematic triangulation.

2.2.2 Evidence supporting or challenging assumptions about educational outcomes and barriers

Following the data extraction and document review process, we assessed project-reported findings against baseline assumptions and expectations. For example, a project may have anticipated that disabled girls would be educationally marginalised, but found supporting or contradictory evidence during the baseline research.

The GEC Business Case² lists the following key assumptions about educational marginalisation of girls in the GEC focus countries:

- despite existing bilateral and multilateral programmes, and the efforts of domestic governments, 39 million girls remain out of primary level education, and a much larger number are dropping out without acquiring basic literacy and numeracy skills;
- girls who have never been enrolled in primary school tend to come from the most disadvantaged communities and face multiple obstacles due to factors such as their geographic location (for instance, living in rural areas), ethnicity and low socio-economic status. The incidence of non-enrolment is particularly high in conflict and post-conflict environments;
- even though enrolment gaps between girls and boys of primary age have recently narrowed, girls are still less likely than boys to enrol in primary school;
- enrolment gaps between boys and girls widen significantly when girls reach secondary school age; and
- girls are more likely than boys to lack basic literacy skills.

GEC-relevant assumptions relate to overarching assumptions that underpin the ToC for the GEC programme as a whole. The key GEC-relevant assumptions have been interpreted as follows:

- **Educational outcomes:** the underlying assumption that is relevant to the GEC programme is that learning outcomes are poor because the target group is marginalised. This implies that there is substantial space for improving educational outcomes of targeted girls and that this improvement would be measurable.
- **Barriers to girls' education:** the GEC-relevant assumption is that these barriers will be present and that they will tend to be associated with poorer educational outcomes. SPW projects may report on the levels or prevalence of these barriers in their target population, but they may not consistently analyse the associations between these factors and the range of GEC-relevant outcomes. Again, the EM has tried to assess the extent to which the evidence presented supports or potentially challenges these assumptions.

² DFID (2012), Girls' Education Challenge, Business Case Version 4, June 2012, pp. 13-28

In addition to these general assumptions are SPW project-specific assumptions about barriers, identified in their project proposal and design documents. These are further detailed in [Section 4.1](#).

Our objective is not to provide a specific rating or ‘critique’ of individual project activity or assumptions. We do not discuss specific project assumptions about outcome levels at baseline. Rather, we discuss findings to reflect on whether they are aligned with or challenge the assumptions, and therefore, the design of the project. For instance, a project with high attendance rates among girls in its target population may be discussed as presenting challenging evidence, not because it is undesirable to have high attendance rates, but because it contradicts the assumption at the design stage.

As such, we have defined benchmarks for learning outcomes only. Benchmarks for learning outcomes are informed by published international norms for EGRA (Oral Reading Fluency). The norms are based on standard expectations for oral reading fluency as measured in words per minute (see [Section 3.2](#)). In addition, we have also used the scores achieved on Uwezo assessments to compare students’ competencies in basic skills, such as digit recognition, addition and subtraction on numeracy tests; and reading letters, words, and paragraphs for literacy. While it is informative to relate test scores to specific skills, there is not an existing benchmark relating these scores to international standards. The original Uwezo assessments administered in Kenya, Uganda, and Tanzania were at Grade Two level difficulty and students were expected to be able to answer all questions. However, since the Uwezo assessments used by SPW partners have been adapted and made more difficult in most cases, there is not an established international benchmark for achievement on these adapted tests.

2.3 GEC outcome variables

This report uses a number of key variables to describe the baseline status relating to GEC outcomes.

2.3.1 Attending school

To assess the extent to which girls are attending school across the GEC, we look at a combination of three dimensions used together to measure whether girls ‘are in school’. These are enrolment, attendance and retention. The SPW projects were not required to collect representative data on enrolment and retention and none of them designed surveys that allow for measuring these outcomes in a way that is representative of their target population. As a result, we only report attendance rates in this section. Two projects measure in-school girls’ attendance (Avanti and Discovery) while Coca-Cola measures attendance at their after-school activities.

- **Attendance rates** – Attendance rates are compiled using projects’ reported findings of the average proportion of school days attended. Projects collected attendance data during visits at the schools where the surveyed girls were reportedly enrolled and/ or through surveys with households and girls. Accuracy concerns exist with both of these data sources, because school records may not be accurate or up-to-date, and self-reported data may be biased.

Box 1: GEC requirements for SPW projects’ measurement of attendance³

SPW projects (and projects across the GEC) were provided guidance for the measurement of attendance before they undertook their baseline research. Although international measures of retention focus on enrolment, it is widely accepted that enrolment figures do not accurately measure the amount of education students receive. **As a result, attendance was chosen as a stronger indicator of the impact of educational interventions, in order to help verify the retention indicator.** Even if SPW projects did not have systems in place for collecting data on individual girls’ attendance, they were required to develop a method to determine the **average attendance of marginalised girls**.

In order to establish a high degree of confidence in the reporting on attendance, the FM and the EM encouraged SPW projects to:

- use attendance data collected from schools registration systems (supplying registers, if necessary);
- undertake a baseline for attendance using historical registration data in both intervention and control schools;
- collect data and undertake spot checks for a sample of intervention schools and control schools;
- ensure that attendance data collected is independently verified by SPW projects’ independent evaluators; and

³ See Fund Manager for the GEC (June 2013), *The Girls’ Education Challenge – Attendance guidance*

- set attainable targets for additional improvements to attendance over the project period.

Each SPW project has used a slightly different approach to gathering data on and measuring attendance, based on the specificities of their project design:

- Coca-Cola is measuring attendance at their after-school Safe Space activities, rather than in schools;
- Discovery is measuring attendance in school, using school registers and spot checks; and
- Avanti is measuring attendance in school, using electronic attendance monitoring to increase reliability of data collected, triangulated by spot checks and school registers.

2.3.2 Learning

Learning, in addition to attendance, is the second of the GEC key outcomes. Throughout this report, we use the term “learning” to describe girls’ progress in school and the gaining of new skills and knowledge in relatively broad terms. However, when measuring learning as a GEC outcome we apply a more specific definition of learning as “a change in ability over time” in literacy (specifically reading fluency and reading comprehension), and numeracy skills. All SPW projects were required to include a learning assessment as part of their M&E design. They had the choice between different types of standardised assessments. Coca-Cola opted to use an adapted version of the Early Grade Reading Assessment (EGRA)⁴ and Early Grade Math Assessment (EGMA)⁵ tools. Discovery and Avanti opted for adapted versions of Uwezo.

Comparability between EGRA/EGMA and Uwezo tests

All of the SPW projects adapted the standard versions of Uwezo or EGRA/EGMA to fit the specific age groups or grade levels that they target, and their language of instruction. This means that there are limits to the comparability of these tests and their results across the SPW. In addition, some projects reported oral reading results as words per minute (in the case of reading), while others reported levels or scores on a 0 – 100 scale. Where possible, we compared scores to international benchmarks or specific competencies such as reading a passage in English or successfully answering addition and subtraction problems. However, it is important to note that assessments such as Uwezo and EGRA/EGMA are adapted with a country’s curriculum and national context. While they often test similar content, they are not strictly comparable and sometimes have levels of competency of varying difficulty. Comparability will be discussed in more detail in [Section 3.2](#).

2.3.3 Disaggregation by sub-groups

For the Innovation Window and Step Change Window Baseline Reports, we assessed GEC outcomes for various sub-groups based on the available evidence. The purpose of this was to examine differences in baseline educational outcomes across different grades, school phases, age groups, and between in-school and OSGs. It was not possible to study the relationship between age, grade and school phases for SPW projects because data on the age of girls was either unavailable or unreliable for all SPW partners. Each partner targeted either primary or secondary age girls and only collected data on one age group of girls in the household. Therefore, we can only report on either all primary or all secondary age girls for each project.

Out-of-school girl samples

Several of the outcome indicators used across the three GEC funding windows require a representative sample of households in a project area that includes households with girls who are out of school. In order to correctly measure enrolment and retention, the surveys must correctly identify the number of girls who are out of school and dropped out after the previous year. However, the main primary sampling strategy used by the Coca-Cola and Discovery projects was to select schools, and then select girls within those schools to form their sample.

Both projects then conducted a separate survey of households with OSGs using various non-random selection methods. Enumerators for Discovery asked in-school girls to identify OSGs to include in the sample and surveyed a pre-determined number of households identified in this way. Coca-Cola selected communities in the catchment areas of treatment schools and repeatedly attempted to interview households until they found a predetermined number of households with an eligible out-of-school girl. Because of these methods, the samples of households with OSGs must

⁴ EGRA is an orally administered assessment designed to measure the most basic foundation skills for literacy acquisition in the early grades: recognising letters of the alphabet, reading simple words, understanding sentences and paragraphs, and listening comprehension.

⁵ EGMA is an orally administered assessment designed to measure a student’s foundation skills in numeracy and mathematics in the early grades, including number identification, quantity discrimination, missing-number identification, word problem solving, addition and subtraction, shape recognition and pattern extension.

be considered a separate, purposive sample for each project and cannot be used to calculate enrolment or retention rates.

2.4 Identifying barriers to girls' education

In this section, we present the projects' assumptions about barriers and assess the extent to which these assumptions are being supported by projects' baseline evidence.

To build their understanding of marginalisation, and develop their interventions, projects identified specific barriers that were assumed to drive educational marginalisation in target areas. Some of these barriers are structural and beyond the projects' direct control, such as the occurrence of droughts or political violence. Other types of barriers may be tackled through targeted interventions and support, such as negative attitudes towards girls' education or a lack of adequate sanitation facilities in schools.

It is important to note that this report presents evidence collected by projects on the most reported barriers *perceived* to be preventing girls from attending school and learning. As such, they may not be *actual* barriers, for instance the fear that violence may occur on the way to school *versus* reports of violence having occurred. However, the influence of these barriers, either actual or perceived, is assumed to similarly prevent girls from attending school. Where information is provided by projects, we distinguish between the two types of barriers and discuss the potential effects on girls' access to education and learning.

2.4.1 Data sources

Information on project assumptions about barriers to girls' education and the evidence they found during baseline research come from the following data sources:

Barriers assumed prior to baseline:

- **Project Proposals:** in their proposals, projects were required to specify the expected barriers to girls' attendance and learning in target areas. Assumptions were mostly based on their understanding of the context in which they operate and/or have been operating in the past, and on a review of country-specific literature.
- **Project M&E Frameworks:** during the Inception Phase and the development of their theories of change (ToCs), projects questioned the assumptions underpinning their intervention logics and refined their assumptions relating to barriers to education.

Barriers evidenced during baseline:

- **Project Baseline Reports:** project baseline reports present evidence, key findings, and lessons learned relating to barriers based on the data analysis carried out by them and their affiliated researchers.
- **Survey data:** SPW projects completed surveys of households, schools, teachers and girls, which provide evidence about the barriers faced by girls.

2.4.2 Methodology for assessing the most and least prevalent barriers

We followed a four-staged approach to assess the most and least prevalent barriers:

1. Following data extraction, we categorised barriers across the key thematic areas that emerged from the baseline reporting of SPW projects.
2. We derived the metrics used to assess the prevalence of barriers from the ways in which projects presented their findings, i.e. whether the barriers were reported to be prevalent or not. For each identified barrier, we discussed the number of projects that reported its existence in their target areas. Their ranking, from most reported to least reported, offers information on the relative prevalence of some barriers compared to others across SPW projects.
3. We then assessed whether evidence for the barriers anticipated at design stage was found, not found or not reported by projects. We also identified unanticipated barriers found by projects during baseline research.
4. Finally, where possible, we conducted a reanalysis of the projects' survey data to assess whether the available quantitative data verified the existence of identified barriers.

The first three stages are described in [Table 4](#) below. For each SPW project, we present a table in [Section 4.1](#), which lists anticipated barriers identified at design stage. In [Section 4.2](#), we assess whether the evidence presented in the project Baseline Report supported or challenged these expectations.

In their Baseline Reports, the three SPW projects had varied interpretations about the nature of educational barriers. They did not generally distinguish between barriers to being in school and barriers to learning. It is also important to note that the data collected by the SPW projects is focused on their target groups rather than the general population or communities in which their target groups live. This means that the barriers projects found among their target populations may not necessarily be the most prevalent in the communities in which they are working.

Throughout Section 4.2 we also present our reanalysis of the projects’ survey data to assess the quantitative evidence for specific barriers. Because data was not collected in a standard way across SPW projects, it was not possible to complete a systematic analysis of the quantitative evidence for every barrier identified at baseline. Instead, we focus on the evidence for particular barriers related to school quality, poverty, and attitudes where data was available. We restricted the methods used, so as to reanalyse projects’ survey data and to analyse the prevalence of factors assumed to be barriers and simple (bivariate) associations between outcomes and barriers. The associations found are not necessarily causal relationships, but they provide an indication of the scale of particular barriers and the strength of their relationship with outcomes. These findings are interpreted using projects’ qualitative evidence to explain the patterns found in the data.

Table 4: Assessing the prevalence of barriers

1. Categorisation of barriers assumed and/or found at baseline	2. Metrics used to assess the prevalence of barriers (meta-level analysis across the SPW)	3. Type of evidence in relation to assumed barriers (project-level analysis)
<p>Barriers are broadly categorised as follows:</p> <ul style="list-style-type: none"> • School-related factors • Poverty factors • Attitudes and behaviour factors • Personal and family factors • Aspiration factors • Violence and security factors 	<p>Identification of barriers: Based on the barriers mentioned in project proposals and project M&E frameworks.</p> <p>Levels of barriers: Each of the categories cover specific barriers that may lie at the individual level (i.e. when related to the girls’ aspirations, health or ability), within the family (i.e. in the case of household economics and decision-making), within the community (i.e. in the case of attitudes or social exclusion), or at the institutional level (e.g. within school).</p> <p>Source of evidence: Barriers may be reported by girls, parents, community leaders, school staff or other key informants.</p> <p>Prevalence of barriers: Based on the number of projects reporting the existence of an assumed barrier in project Baseline Reports. The ranking of reported barriers (from most reported to least reported) gives the relative prevalence of some barriers compared to others across SPW projects.</p>	<p>Barriers found and reported: The assumed barriers that were mentioned by respondents and reported in the baseline reports. Assumed barriers found and reported are marked with ‘✓’.</p> <p>Barriers not found: The assumed barriers that were not mentioned by respondents or not reported in the Baseline Reports. Barriers not found are marked with ‘✦’.</p> <p>Barriers not reported: Barriers that were assumed to exist but not reported/discussed/measured by the project. Missing evidence is marked with ‘●’.</p> <p>Unanticipated barriers: Barriers that were not assumed to exist by projects, but were mentioned by respondents during data collection. Unanticipated barriers are marked with ‘x’.</p> <p>Non applicable: Barriers neither assumed to exist nor reported are marked in Grey.</p>

2.5 Evaluation Manager methodological challenges

We identified the following challenges while extracting, analysing and synthesising the data:

- **Significant gaps and quality issues with the evidence base:** significant gaps and weaknesses in the evidence available arose in relation to some of the key GEC outcomes. Missing and /or unreported figures, contradictory values reported in the project baseline reports and other inconsistencies in project datasets (refer to [Section 2.1.2](#) for missing evidence in datasets) were addressed where possible by triangulating the available evidence (e.g. outcome spreadsheets).
- **Inability to disaggregate projects' datasets for variables relating to sub-groups:** we intended to conduct a comparison according to sub-groups from different social groups and to differences in types of poverty. The purpose for this would be to assess differences in educational marginalisation. The quality of the data provided in project datasets was variable and, as such, we requested further information from projects in order to identify the different variables present in the datasets. Sometimes the identification of variables was not possible and the resulting limitations led us to present information relating to sub-groups as provided by projects in their baseline reports, that is at project-level and not across the SPW. It is also important to note that projects have collected information at sub-group level, some of which are relatively small in size, rendering the generalisation of findings difficult for sub-groups such as young expecting mothers (refer to [Section 5.1.2](#) for a discussion on target sub-groups).
- **Synthesis challenges:** a carefully structured approach to the synthesis of project findings was adopted to mitigate the effects of different types of bias. Challenges identified include:
 - Potential sources of heterogeneity, including project research methodologies, the qualitative narrative versus quantitative nature of the synthesis, degrees of data validity, cultural sensitivities and contextual factors; and
 - Adverse synthesis effects, which were identified as very likely to have been lost during the synthesis process. For example, if two equally valid sources of data (e.g. Project Baseline Report findings and Outcome Spreadsheets) presented different findings, there was a tendency to conclude that this was an inconclusive finding, leading the EM to analyse a third source instead, such as project datasets.

We do not expect that the above limitations to the approach will significantly compromise the quality of the synthesis of the baseline findings.

3 Educational Outcomes at Baseline

The GEC takes as its foundation the general assumption that every girl and every boy should have “access to a good quality education but [that] there is a specific need for an additional focus on girls”⁶. This is because girls are assumed to face gender specific obstacles to enrolling, remaining in school and learning. On this basis, girls who are targeted by the GEC would be expected to display relatively poor learning outcomes at baseline, both in terms of attendance and learning. In the following section, we provide an assessment of the extent to which girls targeted by SPW partners are educationally marginalised. We specifically look at enrolment, retention, attendance and learning.

Key Findings

Learning outcomes were generally poor across most target populations at baseline. Most notably, a significant proportion of both primary and secondary school-age girls across the SPW projects could not read any words in literacy tests. However, performance in some project areas was much worse than average. Some presented a sharp divide between girls who could not read at all and those who had mid to high literacy scores. A similar pattern emerged in the numeracy scores, although numeracy scores were somewhat higher on average. This evidence supports that the assumption that girls targeted by SPW projects are, in general, educationally marginalised. But, it also suggests that there are significant differences in outcomes between project areas and between sub-groups. In some project areas, educational systems are failing entirely to educate girls, while in others certain groups of girls are left behind. Reliable data on enrolment was not available. Attendance rates were generally high, with less variation across and within project areas.

Presentation of the evidence base

The findings presented in this section are based on a review of each partner’s baseline report and a reanalysis of project data. Each of the SPW partners collected data on education outcomes through a series of surveys, administered both in schools and in girls’ households. Table 5 summarises the sources of data available in our reanalysis of data from the three SPW partners.

Table 5: Datasets available for reanalysis of SPW outcomes

		Discovery			Coca-Cola	Avanti
		Ghana	Kenya	Nigeria	Nigeria	Kenya
Household Survey	Survey of in-school girl households	✓	✓	✓	✓	
	Survey of out-of-school girl households	✓	✓	✓	✓	
	Survey of both in-school and out-of-school households in implementation areas					✓
	Survey and life skills/financial literacy assessment for out-school girls				✓	
School-Based Surveys	Perceptions Survey for girls in school	✓	✓	✓	✓	✓
	Learning Assessment for girls in school	✓	✓	✓	✓	✓
	Administrator Survey/review of school records	✓	✓	✓		
	Classroom Observations	✓	✓	✓		
	Headcounts of Student Attendance	✓	✓	✓		
	Teacher perception survey					✓

Drawing on a reanalysis of these datasets along with the outcomes reported in the SPW project baseline reports, we were able to report on three of the five outcome indicators: attendance; literacy test scores; and numeracy test scores for each of the three projects.

⁶ DFID (2012): DFID 5685: Evaluation Manager for the Girls’ Education Challenge (GEC)

3.1 To what extent are girls attending school?

This sub-section presents the baseline evidence related to enrolment, attendance and retention of girls in the target populations of the SPW projects. These indicators (described in Section 2.3) were used to assess the extent of girls' marginalisation in terms of their access to education.

Because of the sample strategies used by the SPW implementing partners, we were only able to calculate attendance rates. Girls are attending school for 70% to 90% of school days in all project areas.

3.1.1 Enrolment

The datasets from the three SPW partners did not permit a systematic analysis of enrolment levels of eligible participants in intervention areas. Because of the sampling methodology used by Coca-Cola and Discovery, the household surveys for these two projects were likely to be unrepresentative of enrolment in their intervention areas.

As mentioned in Section 2.3.3, Coca-Cola and Discovery used a two-stage sampling process. First, they selected a representative sample of schools and randomly selected girls from each school. They then completed the household surveys by finding the households of the selected girls and using them as their primary sample⁷. Samples of OSGs were created separately using snow-balling approaches. While these methods have merit in creating a longitudinal dataset including both in-school and OSGs, they result in an unrepresentative sample of households in the intervention areas. This is because households were explicitly selected based on the enrolment status of the girls in the households. Therefore, these samples cannot be used to determine enrolment rates in the target populations of these projects.

The Avanti household survey was conducted separately from their school survey, and therefore, can be considered representative of the intervention area. However, the survey instrument did not include questions that systematically record the number of children in the household or the number of those in school.

While project data does not allow us to calculate enrolment rates, we have looked at other sources of data to understand better projects' contexts and their findings. UNICEF data⁸ shows that in Ghana, the net enrolment rate for girls is 81% compared to 84% for boys. In Kenya, the net enrolment rate for girls is slightly higher at 83% for girls compared to 82% for boys. While in Nigeria, the net enrolment rate for girls is significantly lower at 60% for girls compared to 71% for boys. According to UNESCO research⁹, Nigeria made very little progress and much less than expected in terms of addressing enrolment ratios for girls and boys, and across nearly all education indicators.

Projects appear to have considered this indicator when designing their projects. For example, in addressing low enrolment rates especially in Nigeria, Discovery appears to be intervening in a number of ways. For example, by engage with parents and communities, as well as producing TV shows to raise awareness about schooling. Coca-Cola appears to work with in-school and out-of-school girls offering special tutorial courses to enhance their literacy and numeracy, and to ultimately enhance the employability of these girls.

3.1.2 Retention

Year-on-year retention rates could not be calculated for the three SPW projects for the same reasons enrolment could not. Coca-Cola and Discovery selected households based on the current enrolment status of girls. So retention rates from these surveys were highly influenced by the proportion of households selected with in-school girls compared to OSGs. The household survey completed by Avanti did not include questions to systematically record if children in the household were enrolled in school, so this survey could not be used to calculate retention rates.

3.1.3 Attendance

Attendance is calculated as the ratio of the number days a student attends school over the total number of days the school is in session. Projects have used different methods to calculate these rates. The most common method used in the other two GEC windows was to code responses by the child's caregiver to questions regarding attendance within a household survey. Other projects attempted to use school records or surveys with school administrators or teachers to calculate or verify the attendance rate. Generally, the first method was preferred in the analyses of the SCW and IW reports because data from household surveys was recorded more consistently.

In the SPW, the household surveys administered by Coca-Cola and Discovery included questions on attendance that were consistent with those used in the other two funding windows. Avanti's household survey also included questions

⁷ Coca-Cola Baseline report, (25); Discovery Baseline report (36)

⁸ http://www.unicef.org/publications/files/SOWC_2015_Summary_and_Tables.pdf

⁹ <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>

about attendance, but they were slightly different from those used in other windows. All three projects collected data directly from schools. School-based sources of attendance data are different for each project, so in the reanalysis of the data, we have used the household surveys to calculate attendance rates.

As reported in [Table 6](#), the following describes our key findings about girls' attendance across the SPW:

- **Project Baseline Reports:** Discovery reported data in their project baseline report taken from their school survey. They separately reported the average attendance rate for all students in the selected schools and the average attendance rate for the girls targeted by the project. For comparability with other sources, [Table 6](#) reports the average attendance rate for targeted girls. Attendance rates range from a **low of 72% in Ghana to a high of 90% in Kenya**. Coca-Cola and Avanti reported responses to questions about attendance in their surveys of teachers and students. Coca-Cola's baseline report only reported whether girls missed any school, so we could not determine an attendance rate. Avanti reported responses to separate questions about attendance from a household survey, teacher survey, and girl survey. For comparability with other projects, we used the household survey data, which reported a 90% attendance rate.
- **Outcome spreadsheets:** attendance data was collected using school registers for the Discovery and Avanti projects. Discovery gathered data on Grades 4 to 6 to align with their Grade 4 cohort's progress over the course of the programme. In Ghana, school registers were considered unreliable and no attendance rate was reported. Avanti reported attendance rates for all primary school grades. This data collection is currently incomplete and will be completed only in late November. Coca-Cola calculated attendance rates to girls' clubs as opposed to schools. Those rates are not reported here.
- **Reanalysis:** data from the household survey were used to calculate average attendance rates for in-school girls in the Discovery, Coca-Cola and Avanti¹⁰ projects. Across the three projects, disaggregated by country, **reported attendance rates ranged from a low of 76% to 90%**.
- **Consistency:** attendance rates derived from the data sources reported in [Table 8](#) are within the range of 70% to 90% in all project areas. However, the variance between data sources suggests that these measures may be too imprecise to reliably compare project areas to each other. In Nigeria, there is a 20 percentage points difference between our reanalysis and data from school registers reported in the outcome spreadsheets. Since Discovery randomly selected girls in each school to participate in the project, the attendance rates for the targeted girls and those for overall students should not be significantly different. However, the overall attendance rate reported in Nigerian schools was 95% - 13 percentage points higher than the attendance rate for targeted girls. The responses in Avanti's different surveys were also inconsistent. While girls and their caregivers reported very high attendance rates (90% and 94% respectively), teachers reported a lower rate of 76%, and the outcome spreadsheet reported an 81% attendance rate. .

Table 6: Attendance rates across SPW

Attendance (%)	Discovery			Coca-Cola	Avanti
	Ghana	Kenya	Nigeria	Nigeria	Kenya
In-school girls					
Baseline Report	72	83	82		90
Outcome spreadsheets		85	96		81
Reanalysis	83	85	76	85	90

In trying to compare the data with external sources, we found that school attendance data for girls in primary schools is inconsistent with the projects' data and our reanalysis. The UNESCO Institute for Statistics¹¹ reports that the net attendance rate for girls in primary schools in Nigeria is 61% (2013) and in secondary schools is 72% (2013), which is significantly lower than the range of attendance ratios we found for Nigeria (82-96%). In Ghana, the reported attendance rate for girls is 69% (2014), which is lower than our range of data (72-83%). In Kenya, the reported attendance for girls in primary schools is 86% (2008), which is consistent and within the range of the projects' data and our reanalysis which is between 81% and 90%.

¹⁰ As mentioned, Avanti conducted separate surveys asking caregivers in the household, teachers, and girls themselves how often they missed school but only data from the household survey was used to calculate the attendance rate.

¹¹ <http://data.uis.unesco.org/Index.aspx?queryid=120>

Summary: Are girls targeted by SPW projects marginalised in terms of attendance?

Because of the lack of precise data, it is difficult to draw a definitive conclusion about girls' attendance. However, the data from all sources in project areas consistently shows that attendance rates are roughly in the range of 70% to 90%, which is broadly consistent with the findings in the SCW and IW project baseline reports. It is worth noting that projects that measured attendance through different surveys show inconsistencies between rates reported by girls or caregivers and school reports, with the latter tending to show lower attendance rates. These results are similar to results found in the baseline reports for GEC's other two funding windows (SCW and IW) and indicate that more research is required to establish reliable measures of attendance.

3.2 What are current learning outcomes?

Learning is the GEC's second key outcome. In this section, we discuss baseline levels of learning across the SPW. We also assess the extent to which girls targeted by SPW projects can be considered marginalised with respect to their learning outcomes.

Learning assessments showed generally low levels of literacy and numeracy across SPW project areas. Significant proportions of students in all project areas were unable to read any words in English and had some of the lowest scores in numeracy assessments. However, there was also significant variation both between and within project areas. While nearly all students scored poorly in some project areas, in others there was a marked division between low and high-performing students.

SPW partners measured literacy and numeracy using adapted versions of two major learning assessments, the Early Grade Reading Assessment (EGRA) and Early Grade Math Assessment (EGMA), and the Uwezo reading and numeracy assessments. Given the differences between these tests, comparisons of learning outcomes across projects are of limited value. Absolute scores in learning assessments are generally not comparable, but we compared the content of each assessment to a common set of competencies and benchmarks where possible.

Benchmarks for learning outcomes

In the reports on the IW and SCW, we compared EGRA scores on oral fluency, measured in words per minute (wpm), to US benchmarks for oral fluency. Specifically, we used reading fluency benchmarks published by Abdazi in 2001 for use by the World Bank¹². Abdazi presents a distribution of oral reading fluency scores achieved by US students and suggests using the score achieved by students at the 50th percentile of the distribution within each school grade as a benchmark. Abdazi further presents the scores achieved by students at the lower end of the distribution, notably at the 18th percentile. Students of Grade 2 at this stage of the distribution scored 45 wpm. This corresponds to the benchmark recommended by USAID for use with students from poor countries. On this basis, we use the EGRA scores achieved by US students at the 18th percentile of the distribution within each grade as a benchmark for students in developing countries.

Table 7: International benchmarks of oral reading fluency by age

Grade	Age	Expected words per minute
1	6 years	21
2	7 years	45
3	8 years	63
4	9 years	85
5	10 years	90
6	11 years	108
7	12 years	110
8	13 years	110

In the SPW, only one partner, Coca-Cola, administered an EGRA assessment, which had been adapted for children at secondary school level. Because of this, the difficulty of the reading assessment was significantly higher than the assessments used to set the benchmarks given in Abdazi. These benchmarks are therefore presented only as an indicative guide and not a valid representation of the grade-level equivalence recorded in Coca-Cola's scores. Avanti

¹² Abdazi, H. (2011) *Reading Fluency Measurements in EFA FTI Partner Countries: Outcomes and Improvement Prospects*, GPE Working Paper Series on Learning, No. 1, Education for All Fast Track Initiative Secretariat, World Bank: Washington DC.

administered an adapted version of the Uwezo test, but for two grade levels their assessment also included an oral fluency test scored in words per minute. While this is not part of the normal Uwezo method, tests were administered with a reading passage at Grade 2 level and Grade 3 level difficulties; hence these results are more closely aligned with the benchmarks given in [Table 7](#).

To date, no comparable benchmarks have been developed for the assessment of EGMA results. There is no established, aggregate EGMA score that readily represents mathematical ability as accurately as oral reading fluency (in wpm). After discussion with RTI International, we decided not to present any benchmarks for EGMA scores in this baseline report. This is consistent with the approach used in the SCW and IW baseline reports.

Results from the Uwezo tests used by Discovery and Avanti are typically reported as a level of competency rather than a score. The standard Uwezo test measures children’s ability to perform literacy and numeracy tasks at a level of difficulty that is typical for Primary Grade 2 assignments. Ability is then reported as the level of tasks that the child can perform comfortably. [Table 8](#) presents the levels used in the 2012 national Uwezo assessment in Uganda, which were adopted by IW and SCW projects.

Table 8: Uwezo assessment levels for literacy and numeracy

Uwezo levels	Literacy		Numeracy
	English language literacy	Local language	
Level 1	<i>Non-readers/nothing</i> – Inability to recognise letters of the alphabet	<i>Non-readers/nothing</i> – Inability to recognise letters of the local language alphabet	<i>Nothing</i> – Inability to count at least 4 out of 5 numerical numbers from 1 – 9
Level 2	<i>Letter</i> – Ability to recognise letters of the alphabet	<i>Letter</i> – Ability to recognise letters of the local language	1-9 – Ability to count numerical numbers from 1 to 9
Level 3	<i>Word</i> – Ability to read words of Primary 2 level difficulty	<i>Syllable</i> – Ability to recognise syllables of the local language	10-99 – Ability to recognise numerical numbers from 10 to 99
Level 4	<i>Sentence</i> – Ability to read a paragraph of Primary 2 level difficulty	<i>Word</i> – Ability to read simple words of the local language	<i>Addition</i> – the ability to solve at least two numerical written addition sums of Primary 2 difficulty
Level 5	<i>Story</i> – Ability to correctly read a story of Primary 2 level difficulty	<i>Sentence</i> – Ability to read a simple paragraph of the local language	<i>Subtraction</i> – Ability to solve at least two numerical written subtraction sums of Primary 2 difficulty
Level 6	<i>Comprehension</i> – Ability to correctly read and understand a story of Primary 2 level difficulty and answer related question	<i>Story</i> – Ability to correctly read a simple ‘story’ text of the local language	<i>Multiplication</i> – Ability to solve at least two numerical written multiplication sums of Primary 2 difficulty
Level 7		<i>Comprehension</i> – Ability to correctly read and understand a simple ‘story’ text of the local language	<i>Division</i> – Ability to solve at least two numerical written division sums of Primary 2 difficulty

Because both Discovery and Avanti used significant adaptations of the Uwezo test, neither partner reported their results on this standard scale. Each test covers slightly different competencies and does not benchmark their tests on Grade 2 level competencies. In order to relate the raw scores on these assessments to specific competencies, we conducted an analysis of each and normalised all literacy scores to a scale of 1 to 6 and numeracy scores to a scale of 1 to 7, corresponding to the competencies listed in [Table 8](#). Further detail on the method used to convert Uwezo scores to this scale are presented in [Annex A](#).



It is important to note that these conversions are not exact. The adapted Uwezo tests used by the SPW partners generally covered the same topics as the standard Uwezo assessment, but questions were often more difficult for higher grade levels. For example, Discovery’s Uwezo numeracy assessment included questions that covered standard topics such as addition, subtraction, multiplication, and division, but the level of these questions was above Primary 2 difficulty. Because of this, comparison between projects and with other funding windows must be done with extreme caution. However, these converted scores provide a picture of girls’ competencies in reading and literacy, which is useful for assessing whether girls are marginalised with respect to learning.

3.2.1 Literacy

Each of the three SPW projects administered a literacy test to the in-school girls in their samples. But, each tool was different. The following is a summary of the tools used by each partner:

- **Coca-Cola**

Coca-Cola administered an adapted Early Grade Reading Assessment (EGRA), which included an oral fluency section. However, because the project targeted girls in secondary school, they were in a higher-grade level than EGRA for which the test is typically used, and the passage was more difficult than a standard EGRA. While the 45 wpm benchmark still serves as a reasonable benchmark for a minimal level of competency necessary for learning, the grade level benchmarks given in [Table 7](#) should be interpreted with caution.

- **Avanti**

Avanti used an adapted version of the Uwezo literacy test, but gave a different version of the assessment to students in each grade level. The topics covered and the difficulty of questions varied between the versions of the test given to each grade level. A reading fluency test was included only in the versions of the assessment given to students in Grades 2 and 3. Because these tests were significantly different from standard Uwezo assessments, it was not possible to normalise these literacy scores to the standard Uwezo competency levels. However, reading fluency scores of second and third grade students were recorded in the standard words per minute scale.

- **Discovery**

Discovery also used an adapted version of the Uwezo literacy test consisting of 40 questions. A slightly different version of the test was used in each country, but there was no appreciable difference in their content or difficulty. Literacy scores were calculated as a simple percentage of correct responses out of 40 questions. Using the subtask scores, we have converted these scores to a six-level scale of competencies aligned with the standard Uwezo scale. The method used to convert raw scores to this scale is described in [Annex A](#). The six levels correspond to the six competencies standard Uwezo levels listed in [Table 8](#) (i.e. level 3 means that a student can read English words). **However, because questions were more difficult than Primary 2 level and because the assessment has a different structure to the standard Uwezo test, the levels reported by Discovery are not directly comparable to standard Uwezo scores** and should be interpreted with great caution.

As reported in [Table 9](#), the following are our key findings about the literacy of girls across the SPW:

- **Project Baseline Reports:** of the three SPW projects, only Avanti reported literacy results for oral fluency measured in words per minute in their baseline report. Oral fluency tests were only completed for students in Grade levels 2 and 3. The reading fluency results were reported in ranges (e.g., 1-44 wpm, 45-60 wpm, etc.). Taking the mid-points in each range, we find that **the mean reading score in Avanti's sample is roughly 37 words per minute for students in grade levels 2 and 3**. This average score is somewhat below the international benchmarks for reading fluency for that grade level, with 55% of students scoring below 45 wpm benchmark set by Abdazi. While Coca-Cola also completed reading fluency assessments, they presented scores in their baseline report on a three-point scale that does not correspond to any standard benchmark. Discovery reported a simple percentage of questions answered correctly on their literacy assessment.
- **Outcome spreadsheets:** Discovery reported Uwezo literacy scores for their Grade 4 cohort only, while Coca-Cola reported scores for students in all grades in junior and senior secondary school, except girls in their final year. Figures are consistent with other sources. Avanti's learning scores have been re-scaled and only Grade 3 girls will be assessed again at endline. This is due to issues with their learning assessments, because a different test was used for each grade. Literacy scores were reported as a raw score out of 20 points in the outcome spreadsheets, while they were reported in words-per-minute in the baseline report. This explains discrepancies between the three data sources.
- **Reanalysis:** data from all three projects were reanalysed and compared with standard literacy scores where possible. Data from Discovery showed disparities among their three target countries. In Nigeria, on average, students answered 12% of the questions correctly, compared with a high of 65% correct responses in Kenya. Based on our standardised Uwezo scoring scale, this means that **the average student in Kenya can read simple sentences (Uwezo level 3) while the average student in Nigeria is below the level of recognising sounds of letters in the alphabet (Uwezo level 2)**.

Coca-Cola collected data on reading fluency measured in words per minute. **The average score was 63 words per minute**, which would be equivalent to the international benchmark at a Grade 3 reading level.

However, since this test was adapted with a significantly more difficult passage at a secondary grade level, this comparison should be treated with caution.

The data available from Avanti included only raw aggregate test scores. Therefore, we are only able to report the average aggregate test score from our reanalysis of their data.

- **Missing data:** each project provided literacy scores, but subtask scores were not available in Avanti’s data. The Avanti literacy test included a reading task that was timed to calculate a reading score in words per minute, but this subtask score was not available for reanalysis. However, it was also not possible to convert total scores in literacy to a standard Uwezo competency level or to calculate an exact average reading fluency in words per minute. This is because of the use of a non-standard test incomplete data provided by Avanti.
- **Consistency:** percentage scores reported by Discovery and Coca-Cola in their project baseline reports matched the percentage scores calculated in our reanalysis and scores reported in the outcome spreadsheets. This is with the exception of Avanti, for which scores were reported using a different scale.

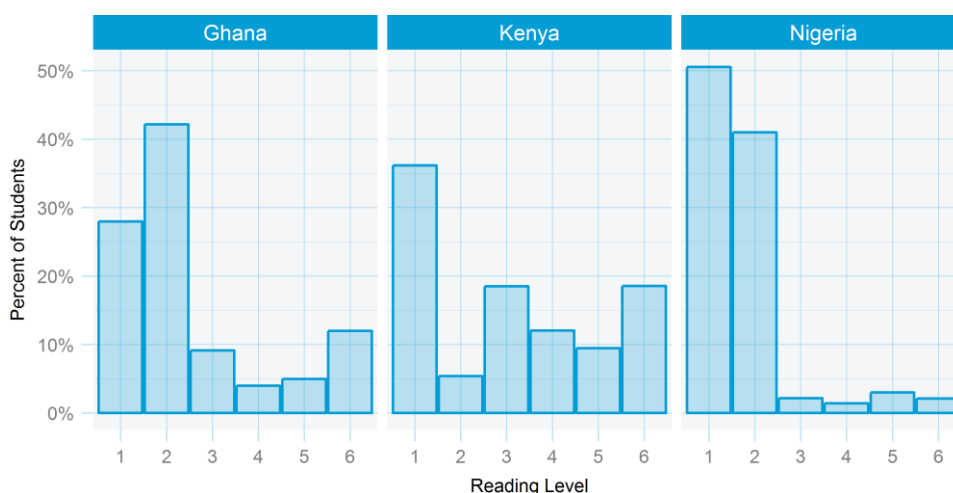
Table 9: Literacy scores for all ages for all projects

Literacy scores	Discovery						Coca-Cola	Avanti	
	Ghana		Kenya		Nigeria		Nigeria	Kenya	
In-school girls	Uwezo		Uwezo		Uwezo		EGRA	Uwezo	
Test used by project	Uwezo		Uwezo		Uwezo		EGRA	Uwezo	
Unit	level	%	level	%	level	%	wpm	Wpm	%
Baseline Report		35		65		12		37	
Outcome spreadsheets		34		65		11	63		31
Reanalysis	3	34	3	65	2	12	63		47

Discovery

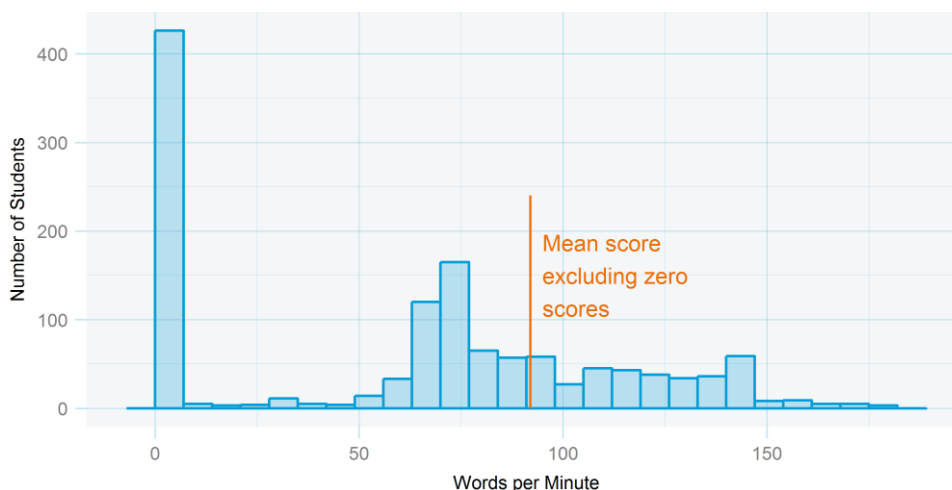
The differences in literacy scores among countries in Discovery’s sample are even more pronounced looking at the distributions of girls’ reading levels shown in [Figure 2](#). **In Nigeria, nearly all of the girls were at the lowest or second lowest literacy level, meaning they could not read individual words.** In Kenya, on the other hand, more students reached higher levels of literacy, with a significant portion achieving the highest level (19%). However, **in all three countries, a large portion of students could not read individual words (70% in Ghana, 42% in Kenya, and 91% in Nigeria).**

Figure 2: Discovery: Distribution of literacy levels on adapted Uwezo scale



Coca-Cola

In Coca-Cola’s sample, the average score of 63 words per minute is above the 45 wpm minimum benchmark set by Abdazi. This suggests that girls in this sample have a high enough level of literacy to read and learn. However, the distribution of oral fluency scores in [Figure 3](#) shows that this overall average masks a heterogeneous distribution: **33% of girls could not read the passage at all, while the average score for the rest of the girls was 94.5 words per minute.** This shows that a significant portion of girls are going on to secondary school without the basic literacy skills needed to succeed.

Figure 3: Coca-Cola: Distribution of oral fluency scores

Summary: Are girls targeted by SPW projects marginalised in terms of literacy?

With the possible exception of girls in Avanti's project, the reanalysis of project data shows that a significant proportion of girls in each project area have very low levels of literacy. However, there were significant disparities between projects and even within project areas. This suggests that in some areas groups of students are falling behind, while in others, school systems are failing entirely.

3.2.2 Numeracy

Each of the three SPW partners administered a numeracy assessment to in-school and out-of-school girls in their sample. Like the literacy tests, these tools also differed between projects. The following sections are summaries of the tools used by each of the partners.

- **Coca-Cola**

Coca-Cola used an adapted version of the EGMA assessment. Scores were calculated as an average of the student's score on each of the six sub-sections. This test was adapted for higher grade levels than is typically assessed using the EGMA tool. Therefore, questions were more difficult and could not be directly compared to EGMA results from lower grade levels.

- **Avanti**

Avanti used an adapted version of the Uwezo numeracy assessment, consisting of separate tests for each grade level varying in difficulty and content. Based on an analysis of the content of the numeracy assessment used at each grade level, we have converted these raw scores to a seven-level scale of competencies aligned with the standard Uwezo scale. Because Avanti's tests did not have standard Uwezo sub-sections, these equivalencies were established by setting score thresholds. The methodology is described further in [Annex A](#). The seven levels correspond to the seven competencies listed in [Table 8](#). Like the other adaptations, these levels were not directly comparable to standard Uwezo assessments, because the difficulty of questions in Avanti's assessments increased with each grade level.

- **Discovery**

Discovery also administered an adapted version of the Uwezo numeracy assessment. We used an analysis of subsections to convert these raw scores to the same seven-level scale of competencies aligned with the standard Uwezo scale. As with the other adapted Uwezo assessments, these levels correspond to the same competencies, but the difficulty of the assessment is higher than a standard Uwezo assessment. Therefore, they cannot be directly compared.

As reported in [Table 10](#), the following are our key findings on the numeracy of girls across the SPW:

- **Project Baseline Reports:** Coca-Cola and Discovery reported average raw scores on each subtask of their numeracy assessment in their baseline reports. We converted these scores to an average numeracy score on 100 percentage points. But these scores do not correspond to any standard benchmark. Avanti reported scores on a 1-3 point scale (poor, medium, good), which represent ranges of scores on the numeracy exam. Because of the lack of precision in these ranges, we have excluded them from [Table 10](#).

- **Outcome spreadsheets:** as for literacy, Discovery reported Uwezo scores for their Grade 4 cohort only, while Coca-Cola reported scores of out-of-schools girls only. Figures are consistent with other sources. Due to issues with their learning assessments, Avanti’s learning scores have been re-scaled and only Grade 3 girls will be assessed again at endline. Numeracy scores are reported out of 10 in outcome spreadsheets, while they were reported out of 100% in the baseline report, which explains the discrepancies between the three data sources.
- **Reanalysis:** in the reanalysis of the project data, we were able to confirm the average scores reported in the baseline reports and relate the scores to numerical competencies. Like their literacy scores, Discovery’s numeracy scores showed large variation across countries. Average scores ranged from a low of 13% correct responses in Nigeria to a high of 66% correct in Kenya. **Based on our converted Uwezo scale, this means that on average, girls in Kenya have a numerical competency level corresponding to subtraction (level 5), while girls in Nigeria have no numerical competency (level 1).** The results from Avanti’s test in Kenya are generally consistent with Discovery’s results. The average score for Avanti was 67% correct responses, which using our conversion, corresponded to a competency level of addition (level 4) on average. The average overall EGMA score in Nigeria for Coca-Cola’s project was 58%.
- **Missing data:** all projects reported numeracy scores. However, Avanti’s data lacked disaggregated scores by subtask. In addition, two sub-sections of Coca-Cola’s data had to be excluded from analysis due to data quality issues.
- **Consistency:** raw scores reported in Discovery and Avanti’s baseline reports are consistent with the values found in our reanalysis of the data. Coca-Cola reported only subtask scores. However, using the same method we used in the reanalysis to determine an overall score, we find that the scores reported in the baseline report are marginally higher than the values found in the reanalysis.

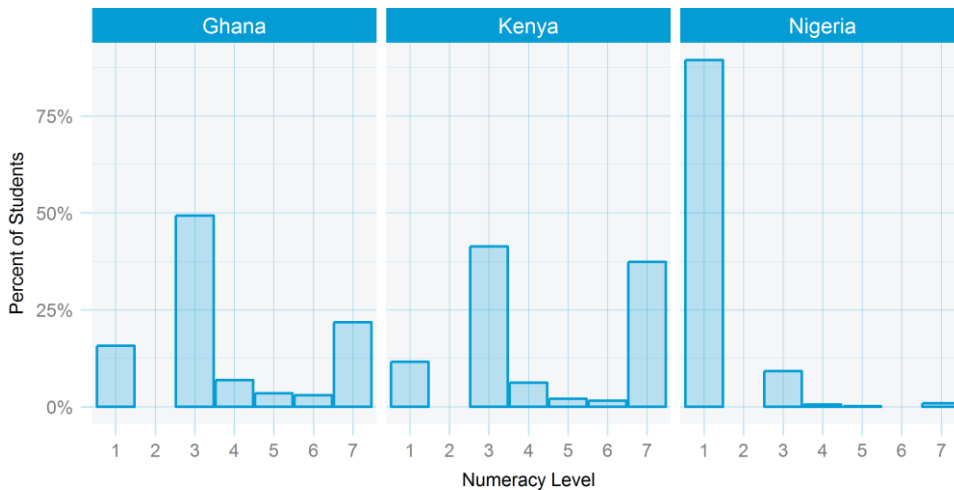
Table 10: Numeracy scores for all in-school girls

Numeracy scores In-school girls	Discovery						Coca-Cola	Avanti	
	Ghana		Kenya		Nigeria		Nigeria	Kenya	
Test used by project	Uwezo		Uwezo		Uwezo		EGMA	Uwezo	
Unit	level	%	level	%	level	%	%	level	%
Baseline Report		55		66		13	64		
Outcome spreadsheets		54		66		12	54		32
Reanalysis	4	54	5	66	1	13	58	4	67

Discovery

The distributions of students’ scores for numeracy within project areas are similar to the distributions of literacy skills. The distributions of numerical competency levels for the Discovery project are presented in [Figure 4](#). Like the literacy scores, girls in **Nigeria (Kano State) are far behind girls in the other two countries (Tamale in Ghana and the informal settlements of Nairobi in Kenya) in numeracy**. Almost all students in the Nigerian sample have no numeracy competencies, whereas girls in their Kenyan sample achieved level seven, the highest level of competency. In Ghana, the most common result was level three with significant numbers of students achieving either the top or the bottom level. Additionally, **a far smaller proportion of students have the lowest level of numeracy in Kenya and Ghana (11% in Kenya and 16% in Ghana)**, compared to their literacy scores. Another notable feature of the distributions shown in Figure 4 is that in Kenya and Ghana very few students had scores between levels 4 and 6. These levels represent skills in addition, subtraction, and multiplication. This suggests that few students master one of these skills without mastering the others. On the one hand, this suggests that this scoring scale is not sensitive to small differences in students’ skills, but it also suggests that there is a division in these countries between students who are falling behind and those who are mastering the material.

Figure 4: Discovery: Distribution of numeracy levels on adapted Uwezo scale



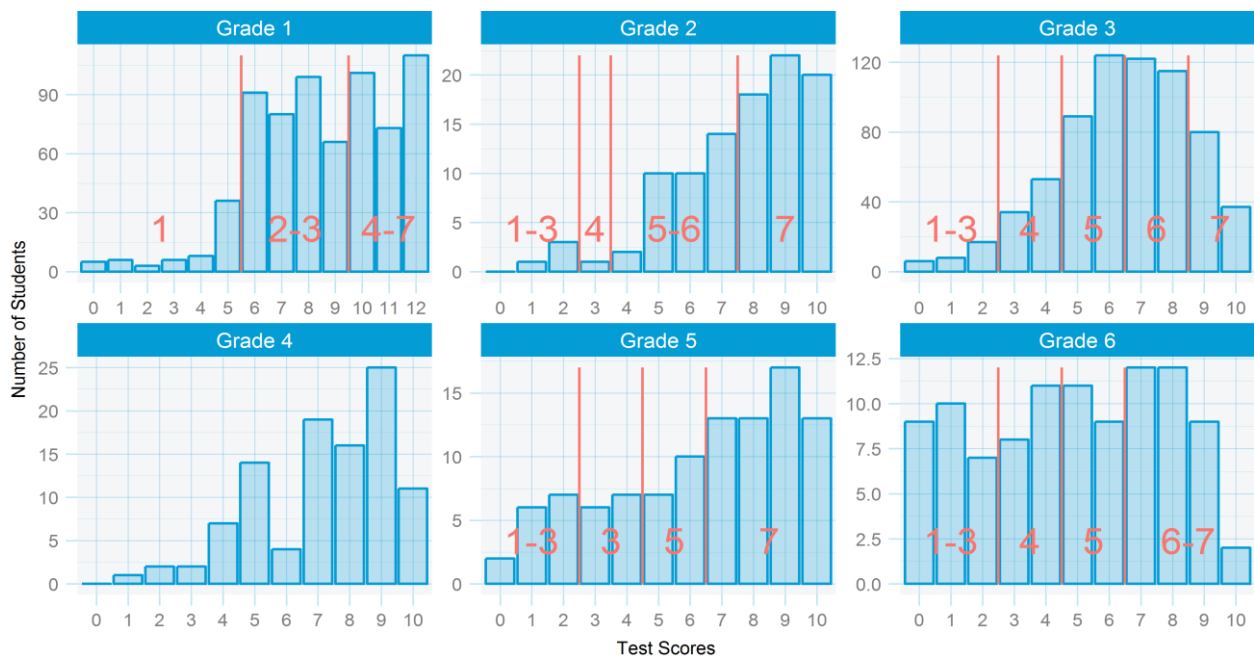
Note: the reason why no student has a competency level of 2 is due to the scale used for adapting the UWEZO test. This limitation is introduced at the beginning of Section 3.2 and the exact methodology used stated in [Annex A](#).

Avanti

The distribution of numeracy scores in Avanti’s data from Kenya is similar to Discovery’s data in Kenya despite the fact that the projects sampled girls in very different parts of the country. [Figure 5](#) presents the distribution of numeracy scores by grade level with thresholds for the Uwezo competency levels. Generally, we find that students’ scores are clustered around levels 3-5, with few students at the lower levels in most grade levels. [Table 11](#) summarises these results, showing the average numeracy score for each grade level along with the closest equivalent Uwezo level. For Grade levels 3, 5, and 6, the average score is equivalent to level 5 competency on the Uwezo scale.

Because the difficulty of Avanti’s tests increased with each grade level, this does not necessarily imply that students are not making progress as they move to higher grades. However, looking at the distribution of grades in [Figure 5](#), we note that **in Grade levels 5 and 6, there is a higher concentration of girls at the bottom end of the distribution compared to earlier grades**. This suggests that there may be a tendency for a portion of the students to fall behind at higher grade levels, and that, in general, girls in Kenya are successfully acquiring basic numeracy skills at early grade levels, but some begin to struggle as the material becomes more advanced.

Figure 5: Avanti: Distribution of raw numeracy scores with thresholds for Uwezo levels



Note: raw numeracy scores are shown on the horizontal axis and corresponding Uwezo levels are shown in red.

Table 11: Avanti: Mean numeracy score by grade level with closest Uwezo equivalent

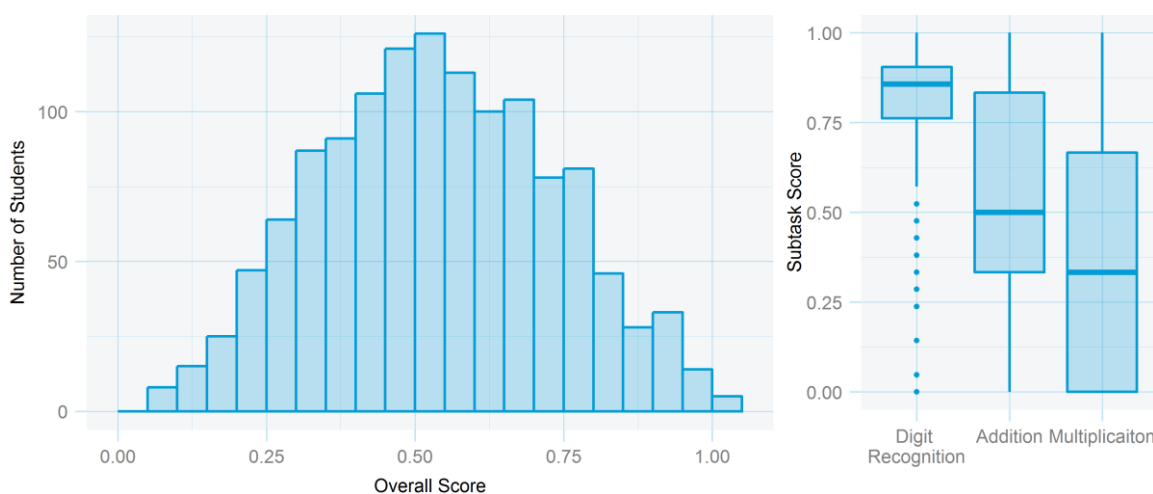
Numeracy	Unit	Grade Level					
		1	2	3	4	5	6
Average Score	%	71	76	64	72	63	48
Uwezo Equivalent	level	2	7	5		5	5

Coca-Cola

While Coca-Cola used an EGMA test that cannot be directly compared to the Uwezo tests, the EGMA does include sub-sections on digit recognition, addition, and multiplication, which correspond broadly to competencies of levels 1, 4, and 5 on Uwezo tests. Looking at subtask scores in the right panel of Figure 6, we can see that a large majority of students passed the Digit Recognition subtask, while the median score on the Addition subsection was 53%. We do not have a specific threshold for the addition subtask, but these scores clearly show that secondary students in this sample performed much better than the primary-school Nigerian students in Discovery’s sample. **This suggests that most girls who have made it past primary school have acquired basic math skills whereas many of those in primary school do not acquire any skills in numeracy at all. However, this score distribution shows that there is still a large portion of secondary students that have not mastered basic skills in addition, subtraction, multiplication, and division.**

Finally, looking at numeracy scores in Coca-Cola’s sample in Nigeria (Figure 6), we find a markedly different distribution from Coca-Cola’s literacy scores. **There is not a spike of students who do not have any numeracy skills at all**; instead, test scores follow close to a normal distribution, with a mean score of 64% and a slight skew toward higher scores. This is consistent with the finding in the other two GEC funding windows that numeracy scores were more evenly distributed than EGRA assessments and scores and did not present any floor effects.

Figure 6: Coca-Cola: Distribution of EGMA scores with subtasks



Summary: Are girls targeted by SPW projects marginalised in terms of numeracy?

Numeracy scores were slightly higher than literacy scores across most SPW project areas. However, a large proportion of girls in many project areas presented low test scores and did not have competences in basic skills such as addition, subtraction, multiplication, and division. As in literacy scores, some project areas performed much worse than average, and within some project areas there were significant disparities between high and low performing students.

4 Barriers to Girls' Education at Baseline

In this section, we discuss the barriers to girls' education that the SPW projects had anticipated within their intervention areas. This is followed by a discussion regarding the evidence presented by partners in relation to these barriers.

As indicated in [Section 2.4](#), the findings presented in this section are based primarily on SPW projects' own analysis and that of their external evaluators, which limited our ability to verify the objectivity or robustness of project findings. We indicate the origin of the findings by referring to individual Project Baseline Reports and we chose to express reservations on them wherever projects themselves have done so as well (refer to [Box 2](#) for a detailed discussion).

Although we were not able to conduct independent research to verify projects' claims relating to the barriers they found, we have conducted an analysis of survey data where possible. As discussed in [Section 2.4](#), a systematic analysis of the quantitative evidence for all barriers across all SPW projects was not possible. Instead, we focused on the evidence for particular barriers related to school quality, poverty and attitudes, which, according to SPW partners, were especially important or prevalent. To clearly differentiate our reanalysis of the projects' survey data from the evidence presented by the partners in their baseline reports, we outline our findings in boxes throughout this section.

Key findings across the SPW

Overall, most of the projects found some level of evidence to support their assumptions about barriers to girls' education. Barriers with the highest levels of supporting evidence were those relating to poverty and school-related factors.

Most projects found evidence of barriers relating to the cost of schooling and housework commitments of girls in their target areas. The third most common barrier concerned negative attitudes towards girls' education, but evidence of this was not systematically found by projects.

Barriers relating to pregnancy and early marriage were not anticipated by most projects. However, such instances were found by all projects, indicating its prevalence across all of the targeted communities.

Barriers to education

Barriers assumed, and /or reported by projects across the SPW, were mapped by six categories.

1. School-related factors

Inadequate provision of schools and facilities: lack of classrooms; and lack of sanitation facilities.

Poor conditions of commuting to school and school distance: distance between schools and girls' homes; and commuting in the rain.

Inadequate provision of qualified teachers: shortage of qualified teachers including female teachers; and teacher absenteeism.

Inadequate provision of teaching materials: lack of school materials.

Poor quality of teaching: inappropriate pedagogical practices and methods; out-dated teacher attitudes and practices; and inappropriate teaching to employment opportunities.

2. Poverty factors

Cost of schooling: high school fees; and high cost of uniforms, equipment and textbooks.

Housework commitments and income generating activities: significant housework commitments of girls; and girls' participation in income generating activities.

Extreme poverty: material deprivation; lack of resources; and lack of other non-specified poverty-related factors.

Lack of sufficient food and water: hunger and shortage of food; and unavailability of sufficient water.

3. Attitude and behaviour factors

Negative attitudes towards girls’ education: negative attitudes towards girls’ education; families valuing boys over girls; and low expectations of girls’ ability to achieve in schools.

Perceived irrelevance of education: lack of family support for education; low community support for girls’ education; and perceived irrelevance of education to employability.

Negative attitude towards girls’ post primary education: cultural norms that discourage girls from attending school past primary.

Negative attitude towards girls’ non-religious education: cultural /religious beliefs that girls should not be educated outside of religious education.

4. Female aspirations, motivation and autonomy factors

Lack of female role models: Lack of local women of influence/role models; and lack of attention given to existing female role models.

5. Violence and security-related factors

Violence: reports of sexual harassment and abuse.

6. Personal and family factors

Early marriage; and early pregnancy.

4.1 What did the projects assume to be the barriers to girls’ education in their target areas?

Projects described barriers to girls’ education that they assumed existed within their target areas in their M&E frameworks and proposals. The identified barriers have been grouped into categories, as described in [Section 2.4.2](#).

The three projects approached barriers differently: Coca-Cola and Discovery explicitly stated the barriers they had identified in their M&E frameworks and project proposals (respectively); while Avanti proposed a number of assumptions regarding marginalisation factors that affected girls’ education. For the purpose of this report, we have considered and treated the marginalisation factors identified by Avanti as barriers to girls’ education.

All three projects assumed that the following factors affected girls’ education in their targeted areas: poverty-related factors; social and cultural norms and attitudes; and school-related factors. Additionally, projects identified other specific barriers to education within their targeted areas. For example, Coca-Cola anticipated personal and family factors, such as early marriage and pregnancy. Discovery assumed barriers related to violence, including sexual harassment. Avanti focused on barriers related to poverty, such as hunger and shortage of food.

[Table 12](#) gives an overview of assumed barriers to girls’ education identified by projects before baseline, reported by categories of barriers.

Table 12: Barriers identified by projects before baseline, by categories of barriers

Barriers assumed by projects	Coca-Cola	Avanti	Discovery
School Related Factors			
Poor quality of teaching	✓	✓	✓
Inadequate provision of teaching materials			✓
Conditions of commuting and school distance			✓
Inadequate provision of schools and facilities	✓		✓
Inadequate provision of qualified teachers			✓

Poverty Factors

Cost of schooling	✓	✓	
Housework commitments and income generating activities	✓	✓	✓
Extreme poverty		✓	✓
Shortage of food and hunger		✓	

Attitudes and Behaviour Factors

Negative attitude and behaviour towards girls’ education		✓	✓
Negative attitude towards girls’ non-religious education	✓		
Negative attitude towards girls’ post-primary education	✓		
Perceived irrelevance of education		✓	

Personal and Family Factors

Early marriage	✓		
Pregnancy	✓		

Aspiration Factors

Lack of female role models			✓
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Violence and Security Factors

Sexual harassment and abuse			✓
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All three projects identified and cited barriers which they assumed affected girls’ education (access and learning) prior to their baseline. More than half of these were poverty and school-related. Projects mentioned the following barriers:

- All three projects assumed the existence of a specific barrier to girls’ education **related to schools**, regarding the poor quality of teaching.
- All three projects assumed the existence of a specific barrier to girls’ education **related to poverty**, which was about the housework commitments for girls, prohibiting them from attending school and learning.
- All three projects assumed barriers related to **attitudes and behaviour** towards (girls’) education, but described them differently. Avanti and Discovery referred to the general negative attitude of communities and caregivers, as well as their lack of support and guidance for girls. Coca-Cola, however, focused on community members’ negative attitudes towards non-religious and post-primary education for girls.
- Coca-Cola identified specific barriers related to **personal and family factors affecting girls**; namely, early marriages and pregnancies of school-aged girls.
- The only barrier to girls’ education related to **aspiration factors** was identified by Discovery, defined as a lack of female role models for girls, as well as communities’ limited attention towards these role models.
- Discovery also assumed barriers related to **violence and security**, specifically describing sexual harassment and abuse as key barriers to girls’ education in their targeted communities.

Our findings correspond to UNESCO’s research findings. UNESCO’s recent research¹³ states that poverty “is perhaps the foremost constraint on education access”. In a previous UNESCO research, when much effort has been put into understanding the obstacles to girls’ education after the 1990 Jomtien conference, two types of barriers stood out¹⁴:

¹³ <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>

¹⁴ http://www.unesco.org/education/wef/en-conf/coverage_session1_2.shtml

- **School-related factors are important for ensuring girls access, stay and learn in schools.** In a number of countries investments in girls' education benefited girls, but they benefited boys more. What seems to have happened is that significant investments in girls' education resulted in an increase in girls' enrolments, but boy enrolments increased more. What this may show is that the investments made essentially improved the quality of schooling and that parents tended to put more children, especially boys, in school when the offering was better.
- It appears that parents still had no additional incentive to enroll their daughters to the same extent as their sons. The quality of education is essential for ensuring that girls get into school and learn, but in itself it is not sufficient. **Growing evidence suggests that the nature of the learning environment and societal attitudes are important factors in improving girls' education.** With regard to the learning environment, there should be a broader definition of "quality" that embodies the concepts of "girl-friendly" or "gender-sensitive" learning environments.

4.2 What are the barriers to girls attending school and learning?

This section focuses on the findings provided by the projects in their baseline reports based on the data they collected through household surveys, school surveys, focus group discussions, and other quantitative and qualitative collection methods. In this section, we present an overview of the prevalence of barriers across the SPW as found by the projects. We also examine whether projects have found evidence supporting their assumptions. The methodology for assessing the prevalence of barriers is detailed in [Section 2.4.2](#).

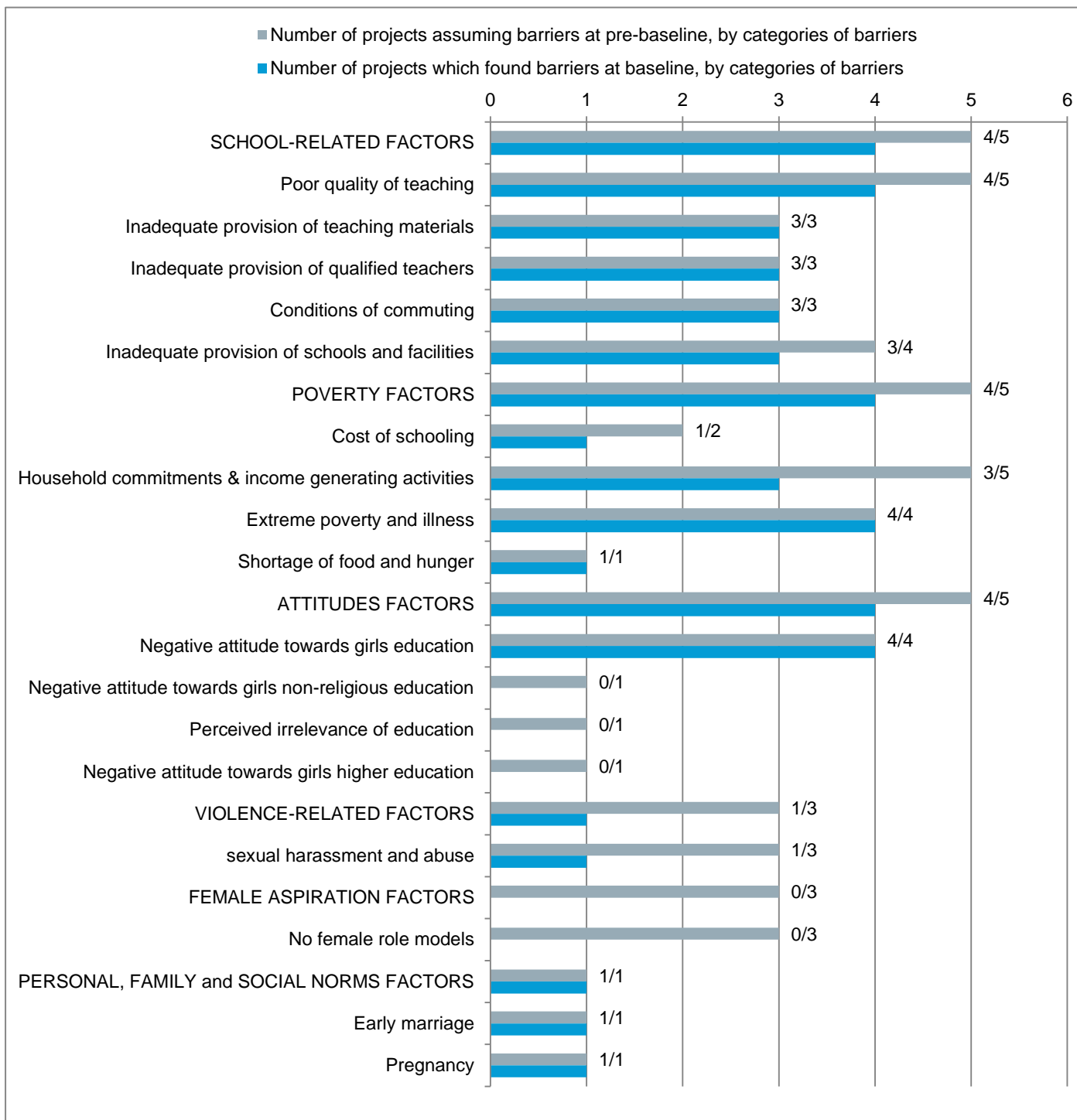
- **Meta-level analysis across the SPW:** the metrics used to assess the prevalence of barriers are derived from the ways in which projects present their findings – for instance, the extent to which reported barriers are prevalent or not prevalent. We discuss the number of SPW projects that have reported the existence of a specific barrier in their target areas.
- **Project-level analysis:** we discuss projects' findings to assess whether any evidence was found, not found or not reported for the assumed barriers identified at design stage.

Meta-level analysis across the SPW by category of barriers

Across the SPW, we discuss the number of projects that have found and reported the existence of each identified barrier in their target areas. The ranking of reported barriers (from most reported to least reported) gives the relative prevalence of some barriers compared to others across SPW projects. [Figure 7](#) gives a summary of barriers assumed and found by the projects (barriers not assumed and unanticipated are presented in table 14).

The project delivered by Discovery is referred to and treated as three separate projects, one in each of the targeted countries: Discovery in Ghana; Discovery in Kenya; and Discovery in Nigeria. This is because while Discovery assumed the same barriers would exist across the three countries, the findings from their baseline research were different in their three targeted countries, and were also analysed and presented separately in the baseline report.

Figure 7: Number of projects that found evidence of anticipated barriers, by categories of barriers



Box 2: Assessing the prevalence and intensity of barriers

Factors responsible for barriers to girls' education can be understood in several ways. Barriers take different forms – among others, barriers to access, barriers to quality services and barriers relating to relevant curricula and /or pedagogy. Barriers may also be related to historically embedded stigma and only be observable as part of subtle social norms.

Assessing the existence of barriers is therefore a complex task, as those existing in the form of perceived stigma against girls' education may be difficult to detect in a population. For instance, 90% of a population may consider that education is a valuable asset for girls; the remaining 10% might state that there is little value in educating girls. For the purpose of this report, we chose to consider that these 10% demonstrated the existence of negative attitudes towards girls' education. Similarly, if parents do not express negative attitudes towards girls' education but other key stakeholders and informants, such as teachers, report that such issues exist, we chose to consider negative attitudes as a barrier.

In some cases, the baseline research assessed certain barriers and marginalisation factors affecting in-school girls (ISGs) and out-of-school girls (OSGs), as well as their caregivers or households. We have analysed whether there is significant difference between the findings for ISGs and OSGs, and where significant differences were present, we have considered that the barrier is evident.

Where projects have assessed their assumed barriers against learning outcomes (enrolment, attendance, retention and learning) at baseline and presented them explicitly in their findings, we have tended to rely on their judgement and assessment. The only exceptions we have made are where evidence presented was very poor.

Determining the prevalence and intensity of barriers is subject to our evaluative judgement. In the previous example, one may argue that girls' access to education is not markedly affected by only 10% of the population reporting negative attitudes towards girls' education. In practice, this may nonetheless imply that 10% of girls are prevented from being in school and learning. Our approach therefore lies in ranking the intensity of reported barriers across SPW projects, in order to assess their relative intensity from one project to another.

Overall, projects found evidence supporting the existence of anticipated barriers. Across the SPW, school-related factors were reportedly the most important barriers to girls' education. This was because most barriers belonged to that category, and most school-related barriers were found in communities targeted by projects.

More specifically, the baseline research identified **four out of the five school-related barriers to girls' education assumed by projects**. These are: poor quality of teaching; inadequate provision of teaching materials; inadequate provision of qualified teachers; problems with commuting to school, especially in terms of the long distance between girls' homes and their schools; and inadequate provision of schools and facilities.

Poverty-related barriers to girls' education were also identified. Avanti anticipated shortages of food and hunger prior to baseline, confirmed by qualitative evidence in certain regions of Kenya.

It is important to note that the capacity of projects to report on barriers may have been different according to the type that they were looking to evidence. **Barriers relating to school-based factors and poverty appear to have been fairly straightforward to evidence. While barriers relating to attitudes may have been harder to measure due to social desirability bias¹⁵ during in-depth interviews or focus group discussions.** Projects may have also faced difficulties in using appropriate research instruments, as well as making sure that the information collected assessed the effects of these factors on girls' education. For instance, Coca-Cola collected evidence about perceptions of violence against girls, but did not make the link or collect further information specifically about how these perceptions affected girls' education.

The key used to assess projects' evidence in relation to assumed barriers is shown in [Table 13](#) below.

¹⁵ Social desirability bias is the tendency of respondents to answer questions in a manner that will be viewed favourably by others. It can take the form of over-reporting "good behaviour" or under-reporting "bad" or undesirable behaviour.

Table 13: Projects’ evidence of assumed barriers – Key

Type of evidence in relation to assumed barriers	Key
Expected barriers found and reported: Assumed barriers were mentioned by a relatively high number of respondents compared to respondents in other SPW projects. Barriers found and reported are marked with ‘✓’.	✓
Expected barriers not found: Assumed barriers were mentioned by a relatively low number of respondents compared to respondents in other SPW projects. Barriers not found are marked with ‘✦’.	✦
Expected barriers not reported: Barriers were assumed but not reported or discussed by the project. Missing evidence is marked with ‘•’.	•
Unanticipated barriers: Barriers were not anticipated or assumed but were found during baseline. Unanticipated barriers are marked with ‘x’	x
Non Applicable: Barriers neither assumed nor reported are marked in Grey .	

As a mitigation strategy, we interpreted projects’ findings in light of the context in which projects operate (refer to [Box 2](#)). Furthermore, when evidence was reported on the share of respondents declaring a positive attitude towards the value of education, for instance, we also considered the importance of the share of respondents not doing so as a proxy for negative behaviours towards girls’ education. This partially mitigates the issue of social desirability bias which may have resulted in respondents not fully revealing their attitudes (refer to [Section 4.2.4](#)). For instance, when a project reported that 75% of the respondents had positive attitudes towards girls’ education, we commented on the fact that 25% of the interviewees may have negative views about girls’ education.

Project-level analysis across the SPW by groups of barriers

In this sub-section, we discuss project findings to assess whether evidence was found, not found or not reported for the barriers assumed at the design stage. We also discuss unanticipated barriers found during the baseline research.

Finally, we comment on barriers that were anticipated by projects at the design stage but were not found. The overarching categories of barriers are presented in this section according to the number of projects assuming their existence – namely, from the most frequently assumed barriers to less common ones.

It is not expected that the relative importance of these categories of barriers will reflect or support the broader body of evidence described in the literature. It should be noted that SPW interventions work in specific target areas and that the barriers they evidenced are specifically related to their initial assumptions and individual project design. As a result, some projects may have disregarded particular barriers in their project M&E frameworks. There is a risk that their baseline research will miss potentially important influencing factors. This issue is discussed in [Section 6](#).

Table 14: Projects’ baseline evidence by type of barriers

Baseline evidence by types of barriers	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
School Related Factors	✓	✓	✓	•	✓ x
Poverty Factors	✓ x	✓ x	✓ x	✦	✓
Attitudes Factors	✓	✓	✓	•	✓
Personal, Family and Social Norms Factors	x	x	x	✓	x
Violence and Security Related Factors	✓ x	✦ x	✦ x		x
Female Aspiration Factors	•	• x	•	x	

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

4.2.1 School-related factors

SPW projects most often assumed, reported, and found barriers to girls' education relating to school factors.

Table 15: Evidence reported by projects for barriers relating to school factors

Baseline evidence for school factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Poor quality of teaching	4	✓	✓	✓	•	✓
Inadequate provision of teaching materials	3	✓	✓	✓		
Inadequate provision of qualified teachers	3	✓	✓	✓		x
Poor conditions of commuting to/from school	3	✓	✓	✓		x
Inadequate provision of schools and facilities	3	✓	✓	✓	•	x

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

Projects' baseline evidence for school-related barriers

Barriers found and reported: Barriers related to school factors were found and reported by Discovery in Ghana, Kenya and Nigeria. These barriers are: poor quality teaching; insufficient provision of teaching and learning materials; inadequate provision of qualified teachers; poor conditions for commuting to and from school; and an inadequate provision of schools and /or school facilities. Avanti also found evidence of poor teaching quality.

Barriers not found: Projects anticipated five school-related barriers to education. All of these school-related barriers were supported by evidence.

Barriers not reported: Coca-Cola assumed that certain barriers existed within its targeted communities, but did not provide evidence to support this in its baseline report. Prior to the baseline research, Coca-Cola assumed that poor teaching quality and an inadequate provision of schools and facilities affected girls' education in their targeted communities. However, the project baseline report did not discuss or provide evidence to support or reject this assumption. Rather, it provided descriptions of reported data from surveys, and focused on education outcomes as well as personal, household or community marginalisation-related factors.

Barriers not assumed: Avanti did not anticipate a number of school-related barriers, but identified three unanticipated barriers in its baseline research. These are: inadequate provision of qualified teachers; poor conditions of commuting; and inadequate provision of schools and facilities.

School-related barrier #1- Poor Quality of Teaching

Teaching methods showed important variation between contexts and countries. However, in all projects, the quality of teaching was reported to impact on girls' school attendance and their learning outcomes.

Projects anticipated and evidenced barriers to education relating to the poor quality of teaching in two ways: the first was anticipated by Discovery and focused on **poor teaching methods and practices** that teachers applied in class; and the second was anticipated by Coca-Cola and focused on **poor curricula and learning content**.

The barrier was evidenced and reported in various ways. For example, through observation carried out in classes, Discovery in Ghana reported that teacher talk time is high, while student engagement is low (refer to [Box 3](#) below for further quantitative analysis and cross-country comparison of Discovery's data). Respondents in focus groups discussions in Avanti's targeted communities reportedly described how teachers were unable to finish the syllabus and were inattentive to students, indicating poor quality teaching in schools.

Box 3. School-related barrier #1 – Quantitative evidence of the quality of teaching and its impact on learning in Discovery’s communities

While all projects cited teaching quality as a major barrier to girls’ education, the quality of teaching is notoriously difficult to measure and there are on-going debates over ideal teaching methods. In this box, we take a closer look at the data that the SPW partners collected about teaching quality and the evidence that poor teaching quality as defined by the projects is a major barrier to learning outcomes in their target areas.

The Discovery project used a classroom observation tool to measure the quality of teaching in their target schools. This dataset provides the most detailed evidence analysing the quality of teaching among the three SPW projects. A purpose of the classroom observations was to assess whether teachers were using “Student-Centred Activities”. In Discovery’s theory of change, these teaching methods should lead to better learning outcomes rather than methods based on getting students to remember facts. Coca-Cola and Avanti did not collect school-level data about teaching quality, so it is not possible to compare these results across the SPW.

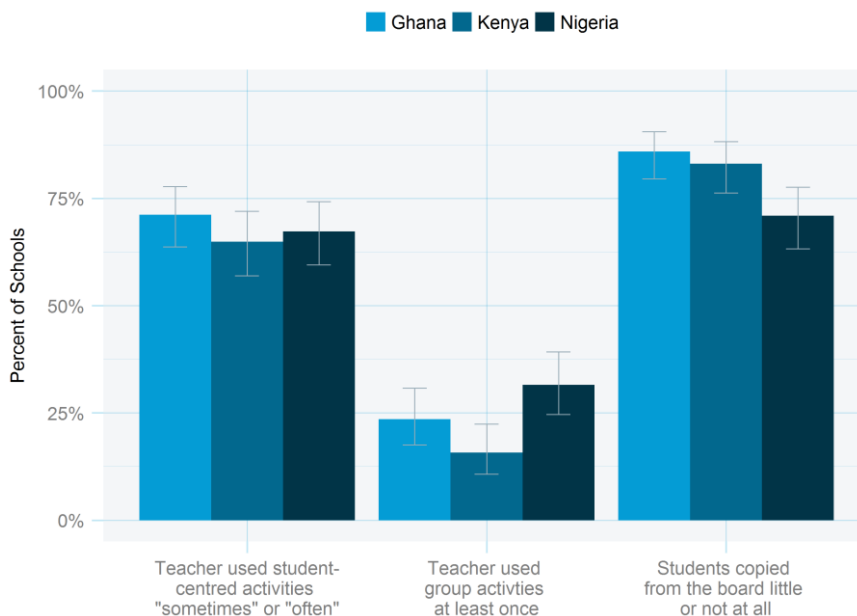
To explore the relationship between student-centred teaching methods and learning outcomes, we took two approaches. First, we compared the prevalence of teaching methods in Discovery’s three countries. Second, we compared data from classroom observations against learning outcomes in individual schools in each country.

Approach 1 – Cross-country comparison

As noted in Section 3.2, students in Nigeria (Kano State) were far behind students in Ghana (Northern Region) and Kenya (Informal Settlements of Nairobi) in both literacy and numeracy. Students in Kenya were somewhat ahead of students in Ghana. If poor teaching methods were a major barrier to learning, we would expect to see a higher prevalence of poor teaching methods in Discovery’s samples in Kenya and Ghana than in its Nigerian sample.

In their baseline report, Discovery uses several questions in the classroom observation tool to measure the use of student-centred activities. First, they report how often teachers use student-centred activities and how often they use group work. The exact questions and responses by country are given in Figure 8.

Figure 8: Teaching methods employed by country¹⁶



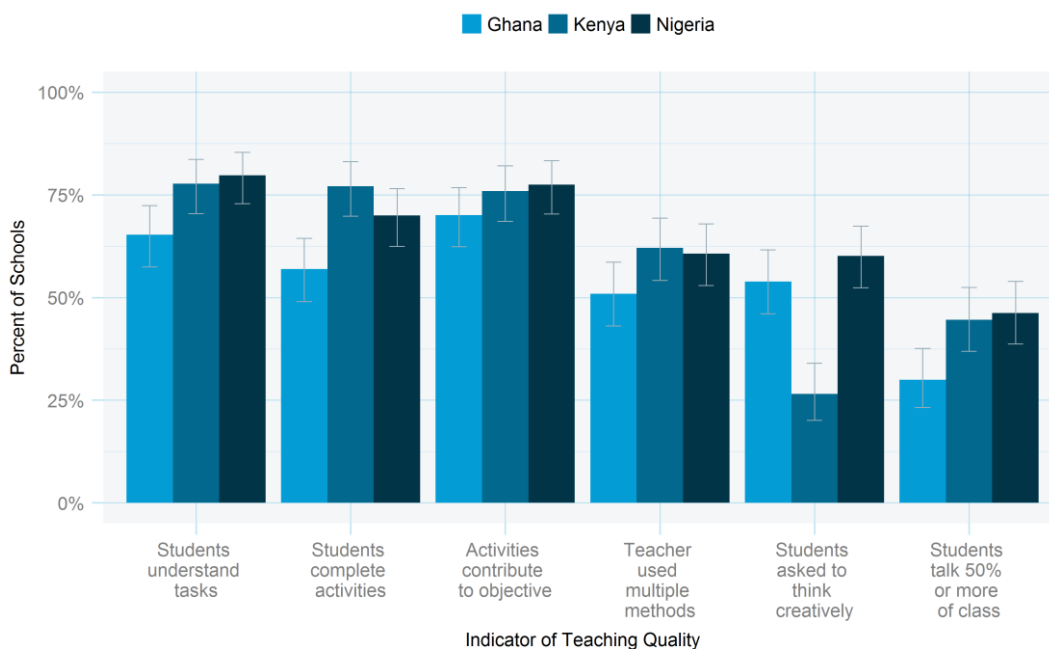
The data does not provide clear evidence that pedagogical systems are significantly different between the three countries or that the quality of teaching in Nigeria is significantly worse. The use of student-centred activities was high in all three, with only small differences between them. In all countries, the use of group activities was low, but it was highest in Nigeria, where 31% (+/- 7%) of schools used at least one group activity during classroom observations, and

¹⁶ In this chart and other bar graphs in this section, bars represent the percentage of observations in the sample and lines on top of the bars indicate a 95% confidence interval estimating the percentage of the underlying population. Confidence intervals were derived using the Clopper-Pearson exact method.

lowest in Kenya, at 16% (+/- 6%). In all three countries, students spent little or no time copying from the board in most classrooms, but in Nigeria this figure was 70% (+/- 7%) of schools compared to a high of 85% (+/- 5%) in Ghana.

These results are similar when looking at other indicators used by Discovery to measure teaching quality. Figure 9 shows the percentage of schools where six other indicators of good teaching quality were observed.

Figure 9: Indicators of Quality of Teaching by Country¹⁷



Like the other indicators, the variation in these indicators does not show a consistent pattern of differences in teaching quality across countries. Nigeria scored relatively high compared to the other countries on all indicators, despite being the country with the lowest performing schools. Furthermore, indicator (5) showed the greatest amount of variation across countries, but Kenya did the worst despite having the best outcomes.

Approach 2 – School-level analysis

While the overall use of these teaching methods did not vary greatly between countries, the quality of teaching could have an impact on the educational outcomes in individual schools within each country. Discovery tested students in each school in their sample, so it is possible to calculate average reading and math scores for each school and compare them against school observations. Figure 10 shows the use of student-centred activities plotted against the average reading score in schools¹⁸.

In Ghana, there was a notable, positive association between the use of student-centred teaching methods and reading test scores, unlike the other countries. This suggests that the effect of teaching methods could be context-specific. There are different possible explanations for this association; for example, such methods could be more culturally appropriate in Ghana, or they could be employed more often in communities with better-resourced schools.

It appears, however, that the district where a school is located in Ghana has a strong association with both learning outcomes and the likelihood that teachers will use student-centred activities. In Discovery’s Ghanaian sample, there is a clear separation between high-performing and low-performing districts. The district where a school is located explained 48% of variation in test scores, and in the two high-performing ones, students scored 74% higher on their reading tests than in the rest of the sample.

¹⁷ The indicators taken from Discovery’s baseline report are: 1) Did students appear to understand what they were asked to do?; 2) Were students able to complete the activities?; 3) Did the activities seem to contribute to reaching a learning objective in the class (clearly aligned with what the students were supposed to learn that day)?; 4) Did teacher use a variety of activities in the lesson?; 5) Does the teacher require students to think creatively to solve real-world problems?; and 6) Was the ratio of student speaking time to teaching speaking time 50% or more?

¹⁸ Note that the explanatory variable, “use of student-centred activities”, is categorical, meaning that it only takes discrete values. In order to make these figures easier to read, we plot points with a small horizontal “jitter” meaning that points are plotted with a small amount of random noise on the horizontal axis. This simply makes it easier to see the distribution of scores.

Figure 11 shows the relationship between using student-centred teaching methods and reading scores in the two groups of districts. Nearly all schools in high-performing districts used student-centred activities, while there was more variation in lower-performing ones. Within each group, however, the association between use of student-centred activities and reading scores was weak: schools in low-performing districts had poor test scores regardless of whether teachers used student-centred teaching methods or not.

Figure 10: Association between teaching methods and reading scores¹⁹

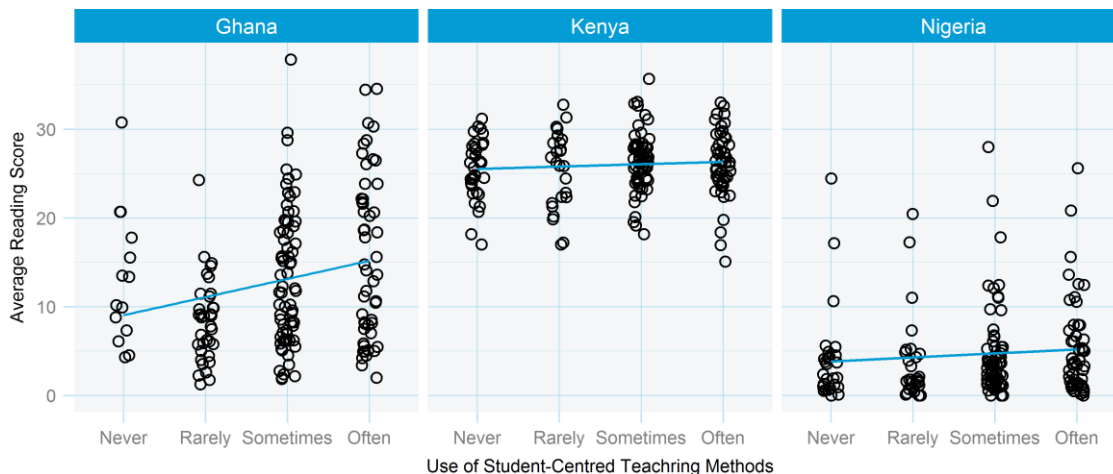
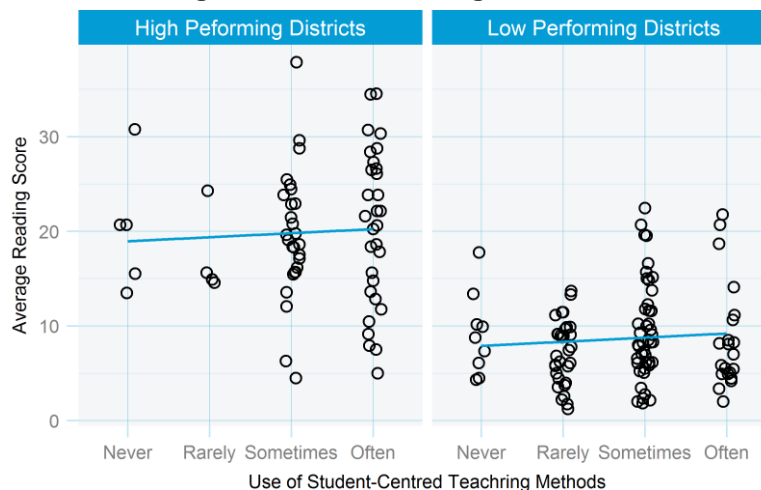


Figure 11: Association between teaching methods and reading scores in Ghana



Conclusions

- The use of student-centred activities does not appear to be a major factor in explaining large differences between learning across countries. It is possible that either the indicators used or the method of observing classrooms is not capturing a true measure of teaching quality.
- The use of student-centred activities may have a local impact, but it is probably closely dependent on other factors. In Ghana, teachers in nearly all schools in high-performing districts used student-centred activities, suggesting that these teaching methods are part of the enabling environment that helps students learn more.

¹⁹ These charts show a linear regression line, which was derived by coding the responses “Never,” “Rarely,” “Sometimes,” and “Often” to a linear scale of 1-4. Because these responses are categorical, the choice of scale is arbitrary and no significance should be put on the coefficient of the regression line. Regression lines are included in the figures only to help visualise the association between average reading scores and this indicator of teaching quality.

School-related barrier#2 – Inadequate provision of teaching materials

A lack of teaching material because of limited school resources was consistently reported in Discovery's project areas.

Discovery expected that the provision of teaching material in its three targeted countries, Ghana, Kenya and Nigeria, would be inadequate and inappropriate, and would therefore act as a barrier to education. This was described in terms of schools and teachers not having access to high-quality teaching aids, teaching and learning resources and materials, affecting teachers' effectiveness and student learning. Supporting evidence was found in all three countries. In Kenya, it was reported that less than half (45.7%) of schools used materials such as textbooks, workbooks, radio lessons, TV sets and computers. Research by UNESCO²⁰ similarly found that in Kenya in particular there has been an increase of at least 10 percentage points in the proportion of students who either had no textbook at all or had to share with two other pupils or more.

A recent survey in two Nigerian states found that more than 50% of classrooms (80% in Enugu and 50% in Kaduna) either had no blackboard or had one that is barely usable²¹.

Neither Coca-Cola nor Avanti anticipated prior to baseline that teaching materials would be inappropriate or limited in their targeted countries.

School-related barrier #3 – Inadequate provision of qualified teachers

Inadequate provision of qualified teachers was defined as a multi-dimensional barrier including the under-supply of teachers, lack of teacher qualifications, as well as gender imbalances among teaching staff.

This barrier was described in several ways by projects: a lack of supply of teachers; a lack of gender balance among teachers in schools (with the number of male teachers exceeding that of female teachers); issues with teachers' qualifications; and teacher absenteeism.

In the case of Discovery, this expected barrier was observed in all three countries. However, it was reported differently in each (refer to [Box 4](#) for in-depth quantitative analysis of this barrier in Discovery data). In Ghana, it was described in a number of ways: for example in terms of the lack of female teachers (80% of teachers were reported to be males); and in terms of teacher absenteeism.

In Kenya, the barrier was mostly observed in the form of teacher absenteeism, with a quarter of the schools reporting that teachers were absent for more than one week within a term. In Nigeria, the report specifically noted that the lack of female teachers discouraged parents from sending their daughters to school. It also noted that the poor qualifications of teachers affected students' learning outcomes.

While Avanti did not anticipate that the provision of qualified teachers would affect girls' education prior to baseline, it did assess and report on teachers' absence in relation to school attendance.

School-related barrier #4 – Conditions of commuting to school

Poor conditions when commuting to and from school were described in terms of poor safety, as well as climate-related issues. These were found to act as a barrier to girls going to school.

Poor conditions when travelling to school include the long distance between schools and households and climate-related issues. These were found to be barriers to girls' education in Avanti's and Discovery's targeted communities.

Discovery anticipated that the length of travel to school would be a barrier to girls' education, and found varied evidence to support this in Kenya, Ghana and Nigeria. However, the barrier was described differently across the three countries. In Nigeria, for example, it was described in terms of heavy rain during the rainy season. In Kenya, it was described in terms of safety issues on the way to school, such as traffic incidents. In the case of Avanti, while the barrier was not anticipated, evidence pointed to the fact that about 20% of the girls had to walk for an hour or more to get to school.

²⁰ <http://unesdoc.unesco.org/images/0023/002322/232205e.pdf>

²¹ <http://unesdoc.unesco.org/images/0018/001865/186525E.pdf>

School-related barrier #5 – Inadequate provision of schools and facilities

With regards to school facilities, overcrowded schools and classrooms and inappropriate sanitation facilities were found to be among the main factors affecting girls' learning.

The inadequate provision of schools and facilities was found to be a barrier to girls' education by Discovery and Avanti, but not Coca-Cola (which anticipated it, but did not discuss it at baseline). The barrier was described in several ways such as: overcrowding in schools and classrooms; a lack of or inappropriate toilets and sanitation facilities; and general poor condition of facilities.

Discovery described the inadequate nature of facilities and in particular their inappropriateness for girls. In Ghana, the evidence found suggested that inappropriate latrines affected girls' attendance in schools. In Nigeria, overcrowded classes were found to affect learning in the classroom, while in Kenya, this had an impact on the enrolment of new students.

While Avanti did not anticipate that the provision of schools and facilities would affect girls' education prior to baseline, the baseline report did discuss these factors. Avanti asked both households and girls whether facilities were appropriate: 67% of household survey respondents noted that schools did not have the necessary facilities for students to learn, while 32% of the girls found that the facilities were inappropriate. Education officials also stated that facilities were inappropriate and affected girls' education.

Highlighting the significance of school infrastructure and especially water and sanitation facilities to education, UNICEF²² states in its research that

Safe water and adequate sanitation are as important to quality education as pencils, books and teachers, Safe water and adequate sanitation are crucial for girls to take their rightful place in the classroom. Without these basic necessities, girls will continue to be absent.

(UNICEF, Water and Sanitation)

Box 4. School-related barrier #2, #3 and #5 – Quantitative evidence of school resources and their impact on learning

School-related barriers two, three, and five are related to deficiencies in school resources, including: teaching materials; qualified teachers; and school facilities. Compared to measures of teaching quality, these characteristics can be measured more directly. Discovery's dataset again provided the most detailed data on these variables. Discovery conducted a survey with administrators from each school in their sample, which included questions covering facilities, teaching staff, and resources. As in Box 4, we undertook two analyses to explore the relationship between school resources and learning outcomes: first, we compare schools in the three countries; second, we compare data about school characteristics against learning outcomes in individual schools in each country.

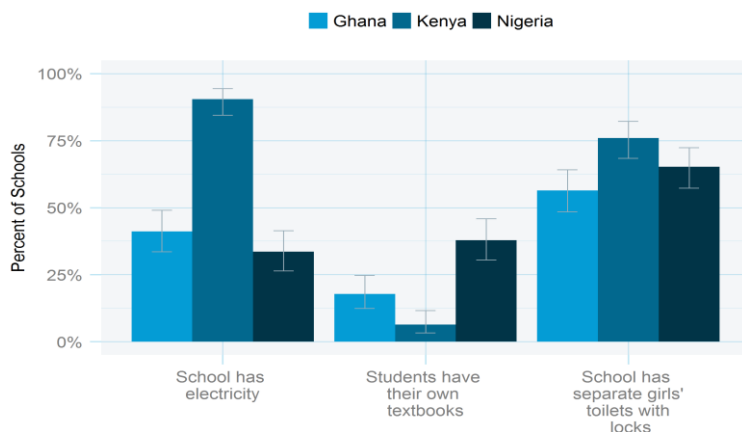
Coca-Cola's primary source of data at the school-level came from interviews with enrolled girls. This survey dealt primarily with girls' perceptions and home situations, providing little information about their schools. The Avanti project conducted a teachers' survey, which largely addressed teacher perceptions, but also included some questions related to school resources. Where possible, we compared the results from the Discovery project to Avanti's data.

Approach 1 – Cross-country comparison

Discovery's school survey included several indicators to measure the barriers found through their qualitative research. Figure 12 shows the prevalence of three indicators of school resources: (1) schools have access to electricity; (2) students do not have to share textbooks; and (3) schools have separate girls' toilets with locks.

²² http://www.unicef.org/education/index_focus_water.html

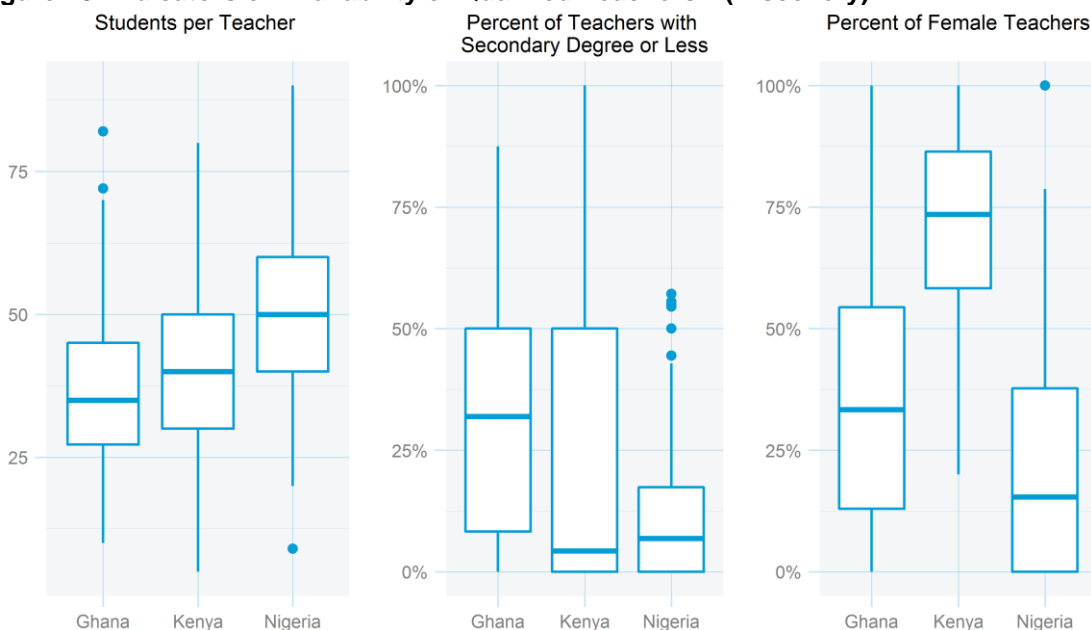
Figure 12: Indicators of school resources (Discovery)



These indicators serve as proxies to measure the quality of school institutions and educational materials. They do not reveal a consistent pattern of differences in school institutions across countries, although schools in Kenya were much more likely to have access to electricity than schools in Ghana and Nigeria. In all countries, 100% of schools reported using textbooks, but in Ghana and Kenya it was very uncommon for students to have their own textbooks.

Figure 13 compares schools in each country on three measures of the availability of qualified teaching staff: (1) the student-teacher ratio; (2) the portion of teaching staff with secondary education or less and no teaching diploma or college degree; and (3) the percentage of female teachers. Patterns are not consistent: schools in Nigeria have somewhat larger class sizes and few female teachers, but they have a significantly lower portion of teachers with no diploma or degree. The clearest difference observed was that Kenya had a far higher percentage of female teachers.

Figure 13: Indicators of Availability of Qualified Teachers²³ (Discovery)



²³ The charts in this figure are boxplots, which summarise the distribution of observations of each variable. The vertical lines represent the range of values (the highest and lowest values) excluding outliers. 50% of observations lie within the box (observations between the first and third quartiles) and the horizontal line inside the box is the median value. Dots above and below the vertical lines are outliers.

Taken together, these indicators suggest that differences in school resources among the countries could partially explain the variation in test scores. The difference in access to electricity could signal that schools in the Kenyan sample are better-resourced than those in the other countries. However, this pattern was not present in all indicators.

Approach 2 – School level analysis

At the school level, several of the indicators examined above have an association with average test scores in schools. However, like the data on the quality of teaching in **Box 3**, the relationship between measures of school resources and learning outcomes appears to be context-specific. Below, we take the example of teacher qualifications to illustrate how context affects these relationships.

Figure 14: Association between teacher education level and school test scores (Discovery)

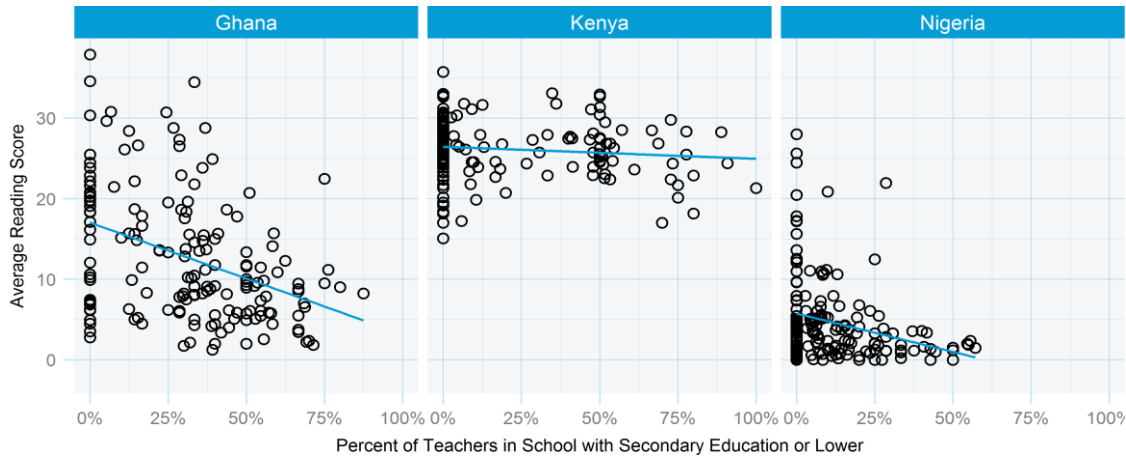
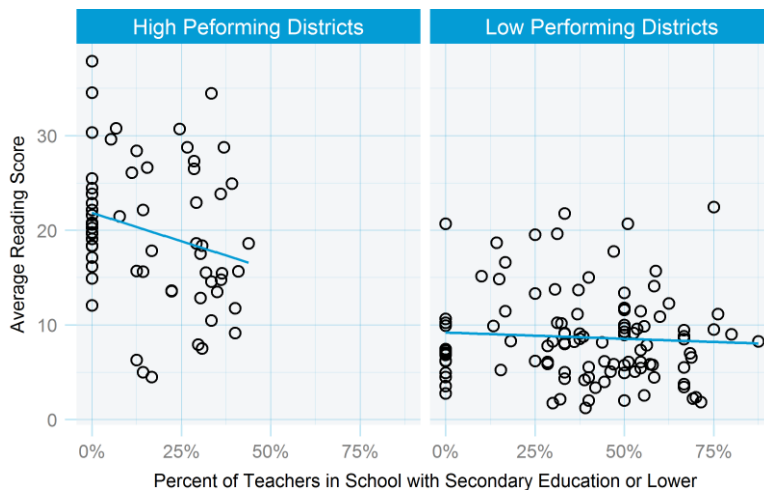


Figure 14 shows the association between the proportion of teachers without a teaching degree and the schools' average reading test scores. As in the case of teaching methods, we find that Ghana presents the most variability and the strongest relationship between this indicator and test scores. In Kenya, where test scores were the highest, there does not appear to be an association between the two variables. Although in Nigeria an association was found, the variation is small due to very low test scores.

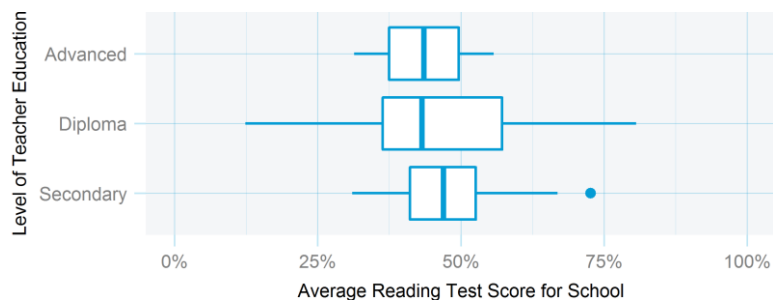
However, similar to before, when we look at high and low performing districts in Ghana, the pattern changes: schools in the low performing districts have low test scores regardless of the qualifications of their teaching staff, while there is still a negative relationship in high performing districts.

Figure 15: Association between teacher education level and school test scores in Ghana (Discovery)



We can also compare these results to data from Avanti on teacher qualifications. Because Avanti interviewed only one to two teachers in each school rather than interviewing administrators, we cannot get the same overall proportion of teachers with advanced education. However, when comparing the education level of the teacher(s) sampled in each school against the school's average test scores, we find there is no apparent relationship.

Figure 16: Association between teaching education level and school test scores (Avanti)



Conclusions

Cross-country differences do not appear to be large enough to explain the large differences in test scores between Discovery's three countries. However, we do see an overall pattern, in that schools in the Nigerian sample appear to have somewhat fewer resources than Kenyan schools in particular. Given the large differences in outcomes between the three regions, this still reinforces the assumption that there must be other major factors in regional or national educational systems or contexts accounting for the large differences between the samples. At the school level, we see that schools with better learning outcomes tend to have more resources, but that resources alone do not necessarily improve outcomes.

4.2.2 Poverty-related factors

Poverty-related barriers were the second most frequently assumed, reported and evidenced barriers across the SPW. These were described mainly in terms of: a general lack of resources and extreme poverty; household commitments and income generating activities; cost of schooling; and shortage of food and water.

Table 16: Evidence reported by projects for barriers relating to poverty factors

Baseline evidence for poverty related factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Extreme poverty and lack of resources	4	✓	✓	✓		✓
Household commitments /income generating activities	3	✓	✓	✓	✦	✦
Cost of schooling	1	x	x	x	✦	✓
Shortage of food and hunger	1					✓

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

Projects' baseline evidence for poverty-related barriers

Barriers found and reported: Barriers related to extreme poverty and a lack of resources were assumed and evidenced by Discovery and Avanti. The projects did not provide a detailed description of what these would entail prior to baseline. But, when reporting the evidence found, they contended that the financial situation of their family affected girls' enrolment and attendance in schools.

Barriers not found: Factors related to household commitments and income-generating activities were assumed as barriers to girls' education by all three projects, but evidence was only found by Discovery.

Barriers not reported: All poverty-related barriers to girls' education that were assumed by the projects were reported on in baseline reports.

Barriers not assumed: Discovery did not anticipate that the cost of schooling would be a barrier to girls' education in its targeted communities. However, in its baseline research, it found that this is a specific barrier to girls' education in its three target countries.

Poverty-related barrier #1 – Extreme poverty and lack of resources

Poverty as a barrier has mostly been analysed by projects through the lens of material deprivation and self-reported inability to meet basic needs.

Extreme poverty and lack of resources were described in a number of ways by projects. Discovery contended that poverty puts pressure on girls and their parents, leading them not to prioritise education, especially if the girl is not performing well at school. Avanti, on the other hand, referred to poverty as a marginalisation factor for girls that affects their education. Coca-Cola did not explicitly identify poverty as a barrier to girls' education, but referred to other poverty-related barriers discussed in this section and in [Box 5](#).

Discovery anticipated that poverty and a lack of resources would affect girls' enrolment and attendance in schools in the three countries. Nigeria had the least reported incidence of the problem, with 52% of parents of out-of-school girls (OSGs) reporting that financial issues were the main reason for not sending their daughters to school. In Ghana, the percentage was 67%, followed by Kenya, where the proportion reached 88% of parents of OSGs. In Nigeria, however, the large number of siblings also reportedly contributed to the limitation of resources and the constraints faced by parents to send all children to school.

Box 5: Quantitative evidence of household poverty of in-school and out-of-school households

While all partners found that poverty was a major barrier to girls' education, there are many ways that this could occur. On the one hand, poor areas may have poorly funded schools and infrastructure and lack support for girls to go to school. If regional effects like these were the main ways that poverty affects educational outcomes, then it would be difficult to separate poverty as a barrier from others, such as poor quality schools or unsupportive attitudes. On the other hand, household poverty levels could affect their ability to pay for school, or other factors that primarily impact only those households. In this box, we look at the quantitative data collected by the partners on household poverty and consider whether enrolment is related to household poverty levels.

Coca-Cola and Discovery conducted household surveys for separate samples of in-school and out-of-school households.²⁴ As noted in [Section 2.3](#), because of their methods, these are not representative samples of the target areas, but must be considered as separate. The data is not appropriate for classical statistical models such as linear regression, but we can analyse whether household characteristics are significantly different between the two groups. It is important to note, however, that because out-of-school households in both countries were not selected randomly, out-of-school samples could be more similar to in-school samples than they are in the population in general²⁵.

We use two measures of poverty: household living standards and self-reported poverty status. The first measure is based on Oxford University's Multidimensional Poverty Index (MDPI). Living standards are one of three dimensions of poverty in the MDPI, along with health and education. Within that dimension, the MDPI measured six indicators of material deprivations: (1) lack of access to electricity; (2) no improved sanitation facility or shared facility; (3) no access to clean drinking water; (4) house does not have an improved floor; (5) cooking with dung or wood; and (6) no assets. Both partners' household surveys collected data on the majority of these indicators. Data on self-reported poverty status was taken from a common question in Coca-Cola and Discovery's household surveys, in which households reported whether they could meet basic needs and if they had any income left for non-essential goods.

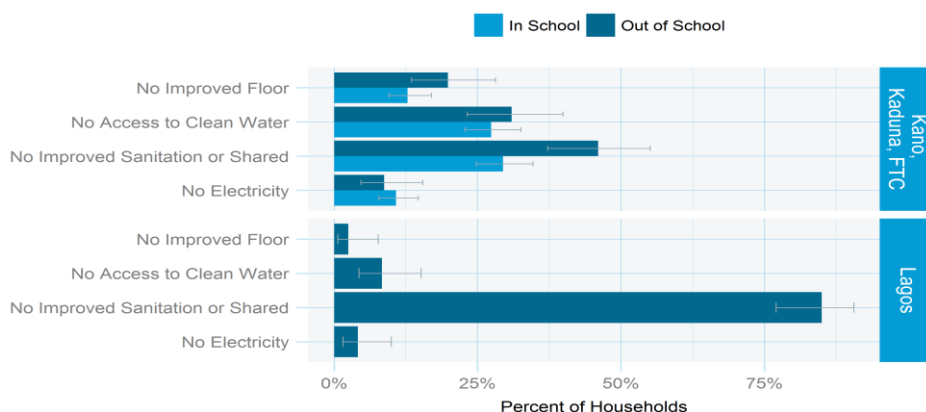
Living standards

Coca-Cola's household survey included questions covering the first four MDP indicators of material deprivation. Information collection was not consistent in the case of asset ownership, and on cooking fuel, it was not consistent with the MDPI methodology. [Figure 17](#) presents the prevalence of each material deprivation for in-school and out-of-school households in the Coca-Cola project. In Lagos, Coca-Cola only had data available on OSGs, so the out-of-school samples from Lagos are separated from the other regions.

²⁴ For the purposes of this analysis, we consider in-school households as those where more than half of household girls are enrolled in school, and out-of-school households to be those where more half or more of the girls in the household are out of school. Coca-Cola only collected data on secondary age girls, and a large majority of households in their sample reported only have one girl in this age range living in their house.

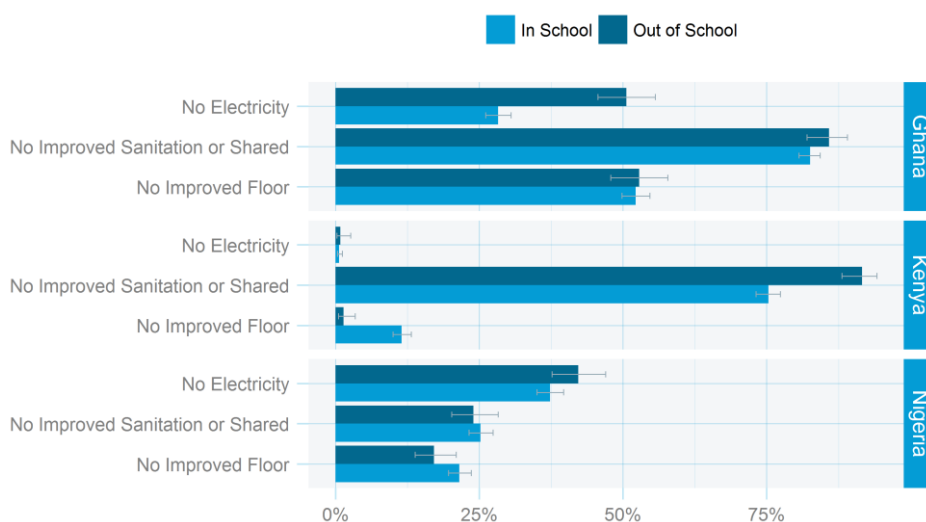
²⁵ Discovery selected out-of-school households by asking the in-school girls if they knew girls that were out of school, and Coca-Cola selected out-of-school households by repeatedly visiting households in the catchment area of selected schools until they found one with an out-of-school girl.

Figure 17: Indicators of material deprivation (Coca-Cola)



The differences between the in-school and out-of-school households are small across most indicators, except for improved sanitation facilities. Among households in Kano, Kaduna, and the Federal Capital Territory (FCT), households with an out-of-school girl were 55% more likely than in-school girls to lack improved sanitation facilities, and nearly half of the households with OSGs faced this deprivation. In Lagos, the prevalence of this deprivation was much higher (87%).

Figure 18: Indicators of material deprivation (Discovery)



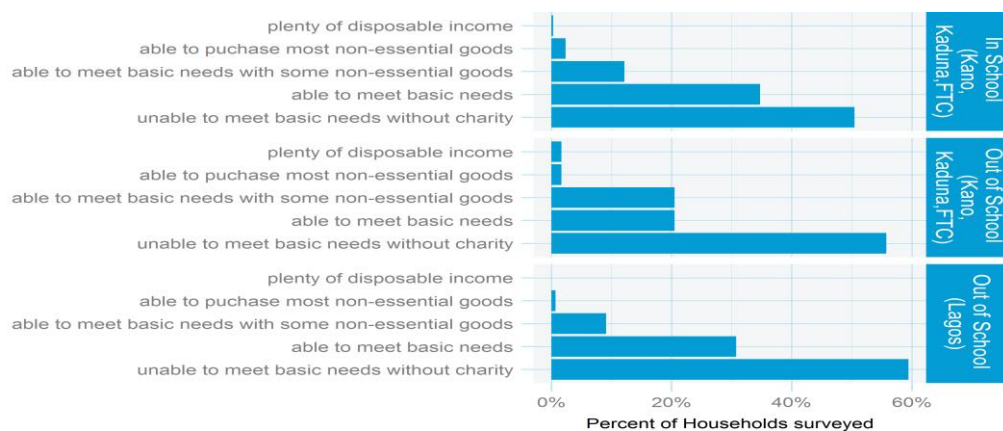
Using the same measure of material deprivation across Discovery’s three countries, we find significant differences. Figure 17 shows the prevalence of each deprivation for each country, disaggregated between in-school and out-of-school households. On most measures, material deprivations were found to be lowest in Kenya and greatest in Ghana. Like Coca-Cola’s data, the single most frequent deprivation was a lack of access to improved sanitation facilities, which was reported by 87% of households in Ghana. As measured by the MDPI, this deprivation was also very high in Kenya; however, most households reported having an improved shared toilet. If we include only households with no access to improved sanitation (including shared facilities), the prevalence of this deprivation drops to near zero in Kenya and Nigeria, but remains high in Ghana. For consistency, in Figure 18, we report the MDPI.

Comparing in-school and out-of-school households, we find that across most indicators, differences between the two were small. An exception was in Ghana, where 51% of out-of-school households reported lacking electricity, nearly twice that of in-school households (28%). A significant difference was also found between Kenyan households that had access to a shared toilet rather than a private one (92% of out-of-school versus 75% of in-school households).

Self-reported income status

In Coca-Cola's sample, a majority of households in each of the three groups reported that they couldn't meet basic needs without charity. Figure 19 shows each group's self-reported income status.

Figure 19: Indicators of material deprivation (Coca-Cola)



The top two panes show the differences between households with and without an out-of-school girl in Kano, Kaduna, and FCT – 50% for households with an out-of-school girl and 56% for households without an out-of-school girl reported being unable to meet basic needs. The difference between in-school and out-of-school households, however, was small, the main difference being that out-of-school households reported having enough money for non-essential goods more frequently (20% and 12% respectively).

Figure 20 presents self-reported poverty status of in-school households for each of Discovery's three countries. In-school households in this sample appeared to feel less poor than those in the Coca-Cola one. A majority of in-school households reported having enough money to meet basic needs. This is notable because Discovery's and Coca-Cola's projects were implemented in the same region of Nigeria. The most likely source of the difference is that Coca-Cola's sample only included households where a girl met at least one marginalisation criteria, such as being an orphan or getting married early. Differences in self-reported poverty may reflect these differences in targeting.

Unlike the Coca-Cola project, we find a significant difference in self-reported poverty between in-school and out-of-school households in all countries, but especially Kenya, where 55% of out-of-school households reported not having enough money to meet basic needs, compared with only 16% of in-school households.

Figure 20: Self-reported poverty in in-school households (Discovery)

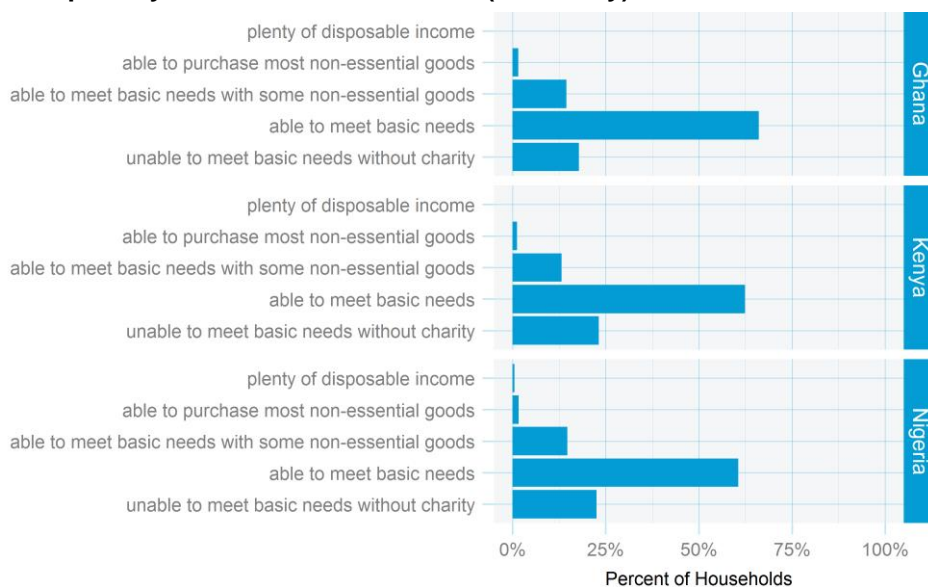
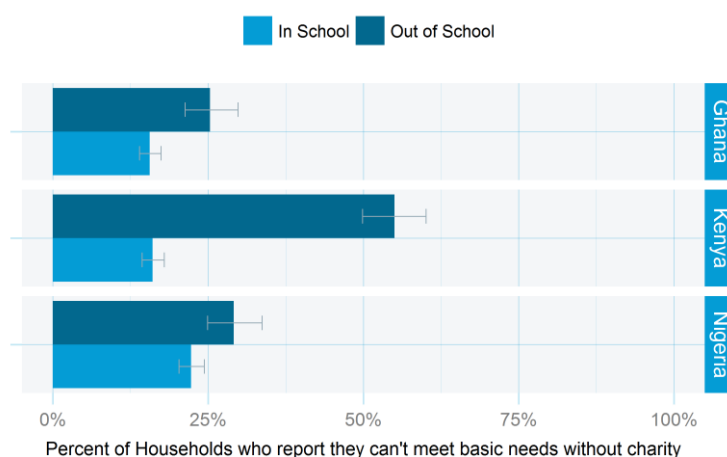


Figure 21: Self-reported poverty in in-school and out-of-school samples (Discovery)

Conclusions

These results suggest that poverty may affect educational outcomes in ways that are context-specific. In particular, we note several patterns in the data:

- **No individual material deprivations were consistently associated with worse learning outcomes. However, in different contexts, particular deprivations were more common among out-of-school households.** In Discovery's Ghana sample, a lack of access to electricity was more common among out-of-school households, but in other groups that pattern did not hold. Similarly, Kenyan households with access only to a shared toilet were somewhat more likely to include an out-of-school girl, but in Ghana, large majorities of both in-school and out-of-school households reported having no access to an improved toilet at all.
- **Household perceptions of their poverty level may have a more important impact on their decisions to enrol their children than their actual living standards.** The most surprising finding from the Discovery data was that households in the informal settlements of Kenya had comparatively few material deprivations. Despite this, a large portion of out-of-school households reported being very poor, and this appeared to be significantly different between in-school and out-of-school households.

Poverty-related barrier #2 – Household commitments and income generating activities

Girls may engage in various activities to improve their household's livelihoods, especially in poor households. This was seen as a barrier to their attendance and subsequent learning trajectory.

Prior to baseline, all projects expected girls' household commitments and /or their engagement in income generating activities to act as a barrier to their education. The three projects described this in the context of poverty and limited resources, with girls seen as engaged in helping their families through housework or contributing to household livelihoods.

Prior to the baseline research, Discovery described the barrier in terms of girls having to conduct domestic labour and /or earn income from an early age, especially when they did not perform well in school or when families did not appreciate education. This was found to affect girls more than boys, and as having a negative impact on all learning outcomes, including attendance, enrolment, retention and learning. In Ghana, it appeared to have a very strong effect in the harvesting season, when girls had more household chores and responsibilities, leading to a gender gap in learning.

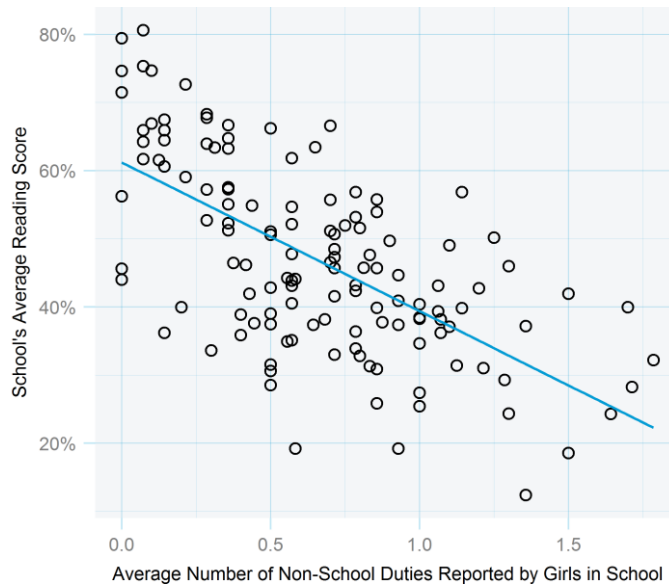
Coca-Cola also identified girls' domestic responsibilities as a barrier to education prior to baseline. However, the report found that in-school and OSGs spent the same amount of time performing household duties; contradicting its previous assumptions. Avanti also did not provide evidence that the household environment has a negative impact on studying at home, because both girls and caregivers reported that girls have enough time to study at home. Only 5% of caregivers stated girls do not have time to study at home, while about 97% of girls said they have time either sometime or enough time. Quantitative analysis of this barrier is provided in [Box 6](#) below.

Box 6: Quantitative evidence on the influence of the time spent on household duties on learning

Evidence about the barriers to school attendance suggested two major pathways through which poverty affects educational outcomes: in poor households, girls may have more household duties or there may be costs associated with schooling that make it difficult for families to afford to send their children to school.

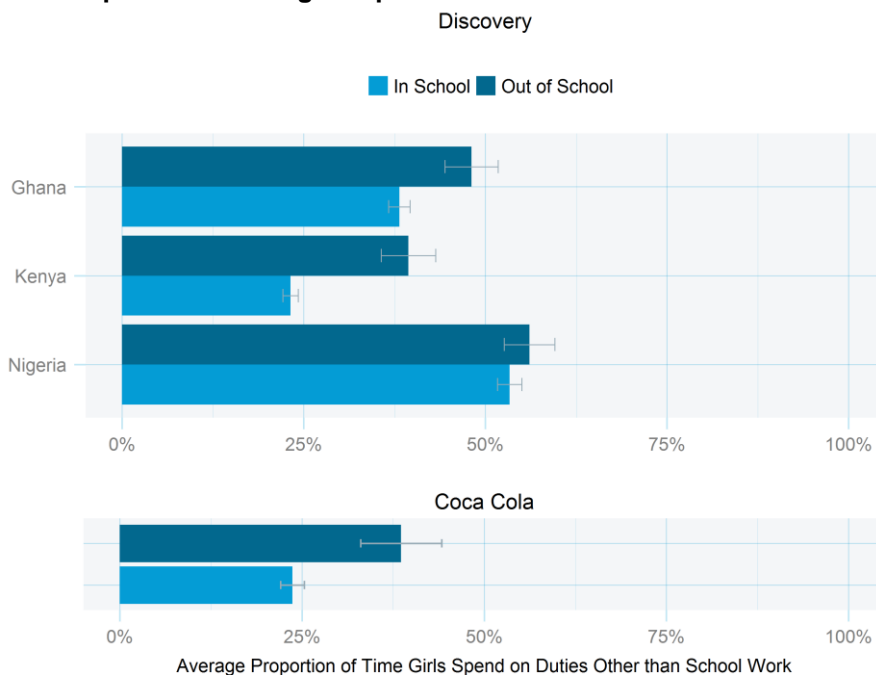
In this box, we look first at the relationship between non-school duties and learning outcomes. Avanti’s survey of in-school girls included a series of questions on tasks they had to do the previous day. Girls were asked if they cared for family members, did agricultural work, or worked outside the home. Comparing the average number of duties girls reported having against average reading test scores, we found a strong negative relationship.

Figure 22: Relationship between time on duties and test scores (Avanti)



Household duties could also affect enrolment if girls are unable to attend school because they have too much work to do outside the house. Data was collected by Discovery and Coca-Cola on the proportion of time girls spend on their household duties. As expected, OSGs generally spent more time on their duties than girls in school, especially in Discovery’s Kenya project area and Coca-Cola’s project. These results are summarised in Figure 23 below.

Figure 23: Proportion of time girls spend on duties other than schoolwork



Conclusions

These results suggest that the time spent on duties other than schoolwork could be related to educational outcomes in terms of enrolment and learning. However, care should be taken in interpreting these findings. With regards to enrolment, it is unclear whether girls who are out of school spend more time on their duties because they are out of school and have more free time, or if their household duties prevent them from attending school. We might expect that if girls' duties prevent them from going to school, their attendance rates would fall before dropping out entirely, but this does not appear to be the case. In most cases, there was not a statistically significant relationship between girls' reported attendance rates and time spent on their duties²⁶. However, we noted in [Section 3.1](#) that attendance rates were variable across all countries and our measure of school attendance may be imprecise.

It is also notable that, in some cases, in-school girls reported spending a large proportion of their time on household duties (for example, girls in Discovery's Nigeria project reported spending 52% of their time on duties). This could suggest that girls in these areas are at risk of dropping out and help explain the poor learning outcomes found in Discovery Nigeria's target schools. The strong relationship between school reading scores and non-school duties in Avanti's project supports the interpretation that girls with more non-school duties fare worse at school and may be at greater risk of dropping out. However, it is also possible that girls who have more household duties tend to be from poorer areas or have worse learning outcomes for other reasons.

Poverty-related barrier #3 – Cost of schooling

The cost of schooling was seen as entailing a variety of expenses needing to be met by the household and as acting as an important obstacle to girls' education.

The cost of schooling was described by projects in a number of ways, including: inability to pay school fees; inability to afford textbooks and other learning material; inability to supplement teachers' salaries, as requested by some schools; and inability to afford uniform and shoes.

For Discovery, the cost of schooling was not specifically anticipated or assumed as a barrier to girls' education prior to baseline. However, during the baseline research, it was found to be significant especially in Kenya and Nigeria, because of an inability to afford school fees. This is despite the fact that Kenya abolished school fees until grade 7²⁷ and in Nigeria for primary school aged children²⁸. UNESCO research shows that although tuition fees were abolished in Nigeria, 10% of parents reported paying some form of fee in 2010, around 57% of parents reported paying a compulsory parent-teacher association fee and a further 40% had to pay exam fees. In Ghana, the cost of schooling was described during baseline in terms of an inability to afford school textbooks.

Avanti found evidence that the cost of schooling, including the ability to afford uniforms and shoes, affected girls' education, especially attendance. However, the strength of the evidence is weak as it is not clear whether households were able to give other non-pre-identified answers.

Coca-Cola also anticipated the cost barrier to education, but the evidence was not strong enough to determine its effect. This is because the proportion of caregivers of in-school girls supporting the claim was much higher than those of OSGs, which led the authors to doubt whether the question was well understood by the latter.

Poverty-related barrier #4 – Shortage of food and hunger

Hunger-related factors were seen as placing girls in situations where they could not attend school or learn properly.

The shortage of food and hunger, together with its negative effect on girls' education, was only anticipated by Avanti. Baseline findings indicated that a large majority of girls (83%) stated that they had three meals per day, and 14% reported having two. Focus group discussions highlighted that in certain regions, food shortages made children unable to concentrate on schoolwork.

²⁶ This relationship was tested through a series of regression models, including both a bivariate linear model and multivariate linear models that controlled for other factors such as attitudes and household characteristics. In all of Discovery's three countries, the coefficient on time spent on household duties was not significant at a .05 level of significance. In Coca-Cola's data, the coefficient for time spent on duties was significant at the .05 level ($p=.036$), but it was not significant in any other model we tested with other covariates. The full model regression results are given in Annex A.

²⁷ http://www.unicef.org/publications/files/Abolishing_School_Fees_in_Africa.pdf

²⁸ <http://unesdoc.unesco.org/images/0021/002180/218003e.pdf>

4.2.3 Attitude-related factors

The SPW projects anticipated barriers related to the communities and caregivers’ negative attitudes towards education. All three projects assumed a variety of attitude-related barriers to girls’ education prior to baseline. Discovery and Avanti found evidence to support their assumptions.

Table 17: Evidence reported by projects for barriers relating to attitude factors

Baseline evidence for attitude and behaviour-related factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Negative attitude towards girls’ education/lack of parental support	4	✓	✓	✓		✓
Negative attitude towards girls’ non-religious education	0				•	
Perceived irrelevance of education	0					✦
Negative attitude towards girls’ post-primary education	0				•	

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

Projects’ baseline evidence of attitude-related barriers

Barriers found and reported: Barriers related to negative attitudes towards girls’ education were assumed and evidenced by Discovery and Avanti. The findings show that this barrier affected girls’ attendance, enrolment, retention and learning in schools.

Barriers not found: Avanti assumed that parents and community members did not perceive education as relevant to their children’s future, anticipating that this would affect girls’ (and boys’) education. However, the baseline research did not support these assumptions.

Barriers not reported: Coca-Cola assumed that community members and parents did not support non-religious education and post-primary education for girls. However, the baseline report did not discuss or provide evidence to support or reject these assumptions, therefore it is difficult to assess whether this factor acts as a barrier to girls’ education in Coca-Cola’s target areas.

Barriers not assumed: No unanticipated barriers relating to attitudes towards girls’ education were discussed in the baseline reports.

Attitude-related barrier #1 – Negative attitude towards girls’ education /lack of parental support

Negative attitudes towards education seemed to affect boys as well as girls in some contexts, although social desirability bias may limit the reliability of the evidence.

This barrier was primarily described in terms of parents and community members valuing boys’ but not education girls’, but also in terms of parents not providing guidance and support for girls to succeed in school.

Discovery described the barrier especially in terms of parents under-valuing their investment in girls’ education. Assuming that girls would eventually get married and leave their families behind, parents feared that investment in their education would not provide a payback for the family. In Ghana, teachers (and not parents) spoke of negative attitudes of parents and community members towards girls’ education compared to boys’ education.

Prior to baseline, Avanti also assumed that negative attitudes of parents and community members towards girls’ education would act as a barrier to their education. The evidence found to support this assumption was weak. During the primary research, parents expressed similar views about education for both girls and boys. The majority of girls also stated that their parents were always or sometimes supportive of their education. These findings were partly confirmed by quantitative analysis (see Box 7). However, 58% of teachers stated that parents value girls and boys education similarly, while 37% stated they value boys’ education more, providing some evidence to support the project’s assumptions.

Negative attitudes towards girls' non-religious education

Coca-Cola assumed that parents and community members believed that girls should not be educated outside of religious education. As this was not discussed in the baseline report, an assessment on whether it constitutes a barrier to girls' education cannot be made.

Negative attitudes towards girls' higher education

Coca-Cola assumed that cultural norms in targeted communities did not support girls attending school past primary school level. However, this was not discussed in the baseline report, so we cannot assess whether it is actually a barrier.

Attitude-related barrier #2 – Perceived irrelevance of education

Education was not valued. Parents perceive education as mostly irrelevant for children's employability.

This barrier concerns parents' perceptions about the relevance of education in general, and the aspiration they have for their children. Assessing this barrier specifically looks at parents' perceptions of the future of both boys and girls.

Avanti assumed that parents' low aspirations for their children's education affected schooling choices. It assessed this barrier by asking parents about what level of education they aspired for their children, finding that the majority of respondents supported university education for children: 81.4% for boys and 81.9% for girls. This evidence does not support the claim that parents perceive children's education as irrelevant.

Box 7: Quantitative evidence on attitudes about education

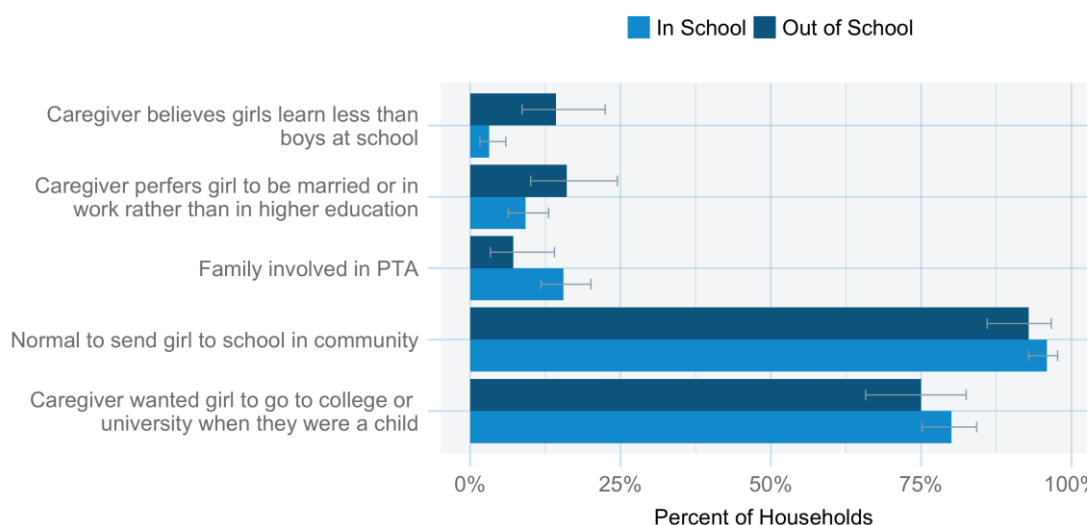
All SPW partners assumed in their project designs that negative attitudes were a significant barrier to girls' education, but found mixed evidence to support their assumptions. Part of the reason for this was that caregivers tended to report having extremely positive views about girls' education in household surveys. In this section, we take a closer look at SPW partners' quantitative evidence about parental and community attitudes toward girls' education. We focus on differences between in-school and out-of-school households to assess the impact of parental attitudes on enrolment.

Household surveys completed by Coca-Cola and Discovery included questions to assess the caregiver's attitudes toward girls' education and perceptions about how girls' education is perceived in their community. We have used these questions as proxy indicators to assess parental and community attitude towards girls education (refer to figures 24 and 25 for indicators). Coca-Cola's survey included all five indicators, and Discovery's included four. Avanti's household survey did not have the same questions on parental attitudes or about enrolment, but, where possible, we compare the results from Coca-Cola and Discovery to similar questions in Avanti's household survey. Avanti's household survey did not have the same questions on parental attitudes or about enrolment, but, where possible, we compare the results from Coca-Cola and Discovery to similar questions in Avanti's household survey.

Coca-Cola

Data collected by the Coca-Cola project showed that the overwhelming majority of caregivers in both in-school and out-of-school households had a positive view of girls' education and had high educational aspirations for girls – 81% of caregivers in in-school households reported they hoped the girl would be in higher education at age 18 rather than working or married. Only 5% said they thought girls learned less than boys at school, and 95% said that it was normal in their communities to send girls to school. Responses from caregivers in households with OSGs also indicated favourable attitudes toward education, but there was a tendency for their views to be slightly less favourable.

Figure 24: Indicators of parental and community attitudes



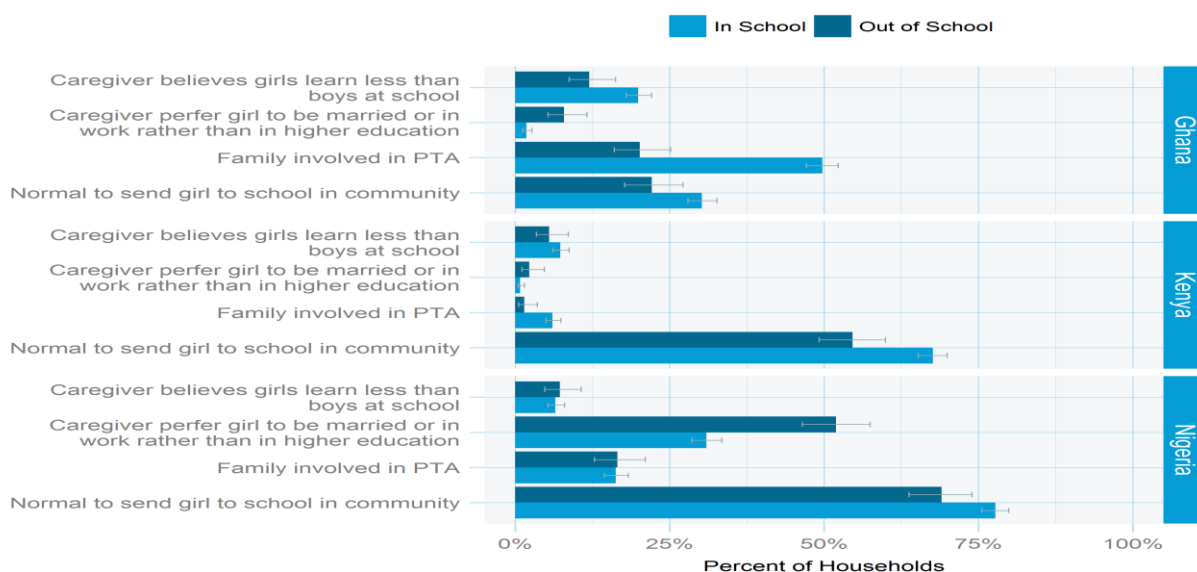
Although the vast majority of caregivers in out-of-school households reported that they would like their daughter to be in higher education once she becomes older, 16% reported they would prefer their daughter to be married or working, compared to only 9% in-school households. Caregiver responses to most of the other questions (such as involvement in Parent-Teacher Associations) are similarly marginally less favourable to girls' education, but the differences are small.

Discovery

Caregivers surveyed in Discovery's three countries responded with similarly positive views about girls' education, but tended to be somewhat less positive than those in Coca-Cola's data. The largest difference in attitudes was in Nigeria, where significant portions of caregivers of both in-school and out-of-school households reported they would prefer that their daughter be in work or married at the age of 18, rather than in higher education (31% and 52%, respectively). Significant portions of caregivers in all countries also said that it is not normal in their communities to send girls to school. In Ghana, only 29% of caregivers said this was the case.

Comparing in-school and out-of-school households, we find a similar pattern to Coca-Cola's data: households with girls who are in school have marginally more positive views about their education. Overall, there were two large differences in our indicators of attitudes to girls' education: In Ghana, 50% of in-school households reported being members of PTAs – more than double that of households with OSGs. This is unsurprising, given that there would be little reason to be member of a PTA if your child was not in school.

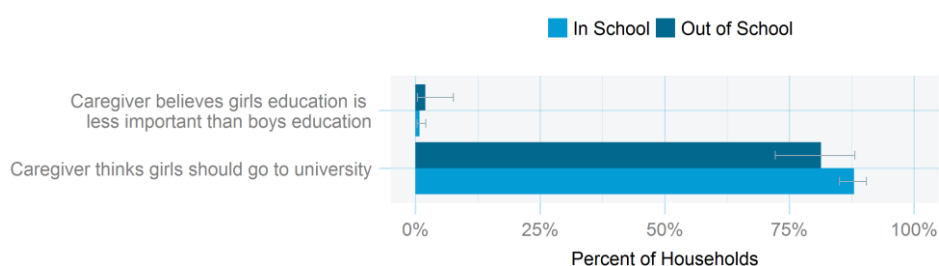
Figure 25: Indicators of parental and community attitudes



Avanti

While directly equivalent data is not available for Avanti’s project, we see from similar questions in the household survey related to parental attitudes that most caregivers had favourable attitudes toward girls’ education. Only 1% of caregivers reported that they thought girls’ education was less important than boys’ education and 87% reported they thought girls should be educated up to a university level.²⁹ Comparing the responses of in-school and out-of-school households, we did not find a significant difference in attitudes³⁰. In the teacher survey, 21% reported that they believed girls’ education was valued less than boys’ education. Because this data was collected in schools, we cannot draw any conclusions about how wider community perceptions affect enrolment. However, there was not a statistically significant difference between girls’ test scores in schools where the teachers reported that girls’ education was undervalued and schools where they did not.

Figure 26: Caregiver attitudes about girls’ education



Conclusions

The large majority of caregivers interviewed reported having favourable views toward girls' education, as parents are unlikely to say that they disapprove of their own daughter's education. The fact that larger portions of household in Discovery’s survey believed that their community did not value girls' education could signal the existence of prejudices in some areas. As in [Box 5](#), these results suggest that the impact of attitudes on education may be highly context-specific. In Ghana, where caregivers felt that it was uncommon to send girls to school, households with in-school girls were also far more likely to participate in PTAs, whereas other areas educational systems were supportive enough to girls that it was less necessary for parents to do so.

4.2.4 Personal, family and societal factors

Personal, family and societal factors include early marriage and pregnancy of girls, which affect girls’ attendance and act as barriers to their education. Only Coca-Cola anticipated their existence in its targeted communities, but all three projects found that such barriers were present at baseline.

Table 18: Evidence reported by projects for barriers relating to personal, family and societal factors

Baseline evidence for personal, family and social-related factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Early marriage	1		x	x	✓	x
Pregnancy	1	x	x		✓	x
Other unanticipated barriers: FGM, Family’s recent mobility, Parents’ knowledge about education system requirements	0	x	x			

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

²⁹ Only 2% thought girls should have less than secondary education.

³⁰ 81% of out-of-school households said they thought girls should go to university, while the figure was 88% for those with an in-school girl. However, using a Pearson’s Chi-Square test, we find that this difference is not statistically significant at the 5% confidence level ($p = .07$).

Projects' baseline evidence for negative attitude-related barriers

Barriers found and reported: Early marriage and pregnancy were anticipated by Coca-Cola, and were included among the personal, family and societal factors that were evidenced during baseline.

Barriers not found: There are no barriers to girls' education that were identified prior to baseline and not found. All barriers anticipated prior to baseline were found during the baseline research and included in baseline reports.

Barriers not reported: There are no barriers to girls' education that were identified prior to baseline and not discussed or reported.

Barriers not anticipated: All projects identified unanticipated barriers to girls' education related to personal, family and societal factors. These included female genital mutilation (FGM), families' recent relocation, and early marriage.

Personal, family and society-related barrier #1 – Early marriage

Early marriage was described as an alternative to education in some cultural contexts, and its prevalence was found to be strongly correlated with poverty levels, being often viewed as an opportunity for girls to be provided for by their husbands.

Although only Coca-Cola anticipated that early marriage for girls would be a barrier to education, the baseline research found evidence supporting its relevance to their target groups. Except for Discovery in Ghana, all projects found evidence that marriage was a key barrier, resulting in girls dropping out of school and disrupting attendance, which can last for months. In Nigeria, UNESCO research shows that about one in six young women aged 20 to 24 were married or in a union before the age of 15 among girls aged 15 to 19, and only 2% of those married were in school³¹.

Early marriage was often related to poverty (where parents prefer to marry off girls to relieve them of taking care of their needs), as well as cultural norms. More specifically, it was reported that in Nigeria, and specifically in Kano State, early marriage is a norm in Hausa and Islamic culture.

Personal, family and society-related barrier #2 – Pregnancy

Pregnancy has been evidenced by all projects as a key barrier to girls' attendance to school.

Similar to early marriage, only Coca-Cola assumed that pregnancy was a key barrier to girls' education in its targeted communities prior to baseline, and was able to evidence this. However, both Discovery and Avanti found that pregnancy for school-aged girls was a key reason for girls to drop out or not attend school. Discovery found that pregnancy is a barrier to girls' education in Ghana and Kenya, but not in Nigeria as only 1% of school girl survey respondents noted that it was a reason for not going to school. This is an interesting finding, as the effects of early marriage on girls' education are usually similar to those of pregnancy.

Personal, family and society-related barrier #3 – Other unanticipated factors

Several unexpected barriers relating to family and society behaviours have been evidenced by Discovery.

Discovery found evidence of the existence of unanticipated barriers to girls' education relating to personal, family and societal factors in its targeted communities during the baseline research. Specifically, these are related to:

- Female Genital Mutilation (Kenya), which was found to disrupt girls' school attendance or to lead them to drop out altogether;
- Families moving and relocating (Ghana and Kenya), which was described as a reason for girls to drop out of school or as disrupting their attendance; and
- Parents' knowledge about the education system and how to register children in school, which also led to delays in registry or no registry at all.

³¹ <http://passthrough.fw-notify.net/download/131378/http://unesdoc.unesco.org/images/0021/002180/218003e.pdf>

4.2.5 Violence related factors

Only Discovery anticipated violence-related factors. These were described in terms of sexual harassment and abuse. During the baseline research, other types of violence affecting girls’ education were identified and reported by Discovery and Avanti.

Table 19: Evidence reported by projects for barriers relating to violence factors

Baseline evidence for violence-related factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Sexual harassment and abuse	1	✓	✦	✦		
Other unanticipated types of violence/harassment	0	x	x	x		X

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

Projects’ baseline evidence for violence-related barriers

Barriers found and reported: The only violence-related barrier that projects anticipated would affect girls’ education related to sexual harassment and abuse. In Ghana, sexual harassment was reported as specifically affecting girls’ attendance at school.

Barriers not found: While sexual harassment and abuse was anticipated to affect girls’ education by Discovery in its targeted communities, it was not clear whether this was found in Nigeria and Kenya. The baseline report stated that about 4% to 5% considered violence and harassment as the main reason for not sending girls to school. However, it was not clear whether this specifically referred to sexual harassment or to other forms of violence in school.

Barriers not reported: There are no barriers to girls’ education that were anticipated but not discussed or reported in the baseline reports.

Barriers not assumed: Discovery and Avanti found evidence of types of violence that emerged during baseline research that were not anticipated. This suggests that projects have underestimated the ways in which violence affects girls’ education. These are barriers relating to fear of violence from both teachers and fellow students, as well as attacks on the way to school (as discussed in [Section 4.2.1](#) on School-related barriers).

Violence and safety barrier #1 – Sexual harassment and abuse

Girls’ reported that sexual harassment and insecurity was mainly felt in school and on the way to and from schools.

Sexual harassment was anticipated as a barrier to girls’ education in Discovery’s three targeted countries prior to baseline. While violence and harassment in and on the way to school was mentioned in the three targeted countries, the report only discussed sexual harassment as a barrier to girls’ attendance in schools in Ghana.

Violence and safety barrier #2 – Other unanticipated types of violence and insecurity

In-school violence and corporal punishment by teachers and fellow students as well as insecurities on the way to school have been reported as barriers to attendance in project areas.

Unanticipated barriers to education relating to violence were described in focus group discussions in three ways: firstly, in terms of a fear of violence from teachers and fellow students that specifically affected attendance, which was mentioned in Ghana; secondly, in terms of actual beatings and corporal punishments by teachers, which were specifically mentioned in Discovery’s targeted communities in Nigeria; and thirdly, in terms of the safety of children on the way to school, threatened by incidents such as mugging, traffic and animal attacks³².

³² This is discussed in section 4.2.1- Barrier #1: School-related factors: Conditions of commuting.

4.2.6 Aspiration-related factors

Aspiration-related factors were only anticipated by Discovery. However, Coca-Cola’s and Discovery Kenya’s baseline reports indicated that other unanticipated aspiration-related factors existed in targeted communities.

Table 20: Evidence reported by projects for barriers relating to aspiration-related factors

Baseline evidence for aspiration-related factors	Evidence found	Discovery Ghana	Discovery Kenya	Discovery Nigeria	Coca-Cola	Avanti
Lack of female role models	0	•	•	•		
Other unanticipated aspiration-related-factors	0		x		x	

Note: Evidence found is a sum of projects in which barriers were assumed by projects prior to baseline and were found and reported at baseline.

Projects’ baseline evidence for aspiration-related barriers

Barriers found and reported: There were no aspiration-related barriers that were assumed prior to baseline, and then discussed in the baseline reports.

Barriers not found: There were no aspiration-related barriers that were assumed prior to baseline but not found during baseline research.

Barriers not reported: Discovery assumed that a key barrier to girls’ education would be the lack of female role models that inspire girls to pursue higher education. However, the baseline research did not provide sufficient evidence to measure whether this is a barrier to girls’ education or not in Discovery’s three targeted countries.

Barriers not assumed: Both Discovery in Kenya and Coca-Cola found barriers that they had not anticipated, indicating that aspiration, interest and decision-making-related factors were underestimated prior to baseline.

Aspiration-related barrier #1 – Lack of female role models

The lack of female role models was assumed to be a barrier by one project, but was not directly assessed by any of them.

While Discovery assumed that the lack of female role models was a barrier to girls’ education, neither Coca-Cola nor Avanti assumed that this was the case in their targeted counties.

Discovery described this barrier in terms of girls having limited female role models that inspired them to do well and pursue higher levels of education, as well as giving limited attention and effort to identify these role models. While Discovery measured exposure to TV and radio by households, as well as their preferred programmes, these did not provide the necessary evidence that girls lacked female role models and that this was a barrier to their education.

Aspiration-related barrier #2 – Other unanticipated types of aspiration-related factors

Various individual factors related to motivation and decision-making have been described as potential barriers to education.

During the baseline research, other types of unanticipated aspiration-related factors were found. Both Discovery in Kenya and Coca-Cola found that, as girls grew older, their interest and outcomes in disciplines considered to be masculine, such as science and math, decreased.

The baseline reports suggest that aspiration-related factors and decision-making powers also affect girls’ education. In Discovery Kenya, a lack of motivation, interest and aspiration was described in terms of girls focusing their attention on boys rather than school, and was reported to affect girls’ attendance in school. Coca-Cola also found during its baseline research that OSGs had slightly less decision-making power (measured by their ability to travel freely) than in-school girls.

4.2.7 Does the evidence support project assumptions about barriers?

Following the document review process, we have assessed baseline project findings against assumptions and expectations relating to barriers. The underlying assumption was that the anticipated barriers would be present and associated with poorer educational outcomes (enrolment, retention, attendance and learning). We have analysed the extent to which the evidence presented supports or potentially challenges this assumption.

1. **School-related barriers** were assumed by projects to be the most important and ranked first in the list of barriers to girls' education found at baseline. Evidence was systematically found by Discovery and Avanti, but not by Coca-Cola. Pathways through which girls' education was affected primarily related to the poor quality of teaching, which was described in terms of poor teaching methods and pedagogical practices applied in class. The other four anticipated school-related barriers were equally evidenced by SPW projects in their target areas. These were: inadequate provision of teaching material; inadequate provision of qualified and teachers including female teachers; poor conditions of communities and long distances from and to schools; and inadequate provision of schools and facilities, including water and sanitation facilities.
2. **Poverty-related barriers were ranked second in the baseline findings.** Pathways through which girls' education was affected primarily related to **extreme poverty and a lack of resources.** While this was not always elaborated by projects, it included material deprivation, limited resources and financial issues faced by families, forcing them to apply coping strategies affecting girls' education. Other poverty-related barriers described by projects relate to the cost of schooling, and household commitments and income-generating activities. Avanti found qualitative evidence (only) through focus group discussions that food and water shortages affected girls' education. .
3. SPW projects found that **attitude and behaviour-related factors were the third most important barriers to girls' education.** Pathways through which girls' education was affected primarily related to the role of women. The barrier was also described in terms of parents not providing guidance or support to girls. Contrary to what Coca-Cola and Avanti had assumed prior to baseline, evidence was not found or reported relating to negative attitudes towards girls' non-religious education, post-primary education or a general perception of the irrelevance of education.
4. Only Coca-Cola clearly assumed that factors relating to **pregnancy and early marriage** were barriers to education. However, all three projects found evidence to support these assumptions, in addition to other personal and family-related factors, such as female genital mutilation and recent relocation.
5. Coca-Cola and Avanti found that **violence-related factors** were the fifth most important barrier to girls' education. While only Discovery anticipated that sexual harassment and abuse would be a barrier to education, both Avanti and Discovery found that other types of violence and harassment were also important. Coca-Cola did not anticipate or discuss violence-related barriers to education in its targeted communities.
6. Factors relating to **female aspiration and decision-making power** were only anticipated by Discovery, and were described in terms of girls having female role models. While this was not specifically assessed, other factors related to aspiration, interest and decision-making power were evidenced by Discovery in Kenya and by Coca-Cola, especially in terms of girls' lack of interest in "male subjects", such as science and math.

In summary, the evidence reported by SPW partners suggests that most of the barriers assumed at the project design stage existed within projects' contexts. While it is difficult to reach definitive conclusions about the extent to which aspects of girls', parents' and communities' lives constitute obstacles for education, the evidence provided suggests that two categories of barriers, namely poverty-related and school-related ones, prevail across a variety of contexts.

However, many barriers that were found were not anticipated prior to the baseline research – these included: family and personal factors such as early marriage and pregnancy; and violence related factors such in-school violence and corporal punishment as well as insecurities on the way to school. Additionally, some barriers to girls' education that were anticipated prior to baseline research were not evidenced – for example, attitude and behaviour related factors, such as negative attitudes towards girls' non-religious education, post-primary education or a general perception of the irrelevance of education that were not evidenced by partners.

This suggests that partners have explored and researched certain types of barriers that are a focus of their initial project designs rather than assessing more widely the possible barriers to girls' education in their targeted communities. This could mean that specific important barriers have been overlooked that could have a significant effect on the success of their project interventions and the results they anticipate achieving.

5 Project Targeting

This section focuses on the projects' definition of marginalised girls and their targeting criteria. It seeks to explain the extent to which girls targeted by SPW projects were socially and educationally marginalised and to outline whether projects managed to reach their target groups as part of their baseline data collection. Our key findings are based on baseline research findings reported by SPW projects.

5.1 Does the evidence support project targeting?

During the baseline data collection, most projects asked girls in their sample to respond to questions that would allow the project to identify their target groups. It also allowed them to assess their level of marginalisation compared to non-target girls. As a result, it is possible in light of the baseline findings to:

- Clarify and confirm how projects have defined marginalisation, specifically how they have measured the relevant characteristics supporting the identification of target groups;
- Assess the extent to which projects' designated target groups are directly represented in their research, specifically in survey samples; and
- Examine the accuracy of assumptions made about the nature and level of girls' educational marginalisation in target groups against the definitions formulated at the outset of the project design and baseline stages.

5.1.1 How have projects defined marginalisation (social and educational)?

The GEC Business Case³³ defined marginalised girls as those aged 6 to 19 who have not been enrolled in school, have dropped out, or are in danger of doing so. However, the design of the GEC Fund deliberately left the definition of marginalisation open to projects' individual interpretations in each of their intervention contexts. Generally, the three SPW projects took similar approaches to defining marginalisation in terms of a combination of socio-economic, geographic and/or educational criteria.

More specifically, the marginalisation criteria identified across the three SPW projects are:

- **Socio-economic criteria**

All three projects identified socio-economic criteria to define marginalised girls. Under these definitions, a girl is marginalised if she is living in poverty, has illiterate parents, got married early or has children, or meets other similar criteria.

- **Educational criteria**

All three projects also used educational outcomes to define marginalisation. Under these definitions, a girl is marginalised if she is out-of-school or if most children in her household complete a few years of education. Girls with poor educational outcomes are marginalised by definition.

- **Geographic criteria**

Finally, all of the SPW partners also identified geographic areas within targeted countries where they argued that girls were generally marginalised. Partners identified regions as being marginalised based on numerous factors, but they usually focused on areas where educational outcomes were especially poor and where there was widespread poverty and/or pervasive negative views toward girls' education. Several partners also considered living in a rural or remote area as a factor contributing to marginalisation independently of the other socio-economic and educational factors in those regions.

Coca-Cola

Only Coca-Cola explicitly defined what it means for a girl to be marginalised in its proposal and M&E framework. The project defined marginalised girls as those meeting one or more of seven criteria of marginalisation, relating mostly to socio-economic status, such as: whether they are married or pregnant, orphaned, or have a disability; and whether their family cannot afford school fees. Coca-Cola also included several educational criteria of marginalisation, such as attending a faith-based school or dropping out of school early. Although Coca-Cola used these criteria as their primary

³³ DFID (2012) Girls' Education Challenge, Business Case Version 4, June 2012, pp. 13-28

definition of marginalisation, it also suggested that geography is a factor of marginalisation, as they argued that cultural norms in northern Nigeria tend to keep girls from attending school.

Discovery

By contrast, the Discovery project defined marginalisation primarily in terms of the comparative educational outcomes in a geographic area, but also in terms of income opportunity³⁴. The proposal identified a series of barriers to girls attaining a good education in each of the three areas selected for project implementation. However, the indicator they used (implicitly) to determine if a girl was “marginalised” was their educational outcomes. They continued to say they would use the baseline research “to gain a more nuanced and in-depth understanding of types, degrees and drivers of marginalisation.”

Avanti

Like Discovery, Avanti adopted an approach to define marginalised regions as areas with especially low educational outcomes. However, their strategy used poverty as a primary factor for identifying these areas in Kenya³⁵. In their M&E plan, they distinguished between “educational marginalisation” and “poverty marginalisation,” saying they would use the household survey to “explore the underlying conditions that create poverty marginalisation, education marginalisation and the risk of education marginalisation.”

5.1.2 How have the projects defined their target groups?

We can identify three levels at which the projects defined target groups for their interventions: selection of geographic regions; selection of schools; and selection of individual girls to be beneficiaries of the programmes.

Regional targeting

Each of the three SPW projects chose to focus their programmes in a specific geographical region. In their proposals and M&E frameworks, each of the three partners made a case for choosing their regions, in which they argued that the areas selected have especially poor educational outcomes and are marginalised in one or more ways. [Table 21](#) shows the justification for regional targeting by the three projects as stated in their M&E documents.

Table 21: Regional targeting of SPW programmes

Project	Region Targeted	Justification in M&E Framework/Proposal
Discovery	Rural Northern Region of Ghana	Girls in Northern Ghana have systematically worse educational outcomes compared to girls in other parts of the country. The M&E framework cites higher than average rates of girls dropping out of school at an early age, especially to get married.
	Urban Slums of Nairobi, Kenya	Girls in these regions are disproportionately poor and have less access to state-run schools, so they have to go to informal schools. Many girls are not enrolled and very few schools conform to national standards.
	Kano State in Nigeria	Kano State has the largest population of OSGs in the country.
Coca-Cola	Northern Region of Nigeria	Girls in northern Nigeria have systematically worse educational outcomes compared to girls in other parts of the country because the barriers to education are higher.
	Slums in Lagos, Nigeria	Although educational outcomes are generally better in Lagos than elsewhere, among girls in slums, outcomes are extremely poor.
Avanti	Poorest counties in Kenya	Poverty “drives” poor educational outcomes. Social norms are also harmful in these counties.

³⁴ In their proposal, they stated: “Most school-age girls in the selected districts by definition meet local, national and DFID definitions as marginalised by income and educational opportunity – especially by comparing enrolment and retention rates in the selected districts to other districts.”

³⁵ In their proposal, Avanti said they would target schools “in up to three regions of Kenya where poverty drives marginalisation and where the outlook for girls and young women is currently limited through poor education and school drop-out.” While their proposal notes that the counties selected are among the poorest in the country, their proposal also says: “The regions are selected on the basis that they represent a cross-section of the type of situations driving marginalisation of girls in the more rural regions of Kenya”.

School /Community targeting

A second layer of targeting emerged from each project's selection of schools. This primarily affected the age and grade level of girls targeted by each programme. The Discovery and Avanti projects only targeted primary schools, but Discovery also included junior secondary-age girls when their schools were found in the same location as primary schools. Coca-Cola only worked in secondary schools, and therefore only targeted secondary-age girls. Because each SPW project designed their evaluations as a randomised control trial (RCT), the selection of target schools was randomised over a sampling frame of schools in the selected regions. However, in creating the sampling frame of schools to choose for interventions, several partners made eligibility choices, which affected the target groups of their projects. These choices and their consequences on the representativeness of the evaluation are discussed in further details in [Section 6.1.1](#).

Individual beneficiary targeting

The final level of targeting by SPW partners came at the level of individual beneficiaries. After selecting geographical locations, communities, and schools to work in, only the Coca-Cola project screened the individual beneficiaries to include only marginalised girls in the programme. Each project's target groups are summarised below:

- **Discovery:** In their M&E framework, Discovery expected girls in their targeted regions to be marginalised in a number of different ways. They also expected to find several marginalised sub-groups, including OSGs, orphans or girls with one parent, adolescent mothers, girls living in remote rural areas, girls with limited social networks, minorities, migrants, and girls with disabilities.
- **Avanti:** Like Discovery, Avanti identified the regions they would work in to be generally marginalised and did not claim to target any specific sub-groups. However, in their discussion of factors that cause girls to be educationally marginalised, they mentioned poverty, having parents with a low level of literacy and /or low educational aspirations for their daughters, or having completed four or less years of education.
- **Coca-Cola:** Coca-Cola included girls who met one of their seven educational criteria of marginalisation. Girls who participated in the programme were selected through screening questions.

All three SPW projects are implementing interventions targeting a subset of schools in the region they chose to work in. Therefore, each first level of targeting was focused on the age of students at the level of education where they were intervening.

5.1.3 Have the projects found baseline evidence that their target groups exist?

During their baseline research, projects were encouraged to collect data representative of their target group(s), as well as of a control group of marginalised girls, who will not receive the intervention but have similar characteristics. [Tables 22](#) and [23](#) below show the extent to which proposed target groups were represented in the project baseline survey samples.

Table 22: Projects' evidence of target group identification – Key

Type of evidence in relation to target group	Key
Target group found and reported: Targeted group was reported by the project as being present in population sampled. Target groups found and reported are marked with '✓'.	✓
Target group not found: Targeted group was reported by the project as not being present in population sampled. Target groups not found are marked with '✦'. ³⁶	✦
Target group not reported: Targeted group was assumed but not reported/discussed/measured by the project. Missing evidence is marked with '•'.	•
Non Applicable: Target groups neither assumed nor reported are marked in Grey .	

³⁶ Where we have quantitative evidence, this is defined as making up 5% of less of the population.

Table 23: Target Groups of Beneficiaries in SPW programmes

Target groups found at baseline	Discovery			Coca-Cola	Avanti	Discovery			Coca-Cola	Avanti
	Ghana	Kenya	Nigeria	Nigeria	Kenya	Ghana	Kenya	Nigeria	Nigeria	Kenya
	Represented in Target Region					Targeted through School or Beneficiary Selection				
School Phase										
Lower Primary	✓	✓	✓		✓	✓	✓	✓		✓
Upper Primary	✓	✓	✓		✓	✓	✓	✓		✓
Secondary				✓					✓	
Socioeconomic Group										
Disabled Girls	✓	✓	✓						+	
Girl with sick parent									✓	
Orphan/one parent	✓	✓	✓						✓	
Poor	✓	✓	✓		✓				✓	
Rural	✓	✓	✓		✓					
Slum/Periurban	✓	✓	✓							
Married Girls	✓	✓	✓		✓				✓	
Young Mothers	✓	✓	✓		✓				✓	
Minority/Migrants	✓	✓	✓							
Widowed/Divorced (child)									+	
Socially marginalised	✓	✓	✓							
Other ³⁷									✓	
Educational Group										
Go to informal schools									✓	
Out-of-school	✓	✓	✓							✓

The baseline findings indicate that projects have achieved the representation of target girls in their baseline data to varying degrees (refer to Table 22 and Table 23). While project samples include the major categories of target groups, data related to social sub-groups within these categories is missing in various cases, such as for girls from disadvantaged castes or ethnic minorities³⁸. With respect to educational sub-groups, data for girls at risk of dropping out and those at risk of poor learning is not available. Data related to age groups, however, is reported by most projects, although not all. We do not comment on target groups for which evidence was not reported by projects in their baseline reports (missing evidence marked with ‘+’), because these groups may have been found in the baseline sample but not reported by the projects.

³⁷ Headmaster said girl was marginalised due to “special circumstances at home”.

³⁸ This may be related to the difficulties for projects to report disaggregated data by ethnic group or caste, and/or to the sensitivity of such data.

6 Projects' Evidence and Effective Evaluation

6.1 Does the evidence support effective project evaluation?

6.1.1 Background

Each of the three SPW projects covered in this report designed their evaluation as a randomised control trial (RCT) in which they compared the outcomes of girls in randomly assigned treatment and control schools. Each of the partners collected quantitative data from household and school-based surveys. This allowed them to compare outcomes between their treatment and control groups. This approach is generally considered a most effective evaluation design, as it ensures that the effect of programme interventions can be isolated from other confounding factors.

However, a review of each of the partners' evaluation methodologies suggested that there are potential issues in the representativeness of survey samples. Additionally, challenges in the implementation of the programmes and evaluations could limit the ability of projects to precisely identify their impact and make their findings generalisable to other contexts. In the following section, we discuss how aspects of the evaluation designs and research methodology of SPW projects will affect their analysis in the endline phase.

Was representativeness achieved?

Each of the SPW partners developed a sampling methodology to make their surveys representative of their target populations. However, none of the SPW partners attempted to gather data that would be representative of all households in the countries or even the sub-national regions of their targeted areas (counties or districts). Rather, they used various criteria to define what schools or individuals were eligible to participate in their programme and then attempted to form a representative sample within that group.

For all SPW partners, this meant defining a sampling frame – the universe of schools, households, or individuals from which a sample is drawn – which was restricted to schools or households eligible to participate in the programme. In this section, we look at how the selection of schools and households determined the target population covered by their surveys. We also consider the challenges faced by partners during fieldwork that may have compromised the representativeness of their surveys.

Selection of schools

Each of the three partners used schools as the primary unit of their intervention. This meant that they selected schools to participate in the programme and to form a control group. The following is a summary of the methods the partners used to establish their sampling frame and the target population that resulted:

- **Avanti:** Avanti's sampling frame of schools included only those that had access to electricity and participated in Kenya's sanitary towel programme. Their M&E report says this was to "ensure high level of marginalisation in the project schools." It is not clear if this approach was meant to select schools with higher levels of poverty or areas where the specific needs of girls and women were not being met, or both. However, restricting selection to those schools with access to electricity may have excluded some of the poorer areas from the sampling frame.
- **Coca-Cola:** Within the three states of northern Nigeria where Coca-Cola worked, local government areas (LGAs) were selected in a non-random way. This was undertaken based on several criteria, such as the availability of government records on schools, geographic convenience, and the density of girls who met marginalisation criteria set out by the programme³⁹. Their sample frame of secondary schools within those LGAs was constructed from several official records⁴⁰. Only schools that met some pre-established criteria (hard ward data, having at least 10 girls enrolled, and being senior-secondary schools or mixed junior-secondary and senior-secondary schools) were included in the final sample. Schools that were not considered sufficiently safe during fieldwork were eventually removed from the evaluation.
- **Discovery:** Discovery's M&E Framework and baseline report does not specify how they established an initial sampling frame of schools in their target regions. However, like Avanti, they screened schools on several criteria. For example, to be included in their sampling frame, schools had to be interested in the project, be willing to cooperate, and have the facilities to securely house media equipment.

³⁹ M&E framework; p 23

⁴⁰ These were the Education Management Information System (EMIS), a school census, and the Education Sector Support Programme in Nigeria

Since each partner used a mix of programmatic and pragmatic criteria to establish their sampling frame, it is difficult to make a general assessment of what population their school-level surveys represent. It appears that every project intended to cover schools in areas that were poorer than national or regional averages. However, projects used other screening criteria, such as having access to electricity, having secure storage for ICT equipment or having government records available. This could mean that the projects ultimately selected schools that were unusually well-resourced, or biased toward more densely populated areas.

Selection of girls and households

After establishing a sampling frame of schools, the partners also had to establish a method for sampling girls within the schools and for sampling households. Avanti's household survey was conducted as a separate exercise, whereas Coca-Cola and Discovery used the samples of girls from their schools and followed up with their households. Coca-Cola and Discovery also conducted a separate household survey for out-of-school girls (OSGs) that relied on different non-random sampling methods. The sampling methods the partners used at this level are described below:

- **Avanti:** Avanti's M&E Framework and baseline report provide very little information about the sampling method employed for their household survey. Their M&E framework says: "we will use random area sampling in accordance with Evaluation Manager Guidance for this project." It appears that they attempted to select a random sample of households in the four counties where the project was implemented, but no detail was given about their sampling framework or sampling method. Girls in schools were sampled randomly, but no detail was given about how this was done.
- **Coca-Cola:** Coca-Cola randomly selected girls in each of the schools in their sample, but screened them to only include girls that met one or more of their marginalisation criteria (see [Section 5.11](#)). Their approach to the household survey of in-school girls was then to follow up with those selected from the schools and conduct an interview with their family.
- **Discovery:** Discovery selected a random sample of girls in each of the schools. Discovery's M&E Framework provided no further detail on how individual girls were selected. Discovery reports having used a snowball sampling technique to find OSGs by asking girls in school to identify them⁴¹.

Because Discovery and Coca-Cola conducted their household surveys for in-school girls as an extension of their school survey, these should cover the same population. They are therefore subject to the same complications in understanding what target population is represented. Since the surveys of OSGs were conducted in a non-random way, there is a little we can say about what population is covered by those surveys. In theory, Avanti's household survey may be more representative of households in the regions covered by their projects, but without further detail about their sampling method, it is not possible to be sure.

Fieldwork

All of the SPW partners reported facing difficulties during fieldwork for their research, which could have compromised the representativeness of their samples. The most common problem related to non-response. Non-response included situations where a school administrator refused to allow enumerators to conduct their surveys in the school, a girl or household in a survey sample refused to participate, or a respondent in a survey refused to answer particular questions. Replacing a girl or household in the sample with another who was willing to respond could introduce biases into the data. Non-responses to individual questions could similarly bias the analysis if there was a pattern in people who refused to respond to individual questions⁴². Unfortunately, SPW partners did not consistently report non-response rates or document reasons for non-response. Examples of non-response problems mentioned are given below:

- **Discovery:** In piloting their instruments, Discovery found that their household survey was too long and many households were failing to complete their surveys. They reported measures they took to counteract this, such as offering small incentives, but their baseline report did not mention how many surveyed households dropped out or what item non-response rates were on individual survey questions⁴³.

⁴¹ In practice, Discovery reported that it was extremely difficult to locate girls that were out-of-school (p 135). This is somewhat puzzling because elsewhere in the baseline report, it also says that very few girls were enrolled in the schools they visited. Together, these admissions suggest that the sampling methods they used did not achieve a good coverage of girls in the target regions.

⁴² For example, less wealthy households may be embarrassed to report their income.

⁴³ Baseline; p. 234.

- **Avanti:** The baseline report stated that enumerators sometimes had to stop interviews “due to fatigue among the girls selected to participate in the surveys.” While their report did not explicitly say what they did in these cases, it appeared that they replaced the girl with another respondent when this happened.
- **Coca-Cola:** Coca-Cola noted that in several schools they had selected to be a part of their sample, the Principal refused to let them conduct their surveys.

Additional issues relate to **enumerator /data entry error**. Coca-Cola acknowledged numerous problems of enumerator error and errors in data entry. This included enumerators failing to correctly record responses, paper records being lost, identifying keys for girls, schools being recorded incorrectly, and inaccurate data entry in the field. Some of these data quality issues could introduce random errors that do not necessarily bias the data. However, Coca-Cola’s baseline report suggested that there could be geographical patterns to the errors that could systematically bias their data. Coca-Cola also mentioned several steps they were taking to remedy these problems and revise their baseline findings.

Were control groups and intervention groups well matched?

As noted at the beginning of this section, each of the three SPW partners designed their evaluation approach as a randomised control trial (RCT). Because of the random assignment of treatment and control groups, the characteristics of each are not systematically different. However, with small sample sizes, the random assignment of schools can still lead to poorly matched treatment and control groups simply due to chance. In analysing the approach used by each partner to randomise and/or adjust their treatment and control groups to be well-matched, we found that **all SPW partners selected well-matched intervention and control groups**.

- **Discovery:** reported using software to randomly assign clusters of schools to treatment and control groups and rejecting the samples if they had statistically significant differences⁴⁴ on characteristics including the number of students, learning assessment scores, and student-teacher ratios. However, it should be noted that since randomisation was done at the level of clusters of schools, each treatment and control group had only 11-13 clusters. With such a small sample size, the power of tests comparing treatment and control clusters to each other may be limited.
- **Coca-Cola:** reported randomly selecting wards to be part of treatment or control groups. While the report did not provide further detail on how wards were assigned, randomisation should be sufficient to ensure that wards are well-matched⁴⁵.
- **Avanti:** reported matching control and intervention groups of schools based on four criteria related to poverty and other barriers faced by schools. This procedure should be sufficient to ensure that treatment and control groups are well-matched⁴⁶.

Table 24 below shows the final sample sizes of learning assessments in treatment and control areas.

Table 24: Sample sizes of learning assessments

Sample sizes by treatment and control areas	Treatment					Control				
	Discovery			Coca-Cola	Avanti (1)	Discovery			Coca-Cola	Avanti
	Ghana	Kenya	Nigeria	Nigeria	Kenya	Ghana	Kenya	Nigeria	Nigeria	Kenya
In-school girls										
Primary 1					520				170	
Primary 2					101				1	
Primary 3					520				170	
Primary 4	1071	1043	1143		102	909	1027	1024		

⁴⁴ Baseline; p. 39 – p-value .1

⁴⁵ See baseline (p.25 and 26) for a description of the sampling strategy and ward-level randomisation.

⁴⁶ Avanti M&E report; p. 36

Primary 5	100	55	48		102	96	57	59		
Primary 6	87	57	45		102	54	55	61		
Junior Secondary 1				1					4	
Junior Secondary 2				14					11	
Junior Secondary 3				62					39	
Senior Secondary 1				263					322	
Senior Secondary 2				216					270	
Out-of-school girls										
OSG girls				118					513	

Note: (1) Avanti treatment group is divided into three groups each corresponding to a different type of intervention: “Full Intervention”, “No personalised tutoring” and “No stipends”.

Future issues

We anticipate that the following issues may arise at the subsequent stages of the evaluation:

- All of the SPW projects are working in areas where there are significant safety concerns. These projects may have to drop schools from their sample, which could reduce the power of their sample size calculations and compromise sample representativeness. In most cases, the partners reported that they replaced schools in their sample when they determined that they were unsafe, which can also bias the sample if schools and/or communities have different characteristics in safe and unsafe areas.
- The Avanti project administered separate literacy assessments to each grade level in schools they worked in. This makes the comparison of scores across grades impossible, and also hinders the interpretation of these scores and their comparison to external benchmarks. Tests given to Grade 2 girls were not of sufficient quality, so these girls will not be assessed again at endline. Only Grade 3 girls will be assessed again, which significantly reduces the overall sample size and may prevent Avanti from showing impact at the end of the evaluation. Computer-based additional literacy testing was given to all girls in treatment schools. Results of these additional assessments will not be used to assess outcomes, but only to complement baseline information.
- The Discovery project noted that spillover effects – benefits to individuals or communities that were not targeted by project interventions – could cause them to underestimate the impact of their interventions. In their target area in Nairobi, some treatment and control schools are in close proximity to each other, so teachers could share knowledge or resources from the programme. Similarly, Discovery noted that if other similar donor programmes were implemented in control areas, it would be difficult to correctly assess the impact of Discovery’s intervention. This problem could also affect the results from the other projects.

6.1.2 Will projects’ evidence support counterfactual analysis of impact?

All of the SPW partners designed their evaluations as RCTs. Therefore **we believe that the SPW projects will be able to credibly compare the outcomes of their intervention groups**; however, we note several potential difficulties in the following sections.

Projects’ definitions of counterfactual groups

The simplest and most effective RCT design is to randomly assign individuals to treatment or control groups. This allows projects to isolate the causal effect of their intervention from any other factors that influence their outcomes. However, it is rarely feasible in practice to randomise at this level. In this case, many of the SPW partners’ interventions affect entire schools or communities, so there would be no feasible way to assign individual girls to receive the intervention or not. Instead, each of the partners randomly assigned clusters of beneficiaries to treatment and control groups. Avanti randomly assigned schools, Discovery assigned clusters of schools, and Coca-Cola randomly assigned wards. This method – sometimes referred to as a *cluster-randomised control trial* – is a standard and valid way to design an evaluation. However, because the intervention is delivered at a higher scale, this means

there are effectively fewer observations (i.e., we are really comparing the outcomes of 25-30 schools rather than comparing the outcomes of 2000+ individual students). This makes it more difficult to detect the impact of the project.

Potential problems with projects' evaluation methodologies

We note several potential difficulties to conclusively evaluate the impact of these projects:

Statistical power may be limited: Every survey finding has an element of random chance. Differences observed between treatment and control groups may be due to the samples chosen rather than differences in the underlying populations. In the analysis of an impact evaluation, **statistical power** can be understood as the probability of observing a significant positive effect of treatment in the sampled population when there was in fact a positive effect on the underlying population. Several factors affect the power of a statistical test, two of the most important being the sample size of the survey and the similarity of individuals to one another within the clusters that were randomly assigned to treatment and control groups. Each of the partners considered these factors, but problems with implementation of the projects and /or evaluations could reduce statistical power.

Discovery noted that they were unable to meet their targets both for the number of schools in their sample and for the number of girls in each school. Their power calculations also assumed that schools were the unit of randomisation, but, in practice, Discovery randomised at the level of school clusters. If the outcomes of schools within each cluster of schools are highly correlated, then this could further reduce the power of their analysis. The sample sizes used by Avanti and Coca-Cola are both smaller than Discovery's sample size and they face similar challenges. Given these problems, there is a significant risk that the analyses will have too little statistical power to accurately detect the impact of the programmes.

Biases could be introduced through attrition and/or schools dropping out: All of the SPW partners are implementing their projects in areas that can be difficult to work in. For example, Coca-Cola and Discovery are working in Northern Nigeria, where they have noted that there are severe safety concerns related to Boko Haram. This could mean that significant numbers of girls moved to different schools or communities and that schools may have dropped out of the programme. In addition to reducing the statistical power of the data analyses, this could introduce biases. For example, if the girls who are likely to be displaced due to conflict are also likely to have worse test results, then attrition could have a positive bias on test results. Furthermore, if projects find that it is infeasible to implement their project in certain schools and instead choose to include other schools, this could further bias the results. Coca-Cola noted in their baseline report that, after completing the baseline research, they had to drop several schools previously selected for implementation because of safety concerns, but could not make an equivalent adjustment to the control group.

Measurement of outcomes may be subject to error: Generally, SPW partners used standard tools to gather data on educational outcomes, such as an adapted version of the household survey used by the EM in the SCW of the GEC, as well as adapted EGRA/EGMA and Uwezo learning assessments. These tools are subject to error, but we believe that they will provide reliable and valid measures of educational outcomes. Of the five educational outcomes studied across the GEC – enrolment, attendance, retention, literacy, and numeracy – these projects will only be able to report on attendance, literacy, and numeracy. However, there are some concerns about the methods that the partners are using to measure these outcomes. We note some of the issues associated with each measure below:

- **Attendance:** Attendance can be calculated either based on estimates given by caregivers in a girls' household or by using attendance records at schools. As with other GEC windows, most partners found that attendance records kept at schools were not reliable. However, Discovery paid special attention to recording schools' attendance records for the girls selected in their surveys and conducting physical head counts of students in the classes. Although this project is still constrained by the quality of records kept at the schools, this dataset may provide more accurate attendance data than other GEC projects. Coca-Cola and Avanti used self-reported attendance figures. In addition to problems of bias and recall, this method of calculating attendance is also problematic because survey questions typically only ask girls or their caregivers to describe their attendance in broad categories, so they may lack precision.
- **Literacy and Numeracy:** Each of the partners administered an adapted version of either the Uwezo or EGRA/EGMA tests. Both of these assessments are well-known international standards that are appropriate for measuring learning. However, in some cases, the unusual adaptations to the tests could complicate the analysis. In [Section 3](#), we discuss the specific tests used and relate each assessment to specific competencies in reading and maths. However, because these are non-standard adaptations of the assessments, comparisons to international benchmarks or results from other projects are limited.

External validity of project evaluation studies

As described in [Section 6.1.1](#), the population covered by each of the SPW projects was determined through complex ad hoc processes. The targeted areas included by the partners' interventions were selected based on programmatic criteria, such as selecting regions that were generally poor, but also on many logistical criteria. As a result it is difficult to say exactly what the context was where the projects were implemented. This raises a problem generally referred to as **external validity** – the ability to generalise findings from the study to other contexts. Randomising within the population covered by the project ensures that differences found between control and intervention groups are attributable to the intervention rather than other factors; but since we do not fully understand the context in which these projects were implemented, it will be difficult to conclude why the project had the impact it did and whether it would have the same effect elsewhere.

Coca-Cola and Discovery explicitly acknowledged this limitation in their baseline reports. After describing many of the complex criteria used to select areas for implementation, Coca-Cola's baseline report states: "we cannot claim that finding from this baseline are, therefore, generalisable to any broader population than those specified above."⁴⁷ Discovery states: "General lessons for subpopulations within each country, as well as for other populations in other countries and regions, will be limited. Moreover, characteristics unique to the target population will limit the generalisability of findings to anyone outside of that population."⁴⁸

⁴⁷ Baseline: p. 34

⁴⁸ Baseline; p. 238

7 Conclusions and Recommendations

7.1 Conclusions

The Evaluation Manager (EM) has reviewed and analysed the findings from the baseline reports and data submitted by three SPW projects. This has enabled us to assess whether these projects have been successful in identifying target girls who are marginalised in terms of their access to education and learning. Additionally, we have provided an assessment of the extent to which the evidence supports projects' initial assumptions with regards to the barriers that girls face. Finally, we have assessed the implications for projects' design and targeting strategies in response to their baseline data, analysis and findings.

To what extent are target girls educationally marginalised?

Conclusion 1 – Because of the design of their sampling strategies and research instruments, SPW projects have been unable to report on school enrolment and retention rates of their target population. Similarly, no age or grade-level data was available at a sufficient level of disaggregation to enable analysis of school phase and learning trajectories. Only attendance in school (for in-school girls) and learning (of in-school girls) were consistently reported across the SPW projects.

The SPW is different from the other two GEC windows. SPW partners had greater flexibility in the design of their M&E frameworks. As a result, we have not been able to analyse outcomes and barriers in the same way as projects in other GEC windows. The subsequent higher level of inconsistency and gaps in evidence reported should not be systematically interpreted as a flaw but more as result of the flexibility provided to projects in this window. SPW partners were not required to measure 'being-in-school' outcomes in the same way as other projects in the GEC. For example, Coca-Cola measured attendance from its Safe Spaces rather than in school. Learning assessments were also significantly adapted from standard tests.

SPW out-of-school samples were either drawn separately from the in-school samples and therefore not representative of the intervention area (Coca-Cola, Discovery) or merged with the household survey samples in a way that makes it impossible to distinguish out-of-school girls from in-school girls (Avanti). This has made the calculation of enrolment and retention rates impossible for any of the three SPW projects. Similarly, the study of relationships between age, grade and school phase is missing due to the lack of disaggregated data about the ages and grades of girls.

SPW project findings and the EM analysis of project data for Coca-Cola and Discovery show attendance at 70% – 90%, albeit these are inconsistent depending on whether rates had been calculated from school records or extrapolated from reports by caregivers, girls or teachers.

Learning levels among in-school girls show inconsistent patterns across contexts but seem to be poor on average compared to international benchmarks. However, benchmark comparisons with standard tests must be interpreted with great caution because all SPW projects used their own versions of literacy assessments, which mean that tests are not clearly equivalent to any international standard. Numeracy scores have shown to be slightly higher than literacy scores, a finding consistent with what was reported in the IW and SCW. The EM has been unable to produce any analysis of students' learning trajectories because the only project that reported grade-level data (Avanti) conducted a different assessment in each grade, making cross-grade comparison irrelevant. Comparison between in-school and out-of-school girls' performance was also not possible because all learning tests took place in school.

Overall, it is unclear whether the girls targeted by SPW projects are educationally marginalised in terms of their attendance. Also, projects did not gather sufficient data to be able to properly analyse girls' learning trajectories across school phase. However, the little evidence available seems to indicate that most girls fall behind international benchmarks in literacy and numeracy. This is consistent with the baseline findings from the SCW and IW.

Which barriers were found to affect girls' education?

Conclusion 2 – Most of the barriers anticipated by projects were supported by evidence presented as part of their baseline findings. Projects also found numerous unanticipated barriers to education in their targeted areas, which suggest some factors affecting education were underestimated prior to baseline. Projects (especially Coca-Cola), failed to provide sufficient evidence or report on some of the barriers that they assumed existed before the baseline research. Generally, they found that school-related factors appeared to be the primary reason why girls do not learn in school. Poverty-related barriers were found to be the second most important factor affecting girls' education. Attitudes,

pregnancy, early marriage and violence-related barriers were also reported as limiting girls' ability to stay in school and learn.

The most reported barriers that girls face to achieving good quality educational outcomes are school-related.

SPW projects assumed these types of barriers impacted on girls' education before they undertook their baseline research. These barriers were evident in the form of: non-participatory approaches to teaching; a lack of student-centred teaching techniques; and the inappropriateness of the curriculum. A lack of qualified teachers, teacher absenteeism and a lack of gender balance among teachers were also found to affect the quality and consistency of education. These types of school-related barriers were reported by Avanti and Discovery (but not Coca-Cola), and were found to especially affect girls' learning in school. SPW projects also found that an inadequate provision of schools, classrooms and facilities (such as girls' latrines); long distances to schools and poor conditions when travelling to school also act as particular barriers to girls' being-in-school.

Poverty-related factors were found to be the second most important group of factors acting as a barrier to girls' education.

The projects found that poverty and a lack of resources prevent girls from enrolling or attending schools because parents are unable to (or fear they are unable to) afford the costs of schooling, including fees, textbooks, supplementing teachers' salaries, and uniforms and shoes. Poverty is an important issue that leads to girls having greater responsibility for household chores and caring for family members, or having to contribute to income-generating activities to support the family.

The perceived value of education was often found to be low among girls and their parents. This is often related to parents preferring alternative life paths for their daughters, especially marriage. **Marriage and pregnancy**, while only anticipated by Coca-Cola prior to baseline, were found to be barriers to girls' education in most project target areas.

Conclusion 3 – In spite of a wealth of evidence, SPW projects presented the barriers they found in a descriptive way and did not always clearly assess the linkages between barriers and the ways in which these affect education outcomes in particular.

Synthesising and unpacking the range of barriers evidenced by SPW projects at baseline allowed the EM to start to identify the linkages between girls' educational marginalisation and the risk factors that affected their ability to enrol, attend and learn in school. **The analysis of these linkages was limited, and this affected the ability of the EM to assess both the prevalence of barriers and the multiple pathways through which these influence educational outcomes.**

Does the evidence support project targeting and design?

Conclusion 4 – During the baseline research, SPW projects generally managed to identify and measure the groups they had aimed to target as part of their design, In the case of out-of-school girls, for which purposive samples were drawn, the data did not allow the EM to assess the extent to which these were marginalised compared to other groups (especially in-school girls) in target communities.

Marginalisation was defined by SPW projects through three types of criteria: socio-economic characteristics; educational outcomes; and geographic location. However, only one project (Coca-Cola) explicitly selected marginalised girls based on a precise list of socio-economic criteria. The other projects considered marginalised girls as those with relatively poor educational outcomes (as compared to girls in other geographic areas).

All three SPW projects analysed in this report targeted regions that they thought had particularly poor educational outcomes, and all of them targeted a subset of schools in the region they chose to work in. This selection was non-random (i.e. was based on programmatic and logistical criteria) and was often restricted by safety concerns, as projects had to drop a number of schools from their original sample, especially in northern Nigeria. Therefore, it is not clear how marginalised sampled girls were compared to girls in other locations or within targeted communities. **This means that target groups are not representative of the wider population of the regions covered by the projects. It also means that the external validity of findings is likely to be limited.**

The purposive selection of out-of-school girls also constrained the EM's and projects' ability to analyse the extent to which the targeted population was marginalised relative to in-school girls. More generally, projects usually considered that all girls in their intervention areas were marginalised and rarely differentiated between subgroups that could be "more marginalised" than others. As a result, we faced difficulties in assessing the levels of educational marginalisation of different sub-groups, as well as finding evidence for the complex linkages between the social and economic factors that marginalise particular groups of girls compared to others. It is important to note that when

projects reported on sub-groups, it has generally not been possible for the EM to confirm findings due to the difficulty of reanalysing projects' primary data.

Evidence was generally supportive of projects' initial assumptions about their design. However, more evidence is needed to assess the extent to which projects' target populations are actually marginalised, and to refine their definitions of marginalisation. Nevertheless, for the purpose of identifying the specific needs of targeted girls, the baseline research was successful to the extent that it confirmed and deepened projects' knowledge of their target populations.

Does the evidence support effective project evaluation?

Conclusion 5 – Overall, SPW projects' M&E strategies appear to be appropriate for delivering effective project evaluations. In spite of the theoretical strength of their counterfactual RCT designs, several potential difficulties could make it difficult to conclusively evaluate project impacts.

All of the SPW projects designed their evaluations as RCTs and ensured that their intervention and control groups were well-matched. All projects also specified sample sizes that should provide a reasonable chance of detecting the agreed level of impact for the key GEC outcomes (attendance and learning), even though randomisation was done at the school or cluster-level, rather than at the individual level. **The collection of longitudinal data from intervention and control samples of sufficient sample sizes should support counterfactual analysis of outcomes.**

Potential future risks to effective project evaluation include the loss of respondents in the samples (and subsequent reduction in the power of analysis) that may arise due to: safety concerns; drop-out; contamination /spill over effects; or insufficient take-up of the intervention. At least one or more of these issues are relevant and have been reported by each SPW project, but few mitigation strategies were proposed. For example, one project (Avanti) administered separate learning assessments to each grade level and only one of these assessments was considered valid. Consequently, only one grade will be re-assessed at baseline, which will significantly reduce the size of the project's sample and hinder its ability to detect effects that its activities might have on targeted girls.

The breadth and depth of the evidence base is arguably a result of a more rigorous approach towards establishing a clear theory of change and articulating M&E strategies in line with an analytical research framework. However, **issues still prevail, particularly in terms of how projects' research frameworks address the relationship between risk factors, barriers and educational outcomes.** Furthermore, some challenges relating to the limited ability of projects to achieve a full sample size and obtain reliable data about girls being-in-school suggest that some SPW projects might experience difficulties providing evidence of their impact relative to the employed counterfactuals.

7.2 Recommendations

Recommendations for DFID, FM and the EM

- The limitations of the projects' baseline research pose challenges for the evaluation of the SPW overall – **key limitations** are:
 - an inability of projects to assess the learning trajectories of girls and to place them in their broader contexts in terms of levels of marginalisation and learning;
 - the absence of reliable measurements of outcomes relating to girls being in school at the community level (implying an inability to assess changes in enrolment and retention between baseline and endline); and
 - an absence of sub-group analysis that allows for an assessment of levels of educational marginalisation of these different subgroups.

In order to overcome these challenges and minimise their effect on the programme evaluation we recommend the following **course of action**:

- EM and FM should meet in January 2016 to discuss the endline evaluation and research implications for each of the partners including the recommendations for SPW partners below. This should include a review of their M&E frameworks, which includes Ericsson's 'Connect to Learn' project in Burma. These initial discussions should lead to an agreed clear plan of action for each partner used as a starting point for further discussion with each of the SPW partners. Key areas that should be discussed are:
 - ✓ Potential improvements in the quality of the data collection process;
 - ✓ Potential improvements in the content of their research /survey instruments to address missing variables wherever possible; and

- ✓ Potential opportunities to boost or amend samples to address deficiencies in the coverage or representativeness of their baseline samples, while keeping as much continuity as possible to the baseline.
- The FM should manage these discussions and involve the EM to feedback to each SPW partner individually in January and February 2016. The meetings between the FM, EM and SPW partners should result in an agreed set of revisions to each of the partner’s M&E frameworks to ensure that they are in the best position possible to fully capture the effects of their interventions through their endline evaluations. These discussions should also help SPW partners absorb the key lessons learned from our baseline analysis to identify potential implications for the design of their interventions and whether any adjustments may be necessary or beneficial.
- These actions should enhance the quality and utility of the baseline data collected at the project level – in particular the level of understanding about the relationships between barriers, target groups and contexts. But it should also aim to improve the quality and level of analysis that is possible at the window level.
- It is recommended that there are no further changes to this baseline report to take into account the completion of Ericsson’s data collection and project baseline report. However, Ericsson should be included in all of the follow-up discussions following this report to ensure that this partner benefits from the lessons learned and additional support provided to all partners in preparation for their endline evaluations.
- A common lesson learned for DFID and the FM relates to the **benefit of conducting rigorous baseline research**. The identification of barriers to girls’ education and target groups at baseline deepened the partners’ knowledge of the populations they work with, suggesting that the GEC Evaluation Strategy is likely to help build a solid evidence base in terms of what works and what does not for improving girls’ access to education and learning.
- A potential recommendation for DFID for future programming relates to the extent to which the **purpose of the baseline research should be more specifically defined**. Projects generally sought to obtain data that was representative of their target groups. Projects should be able to evaluate the impact on the intervention groups compared to the control groups. But, the ways in which both groups (i.e. the whole population) were initially selected means that neither of these groups may be representative of the wider population. This potentially limits the external validity and usefulness of the findings from policy and programming perspectives.

Recommendations relating to SPW partners

- As is the case with GEC projects across the other funding windows, we anticipate that some SPW projects will experience challenges in providing counterfactual evidence of impact. This specifically refers to the limited ability of projects to achieve a full sample size. There are two main reasons why project sample sizes may be smaller than anticipated: (1) because of safety and security issues; and (2) because of girls dropping out of schools.

Where possible, **SPW partners should explicitly identify these risks in advance through further analysis of their baseline data**. The reasons for girls dropping out of school should be captured using qualitative research methods as an integral part of projects’ monitoring strategies, and also through research for their endline evaluation.

- Partners used significantly adapted international standard learning tests, and in some cases, different tests were administered to each grade level without highlighting a clear progression of level of difficulty. This will pose a challenge to understanding the magnitude of project impact.

We recommend that when endline data is collected, **partners should use international standards where possible (words per minute tests), and convert non-standard Uwezo scores to standard Uwezo ones representing specific competencies**. This will enable us to use endline analyses to compare results across interventions and assess project impact more robustly.

- Because of the non-random selection of school and /or students, the sampled schools /students are not representative of the population as a whole. We are also not able to identify the selection bias of the sample.

We recommend that partners use external data sources to compare the schools and students selected such as Oxford multidimensional poverty index reports and the UN Human Development Index. This would allow the projects to better identify what sub-populations their samples represent. While this will not

necessarily allow us to generalise results from the project to the broader population, it will give us a more precise idea of what the findings from any one particular project mean. Combining this evidence from different projects will allow us to make more generalisable conclusions.

- There were a number of anticipated barriers to girls' education that were found during the baseline research such as early marriage and pregnancy. Unanticipated barriers are expected to have direct and /or indirect impacts on the effectiveness of the current intervention designs and their targeting strategies.

Project design may need to proactively account for unanticipated barriers to education. Projects should make sure that these barriers are continuously monitored throughout the lifetime of the project, and that interventions are appropriately modified and adjusted to address these barriers. Additionally Projects' endline research and research instruments should be designed in a way that allows them to capture all key barriers to education including unanticipated ones.

- Projects need to ensure that M&E frameworks are able to thoroughly assess the link between barriers to education and girls' education outcomes. M&E systems should be in place to enable projects to collect data and conduct analyses providing a reasonable and reliable level of understanding of the complexity that many of the targeted girls face in achieving education outcomes. **We recommend that projects regularly review and refine their theory of change and, if necessary, adjust their M&E strategies.** This will allow projects with an inconclusive evidence base or insufficient data about targeted girls or barriers to education to gain a deeper understanding and continuously adapt their interventions to improve the probability of achieving a sustainable impact.

Annex A: Conversion of Literacy and Numeracy Uwezo Scores

In Section 3, we presented literacy and numeracy scores derived from adapted Uwezo assessments conducted by the Discovery and Avanti projects. These scores were converted from the raw number of correct responses to a scale of Level 1 to 7, which correspond to the scoring levels used in the 2012 national Uwezo assessment in Uganda and by other GEC partners funded through the SCW and IW. These levels measure specific competencies in literacy and numeracy. For example, a student scored at Level 4 on the Uwezo reading assessment is able to read a sentence of Primary 2-level difficulty. These levels are described in [Table 8](#).

The conversion of Discovery and Avanti's Uwezo scores to this scale is not exact. The assessments conducted by Discovery and Avanti were adaptations of the standard Uwezo method, and were not originally scored on a scale of Levels 1-7. Avanti gave a different version of the test to each grade level, varying in content and difficulty. Discovery administered only one adapted version of the test to students at grade levels Primary 4 to Primary 6, which had more difficult questions than the standard Uwezo test. Both reported only raw scores of the number of correct responses.

A direct comparison of results from adapted Uwezo exams with those from a standard Uwezo exam is not appropriate, since their content and difficulty are different. However, the skills tested by adapted Uwezo assessments correspond broadly to those in the standard Uwezo assessment. For this reason, the scoring scale of Level 1 to 7 is still a useful representation of the competencies of each student.

The assessments used by Discovery and Avanti and the data available were significantly different, requiring varying methodologies for converting each of their scores. In the following section, we describe the methodology used.

Discovery

The data obtained from the Discovery project included scores on every subtask in their adapted Uwezo assessment. This allowed us to use subtask scores to evaluate a student's specific competencies in literacy (reading) and numeracy. Subtasks were mapped to the competencies represented by the standard Uwezo levels. We then set a threshold of correct responses to pass the section and assigned a converted score for the highest level passed.

In the standard Uwezo scoring levels, an assumption is made that the competencies are learned sequentially. That is, any student with the competencies represented by Level 6 must also have all the competencies for Levels 1-5. We have adopted this assumption in our conversions. This means, for example, that for a converted score of Level 4, a student must have passed Levels 1-3 as well. If a student passes Levels 1-3, fails Level 4, and passes Level 5, her converted score would be Level 3. This method was chosen for consistency with standard Uwezo scoring. For literacy scores, this appears to be a reasonable assumption; a student must be able to read words before she can read sentences. In the numeracy test, it is less clear that the skills tested in the Uwezo exam are necessarily learned sequentially. For example, it is plausible that a student could be better at multiplication than at addition, even though multiplication is considered a more advanced competency than addition in Uwezo scoring levels. Because of this, it is possible that the converted numeracy scores are a somewhat conservative estimate of students' ability in numeracy.

The mapping of Uwezo levels to specific competencies are given in [Table A.1](#) and [Table A.2](#) for literacy and numeracy respectively. In some cases, the competencies represented by these converted scores are different from the standard Uwezo levels. The differences are as follows:

Literacy

- Reading Level 5 in the standard Uwezo scoring is the ability to read a story out loud. This was not used in Discovery's adapted Uwezo, which tested the ability to read simple and more complicated sentences. Level 5 is therefore assigned to the ability to read more complicated sentences rather than reading a story.
- While the standard Uwezo test questions are intended to be of Primary 2 level difficulty, it was not clear what level of difficulty the questions in Discovery's adapted Uwezo are intended to be, so we cannot specify this precisely in the competence definitions.

Numeracy

- Standard Uwezo numeracy scores begin by recognising digits between 1-9, whereas the simplest questions in the adapted Uwezo tested the ability to recognise numbers between 10-999. Therefore, we cannot distinguish between students at Level 2 and Level 1.

ANNEX A – CONVERSION OF LITERACY AND NUMERACY UWEZO SCORES

- The adapted test includes several subsections that test competencies that are not part of the standard Uwezo test, including identifying larger numbers and comparing numbers. For consistency with standard Uwezo scores, we did not use these subsections in our analysis.
- While the difficulty of addition, subtraction, multiplication, and division questions in the standard Uwezo exam are intended to be at a Primary 2 Level, there is no clear indication of the level of difficulty of these questions in Discovery’s adapted Uwezo test. Therefore, we cannot specify difficulty in our definitions of these levels.

Table A.1: Converted scores on adapted Uwezo literacy assessment (Discovery)

Discovery Adapted Uwezo levels		Standard Uwezo level (closest equivalent)	
Level 1	<i>Non-readers/nothing</i> – Inability to identify the sounds of letters of the alphabet.	Level 1	<i>Non-readers/nothing</i> – Inability to recognise letters of the alphabet
Level 2	<i>Sounds</i> – Ability to identify the sounds of letters of the alphabet.	Level 2	<i>Letter</i> – Ability to recognise letters of the alphabet
Level 3	<i>Word</i> – Ability to read words.	Level 3	<i>Word</i> – Ability to read words of Primary 2 level difficulty
Level 4	<i>Sentence 1</i> – Ability to read simple sentences.	Level 4	<i>Sentence</i> – Ability to read a paragraph of Primary 2 level difficulty
Level 5	<i>Sentence 2</i> – Ability to read more complicated sentences.	Level 5	<i>Story</i> – Ability to correctly read a story of Primary 2 level difficulty
Level 6	<i>Comprehension</i> – Ability to listen to a passage and answer related question	Level 6	<i>Comprehension</i> – Ability to correctly read and understand a story of Primary 2 level difficulty and answer related question

Table A.2: Converted scores on adapted Uwezo numeracy assessment (Discovery)

Discovery Adapted Uwezo levels		Standard Uwezo levels (closest equivalent)	
Level 1	<i>Nothing</i> – Inability to identify at least 3 out of 5 numbers from 10 to 999	Level 1	<i>Nothing</i> – Inability to count at least 4 out of 5 numerical numbers from 1 – 9
(Not Tested)		Level 2	<i>1-9</i> – Ability to count numbers from 1 to 9
Level 3	<i>10-999</i> – Ability to identify numbers from 10 to 999	Level 3	<i>10-99</i> – Ability to recognise numbers from 10 to 99
(No Level Assigned)	<i>1,000-99,999</i> – Ability to identify numerical numbers from 1,000 to 99,999	(Not Tested)	
(No Level Assigned)	<i>Comparing 2 & 3 digit numbers</i>	(Not Tested)	
(No Level Assigned)	<i>Comparing 4 & 5 digit numbers</i>	(Not Tested)	
Level 4	<i>Addition</i> – the ability to solve at least two numerical written addition sums	Level 4	<i>Addition</i> – the ability to solve at least two numerical written addition sums of Primary 2 difficulty
Level 5	<i>Subtraction</i> – Ability to solve at least two numerical written subtraction sums	Level 5	<i>Subtraction</i> – Ability to solve at least two numerical written subtraction sums of Primary 2 difficulty
Level 6	<i>Multiplication</i> – Ability to solve at least two multiplication problems	Level 6	<i>Multiplication</i> – Ability to solve at least two numerical written multiplication sums of Primary 2 difficulty
Level 7	<i>Division</i> – Ability to solve at least two numerical written division sums	Level 7	<i>Division</i> – Ability to solve at least two numerical written division sums of Primary 2 difficulty

Avanti

The Uwezo literacy test administered by Avanti was significantly different from the standard test and disaggregated scores were not available. For some grade levels, Avanti’s assessment included an oral reading fluency test, which provides a useful metric for evaluating reading competency. We have used those scores where possible, rather than converting them to Uwezo competency levels.

This alternative was not available for Avanti’s numeracy scores, so we converted those scores to the scale of Level 1 to 7. As in the literacy test, the numeracy assessment was significantly adapted from the standard Uwezo exams and a different test was administered to students at each grade level. [Table A.3](#) presents an analysis of the content of each test, establishing the closest equivalent to the standard Uwezo competency levels. Avanti’s data was recorded with only the total number of correct responses, so equivalent Uwezo competency levels were established by setting score ranges for each level of competency. In setting these thresholds, we assumed that students learn mathematical skills sequentially, so that lower scores represent correct answers on easier topics. We also noted that, unlike standard Uwezo procedures in which the same test is administered to students at different grade levels, these tests become more difficult at higher grade levels. Hence, while the topics are the same (e.g., for every grade level, Uwezo Level 5 represents mastery up to subtraction), the difficulty of problems increases.

From [Table A.3](#), it is clear that these conversions are only a rough approximation of ability, since there is so much variation in the tests given and our method of setting thresholds does not allow us to closely link standard levels with subtask scores. However, because most of the tests cover standard topics of addition, subtraction, multiplication, and division, these converted scores still provide an estimate of student competencies in these areas.

Table A.3: Converted scores on adapted Uwezo numeracy assessment (Avanti)

Avanti Uwezo numeracy scores by grade level	Content of Test	Score Range	Closest Uwezo Standard Uwezo level
Standard 1	Four questions deal with shape recognition, which is not a part of the standard Uwezo numeracy test. Two questions deal with counting single digit numbers and the remaining 6 questions are addition problems.	0–5 / 12	Level 1
		6–9 / 12	Level 2
		10–12 / 12	Level 4
Standard 2	Four questions on addition, 2 on subtraction, 2 on division, and 2 on multiplication.	0–2 / 10	Level 1
		3–4 / 10	Level 4
		5–7 / 10	Level 5
Standard 3	The same format as the Standard 2 test, but each question is more difficult.	8–10 / 10	Level 7
		0–2 / 10	Level 1
		3–4 / 10	Level 4
		5–6 / 10	Level 5
Standard 4	Significantly different from the Standard 2 and 3 tests; includes questions on telling time and quantitative comparisons that aren’t part of the standard UWEZO criteria	7–8 / 10	Level 6
		9–10 / 10	Level 7
		N/A	N/A
		N/A	N/A
Standard 5	4 Addition problems, 2 subtraction problems, 2 multiplication problems, and 2 division problems. All problems at higher difficulty level than Standard 2 and 3 tests.	0–2 / 10	Level 1
		3–4 / 10	Level 4
		5–6 / 10	Level 5
		7–8 / 10	Level 6
Standard 6	Similar format as Standard 5 test but more difficult questions and word problems rather than numeric problems, and does not cover division.	9–10 / 10	Level 7
		0–2 / 10	Level 1
		3–4 / 10	Level 4
		5–8 / 10	Level 5
		9–10 / 10	Level 6

Annex B – Terms of Reference (revised February 2015)

Terms of Reference for the Evaluation Manager of the Girls' Education Challenge (GEC)

Introduction

1. The Department for International Development (DFID) manages the UK's aid to poor countries and works to get rid of extreme poverty. DFID is working to reach the Millennium Development Goals (MDGs), the international targets agreed by the United Nations (UN) to halve world poverty by 2015. Progress on girls' education is critical to the achievement of these targets. Millennium Development Goals (MDGs) 2 and 3 specifically relate to education and achieving gender parity.
2. Globally 39 million primary age girls, have never been to school. And 70% of these girls come from the poorest and most marginalized communities in the most disadvantaged locations, ethnic groups etc. Over the last 20 years primary enrolments for girls have improved along with boys but completion rates are equally low for both sexes. At the secondary level the differences between boys and girls participation rates really start to show. Large disparities exist within countries with poor rural girls come off the worst in terms of educational disadvantage even at the primary level.
3. Levels of traditional ODA to education have stagnated and, given the global financial situation and shifting development priorities, may even go into decline. DFID is refocusing its efforts on girls' education through the Girls Education Challenge fund with the ambition that this will have a catalytic effect on other international partners.
4. The GEC is open to competitive bids from non-state organisations to fund programmes that focus on getting girls into primary and lower secondary education, keeping them there, and making sure they learn. It is expected that £355 million is available in total to support the GEC up to March 2017.
5. This support should enable at least 660,000 marginalised girls to complete a full six-year cycle of primary school or 1 million marginalised girls to complete three years of junior secondary school.
6. A dedicated Fund Manager will be responsible for the day-to-day operation of the GEC, including establishing the bidding process, supporting bidders, sifting and scoring proposals, evaluating Value for Money and making project funding recommendations for DFID approval, and managing the relationship with projects to be funded.

7. The independent Evaluation Manager which these Terms of Reference relate will be contracted to establish, lead and manage a rigorous monitoring and evaluation framework to assess the effectiveness and impact of individual projects and the GEC as a whole, and to support the dissemination of lessons to inform GEC design and wider DFID programming.

Objective

8. DFID is seeking to procure the services of an independent Evaluation Manager for the Girls Education Challenge (GEC) Fund over the next five years. DFID is committed to ensuring that every girl and every boy has access to a good quality education but there is a specific need for an additional focus on girls. The Evaluation Manager will provide an independent and rigorous monitoring and evaluation function, designing and implementing a framework which will assess the effectiveness of individual projects and the GEC as a whole and disseminate good practice.
9. Full details of the GEC can be found in the Business Case on DFID's website www.dfid.gov.uk

Recipient

10. The recipient of this service will be DFID.

Scope of Work and Requirements

11. The independent Evaluation Manager's primary responsibility is to track results effectively, feedback accurate assessments to DFID and work with the Fund Manager to make lessons available to inform GEC evolution and wider DFID programming. Generate lessons learned based on evaluation findings, primary research and project evaluation reports.
12. The Evaluation Manager will be expected to provide a draft Monitoring and Evaluation Framework for approval by DFID within the first 6 months and an inception report (within the first six months) that should also contain:
 - Risk management plan;
 - Quality assurance plan;
 - Proposed basis of work with Fund Manager;
 - Outline of proposed methods for assessing core indicators;
 - Outline of proposed approach to assessing grant-specific additional indicators;
 - Outline of proposed approach to measuring and evaluating value for money of individual projects and cost benefit of the programme as a whole;
 - Draft M&E guidance and standards for the Fund Manager to disseminate to key stakeholder and partners;
 - Proposed outline method for measuring educational outcomes; and

- First draft of design of longitudinal study outlining the feasibility of sampling and data collection strategies to ensure a representative sample of beneficiaries is selected for the subsequent study. Refinement of the design will take place following inception and once the cohort of beneficiaries has been identified by DFID.
- Provide guidance on “evaluability” criteria for project selection process at concept Note and full proposal stage.

Once the inception report is approved it is expected that the Evaluation Manager will be responsible for delivering the following:

13. Tracking progress: ensuring robust measurements of performance at the project and programme level:

- The Fund Manager quality assures project progress reports and notifies DFID on progress, and about any problems that may have arisen. To support this process, the Evaluation Manager will provide the Fund Manager with support and technical guidance on approaches and methods for measuring project performance, effectiveness and impact through evaluation.
- Support provided by the Evaluation Manager includes conducting in-country field visits to all Innovation Window projects to support project teams to develop their M&E Frameworks; and one-to-one support for all Step Change Window and Strategic Partnership Window grantees and partners.
- Additionally, the Evaluation Manager will independently assess project reach and performance through the re-analysis of project baseline, midline and endline data, as well as the meta-analysis of data collected by the Evaluation Manager.
- Provide technical expertise and generic guidance on M&E at the project and portfolio level.
- Provide technical expertise in the development of a PBR approach. Act as an independent advisor to DFID on PBR matters, by providing quality assurance on the process and highlighting potential technical risks of proposed approaches, for the purpose of improving the effectiveness and successful administration of PBR.
- Develop guidance for the Fund Manager to assess the adequacy of project M&E plans to collect systematic baseline, performance, and impact data

14. Evaluate new approaches to implementation: presenting lessons, including cost comparisons, to inform GEC evolution and wider DFID and global programming:

- Through the Fund Manager disseminate lessons learned and report those to DFID to agree evolution of GEC accordingly;
- Check that generic lessons are drawn out on what works in girls' education, triangulated with other evidence, and reported to DFID. These lessons may be both immediate and used to inform future GEC evolution or longer term and inform future DFID or others' interventions;
- Systemic lessons are drawn out on the costs and benefits of the Challenge Fund approach..

15. In-depth evaluations: to include working with DFID and the Fund Managers to select, design and administer in depth evaluations on a select number of thematic areas:

- DFID will, following recommendations from the Evaluation Manager, select a number of projects and/or thematic areas for in depth evaluation. These decisions will be based on relevance to the overall objectives of the GEC, potential for wider DFID and global lesson learning and the potential to fill key knowledge gaps and feasibility and cost of collecting data. Whilst designing these evaluations the Evaluation Manager's considerations should include how to: measure the adequacy of methodologies; assess cost comparisons with relevant tried and tested interventions; combine quantitative and qualitative assessments and include a variety of methodologies including community surveys;
 - Track whether results chains set out in the Programme Theory of Change holds good and that the evidence base is sound;
 - Using a variety of research tools (including qualitative household in-depth interviews,, classroom observations and teacher interviews) to assess the impact of key thematic barriers, identified in the baseline research on gender disparities on learning and enrolment in a selection of two to three see Annex B); and
 - Producing and dissemination evaluation syntheses across DFID and wider audience.
16. Conduct meta-evaluations to report on the value for money of the GEC programme as a whole (as part of the process evaluation), and the impact of the GEC programme on girls' educational outcomes in absolute terms and relative to boys in certain circumstances (as part of the endline evaluation).
17. Design the Longitudinal study: to include draft methodology, outline core indicators, milestones and example budget:
- Design at least one separate longitudinal study to follow through a cohort of girls for at least ten years to assess the longer term health and economic impact of education set out in the Theory of Change likely to require study well beyond the 4 year life of the programme. The focus of the longitudinal study will be selected by DFID.
18. Supporting grantees to develop and deliver effective project M&E including the specific requirements linked with Payment By Results and working with the Fund Manager to help grantees design and manage effective M&E components which are consistent with the GEC logframe ;
- Support the Fund Manager to ensure all successful proposals have written and financed within the project concrete M&E plans designed to collect systematic baseline data; consistently monitor progress against milestones and targets in the GEC log frame and a plan for conducting an end of project survey to facilitate the project completion report.
19. Disseminate and communicate information: Support the Fund Manager in the approach to disseminating key findings and lesson learning to key partners and stakeholders and actively shape the Knowledge Management Strategy based on lessons and findings that emerge from the EM's work.
- This should include outreach and engagement with: project implementing partners; national governments; DFID country offices; bilateral and multilateral the private sector and civil society, in collaboration with the FM and DFID.
20. In addition the Evaluation Manager will be expected to:
- Establish a good working relationship with the Fund Manager;

- Provide input on reporting mechanisms and templates at project and programme level to ensure evaluation data is captured effectively
- Review the Fund Manager's recommendation on updating the programme logframe annually and submit recommendations to DFID. Final approval to be provided by DFID; and
- Respond to the needs of the GEC Team.

21. The Evaluation Manager should have a proven track record of:

- monitoring and evaluation of development programmes using both quantitative and qualitative methods;
- work with educational programmes including testing of educational outcomes;
- social research management;
- management of impact evaluations; and
- undertaking evaluations in the context of major donor interventions, ideally focused outside of government.

Constraints and Dependencies

22. The Evaluation Manager will be expected to provide its own overseas duty of care in relation to its employees and other personnel it retains and logistical arrangements. If deemed necessary DFID may need to be convinced that systems and procedures that it has in place are adequate if traveling to conflict affected countries. Where the security situation in a GEC country has deteriorated (per the designation of the FCO or another reputable risk and security monitoring service) such that additional security precautions are required to undertake work, the Evaluation Manager may make an application for further funds to meet duty of care requirements.

Reporting and Monitoring and Evaluation

23. Key Performance Indicators (KPIs) are attached at Annex A. These will ensure that the management of the contract is undertaken as transparently as possible and to ensure that there is clarity of roles and responsibilities between the DFID GEC Team, the Evaluation Manager and the Fund Manager. The Evaluation Manager will need to demonstrate to DFID, at intervals which will be agreed with DFID within 2 months of contract award, its performance against these KPI's.

24. DFID will evaluate the performance of the Evaluation Manager throughout the life of the programme and at least twice yearly one of which will be as part of DFID standard Annual Review of the programme. The Evaluation Manager will be expected to submit progress reports and lessons presented written and orally to DFID twice annually in-line with DFID's programme cycle as outlined in the requirements section of this ToR. It is expected that the Evaluation Manager take a proactive approach to notifying DFID of any matters which may require immediate attention.

25. The inception report should be finalized within the first 6 months as detailed in the scope of work and requirements section. The inception report should outline details of timelines for in-depth evaluations and the longitudinal study milestones. Comprehensive progress and evaluation report in Spring 2016 to inform possible future support for the GEC. The final evaluation report by June 2017.

26. Milestone-based payments within the first year will be based on the approval by DFID of inception and quarterly reports of high standard and which correspond to the requirements of these Terms of Reference. During the first year of the programme, DFID and the Evaluation Manager will use best efforts to agree an amendment of the criteria for milestone based payments to include as an element (at approximately 5%) satisfaction of the KPIs already agreed by DFID and the Evaluation Manager and which incorporate aspects of communication, engagement and timeliness of report submissions.
27. Within the first year of the programme, DFID and the Evaluation Manager will use best efforts to agree an amendment of the criteria for milestone based payments to include additional elements reflecting the KPIs agreed by DFID and the Evaluation Manager pursuant to paragraph 22 of these Terms of Reference.

Timeframe

28. The contract for the Evaluation Manager will be awarded from July 2012 – June 2017. The contract is designed to end after financing is dispersed to allow a final evaluation of projects to be completed if necessary.
29. The Girls Education Challenge fund will run for 5 years initially (2012 – 2017) with the possibility of a further extension. Although no project financing is committed beyond March 2016 the Evaluation Manager should consider establishing monitoring and evaluation systems in terms of measuring the long-term sustainable benefits of the GEC benefits beyond the life of the programme.
30. The first Step Change Projects will be awarded in late 2012 and Strategic Partnerships will be asked to express further interest around the same time. Initial Innovative projects are likely to be awarded in January 2013. All projects proposals will be approved by DFID, following recommendations by the Fund Manager.
31. The Evaluation Manager will be expected to play a significant role supporting the Fund Manager to arrange an event (timing to be confirmed) at which the GEC projects will be able to demonstrate the results of their investments to the Fund Managers and a panel of potential funders (including private sector foundations).

DFID coordination and management

32. The DFID GEC team (consisting of the Girls Education (GE) Lead Adviser and Programme Co-ordinator, Innovation and Private Sector Manager, Evaluation Advisor, Programme Manager and Deputy Project Manager) will have the day-to-day oversight and management of the Evaluation Manager. The DFID GEC team will monitor operational and financial progress and raise any issue that require attention to DFID senior management and Ministers as necessary. The DFID EvD Team will also have an oversight role of the GEC Evaluation Manager, providing strategic advice as required and ensuring that evaluation and monitoring activity aligns with wider DFID activity. The DFID GEC team will work alongside the Evaluation Manager and Fund Manager to consider what input is required, by whom and at what times to ensure technical advice is on hand at the right time during the bid approval process.
33. The Evaluation Manager will be expected to report to the DFID twice annually alongside the Fund Manager who will be expected to present funding recommendations along with progress and decision points to the steering committee. DFID will then submit their view on this information to the Secretary of State for

International Development for his final approval before any financing is awarded or any significant changes are made to the fund. It will be expected that there will be a regular weekly meeting between the GEC team and the Evaluation Manager for the first 6 months of the contract and thereafter to be agreed with the DFID GEC Team.

Annex C – List of Documents

Name of document	Lead Author
DFID GEC Business Case and Summary June 2012 V4	DFID
iMlango Project Baseline Study Report 3.0 (February 2015)	Advantech Consulting
ENGINE Project Baseline Evaluation Report (March 2014)	T K G
Discovery Project Final Baseline Report (October 2014)	Social Impact, Inc.
Discovery GEC Technical Proposal (January 2013)	Discovery Communications
M&E Framework; Discovery Girls (July 2014)	Discovery Learning Alliance
Educating Nigerian Girls in New Enterprises (ENGINE) Proposal (January 2013)	The Coca-Cola Company
Monitoring and Evaluation (M&E) Framework for the Educating Nigerian Girls in New Enterprises (ENGINE) (April 2014)	The Coca-Cola Company
iMlango Kenyan Schools Online Content Project Partnership Proposal (April 2014)	Avanti Communications Limited
M&E Framework: iMlango Kenyan Schools Online Content Project (June 2014)	Avanti Communications Limited
UNESCO Institute for Statistics- Theme: Education http://data.uis.unesco.org/Index.aspx?queryid=120 retrieved on (22/12/2015)	UNESCO Institute for Statistics
Reading Fluency Measurements in EFA FTI Partner Countries: Outcomes and Improvement Prospects (2011), GPE Working Paper Series on Learning, No. 1, Education for All Fast Track Initiative Secretariat, World Bank: Washington DC	Abadzi, H.
EFA Global Monitoring Report 2015- Education For All 2000-2015: Achievement and Challenges http://unesdoc.unesco.org/images/0023/002322/232205e.pdf	UNESCO
Education For All Global Monitoring Report Statistical Tables (2015) http://en.unesco.org/gem-report/node/6	UNESCO
UNICEF Basic education and gender equality; Water and Sanitation. http://www.unicef.org/education/index_focus_water.html (retrieved on 22/12/2015)	UNICEF
An Assessment of Teacher Absenteeism on Quality Teaching and Learning in Public Primary Schools in Northern Ghana (2010) http://siteresources.worldbank.org/EXTHDOFFICE/Resources/5485726-1239047988859/5995659-1270654741693/5_Session1.2_IBIS_Ghana.pdf	World Bank

ANNEX C – LIST OF DOCUMENTS

<p>EFA Global Monitoring Report 2010: Reaching the marginalized http://unesdoc.unesco.org/images/0018/001865/186525E.pdf</p>	<p>UNESCO</p>
<p>Abolishing School Fees in Africa: Lessons from Ethiopia, Ghana, Kenya, Malawi, and Mozambique (2009) http://www.unicef.org/publications/files/Aboloshing_School_Fees_in_Africa.pdf</p>	<p>World Bank, UNICEF</p>
<p>EFA Global Monitoring Report: Youth and Skills, Putting education to Work (2012) http://passthrough.fw-notify.net/download/131378/http://unesdoc.unesco.org/images/0021/002180/218003e.pdf</p>	<p>UNESCO</p>
<p>Overcoming obstacles to educating girls, Issues Paper, Strategy Session I.2, Senegal: World Education Forum (2000) http://www.unesco.org/education/wef/en-conf/coverage_sessionI_2.shtm</p>	<p>UNESCO</p>