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Baseline Report – Step Change Window

Final Version

Evaluation Manager Girls' Education Challenge Fund-

January 2015

ORB International RTI INTERNATIONAL UEA University of East Anglia

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UK Department for International Development Project Name

Evaluation Manager Girls' Education Challenge Fund

PO 5685

Partners

- The University of East Anglia
- RTI International
- Opinion Research Business

January 2015

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This document has been approved for submission by Coffey's Project Director, based on a review of satisfactory adherence to our policies on:

- Quality management
- HSSE and risk management
- Financial management and Value for Money (VfM)
- Personnel recruitment and management
- Performance Management and Monitoring and Evaluation (M&E)

Ben Ward, Project Director

Signature:

Disclaimer

Abbreviations and Acronyms

ACTED	Agency for Technical Cooperation and Development
AIDS	Acquired Immune Deficiency Syndrome
ASER	Annual Status of Education Report
BEAM	Basic Education Assistance
BL Report	Baseline Report
DFID	Department for International Development (United Kingdom)
EGMA	Early Grade Math Assessment
EGRA	Early Grade Reading Assessment
EM	Evaluation Manager
FGM	Female Genital Mutilation
GEC	Girls Education Challenge Fund
HHS	Household Survey
HIV	Human Immunodeficiency Virus
IDI	In-depth Interview
IDPs	Internally-Displaced Persons
IW	Innovation Window
ORB	Opinion Research Business
OOS	Out-Of-School
PbR	Payment by Results
RCT	Randomised Controlled Trial
RTI	RTI International
SBA	School-based assessment
SCW	Step Change Window
SEM	Structural Equation Modelling
SPW	Strategic Partnerships Window
SVS	School visit survey
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund

US	United States of America
USAID	United States Agency for International Development
WPM	Words per Minute

Project Abbreviations

The following abbreviations are used for project organisations in tables in this report:

ACTED	Agency for Technical Cooperation and Development
AKF	Aga Khan Foundation
BRAC	BRAC
Camfd	Campaign for Female Education
CARE	CARE International
CfBT	CfBT Education Trust
ChHpe	ChildHope
IRC	International Rescue Committee
RI	Relief International
PLAN	Plan International
STC	Save the Children
WUSC	World University Service of Canada
WV	World Vision

Country Abbreviations

The following abbreviations are used for countries in tables in this report:

Afg	Afghanistan
DRC	Democratic Republic of Congo
Eth	Ethiopia
Ken	Kenya
Moz	Mozambique
Sie	Sierra Leone
Som	Somalia
Tan	Tanzania
Zim	Zimbabwe
Z-T	Zimbabwe- Tanzania

Contents

Executive Summary – Step Change Window

Background to the GEC Step Change Window

In 2012, the UK Department for International Development (DFID) launched the £355 million Girls' Education Challenge Fund (GEC) to support up to a million of the world's most marginalised girls to improve their lives through education. Within the Step Change Window (SCW), non-governmental organisations are being funded to quickly and effectively expand education opportunities for 650,000 girls at primary and secondary school levels.

Fifteen SCW projects were awarded funding of up to £30 million. They operate in Afghanistan, DRC, Ethiopia, Kenya, Mozambique, Sierra Leone, Somalia, Tanzania, and Zimbabwe. These projects plan to provide girls with access to education, materials, safe spaces and a 'voice'. They will also help to mobilise and build capacity within governments, communities and schools, for example, through training and mentoring teachers, governors and community leaders.

Purpose of the baseline report

DFID has appointed Coffey, in partnership with the University of East Anglia, RTI International and ORB as the Evaluation Manager (EM) of the GEC. The EM leads the independent evaluation of the GEC as a whole.

The GEC baseline research explored the scale and nature of educational marginalisation among girls in the project areas before the start of GEC programme activities. It measured girls' current education outcomes with respect to attendance, enrolment, retention and learning. It also explored potential barriers to girls' education, ranging from poverty and household economics through early marriage and pregnancy, cultural attitudes, and violence.

Research approach

The SCW baseline report draws on a wealth of primary data, collected by the projects and the EM. Projects commissioned independent baseline studies to inform the assessment of change at the project level. The EM reviewed and analysed the projects' baseline reports and datasets to prepare this overarching baseline report.

The EM also collected primary data across the 15 SCW project areas, including over 6400 household surveys, 800 qualitative interviews, school-based surveys and classroom observations, and 13,000 learning assessments of boys and girls using the Early Grade Reading Assessment (EGRA) and the Early Grade Maths Assessment (EGMA) tools. The projects collected data from 30,000 household surveys and 31,000 learning assessments. The projects and the EM collected data from treatment and control areas to allow for the use of control groups in assessing the programme's effectiveness and impact.

Key findings

While a majority of girls are enrolled in school, many do not progress at the expected pace. On average across the window, the majority of girls are enrolled in school, with some variation between project areas. However, primary aged school girls tend to be enrolled one grade below their expected grade and secondary school aged girls tend to be two grades behind. Less than half of secondary aged girls are actually enrolled in secondary school. This supports GEC programme assumptions that girls face important obstacles to progressing at pace.

Learning test scores suggest that girls fall further behind expected benchmarks as they grow older and often fail to acquire basic skills. The EGRA test showed low average reading fluency levels among girls of primary and secondary age in virtually all project areas. Generally, girls only reach a basic level of reading comprehension when they enter secondary school and still lag several years behind international benchmarks in terms of their oral reading fluency scores. In some project areas, secondary aged girls were unable to demonstrate foundational mathematic skills. Especially for girls of secondary age these findings indicate a persistent level of educational marginalisation throughout their time in the school system.

Girls are not *systematically* more disadvantaged than boys in terms of enrolment or learning. The enrolment rates of girls are not systematically lower than those of boys in the SCW project areas. In some contexts, boys are less likely than girls to be enrolled in school. In terms of learning, boys tend to perform slightly higher than girls but

are equally far behind international benchmarks for their age group. It seems that gender gaps in learning are context-specific and that in certain contexts boys also experience degrees of educational marginalisation.

Conclusions

Poverty emerges as a critical structural factor that is dynamic and affects girls' education through a variety of pathways. Analysis of the GEC household survey shows direct and indirect relationships between poverty; intermediary factors such as material deprivation, poor housing, subjective wellbeing and household duties; and girls' enrolment and learning. It is clear that poverty is multifaceted, affects educational outcomes through various pathways, and is not static. Poverty often intensifies temporarily due to natural disruptions that dip agricultural household into acute hardship. If these affect girls at critical times during the school year, such as when school fees and costs must be paid, they can hinder enrolment and attendance during the rest of the year.

Social attitudes and practices such as early pregnancy and early marriage relate to wider economic, cultural and societal pressures and cannot be understood in isolation. Negative attitudes towards girls' education are not widespread across the SCW but they do hinder girls' enrolment and learning where they exist. The EM's qualitative research suggests that attitudes are shaped in relation to cultural beliefs about the role of women, accepted societal arrangements, and economic considerations. The EM qualitative research highlighted the persistence of beliefs whereby marriage should take priority over education in some communities. In some cases, such attitudes seem to stem from a realistic assessment of the pathways available to girls given the local circumstances and realities. It is important that projects recognise and address the structural factors that drive attitudes towards education and phenomena such as early pregnancy and early marriage, to understand what change can be achieved and how.

Various school-based barriers jointly shape the learning environment in school – and affect both boys and girls. In the EM school-based assessment, more than two thirds of schools reported a lack of teachers; the large majority of classrooms did not have electric lighting; and one in four schools reported problems with teacher absenteeism. The EM qualitative and quantitative research findings suggest that overcrowded classrooms, poor school facilities, and an unfriendly environment can hinder girls' learning. Many of these issues seem to be driven by structural problems such as a general under-resourcing of schools. Rather than being gender-specific, school-based barriers affect all children enrolled in school, and schools tend to be the more disadvantaged the more remote and the poorer the community in which they are located.

Findings on the role of violence and disability are inconclusive and more in-depth research is needed to understand how they influence girls' education. In the EM household survey, respondents rarely reported incidences of violence across the SCW. In the EM qualitative interviews, however, they stressed the severe effects that violence (including sexual, physical and psychological abuse) can have on girls' education when it occurs. There was also little clear evidence that disability acts as a barrier to education. This seems counterintuitive and may be due to a lack of understanding or under-reporting of the difficulties linked to living with a disability. These sensitive issues will be subject to additional in-depth thematic research using tailored methods and approaches.

Many barriers that hinder girls' education are interrelated and driven by a common set of structural problems, which projects need to understand better in order to achieve sustainable impact. Many barriers discussed in the report are symptoms or consequences of structural challenges such as a lack of resources in households, communities, schools and government; and social norms, beliefs and attitudes. It is important that projects distinguish symptoms and underlying drivers of educational marginalisation, and account for existing coping strategies to ensure that their interventions have a sustainable impact. This is important to reduce the risk that interventions will be confounded by barriers that projects are either unaware of or are unable to mitigate against in a strategic manner.

Projects have struggled to understand and address the complexity of educational marginalisation, which could limit the effectiveness of project interventions. There has been a tendency for definitions of barriers and target groups to overlap. For example, barriers such as poverty may affect girls with disabilities who may be part of a wider target group defined as 'the poor'. Projects have struggled to define in enough detail the relationships between social barriers to education and being marginalised from education in terms of being in school and learning. Those who defined their target groups in relatively narrow terms may find that their intervention design will be less effective than expected because they do not address the problems in their full complexity. Initially, some projects adapted their designs in response to their baseline findings while others have not.

1 Introduction

1.1 Background to the GEC Step Change 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. For this purpose the GEC operates through three distinct funding windows:

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

Within the Step Change Window, non-governmental organisations aim to quickly and effectively expand education opportunities for 650,000 girls at primary and secondary level in nine focus countries. In January 2013, 15 Step Change Window projects were awarded funding of up to £30 million to complement existing support to education and demonstrate sustainability beyond the life of the GEC. These projects plan to provide girls with access to education, materials, safe spaces to learn and a 'voice'. They will help to mobilise and build capacity within governments, communities and schools through training and mentoring teachers, governors and community leaders. A more detailed overview of the different intervention types covered is presented in Table 1.

Table 1: Intervention Types in the SCW

Broad types of interventions	Descriptions of different types of interventions summarised by the Evaluation Manager
1. Access	• Support transition (primary to secondary) • Individual access support for girls with disabilities
2. Capacity	• Build / fund schools or classrooms • Build / fund alternative schools
3. Community	• Engage men /boys (mentor) • Engage champions / community facilitators / religious groups or leaders • Community intervention / mobilisation • Integrate religious teaching into formal education • Engage the private sector • Peer / female mentors
4. Governance	• Train school governors / School Management Committees on girls' education best practise • Monitoring & intervention • Establish School Management Committees • International school partnerships • School inspectors • Capacity support system • Policy development • School improvement / school development plans
5. Learning	• Life skills / leadership training • Formative assessment (literacy / numeracy) • Develop / extend curriculum • After-school / out-of-school tuition / Support Accelerated Learning Programme • Learning support • School readiness classes • English language programmes (e.g. language of instruction)
6. Material	• Stipends funding • Other material support • Microfinance • Income generating activities with families • Solar lamps • Kits / materials • Deworming & vitamins

Broad types of interventions	Descriptions of different types of interventions summarised by the Evaluation Manager
7. Safe space	• Physical infrastructure • Facilities / WASH / hygiene education • Anti-gender-based violence • Engage public sector child protection • Girl / boy friendly school • Girls study group • Clubs (child / parent) • Girls spaces
8. Teaching	• Train / fund (general) teachers • Support psychological / health training • Support government training • Train / fund local teachers • Training para-educators (extend curricula)
9. Voice	• Radio • Student represent / feedback • Child-led advocacy

1.2 Governance of the GEC evaluation

DFID has appointed Coffey, in partnership with the University of East Anglia, RTI International and 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 individual projects and the GEC as a whole. We will also generate and share lessons learned to inform the GEC design and wider DFID programming. Table 2 below provides an overview of the roles and responsibilities of the different EM consortium partners.

Table 2: Role and responsibilities of the EM consortium partners

Consortium Partner	Role and key responsibilities
Coffey (Consortium Lead)	Coffey is the overall lead of the EM consortium and responsible for the following activities: ✓ Designing and delivering the overarching GEC evaluation strategy; ✓ Providing M&E support to the Fund Manager and individual projects; ✓ Analysis of EM primary data and reporting; and ✓ Sharing key findings and lessons learned.
ORB International	ORB International manages the EM fieldwork and is responsible for the following activities: ✓ Training interviewers and piloting research tools; ✓ Overseeing and managing local research partners to qualitative and quantitative data collection in SCW countries; ✓ Quality assurance and data verification; and ✓ Data collation, processing and cleaning.
RTI	RTI are leading on the design of the learning assessment tools (EGRA and EGMA). Their responsibilities include: ✓ Training interviewers in the use of EGRA/EGMA tests; ✓ Processing and cleaning of learning assessment data; and ✓ Peer reviewing and quality assuring the EM analysis of educational outcomes (led by Coffey).
UEA	UEA and its leading experts in the field of gender and international development support the evaluation through the following activities: ✓ Technical lead on the design and implementation of the GEC thematic research; and ✓ Peer reviewing the EM research and analysis (led by Coffey).

We closely collaborate with the GEC Fund Manager (PwC) to ensure that projects generate high quality data, and report results with a minimum level of consistency across the fund. The Fund Manager has played a key role in developing M&E processes and requirements at the project level, and in managing relationships with projects. Table 3 shows the activities carried out by the Fund Manager with regards to M&E in the GEC.

Table 3: Role of the FM with regards to M&E

FM Consortium Lead	Role and key responsibilities with regards to M&E
PwC	The FM is responsible for the day-to-day operation of the GEC, including managing relationships with projects and partners. With regards to M&E, the FM has played a key role in the following activities: ✓ Developing M&E processes and requirements at the project level (e.g. required sample sizes, target setting, methodological guidance on measuring key outcomes); ✓ Providing support and capacity building to strengthen projects' M&E designs; ✓ Formal sign-off of project M&E frameworks and logframes; ✓ Developing reporting tools (including the outcome spreadsheet); and ✓ Ongoing work with projects to rectify data inconsistencies and methodological issues.

1.3 The GEC Evaluation Strategy

The overarching purpose of the GEC Evaluation Strategy is to apply a rigorous approach to evaluation that produces reliable evidence that DFID, the FM and projects can use to inform improvements to the GEC programme during its lifetime and beyond; and to influence wider policy change among DFID's partners and policy-makers to maximise the benefits achieved from the GEC through transformational change at a global scale.

For the SCW, the GEC Evaluation Strategy sets out a combination of project-led research and EM-led research that is conducted in both intervention areas, and in matched control areas to enable a counterfactual evaluation of the effects and impact of project activities and the GEC as a whole at midline and endline. As part of the project-led research, projects are required to:

- Commission an independent evaluator to undertake baseline research and an evaluation at the midline and endline stages;
- Identify intervention groups and matching control or comparison groups either in the form of schools or communities that have not been exposed to the project's activities;
- Collect a combination of quantitative and qualitative data to support all three phases of the evaluation, including a longitudinal household survey of intervention and control communities;
- Test learning outcomes i.e. literacy and numeracy; and
- Produce a baseline report (2014) and impact evaluation reports at the midline (2015) and endline (2016) stages of the project.

The project-led research is complemented by extensive EM-led primary research to validate the scale of impact achieved by SCW projects, and assess the overall effectiveness, value for money and impact of the GEC as a whole. As part of the EM-led research we deliver the following activities:

- Conduct complementary primary research at the baseline, midline and endline stages, covering both intervention and control areas across the 15 SCW projects. This research includes a longitudinal household survey and qualitative In-depth-Interviews (IDIs);
- Conduct standard learning assessments at baseline, midline and endline stages with girls identified through the household survey;
- Follow up on the household survey and learning tests with a school visit to confirm enrolment, obtain attendance data and to contextualise the girls' learning outcomes in comparison to their peers;
- Carry out school-based research in 200 intervention and control schools across seven SCW project areas, including classroom observations, teacher surveys and learning assessment with boys and girls; and
- Produce baseline reports and midline and endline evaluation reports for the SCW.

The timescales for key evaluation activities for the SCW are shown in Table 4 below.

Table 4: Timescales for key evaluation activities in the SCW

Project/EM	Key Evaluation Activities for the SCW	Key Timelines
1. Baseline		
EM	Development of research instruments and templates	February – March 2013
EM, projects	Adaptation of EGRA/EGMA tools	March 2013 – June 2014
EM	Training for EGRA/EGMA	July – November 2013
EM	Review SCW project M&E frameworks & sampling frames	April 2013 – December 2013
Projects	Project fieldwork, data analysis and reporting	March 2013 – January 2014
EM	EM fieldwork (quantitative & qualitative)	April 2013 – June 2014
EM	EM data analysis and reporting	March 2014 – January 2015
2. Midline		
EM	Update quantitative research instrument	January – March 2015
EM	EGRA/EGMA test piloting and adaptation	March 2014 – January 2015
EM	EM fieldwork (quantitative only)	July 2015 – January 2016
Projects	Project fieldwork, data analysis and reporting	May 2015 – March 2016
EM	EM data analysis and reporting	November 2015 – June 2016
3. Endline		
EM	Submission of the final GEC evaluation report	June 2017
(Detailed time scales for the endline evaluation are still to be confirmed.		

1.4 Purpose of this baseline report

The GEC baseline research aims to measure current education outcomes of girls in the project areas and to assess potential barriers to education to capture the scale and nature of educational marginalisation. Project baselines (based on project-led research) will be used to assess change at the project level. The EM baselines will be used to assess change across the SCW as a whole. The purpose of this baseline report is to present the key findings from the project baseline research and the EM's complementary data collection and analysis in order to:

- Assess the extent to which girls in project areas across the Step Change Window are educationally marginalised at baseline with respect to attendance, enrolment, retention and learning outcomes;
- Explore the prevalence and importance of various potential barriers to girls' education and test projects' assumptions about these barriers;
- Review how projects defined marginalisation, identified their target groups; and whether the baseline evidence supports their targeting strategies; and
- Provide an overview of the extent to which projects proceeded to adapt their project design in light of their baseline findings.

This baseline report has been informed by 15 individual project baseline reports and the reanalysis of evidence from 6400 household surveys, 800 In-Depth-Interviews (IDIs) and 13,000 learning assessments that were conducted by the EM and ORB in the intervention and control areas of the 15 SCW projects in Afghanistan, DRC, Ethiopia, Kenya, Mozambique, Sierra Leone, Somalia, Tanzania, and Zimbabwe between May 2013 and July 2014.

1.5 Structure of this baseline report

This baseline report is structured around the GEC research questions, as shown in Table 5 below.

Table 5: Key Baseline Research Questions and Structure of the Report

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 attending school? 2.2 What are the barriers to girls learning? 2.3 What did the projects assume to be the barriers to girls' education in their target areas? 2.4 Does the evidence confirm the expected barriers?	
3. Does the evidence support project targeting and project design?	**Section 5** – Project targeting and changes to project design
3.1 How have the projects defined marginalisation (social and educational)? 3.2 How have the projects defined their target groups? 3.3 Has the baseline evidence influenced project intervention design?	
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?	

Section 2 presents our approach to answering the above-mentioned questions and introduces the different streams and types of data underpinning the baseline analysis. Section 3 focuses on the extent to which girls targeted by SCW projects are found to be educationally marginalised at baseline in terms of their enrolment, retention, attendance and learning outcomes. Section 4 provides an in-depth analysis of barriers to girls' education. Section 5 describes how projects have defined marginalisation and what groups they specifically target through their interventions. Section 5 also discusses baseline challenges and the extent to which the evidence collected by projects supports counterfactual analysis of their impact. Section 6 presents our conclusions and recommendations.

2 Methodology

This section provides an overview of the data sources and methodology that underpin the analysis presented in this report. In Section 2.1, we provide a brief outline of the field work carried out by the EM. Section 2.2 introduces the different streams of evidence collected by the projects and the EM that inform this report. Section 2.3 explains our approach to measuring baseline outcomes, and Section 2.5 briefly describe the methodology and analytical framework used to analyse how various barriers affect these education outcomes.

2.1 Approach to delivering EM-led baseline fieldwork

The SCW baseline fieldwork was managed by our consortium partner ORB International. In each individual country, ORB worked with local research partners that were responsible for recruiting quantitative and qualitative interviewers and supervisors and overseeing the fieldwork. In Annex B we provide a detailed discussion of the methodology and processes that we used to carry out this fieldwork, covering issues such as: sampling; interviewer training and piloting; field work supervisions; non-response and managing the burden on respondents (see Annex B, Section 2). Key points from this discussion are summarised in Table 6 (below).

Table 6: Overview of Coffey's and ORB's approach to delivering the EM baseline fieldwork

Methodological issue	EM approach to delivering this aspect of the baseline fieldwork	Reference to Annex B (for more details)
Research permissions	ORB's local partners used standard country-specific protocols in most countries to obtain research permissions. They generally obtained permission from the National Bureau of Statistics. Where research took place in schools (i.e. school visits; school-based assessments) we also sought permission from the Ministries of Education.	Annex B – Section 2.2
Sampling approach (general)	We defined the overall population in each project area (sample universe) based on a list of project intervention and control locations supplied by the projects (for more details on the responsibilities of projects and the EM in the sampling process, see Table 51 in Section 5.3.1). The projects used templates provided by the EM to prepare sampling frames, which were quality assured by the EM (except for that of Camfed). For the EM household surveys, we selected 40 locations in each project area, and surveyed 10 households in each of these giving a target sample of 400 interviews per project area (and 600 in the case of Camfed project areas which cover two countries). There was no clustering above the sample point so the sample as a whole is representative of the underlying GEC populations (giving equal weight to each project context). We typically drew the sample using a fixed interval and random starting point across the list of project locations. Intervention and control locations were treated as distinct listings. The resulting sample was reasonably proportional by region and district relative to the number of project locations. We used selection based on equal probabilities for each location as our default approach. Households were sampled using a random walk approach based on identification of landmarks and alternating selection of central and peripheral landmarks as start points. Qualitative In-depth Interviews (IDIs) were completed in about 14% of the sampling points chosen for the quantitative sample.	Annex B – Section 2.3
Sampling approach (intervention and control)	Half of the sampling points in each project area were drawn from intervention locations and half from control locations. Where intervention and control locations were randomised, we sampled systematically to ensure that control locations are representative of the whole. In some projects, control locations were identified by the project on an ad hoc or informal matching basis and in relatively small numbers. In these instances the control samples were selected around the requirements of the project.	Annex B – Section 2.3.1

Interviewer training	ORB and RTI jointly trained interviewers and supervisors in administering the survey questionnaire and the EGRA/EGMA tests. Training sessions took place over a two-week period in each country's capital city and covered a range of subjects including field methodology, questionnaire review, quality control, and pilot test review as well as detailed training on the EGRA/EGMA testing.	Annex B – Section 2.4.3
Pilot testing	Teams completed two full days of piloting in each country. Both quantitative and qualitative research teams participated in the pilot.	Annex B – Section 2.4.4
Non-response	We did not experience high rates of ineligible households or household refusals in any of the nine countries. On average only 2% of the contacted households refused to participate in the interview.	Annex B – Section 2.5
Supervision of field work and quality control	A team of supervisors oversaw the fieldwork and undertook quality controls. The supervisors checked all of the questionnaires after they had been filled in. They accompanied at least 10% of the interviews conducted by each interviewer, checking that the correct instructions and procedures were being followed. Team supervisors were also required to back-check approximately 20 per cent of all interviews conducted by each interviewer.	Annex B – Section 2.6
Respondent burden	We reduced the burden on respondents by not testing boys in households and streamlining the questionnaire during testing. We have not used any inducements anywhere.	N/A

2.2 Different streams of evidence

This section introduces the different streams of evidence that we reviewed and analysed to inform this baseline report.

2.2.1 Project data

The GEC Evaluation Strategy requires all SCW projects to carry out qualitative and quantitative baseline research that must cover their intervention areas as well as matching control areas where no project activities will take place. All 15 projects conducted a household survey using a standard survey template that was provided by the EM and aligned with the questionnaire used for the EM household survey. Projects were able to adapt or amend this questionnaire to fit their specific intervention context, target groups or information needs. All of the 15 projects tested the literacy and numeracy skills of a sample of girls in their intervention and control groups, either as part of the household survey or through school-based learning assessments. In addition, projects conducted qualitative research and were encouraged to draw on existing sources of secondary data.

The resulting evidence that projects gathered through their baseline research is documented and reported in three different formats:

- The **project baseline reports** present evidence, key findings, and lessons learned from the projects' self-directed baseline research. Projects were encouraged to review their assumptions about target groups, educational outcomes and barriers based on these findings. The baseline reports were also intended to present representative and precise measures of attendance and learning for the projects' target groups.

  However, the projects did not consistently report the same standardised outcome indicators. This makes it difficult to aggregate their findings at the SCW level. Project baseline reports were supplied to the Evaluation Manager by the Fund Manager between November 2013 and August 2014.

- In their **outcome spreadsheets**, projects consistently capture key outcome data, and report on progress against targets for learning and attendance. At baseline, all projects were required to submit the baseline levels for attendance, literacy and numeracy to the Fund Manager, based on their baseline research findings. The outcome levels had to be reported in a relatively standard format and disaggregated by school grade (subject to some variation in the learning assessments used), which enables comparisons and reporting across the SCW. Projects were also required to report on enrolment but without breaking

down by school grade[1]. The outcome spreadsheets do not contain any data on retention, or gender differences in learning. Outcome spreadsheets were retrieved from the Fund Manager portal between 16 April and 6 May 2014.

- The **project datasets** were generally expected to compile the evidence gathered through the projects' household surveys and learning assessments, which would form the core of the project baseline reports. The EM has carried out an independent, renewed analysis of this data for a selected number of key outcomes where the relevant information was available, documented and comparable. This "reanalysis" aimed to cross-check and verify the figures and findings presented by the projects in their baseline reports. In addition, the reanalysis can fill gaps where projects have not commented on all outcomes in their baseline reports even though they have collected the relevant data.

The EM used a systematic approach to extracting any relevant information from the different sources of project data. As part of this process, the EM also consulted design documents such as the project proposals, M&E frameworks and logframes. Details on the methodological approach are provided in Annex B, Section 1. A detailed list of all the documents consulted is provided in Annex G. Project-level information and analysis are presented in the form of detailed individual project profiles that can be referred to in Annexes D1-D15.

2.2.2 Evaluation Manager data

The EM-led baseline research complemented the data collection activities of the individual projects and generated additional evidence to deliver the learning and accountability objectives of the programme evaluation. This section introduces the different research activities carried out by the EM at baseline, and the evidence produced.

- The EM completed the first out of three planned waves of **longitudinal quantitative household surveys (HHS)** between May 2013 and July 2014. In each of the 15 SCW project areas, local enumerators conducted on average 400 structured interviews with randomly selected households. The surveys collected information about one randomly selected girl aged 5-15[2] in the household, her family, living conditions and school situation. While the majority of survey questions were answered by the girl's primary caregiver, the girl herself took part in a short, child-friendly interview and in the learning assessment. The local interviewers used a consistent questionnaire and learning assessment template across all of the surveyed areas, which had been developed by the EM and translated into the relevant local languages. The household surveys were followed up with visits to the girl's school (if she was reported to be enrolled and if consent was given by the primary caregiver) to verify details about her enrolment and attendance.[3]

  The EM worked closely with each project to develop complementary sampling frameworks for the selection of respondent households. Typically, the project identified a sampling framework that was representative of their target populations and consisted of treatment and control communities (sampling points). The EM then drew samples by randomly assigning sampling points into two separate samples so that the EM and the project could conduct household surveys independent of each other (for a more detailed description of our sampling approach, see Table 6, Section 5.3 and Annex B, Section 2.3).

  The EM household survey samples were typically not as large as those achieved by the individual projects. They were not primarily designed to verify project results, although they do support the broader evaluation of project results. Rather, the EM survey is intended to benchmark, complement and supplement project data by capturing the characteristics of girls and their households in a way that is consistent and comparable across the SCW, providing core data for the aggregate analysis of educational outcomes, barriers and impacts at the window level. Moreover, the EM surveys are representative of the general population living in a target community rather than specific target groups that the projects may have

[1] The outcome spreadsheets were initially designed to capture those key outcomes that are subject to payment by results (PbR). These included attendance and learning, but not enrolment and retention. However, outcome spreadsheets are now to be filled in by all projects, regardless of whether they have a PbR component or not.
[2] In Tanzania and Zimbabwe, a portion of the sample included girls aged 13-17 (general) and girls aged 13-17 who had completed primary school through P4 and had received a bursary.
[3] A slightly different methodology was adopted for Camfed (Tanzania & Zimbabwe). Here, surveys were conducted in the home communities of secondary school girls that received bursaries. The samples were slightly larger than in other project areas, combining a random selection of households with a sample of households that accommodated bursary girls (not exclusively project beneficiaries) who were identified with the help of local communities.

focused on in their baseline research. This enables the EM data to support a broader view by identifying and monitoring unanticipated sub-groups that may be marginalised or otherwise of interest.

- **The EM school visit survey (SVS):** To complete the quantitative school sample, ORB's local teams completed two-part surveys in selected schools. Interviewers visited all schools identified as being attended by the randomly selected girls at the household level. They completed a survey with the school's administrator and with each individual girl's teacher if relevant records were kept by teachers.
- The **EM school-based assessment (SBA)** complemented the data collected through the EM household survey with school-based research about levels of literacy and numeracy among boys and girls and the learning conditions in a selection of schools associated with SCW projects in Kenya, Ethiopia, Sierra Leone and the DRC. At each school, local teams completed one observation of the school facilities, two classroom observations, two teacher surveys, and 32 EGRA and EGMA assessments with boys and girls in primary 2 (P2) and primary 4 (P4) grades. The classroom observations aimed to assess the patterns of boys' and girls' participation in class, their interaction with each other and the teacher. The teacher survey addressed attitudes towards the education of girls and the political-economy of the education system in the district in which the school is based. The SBA allowed us to identify factors in and around school that could potentially hinder girls' learning. A detailed discussion of our findings on school-based barriers is provided in Section 4.
- In all fifteen SCW project areas we carried out **qualitative In-Depth-Interviews (IDIs)** with a randomly selected subset of primary caregivers who had participated in the EM household survey, as well as with a small number of community leaders and teachers. On average around 54 families, community leaders and teachers were interviewed within each project area (for an in-depth discussion of our qualitative fieldwork methodology, see Annex B, Section 2). The qualitative data gathered through these interviews provides detailed and nuanced information about these respondents' attitudes and perceptions about girls' education and the factors that influence whether girls are able to be in school and learn (see our discussion on the barriers to girls' education in Section 4).

Given the multiple sources of information, there is no definitive stream of evidence for either outcomes or barriers that takes precedence. Instead, we present evidence from all available sources, discuss the implications and review the consistency of findings across sources in order to inform the overall assessment. Table 7 provides an overview of the streams of evidence upon which we based our analysis of outcomes and barriers.

Box 1: A note on the ownership of GEC data

The GEC data is being collected by the EM and by projects based on the contractual understanding that it would become the intellectual property of the DFID as the donor funding this research, and be eventually released into the public domain. This requires that the data be anonymised and made available in suitable form to DFID.

Currently, project baseline data is uploaded to a web-based location hosted by the EM on behalf of DFID. In theory this data is primarily lodged as a "frozen" version of the evidence used to measure baseline change. However, a final version of all waves of data, including both project and EM data, will become available to DFID after the EM has finished processing the data and applied thorough disclosure controls.

Responsibility for anonymising project datasets rests with the projects themselves, and they are explicitly required to deliver anonymised data. However, the ultimate responsibility for disclosure control will be retained by DFID upon defining the mechanism for the release of the GEC data to the public domain.

Table 7: Overview of the streams of evidence used to inform the analysis presented in this report

Subject of analysis		Data sources used for analysis							
		Project Data				EM Data			
		Baseline Report	Project Data	Outcome spreadsheet	Full Project Proposal	House-hold Survey	School Visits	SBA[1] (4 countr.)	Qualitative IDIs[2]
Being in school	Attendance	✓	✓	✓		✓	✓		
	Enrolment	✓	✓			✓			
	Retention	✓	✓			✓			
	Gender gaps					✓			
Learning	Literacy	✓	✓	✓		✓		✓	
	Numeracy	✓	✓	✓		✓		✓	
	Gender gaps					✓		✓	
Targeting	Declared target groups	✓			✓				
	Samples achieved	✓				✓			
	Outcomes of target groups	✓	✓			✓			✓
Barriers	Barriers assumed	✓			✓				✓
	Evidence on barriers	✓				✓	✓	✓	✓
Design	Initial design	✓			✓				
	Changes to design	✓							

Notes: 1. "SBA" refers to the EM's school-based assessment. These were carried out in four out of nine SCW countries, namely DRC, Ethiopia, Kenya and Sierra Leone. 2. "Qualitative IDIs" refers to the EM's qualitative In-Depth-Interviews.

2.3 Approach to measuring and reporting baseline outcomes

2.3.1 Measuring Enrolment, Attendance and Retention

As part of analysing outcome levels at baseline we assessed the extent to which girls across the SCW are being in school. We looked at a combination of three dimensions that come together in order for girls to 'be and stay in school', which are enrolment, attendance and retention. Below we provide a brief discussion of the methodology used by the EM, and by projects to measure each of these outcomes at baseline.[4]

#1 Enrolment

In this report, we examine enrolment levels at baseline through a number of different measures. Firstly, we report a **basic enrolment rate** that is defined as the proportion of girls in a population who are currently enrolled in school, regardless of the grade or school phase that they are enrolled in. This enrolment rate can be disaggregated for different age groups. In addition, we report **net primary and secondary enrolment rates**. These show the percentages of girls at primary or secondary age, who are actually enrolled in primary or secondary school,

[4] We report results for sub-groups by age (lower primary, upper primary, lower secondary and upper secondary). These age sub-groups are based on actual age (5-7, 8-10, 11-13 and 14-15 and 16+) for EM analysis and for reanalysis of project data, but for project reporting and PbR sources the breakdown may reflect grade structures in that school entry and transition ages and grade repetition levels vary.

respectively. Finally, we compare basic enrolment rates between boys and girls to assess **gender gaps in enrolment.**

#1.1 Enrolment measured by projects

Enrolment indicators are not used for Payment by Results and projects did not receive any binding guidance on how to measure and report on enrolment levels. Nevertheless, projects were required to report on enrolment in their outcome spreadsheet with no disaggregation by age or school grade. We therefore do not present these figures in our discussion of outcome levels in Section 3.1.1, but they can be consulted in Annex C, Table 8 and in the project profiles (Annexes D1-D15).

#1.2 Enrolment measured by the EM

The EM collected information on enrolment through the household survey and the school visit survey. In the household survey the primary caregivers provided information on the current enrolment status of every child in the household aged between 5 and 15. Additional questions were asked about the selected girl i.e. what grade she was enrolled in at the time of the interview, and whether she had ever been enrolled in school, in case she was said to be currently out of school. The school visit survey was used to check that girls who had been reported as being currently enrolled by their primary caregiver during the EM household survey where actually enrolled in the reported school. Findings from this validation of enrolment are shown in Table 8 in Annex C for project areas in which school visit data was collected.

When calculating net enrolment rates, we accounted for the official country-specific school starting ages that are shown in Table 8. In DRC, for instance primary school officially starts at the age of six and lasts for six years, while in Ethiopia primary school starts at the age of seven and lasts eight years.

Table 8: Official school ages per grade, and duration of primary and secondary school cycles by country

In years	Afgh	DRC	Eth	Ken	Moz	Sie	Som	Zim	Tan
Grade 1	7	6	7	6	6	6	6	7	7
Grade 2	8	7	8	7	7	7	7	8	8
Grade 3	9	8	9	8	8	8	8	9	9
Grade 4	10	9	10	9	9	9	9	10	10
Grade 5	11	10	11	10	10	10	10	11	11
Grade 6	12	11	12	11	11	11	11	12	12
Grade 7	13	12	13	12	12	12	12	13	13
Grade 8	14	13	14	13	13	13	13	14	14
Grade 9	15	14	15	14	14	14	14	15	15
Grade 10	16	15	16	15	15	15	15	16	16
Grade 11	17	16	17	16	16	16	16	17	17
Grade 12	18	17	18	17	17	17	17	18	18
Grade 13								19	19

Notes: Primary school grades shaded in light orange (●); Secondary-school grades are shaded in darker orange (●).Entrance age of primary is the age at which students would enter primary education, assuming they had started at the official entrance age for the lowest level of education, had studied full-time throughout and had progressed through the system without repeating or skipping a grade.
Source: For official starting ages: World Bank Development Indicators; UNESCO statistics; USAID Demographics and Health Survey (DHS). For school system information: UNESCO.

An additional indicator of interest is whether girls face gender-based disadvantages in enrolment compared with boys. We therefore measure **gender gaps in enrolment** as the difference in enrolment rates between boys and girls. We used information provided by the primary caregiver about the enrolment status of all children between 5 and 15 living in the surveyed household, to generate the percentage of boys and girls who are enrolled. For the purpose of this analysis, we also considered data from so-called boy-only households so that we reached a sample of 10,508 girls and 8,252 boys.

#2 Attendance

In this report, we report attendance levels as the average proportion of school days on which enrolled girls attend school. While the enrolment rate gives a sense of girls' initial access to education, the attendance rate captures whether girls actually go to school on a regular basis.

#2.1 Attendance measured by projects

During the pre-baseline stage, projects received methodological guidance from the Fund Manager on how to measure and report on attendance levels as a key indicator used for Payment by Results. Projects are not strictly required to collect attendance data from a cohort of girls to be tracked longitudinally, but may report average attendance levels in intervention and control schools. They are required to collect attendance data from school registration systems in preferably all intervention and control schools, but at least in a sample of 50%. At baseline, projects were required to collect historical registration data from the previous year (or the previous quarter if attendance data for the previous year was not available), and to then follow up with regular spot-checks. The school-based attendance data is reported in the projects' outcome spreadsheets.

Most SCW projects included a survey question on self-reported attendance in their longitudinal household survey which is similar to the question included in the EM household survey. However, the EM's reanalysis of project data could not always identify these variables in the dataset.

#2.2 Attendance measured by the EM

The EM estimated the attendance rate by using information about the girl's attendance in school that was provided by the primary caregiver during the EM household survey. We coded a 90% attendance rate for the girl if the primary caregiver stated that the girl had attended school on "most days" over the course of the year. We coded a 75% attendance rate where it was stated that the girl had attended more than half the time[5]; 50% if it was stated she attended about half the time; and 25% if it was stated she had attended less than half the time.

The EM conducted follow-up school visits to collect additional information about the attendance of girls that were surveyed in the households (see Section 2.2.2) to cross-check and validate the self-reported attendance rates. In the contexts where school visits were carried out[6], 98% of the caregivers agreed to a check of the information that they had provided about the selected girl (1.0% refused and 0.8% responded that they did not know when asked to provide consent).

The school visit survey collected information about the attendance of the girl over a period of time since the start of the most recent school year, namely the days attended (so far) and possible days of attendance (so far), to calculate an attendance rate. For some school visits, the school year had only just started and the number of days so far was relatively small. Where this was the case and there was plausible equivalent information from the preceding year, we used the preceding year's figures. When comparing the self-reported attendance rates with the school-based information, we found a relatively high level of consistency with figures from both sources differing by only 4% on average. A more detailed discussion of the findings from this validation exercise is provided in Section 3.1.1, Box 5.

We also measure differences in attendance between boys and girls. To this end, we compare the attendance rates reported by the primary caregiver for the randomly selected girl with the rates reported for one randomly selected boy in the same household. This comparison is available for all project areas, apart from those in Afghanistan. This is because of the way in which the survey questionnaire was shortened in Afghanistan to reduce its complexity and length, and allow for the use of paper-and-pencil questionnaires instead of computer-assisted questionnaires (please see Annex B for more details on the rationale for using paper-and-pencil questionnaires in Afghanistan).

#3 Retention

#3.1 Retention measured by projects

Projects are not required to report systematically on retention and this outcome is not captured in the outcome spreadsheet. Nevertheless, a few projects included measures of retention in their baseline reports, or project datasets. Where year-on-year retention rates were available, they are included in the relevant project profile (see Annexes D1-D15).

[5] We recognise that the coding of self-reported attendance involves a value-judgement on the part of the EM. We have therefore applied a sensitivity test to assess the extent to which changes in coding affect the measurement of attendance. We calculated alternative attendance rates based on coding "attending more than half of the time" as 60% attendance instead of 75% and found that the measured attendance rates differed only marginally, with an average variation below 1% on SCW average (within each age group). The attendance rates resulting from both coding approaches can be compared in Section 3.1.1, Box 5.

[6] School visit surveys were conducted in all SCW project areas, except Camfed project areas and project areas in Afghanistan.

#3.2 Retention measured by the EM

Since longitudinal data about the girls' educational trajectories is not yet available at baseline, we calculated year-on-year retention rates for girls of different ages that are the proportion of girls who were enrolled in one school year and who also enrolled in the following school year. We derived these year-on-year retention rates from the responses provided by the surveyed care givers about the girls' enrolment at the time of the survey, and in the previous year. This simple year-on-year retention rate can also be understood as the inverse of the year-on-year drop-out rate. We also measure the ratio of the enrolment rate in the last year of primary school in relation to the enrolment rate in the first year of primary school. Retention rates are an indicator of longer term trends in enrolment.

Retention comparisons by gender were not available at baseline as relevant information on enrolment in the previous year was not systematically collected from boys in the households. However, differences in enrolment of boys and girls by age give a reasonable guide to likely differences in retention and we will carry out more detailed analysis of retention (for both genders) as new waves of GEC data become available at the midline and endline. This data will also allow us to examine individual learning trajectories and compare girls' enrolment status at different points in time and to reconstruct retention based on actual enrolment status rather than on recalled past status.

2.3.2 Measuring Learning

Learning, in addition to being in school, is the second of the GEC's key outcomes. Throughout this report we use the term "learning" to describe girls' progress in school and the acquisition of new skills and knowledge in relatively broad terms. However when measuring learning as a GEC outcome in Section 3 we apply a more specific definition of learning as "a change in ability over time" in literacy (i.e. reading and reading comprehension), and numeracy (i.e. mathematical and logical) skills. At baseline, learning therefore represents the current measured level of ability or skill from which we expect to measure change at successive measurement points. In other words measuring learning in this report is not measuring a process or change, but a single measurement which captures prior learning progress up to the point of baseline.

#1 Learning assessment tools used by projects

The GEC Evaluation Strategy requires all SCW projects to assess the literacy and numeracy skills of a cohort of girls in their target areas as well as in control areas at different stages of the GEC's life cycle (i.e. at baseline, midline and endline) to document the girls' learning outcomes. Projects conducted the learning assessments either alongside the household survey or in schools. They were able to choose their preferred option from a range of international standardised learning assessment tools taking advice from their independently commissioned evaluators. The Fund Manager provided support during this decision process and the Evaluation Manager provided support where sequencing allowed for adoption of EGRA / EGMA if this was the preferred approach. The tools selected by projects were:

- **ASER** – One project (ACTED Afghanistan) is using the Annual Status of Education Report (ASER) tool that was developed in India to test children aged 6-16 years. The ASER literacy test assesses literacy skills at several levels of difficulty, including reading letters, reading words, reading a short paragraph and reading a longer story. The Maths assessment tool equally tests several levels of difficulty including one-digit number recognition (1-9), two-digit number recognition (11-99), two-digit subtraction with carry over and three-digit by one-digit division. Children are marked at the highest level which they can perform comfortably. ACTED's ASER test assigned girls to a competency level between 1 and 5 for reading, and 1 and 7 for maths. ASER has been administered annually in India since 2005 and in Pakistan since 2008.
- **EGRA & EGMA** – A majority of SCW projects use a variant of the Early Grade Reading Assessment (EGMA) and the Early Grade Maths Assessment (EGMA) tool. They were developed to assess girls' basic foundational skills in literacy and numeracy in early grades (i.e. 1 to 4). EGRA has been administered to children in over 44 developing countries and across more than 30 languages.

  During the EGRA test, girls perform a number of oral tasks such as recognising letters, reading simple words, reading sentences and paragraphs, and reading comprehension. During the EGMA test, girls identify numbers, distinguish different quantities, identify missing numbers, complete number patterns, and perform basic addition and subtraction exercises. Additional subtasks involving advanced addition, subtraction, division and multiplication were given only to the best performing students. The FM's PbR

guidance required all projects using the EGMA test to report a score out of 100 in their outcome spreadsheets, weighting each subtasks equally, and to clearly report and agree on any deviations from this methodology.

- **Uwezo** – Uwezo means 'capability' in Kiswahili and was originally developed for use in Kenya, Tanzania and Uganda. It was designed to assess whether children of primary school age can perform literacy and numeracy skills at a primary grade 2 level of difficulty. Uwezo is based on the ASER tool and its results are usually displayed as the competency level reached, from 1 (nothing) to 5, 6 or 7 depending on the test used. Three projects in East Africa (i.e. Kenya and Somalia) are using adapted Uwezo tests in the GEC.
- **National Test** – Camfed (Tanzania/Zimbabwe) assessed girls' literacy (i.e. English) and numeracy skills using a test that was designed by national examination boards in Tanzania and Zimbabwe based on Form 2 national examinations.

Several SCW projects adapted standard versions of Uwezo or EGRA/EGMA to fit the specific age groups or grade levels that they target, and their language of instruction. As a result, there are limits to the comparability of results even among projects using the same type of test. Some projects reported oral reading fluency subtask results as a number of words per minute achieved while others reported levels, or a percentage of correct scores.

#2 Learning assessment tools used by the EM

As part of the EM household survey, the EM tested the literacy and numeracy skills of the selected girls using the EGRA/EGMA tool:

- **Literacy** – We considered girls' performance on each EGRA subtask (i.e. letter recognition, oral reading, reading comprehension, etc.) to calculate an integrated score that is then rescaled to the oral reading fluency score considered as an absolute reference of literacy ability. In doing this we take all the available information from the different subtasks into account. This allows us to capture subtle difference in levels of ability at the lower end of the distribution better than if we used a simple oral reading score, while keeping the score interpretable in terms of word-per-minute oral reading ability. For a detailed description of the methodology used calculate the integrated EGRA score, see Sections 4.3.1 and 4.4 of the methodological Annex B).
- **Numeracy** – We have aggregated the scores that girls achieved across different EGMA subtasks into an aggregate EGMA score scaled from 1 to 100. Students having answered all core subtasks correctly in the given time (with no time remaining) were given a score of 100. Many students had some time remaining and best-performers were given additional subtasks. This explains why we may observe EGMA scores higher than 100.

The EM learning assessments were carried out with the girls selected in each of the surveyed households. In addition, we carried out school-based learning assessments with boys and girls in primary grades 2 and 4 at a sample of selected schools in DRC, Kenya, Ethiopia and Sierra Leone in order to assess gender differences in learning outcomes.

Box 2: The challenge of comparing literacy scores across different languages

In preparation for the EM learning assessments, the EGRA and EGMA templates were adapted for the language in which the project intended to measure an increase in literacy, which was generally the language of instruction. Core texts were adapted rather than simply translated, using a corpus of texts that represent similar levels of difficulty in different languages. It is worth noting that the adaptation of the EGRA tool and its administration in different languages and contexts places a limit on the comparability of literacy scores across contexts.

While research on the early development of reading skills suggests that all children move through the same stages when learning how to read, the pace at which they move through these stages differs by language and the degree of orthographic complexity. Moreover, it is difficult to validate that translation and adaptation efforts do not cause any changes to the degree of difficulty of a given test, which would change the meaning of the test scores. These challenges notwithstanding, a tool such as EGRA still allows us to assess to what extent children of a given age or grade are able to read, and to compare these findings across countries.

In addition, extra analytical work has been undertaken for the GEC baseline to develop EGRA scores that draw on all elements (subtasks) of the test. This means that the scores being compared are able to distinguish small differences in test performance among the lowest performing students who achieved a zero word-per-minute score on the oral reading fluency subtask; and less likely to be biased by the specific relative difficulty of a single skill (subtask) in a specific language.

#3 Benchmarks for literacy (i.e. reading fluency)

In this the report, we relate literacy scores measured in words per minute (wpm) in the project areas to international benchmarks for oral reading fluency. This provides us with a sense of how girls in SCW project areas fare in comparison with the reading fluency levels that could be expected at a given age. International education experts consider oral reading fluency a strong predictor of later literacy. Children who do not acquire basic reading skills at an early age are more likely to repeat grades and eventually drop out of school, while the performance gap between early readers and non-readers increases over time. It is generally assumed that students must be able to read a minimum of 45-60 words per minute to be considered fluent readers, and that this is a valid proxy indicator for overall literacy. Existing research suggests that this standard can possibly be applied worldwide.[7]

We use specific reading fluency benchmarks published by Abdazi (2001)[8] for use by the World Bank. 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:

> "[…] most scholars converge on the idea that by the end of grade 2, children learning to read in English ought to be reading at about 60 correct words per minute, respectively. Based on our experience in approximately 10 countries to date, for a poor country with linguistic complexity or particularly difficult orthographies, these benchmarks could perhaps reasonably be relaxed to something like 45 correct words per minute." (RTI International 2009)[9]

On this basis, we use the EGRA scores achieved by US students at the 18th percentile of the distribution within each grade as benchmarks for students in developing countries (see Table 9).

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) represents literacy across subtasks. In discussion with RTI International we have therefore decided not to present any benchmarks for EGMA scores in this baseline report.

[7] See Abadzi, 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.
[8] Abadzi, 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.
[9] RTI International (2009), Early Grade Reading Assessment Toolkit, prepared for the World Bank, Office of Human Development, Washington DC.

Table 9: International benchmarks of oral reading fluency by grade

Grade	Equivalent Age	Expected words per minute
1	See Table 8 for corresponding ages by country.	21
2		45
3		63
4		85
5		90
6		108
7		110
8		110

2.3.3 Reporting across different data sources and age groups

As described in Section 2.1 this report draws on evidence from a range of different data sources. For the purpose of simplicity, however, we only present data from the projects' outcome spreadsheets and the EM household survey when discussing education outcomes in Section 3. Additional evidence (i.e. from project baseline reports or the reanalysis of project datasets) is presented in the individual project profiles (see Annexes D1-D15) and in Annex C.

Our discussion of outcome levels at baseline focusses on two age groups, namely 9 to 11 year olds and 14 to 15 year olds, for the following reasons:

- Based on official school starting ages 9 to 11 year olds would be of primary school age in all SCW project areas. By examining this group, rather than 6 to 8 year olds we avoid any bias stemming from 6 year olds not being enrolled where the official school starting age is seven years.
- The age group of 14 to15 year olds is officially of secondary school age in all countries, except Ethiopia where 14 year olds would be enrolled in the last year of primary school (Grade 8).

In summary, we present evidence on outcome levels for one age group that is representative of a primary school population, and one age group that broadly represents secondary school girls. More detailed breakdowns of outcome levels by age and grade are provided in Annex C. When comparing the outcome levels of specific age groups across project areas and countries, it is worth keeping in mind that official starting ages and the length of primary school cycles vary by country (see Table 8).

It is important to note that the projects' outcome spreadsheets and baseline reports reported outcome levels by school grade rather than by age group. When extracting outcome figures from these sources, we converted school grades into the equivalent ages based on the official school starting ages in each country. This conversion assumes that the majority of girls are enrolled in a school grade that corresponds to their age. However, as shown by the analysis presented in Section 3.1.1, a considerable share of girls is actually enrolled below their expected grade level. Where projects did not report any data for one or several grades, we estimated the missing figures for the whole age category based on a linear extrapolation from the available data. Because of these particularities, the outcome figures from the outcome spreadsheets and project's baseline reports are not directly comparable with those from the EM analysis and reanalysis of projects' datasets as they may refer to girls of slightly different ages.

Box 3: Inconsistency observed across the different streams of evidence

This box summarises some key findings with regards to the consistency of different streams of baseline evidence across the SCW. Figures from all available project data sources can be compared in the individual project profiles (see Annexes D1-D15).

For the purpose of triangulation and verification the EM has reviewed and analysed all available project and EM data sources on GEC outcomes at baseline. As described in more detail in Section 2.2, this included the analysis of EM household survey data; the review of projects' outcome spreadsheets; the reanalysis of project data and the review of project baseline reports. This triangulation exercise was intended to identify possible inconsistencies between the different streams of data and to explore their drivers in order to improve the robustness and reliability of the baseline analysis.

Key findings on consistency

For the two age groups of 9-11 and 14-15 year old girls, the EM analysis of being-in-school outcomes tends to show higher average enrolment and attendance rates than the reanalysis of project datasets; and the reanalysis tends to show higher average rates than the project-reported streams of evidence (i.e. the baseline reports and outcome spreadsheets, with the former tending to exhibit the lowest figures among the full set of estimates available).

In terms of learning outcomes, it is not possible to directly assess the consistency of different data sources for most projects. This is because projects may have used different learning tests than the EM (e.g. Uwezo/ASER when the EM used EGRA/EGMA); and when projects opted for the EGRA/EGMA test they still may have used different scales to report reading fluency and numeracy scores. However, in some projects where scores can be compared across different streams of evidence, we only observe relatively low levels of consistency between EM Data and the reanalysis of project datasets, and/or between the reanalysis and project-reported streams of evidence.

Potential factors that explain inconsistencies

There are several factors that may explain the inconsistencies observed between different data sources at baseline:

- **Use of different definitions and measures for the same outcome:** This applies to both learning outcomes and being-in-school outcomes, as indicated above. For instance, the EM measured attendance based on self-reported information provided by the primary caregiver whereas projects were required to draw on school records as their primary data source. Retention could also have been subject to diverging measures with some projects reporting rates across school phase rather than year-on-year retention rates.
- **Different samples:** Discrepancies between the EM data and the reanalysis of project datasets may be an indication that the project samples have captured specific population sub-groups that the projects considered educationally marginalised (see Section 5.1.2), whereas the EM sample may have covered a more general population of girls living in the project areas. While project samples were generally specified in a similar way as EM samples at the level of the selection of sampling points, the approach to selecting specific households may have differed. For example, ACTED (Afghanistan) had a target of selecting 50% of girls that were out-of-school, and 50% that were in-school, and similar approaches were used by BRAC in Sierra Leone and Afghanistan. This may explain the low levels of enrolment documented in the project data from these areas (see the project profiles in Annexes D1-D15), and the deviation from the EM data, which reports higher enrolment rates.
- **Mistakes in the (re)analysis of project datasets:** Differences in findings from the reanalysis of project data on the one hand, and project reporting (i.e. baseline reports and outcome spreadsheets) on the other hand may arise because of mistakes in the data analysis, either on the part of projects (when preparing their report) or of the EM (when conducting the reanalysis). For many projects the EM lacked contextual information to accurately reanalyse their datasets. Such information would have typically covered the characteristics of the assessed population (gender, age, in-school/out-of-school, etc.), the structure of the datasets and the labelling of the outcome variables and values (especially those related to learning outcomes where different scales/scoring systems could be used for the same test). As a result, the EM could have misinterpreted variables or associated them wrongly to specific sampled populations, which limits the validity and reliability of the reanalysis figures presented in project profiles.

- **Bias in age-grade equivalence:** Reanalysis was done by age categories while most projects reported outcomes by grades in their project baseline reports and outcome spreadsheets. In this report we decided to present findings across the age categories of 9-11 and 14-15 year old girls (outcomes for other age categories being presented in Annex C). We use an age-grade equivalence to report outcome figures from the project baseline report and outcome spreadsheet, using secondary information about the official school starting ages and the length of school phases in each country. This places a limit on the direct comparability between project-reported outcomes and findings from the EM reanalysis of project data as we had to use official rather than actual age-grade distributions. In practice, girls are likely to fall behind their expected grade, which implies that project-reported results as presented in our aggregated outcome tables may actually relate to older girls than the age category under which they appear.

2.4 Flagging outcomes that potentially challenge GEC-relevant assumptions

The GEC baseline provides an opportunity to review the programmatic assumptions that drove the design of the fund as a whole, and the project-level assumptions that underpin the individual projects' theories of change. At the fund level, the GEC business case sets out the following key assumptions about the educational marginalisation of girls in GEC countries:

- A significant number of girls in the GEC focus countries are not enrolled in primary school, and many drop out of school without having acquired basic literacy and numeracy skills;
- Even though enrolment gaps between girls and boys of primary age have narrowed in recent years, 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;
- Girls are more likely than boys to lack basic literacy skills; and
- Girls who have never been enrolled in primary school tend to come from the most disadvantaged communities and face multiple obstacles: among other factors, they come from remote rural areas; are affected by poverty; and/or live in conflict and post conflict environments.

Section 3.1 of this report presents baseline findings on the education outcomes of girls across the SCW project areas and assesses whether any of these findings challenge the above-mentioned GEC-relevant assumptions about the degree of educational marginalisation. The objective of this is not to provide a specific rating or "critique" of individual projects or assumptions, or to validate or check findings presented in project baseline reports. Instead, we intend to highlight cases where a specific project may have a case for reviewing its intervention logic, where it may have a more difficult time generating and demonstrating positive change or cases where further investigation and analysis may be needed.

2.5 Approach to analysing potential barriers to education

In Section 4 we discuss qualitative and quantitative findings about barriers to girls' education. We have grouped the various sub-level barriers cited by SCW projects in their design documents and baseline reports into five broader categories (see Figure 20). These are economic factors, school-based factors, attitudes and support in the families and communities, violence and safety, and personal factors.

We first discuss specific barriers to enrolment, attendance and learning that emerge as the most salient across the fund. We explored the salience of barriers by introducing all potential barriers captured through the EM household survey and school-based assessment into a multivariate regression model. We then identified those barriers as 'most salient' that showed a significant association with enrolment, attendance or learning, having controlled for all other potential barriers. The methodology underpinning this analysis, as well as its benefits and limitations, are explained in more detail in Section 4.2.1.

We then discuss each of the potential barriers that projects assumed to affect girls' education in more depth, drawing on both quantitative and qualitative evidence (see Section 4.2.2). We aim to identify immediate obstacles and structural barriers to education, and to examine how different barriers interact with each other. This allows us to unpack barriers systematically, and to understand their key dimensions, drivers, and relative influence.

3 Educational Outcomes at Baseline

3.1 To what extent are target girls educationally marginalised?

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"[10]. 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 assess the extent to which girls in the SCW project areas are educationally marginalised.

Our key findings suggest that the picture at baseline is mixed across the 15 SCW project areas. There are some project areas where enrolment, attendance and retention appear higher than would have been expected on the basis of GEC programme assumptions about the educational marginalisation of girls. With regards to learning outcomes we see a more consistent picture of girls who demonstrate relatively low levels of literacy and numeracy (in comparison with international norms) across virtually all project areas – in line with what would have been expected based on GEC-relevant assumptions.

As explained in Section 2.3, the analysis presented below is based on evidence from the projects' outcome spreadsheets and the analysis of EM household survey and school-based assessment data. It focuses on two age groups, namely girls aged 9 to 11 and 14 to 15. Outcome levels of other age groups (i.e. under-six-year-olds, 6-8, 12-13 and 16-19-years-olds) are presented in Annex C, Section 2. They are also included in the individual project profiles (Annexes D1-D15), which provide a more detailed discussion of education outcomes in the individual project areas and present additional outcome data from the project baseline reports and the EM reanalysis of project data.

When analysing EM outcome data we did not distinguish between the outcome levels measured in the intervention and control groups but reported the average across the entire project area. In projects' outcome spreadsheets and baseline reports, outcome data was often disaggregated for intervention and control groups and in this case we reported the average for the intervention group. It is worth noting that the averages presented in the outcome tables are unweighted, which means that every individual project average feeds into the overall SCW average at equal weight, regardless of small differences in sample size.

3.1.1 To what extent are girls attending school?

Enrolment

In this section we present two measures of enrolment. The enrolment rate captures the percentage of girls in the target communities who were enrolled in school, regardless of the grade or school type that they were enrolled in. The net enrolment rate, in turn, shows the percentage of girls that are enrolled in the 'right' school phase – that is the school phase that corresponds to their age (i.e. either primary or secondary school). While projects reported on enrolment in their outcome spreadsheet, they did not disaggregate enrolment by school grade. We therefore do not present these figures in this section but focus on the analysis of EM household survey data. Figures from the outcome spreadsheets can be consulted in Annex C (Table 8).

As shown in Figure 1 and Table 10, analysis of EM household survey data suggests that about **87% of girls aged 9-11** were enrolled in school across the 15 SCW project areas. There was considerable variation at the project level, ranging from enrolment rates of 58% in CARE project areas to 98% in STC (Mozambique), Camfed (Tanzania/Zimbabwe), ChildHope (Ethiopia) and World Vision (Zimbabwe) project areas.

[10] DFID (2012): DFID 5685: Evaluation Manager for the Girls' Education Challenge (GEC).

Figure 1: Comparison of enrolment rates across project areas and data sources, 9-11 year olds

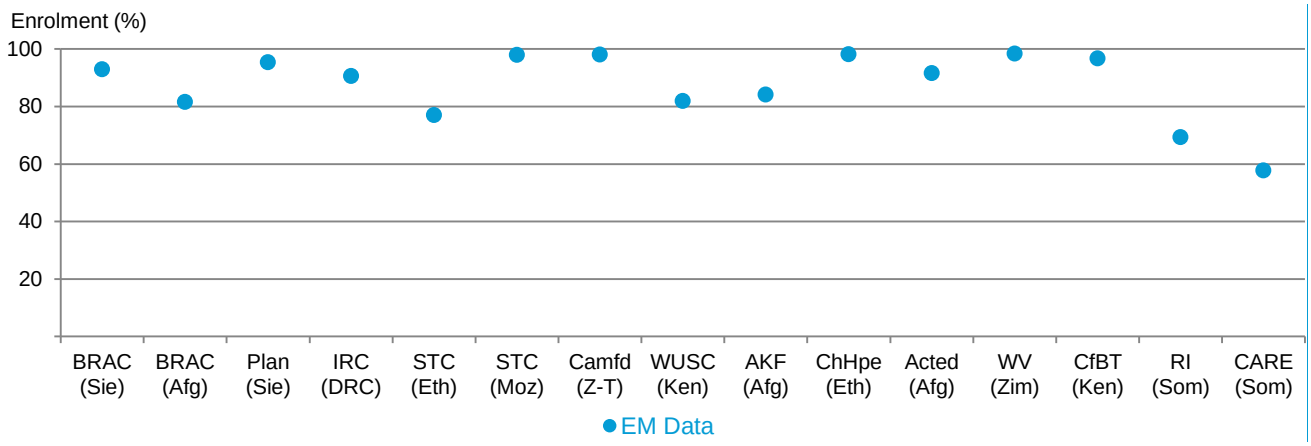


Table 10: Enrolment rates by project area and data source, 9-11 year olds

Enrolment % 9-11	5063 BRAC Sie	5085 BRAC Afg	5096 PLAN Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
EM Data	93	82	95	91	77	98	98	82	84	98	92	98	97	69	58	87

As shown in Figure 2 and Table 11, the analysis of EM data indicates that **14-15 year olds** have slightly lower average enrolment rates than the 9-11 year olds. Across the 15 project areas, 80% of the 14-15 year olds were enrolled in school (this could be either in primary or in secondary school). At the project level, enrolment varied significantly from 56% in STC (Ethiopia) project areas to 95% in IRC (DRC) project areas.

Figure 2: Comparison of enrolment rates across project areas and data sources, 14-15 year olds

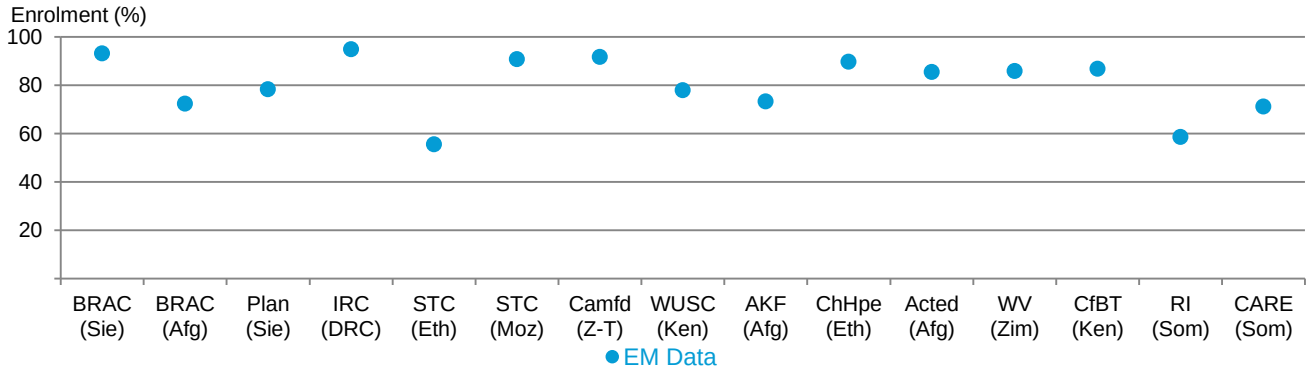


Table 11: Enrolment rates by project area and data source, 14-15 year olds

Enrolment % 14-15	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
EM Data	93	72	78	95	56	91	92	78	73	90	85	86	87	59	71	80

The analysis presented thus far shows that a majority of girls in the age groups 9-11 and 14-15 are enrolled in school. For the 14-15 year olds, this is regardless of whether they are enrolled in primary or secondary school. International statistics generally report a different indicator of enrolment that captures more information about enrolment across the primary and secondary school phases. The net enrolment rate shows the percentage of girls at the official primary or secondary school age that are actually enrolled in primary or secondary school.

Table 12 shows the net enrolment rates for girls of primary age. This rate differs from the age-specific enrolment rates presented in Table 10 as it accounts for *all* girls at primary age, accounting for differences in the official school starting age (for a more detailed explanation of this measure see Section 2.3.1.

The analysis of EM data showed a net primary enrolment rate of 77%, on average across the SCW project areas. This is 10 percentage points below the rate of 9-11 year olds, which can be explained by the fact that many girls have reached the official school starting age but are not yet enrolled in primary school (see the first two grades in Figure 3), whereas a larger share has enrolled by the age of nine. On average, girls at primary age tend to be one year behind their expected grade level, with some variation across project areas. The largest gaps were observed in WUSC (Kenya) project areas where girls were, on average, 2.5 years below their expected grade level, and in Somali project areas where the gaps were between 2 and 2.3 years.

Table 12: Net Primary Enrolment Rates and grades behind, by project area

Net enrolment % Primary	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Net enrolment rate in % (primary school aged girls)																
Best Guess	82	n/a	83	85	67	96	91	59	n/a	92	n/a	93	80	53	48	77
Min,Max[1]	78,83	n/a	76,84	78,86	66,67	94,96	82,92	58,60	n/a	91,92	n/a	93,93	87,80	50,55	47,49	74,77
Grades behind expected grade (primary school aged girls)																
Grades behind	0.61	n/a	0.80	0.69	1.61	1.07	0.82	2.47	n/a	0.89	n/a	0.58	1.13	2.08	2.33	1.20
Number of girls in the sample																
N	200	n/a	245	213	258	298	255	310	n/a	279	n/a	266	357	303	287	3271

1: Minimum/maximum net enrolment rates assuming that all girls whose grade is unknown are enrolled in the right/wrong school phase respectively.

The analysis of enrolment rates among the 14-15 year olds, presented in Table 11 suggests that a majority of girls at this age are enrolled in school. Table 13 looks more specifically at the percentage of girls at the official secondary school age (accounting for differences by country) who are actually enrolled in secondary school. These rates are considerably lower than the basic enrolment rates presented in Table 11. Less than half of the girls at secondary school age are actually enrolled in secondary school. The highest net secondary enrolment was recorded in Zimbabwean project areas, at 64% in Camfed project areas and 46% in World Vision project areas. Net secondary enrolment was zero among the girls surveyed in Save the Children (Ethiopia), and WUSC (Kenya). In these project areas, girls were on average between 4 and 5 years behind their expected grade level. It is worth noting that these projects target specific populations, notably pastoralist communities in the case of Save the Children (Ethiopia), and girls living in refugee camps in the case of WUSC (Kenya). On average across the SCW (excluding Afghanistan), secondary school aged girls were enrolled 2 years below their expected grade level. In summary, while the majority of 14-15 year olds are enrolled in school across the SCW, they tend to lag behind in terms of their expected grade and school phase.

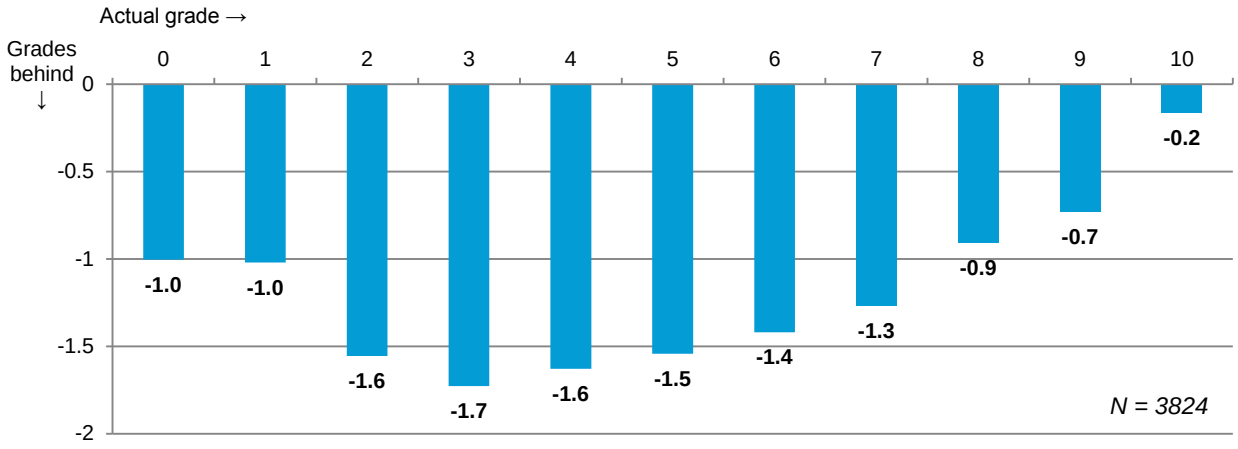
Table 13: Net Secondary Enrolment Rates and grades behind, by project area

Net enrolment % Secondary	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Net enrolment rate in % (secondary school aged girls)																
Best Guess	37	n/a	19	38	0	18	64	0	n/a	22	n/a	46	11	13	5	34
Min, Max[1]	33,45	n/a	19,21	33,45	0,0	17,22	61,66	0,2	n/a	22,22	n/a	46,47	11,11	13,16	5,5	27,47
Grades behind expected grade (secondary school aged girls)																
Grades behind	2.44	n/a	2.79	2.27	5.25	2.58	1.16	4.38	n/a	1.95	n/a	1.08	2.87	2.47	4.42	2.18
Number of girls in the sample																
N	132	n/a	100	132	29	94	392	59	n/a	23	n/a	111	54	62	85	1611

1: Minimum/maximum net enrolment rates assuming that all girls whose grade is unknown are enrolled in the right/wrong school phase respectively.

Figure 3 looks deeper into the trajectories of girls throughout the school cycle, showing the difference between the expected grade level and the grade that girls are actually in. It shows that girls are, on average, already one year behind when enrolling in the first grade – suggesting that many do not start school at the official school age. Girls enrolled in the third year of primary school are, on average, 1.6 grades behind. The gap decreases in higher grades and Figure 3 suggests that on average, girls who actually reach secondary school tend to be fewer years behind than the average of girls in primary school. This suggests that it is girls who perform the strongest and attend school without major disruptions that actually reach the final grades of secondary school.

Figure 3: Grade behind trajectory across actual grades (SCW average, in negative years)



Box 4: Comparison of EM net enrolment rates with secondary data at the country level

The EM baseline fieldwork was limited to SCW project areas and hence the outcome figures presented in this report are not representative of the national population in each country. Nevertheless, Table 14 shows a comparison of the EM net enrolment rates, and net enrolment rates documented through USAID's Demographic and Health Survey (DHS) that covers a majority of SCW countries. While there is considerable variation between the two sources there is no clear trend of EM figures being either systematically higher or lower than DHS national figures.

Table 14: Net enrolment rates by SCW country, EM data vs. DHS data

EM Data	Afghanistan	Ethiopia	Kenya	Somalia	DRC	Sierra Leone	Mozambique	Tanzania	Zimbabwe
DHS year	2010-11	2011	2008-09		2013/14	2013	2011	2010	2010-11
Net primary enrolment in %									
EM data	n/a	85	80	70	96	82	50	92	92
DHS	n/a	65	80	n/a	79	73	77	81	87
Net secondary enrolment in %									
EM data	n/a	38	10	5	18	29	8	53	62
DHS	n/a	13	18	n/a	37	40	22	25	48

Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards to school enrolment?

To conclude, the analysis of EM data showed average enrolment rates of 87% among 9-11 year olds, and 80% among 14-15 year olds. However, while the majority of 14-15 year-old girls are still enrolled in school, they tend to lag on average two years behind their expected grade level (given their age), which means that many are still enrolled in primary school. On average across the SCW, less than half of the girls who are at secondary school age are actually enrolled in secondary school. Further analysis shows that those girls, who do reach secondary school grades, tend to lag fewer years behind that the average girl at primary level. This suggests that the highest-achieving girls are those who progress at pace while girls experience disruptions and delays seem more likely to leave school early. These findings are in line with GEC-relevant assumptions whereby girls of secondary school age experience particular degrees of educational marginalisation. However, the analysis suggests that this may be due to disadvantages that are being accumulated across the primary school phase.

Gaps in enrolment between boys and girls

One of the programmatic assumptions underpinning the GEC (as stated in the GEC business case, see Section 1.3.2) is that there are significant enrolment gaps between girls and boys, with girls being less often enrolled, and that these gaps tend to increase as children reach secondary school age. When conducting the EM household survey, we collected information on the enrolment status of all children living in the household, so that we would be able to calculate enrolment rates for girls and boys as a way of assessing gender-specific enrolment gaps.

Based on the analysis of EM household survey data, we did not find a clear trend of girls having lower average enrolment rates than boys at age 9-11 (see Figure 4). Instead, we found mixed patterns:

- At age 9-11 we found no difference in the enrolment rates of boys and girls, measured on average across the SCW project areas. However, when comparing enrolment at the project level, we found that girls have lower average enrolment rates than boys in about half of the SCW project areas, while their enrolment rates are higher in the other half of projects. When taking an average across all project areas, these trends cancel each other out, leading to a difference of around zero across the 15 SCW project areas.
- We found that girls aged 9-11 were most disadvantaged in CARE (Somalia), AKF (Afghanistan) and IRC (DRC) project areas (i.e. having enrolment rates in the sample that are seven to 11 percentage points below those of boys). Girls were most advantaged, in comparison with boys, in ChildHope (Ethiopia) project areas (i.e. having a 12 percentage point higher enrolment rate than boys).

The picture shifts slightly when looking at the age group of 14-15 year olds:

- In four project areas, the negative enrolment gap (to the disadvantage of girls) observed among children aged 9-11 year widens among those aged 14-15 suggesting retention was poorer among girls than boys. This is the case in BRAC (Afghanistan), PLAN (Sierra Leone), WUSC (Kenya) and AKF (Afghanistan) project areas.
- In four project areas, we found that girls had a higher enrolment rate than boys at age 9-11, but the positive gap narrowed among the 14-15 year olds (ChildHope, Ethiopia) or even became a gap in favour of boys, again suggesting that retention was poorer among girls than boys in STC (Mozambique), ACTED (Afghanistan), and Relief International (Somalia) project areas.
- In six project areas, the negative enrolment gap for girls observed at age 9-11 either narrowed in the older age group (IRC, DRC), or became a gap in favour of girls at age 14-15, (BRAC, Sierra Leone), STC (Ethiopia), Camfed (Tanzania/Zimbabwe), World Vision (Zimbabwe), CfBT (Kenya) and CARE (Somalia).

Figure 4: Gaps in enrolment rates between boys and girls by age group (sorted by the size of the gap and direction of the gap among 9-11 year olds)

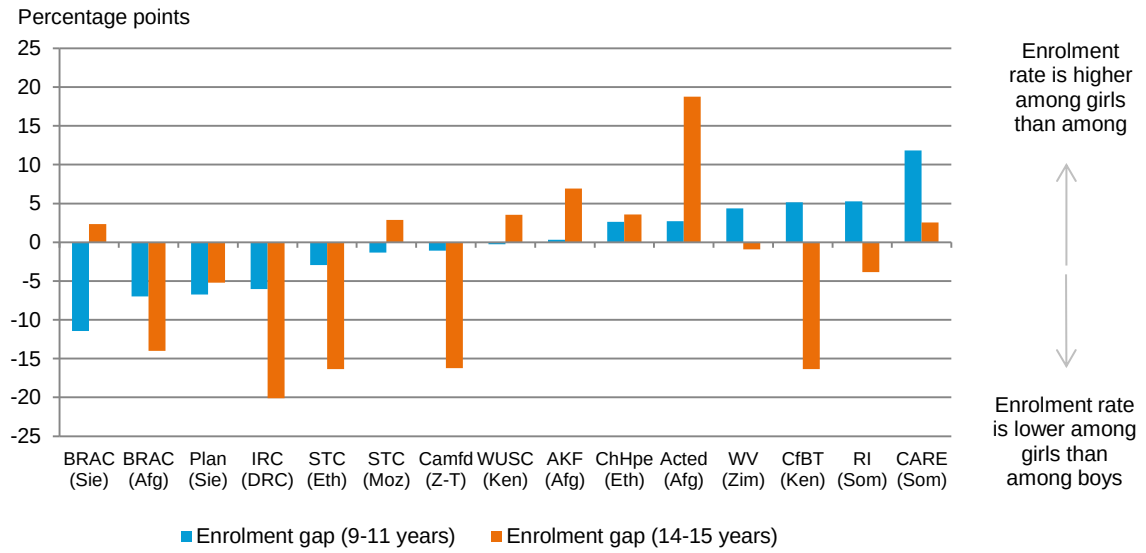


Table 15: Enrolment rates of boys and girls, by age group (EM data)

Enrolment Girls vs. Boys	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Actd Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Girls aged 9-11 years																
Girls	94	86	91	89	72	97	99	79	77	95	84	97	95	66	62	86
Boys	93	92	92	96	72	91	96	82	84	84	80	99	93	60	73	86
Difference[1]	*0*	*-6*	*-1*	*-7*•*	*0*	*5*•*	*3*	*-3*	*-7*	*12*•*	*4*	*-1*	*3*	*5*	*-11*•*	*0*
Girls aged 14-15 years																
Girls	89	69	75	92	66	85	89	71	71	85	75	84	90	64	73	79
Boys	82	90	91	97	63	89	70	87	85	82	76	81	86	80	71	82
Difference[1]	*7*	*-20*•*	*-16*•*	*-5*	*4*	*-4*	*19*•*	*-16*•*	*-14*•*	*3*	*-1*	*3*	*4*	*-16*•*	*2*	*-3*

Notes: 1. In percentage points.
* indicates that p-value from linear regression is strictly below 0.05.
• indicates that p-value from logistic regression is strictly below 0.05.
*• indicates that both p-values are strictly below 0.05.

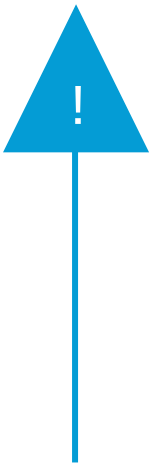
Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards differences in enrolment between boys and girls?

In summary, the EM evidence does not suggest that girls have *systematically* lower enrolment rates than boys at the SCW level and our evidence does not support the assumption that existing gaps generally widen when children reach secondary school age. Instead, we find a mixed picture with some girls being advantaged rather than disadvantaged in some project areas. Gaps exist in both directions and change in both directions. In a set of project areas we found that girls were less often enrolled than boys at ages 9-11 and had even larger disadvantages at ages 14-15. In other project areas, girls had higher enrolment rates than boys at ages 9-11, but were less often enrolled than boys at age 14-15. In yet another set of project areas we observed little difference between boys and girls at ages 9-11 but a considerably higher enrolment for girls than for boys at ages 14-15. These findings raise questions about the assumption that girls are systematically less likely than boys to be enrolled and suggest that boys in some of these areas may actually face greater degrees of educational marginalisation than girls and would benefit from an educational programme targeting both boys and girls.

Attendance

Attendance rates measure the time that girls actually spend in school when they are enrolled. As explained in Section 2.3.1, we report attendance levels as the percentage of available school time that girls spend in school. This section will focus on the attendance levels reported in the projects' outcome spreadsheets and by the EM analysis. However, for the purpose of triangulating and verifying the different streams of available data, we also analysed attendance levels based on data from the project baseline reports and the reanalysis of project data. The resulting figures are included in the project profiles (Annexes D1-D15).

It is worth noting that projects have been asked to collect data from school registers as their primary data source to measure attendance. There may be incentives for schools and teachers to artificially inflate these registers, and projects are therefore required to undertake at least three unannounced spot checks on these registered every year. Even with spot-checks ensuring the validity and reliability of school-based attendance data remains a challenge. This also drove the decision to allow projects to remove the attendance element of PbR, where applicable. The potential for bias should be kept in mind when interpreting attendance figures reported in the projects' outcome spreadsheets.



***When comparing attendance figures measured by the EM and by projects** presented in this section and in the project profiles (Annexes D1-D15), **it is important to note that these are based on different measurement approaches**. As explained in more detail in Section 2.3.1, #2, projects' primarily reported attendance based on school records whereas the EM's measure is based on subjective self-reporting at the household level. In addition, projects are not required to measure attendance longitudinally in a cohort of girls.*

*Finally, **project outcome spreadsheets usually report attendance by grade whereas the EM data refers to attendance by age**. As discussed in Box 5, we have conducted a sensitivity check of our coding of self-reported attendance levels, as well as a cross-checking exercise comparing attendance levels measured through the EM household survey and through school records. We find that there are only relatively small discrepancies between self-reported and school-based attendance data on average across the SCW, but that discrepancies are considerable in certain project areas. It is possible that such discrepancies contribute to variation in attendance levels measured by projects and by the EM at baseline.*

As shown in Figure 5 and Table 16, the following are our key findings on the attendance of 9-11 year olds across the SCW:

- **Outcome spreadsheets:** Four projects submitted figures on the attendance in school grades corresponding to the ages of 9-11 year olds in their outcome spreadsheets. The lowest attendance was reported by IRC in DRC at 79%, and the highest was reported by Save the Children in Ethiopia at 94%.
- **EM household survey data:** Based on the analysis of EM data we found an average attendance rate of 88% among the 9-11 year olds across all 15 SCW project areas. At the project-level, attendance ranged from 83% in AKF (Afghanistan) project areas to 90% in CARE (Somalia) and World Vision (Zimbabwe) project areas.

Figure 5: Comparison of attendance rates across project areas and data sources, 9-11 year olds

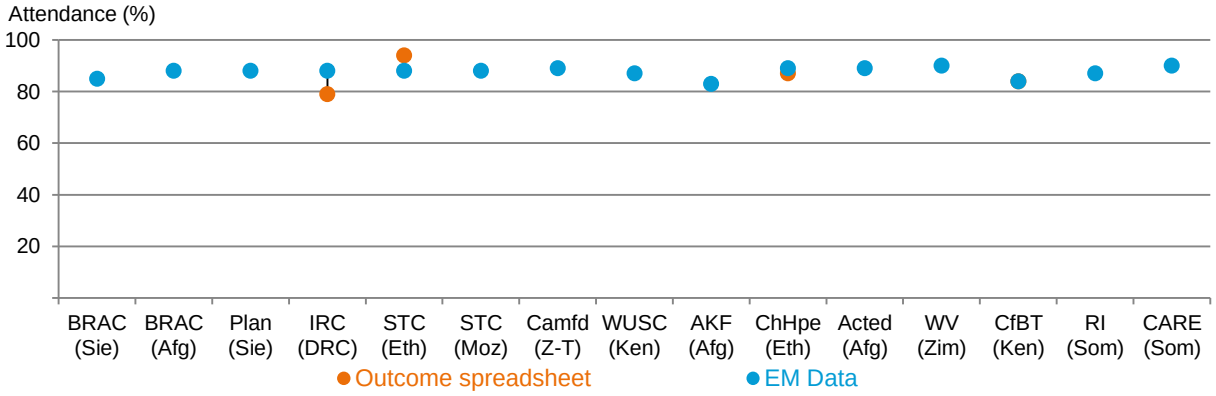


Table 16: Attendance rates by project area and data source, 9-11 year olds

Attendance % 9-11	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Outcome spreadsheet				79	94					87			84			
EM Data	85	88	88	88	88	88	89	87	83	89	89	90	84	87	90	88

Among the **14-15 year olds**, both the outcome spreadsheets and the EM analysis suggested average attendance levels similar to those of girls aged 9-11. As shown in Figure 6 and Table 17 the following are our key findings on the attendance of 14-15 year olds across the SCW:

- **Outcome spreadsheets:** Only one project, ChildHope (Ethiopia), submitted figures on the attendance of 14-15 year olds in their outcome spreadsheet (i.e. 83 %).
- **EM household survey data:** Analysis of EM data showed an average attendance rate of 87% among the 14-15 year olds across all SCW project areas. At the project level, attendance ranged from 85% in four project areas to 90% in BRAC (Afghanistan) project areas.

Figure 6: Comparison of attendance rates across project areas and data sources, 14-15 year olds

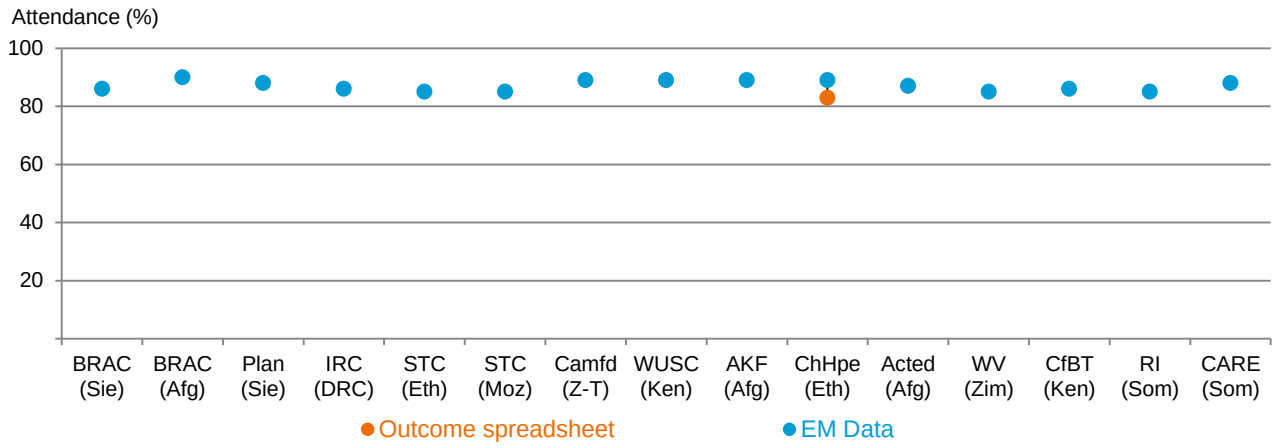


Table 17: Attendance rates by project area and data source, 14-15 year olds

Attendance % 14-15	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Outcome spreadsheet										83						
EM Data	86	90	88	86	85	85	89	89	89	89	87	85	86	85	88	87

Box 5: Validation of self-reported attendance using sensitivity checks and data from the EM school visits

The EM analysis of attendance is based on a self-reported measure. During the household survey, the caregiver of the selected girl was asked to estimate how often the girl had attended school in the previous year. Possible response categories ranged from "most days" to "less than half of the available time" and these were subsequently coded into an approximate percentage of days attended (a detailed explanation is provided in Section 2.3.1).

We recognise that the coding of self-reported attendance involves a value-judgement on the part of the EM. We have therefore applied a sensitivity test to assess the extent to which changes in coding affect our measurement of attendance. To this end we calculated alternative attendance rates based on coding the response "attending more than half of the time" as 60% attendance instead of 75% (which is the coding upon which the figures presented above are based). As shown in Table 18, we found that the measured attendance rates differed only marginally, with an average variation below 1% across SCW project areas.

Table 18: Comparison of attendance measures based on different approaches to coding self-reported attendance (i.e. coding "attending more than half of the time" as 60% attendance instead of 75%).

Attendance % In-school girls	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
9-11 year olds																
HH survey - 75% hyp.	85	88	88	88	88	88	89	87	83	89	89	90	84	87	90	88
HH survey - 60% hyp.	84	88	86	87	88	88	88	86	82	89	89	89	83	87	89	87
Difference[1]	*-1.2*	*0.2*	*-2.4*	*-0.9*	*-0.9*	*-1.0*	*-0.2*	*-2.1*	*5.3*	*-1.1*	*0.0*	*-1.5*	*2.3*	*-4.4*	*-7.6*	*-1.2*
14-15 year olds																
HH survey - 75% hyp.	86	90	88	86	85	85	89	89	89	89	87	85	86	85	88	87
HH survey - 60% hyp.	85	89	85	85	85	84	88	87	89	89	86	84	85	84	88	87
Difference[1]	*-0.6*	*-0.3*	*-2.4*	*-0.3*	*-0.5*	*-0.3*	*-0.8*	*-1.3*	*0.0*	*0.0*	*-0.3*	*-0.7*	*-0.3*	*-0.4*	*-0.8*	*-0.6*

1: In percentage points.

We further recognise that there is a risk of upwards bias in self-reported attendance data as caregivers may feel a need to provide socially desirable responses, leading to an overstatement of the girls' actual attendance. We used data from the EM's follow-up school visits to check for such bias by comparing the self-reported attendance for a selected girl with her actual attendance record in school. These visits were carried out whenever a girl was stated to be enrolled in school and where the caregiver gave their consent to the follow-up visit (see Section 2.3.1 #2.2 for more methodological detail). We did not conduct any school visits in Afghanistan or in Camfed project areas for reasons that are explained in detail in Annex B. This triangulation exercise also enables us to check whether our coding of the qualitative responses provided by the caregiver was appropriate (see Section 2.3.1 for methodological details).

Table 19 shows the average attendance rates measured among girls for whom follow-up school visits where conducted (please note that this is a sub-sample of all surveyed girls and that attendance figures therefore differ slightly from those presented in Table 18. We present the attendance reported by the primary caregiver as well as the rate recorded in the school records, and the difference between the two.

The average attendance rates generated by the two streams of evidence differed by about 4% across all SCW project areas, which indicates a relatively high level of consistency between the two data sources. However, this average figure somewhat conceals more important discrepancies at the project level:

- In five project areas the school-based attendance rates were considerably lower than the self-reported rates for the 9-11 year olds, ranging from a difference of 9.9% in CARE (Somalia) project areas to a difference of 16.9% in STC (Ethiopia) project areas.
- In another five project areas, school-based attendance was actually higher than the self-reported measure for the 9-11 year olds but the discrepancies between the two data sources were generally smaller (i.e. ranging from 2.2 and 7.9 percent in World Vision and IRC project areas, respectively).
- There was virtually no difference between the two streams of attendance data in CfBT project areas.

Table 19: Comparison of attendance data from the EM household survey and the EM school visits, by age

Attendance % In-school girls	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHope Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
9-11 year olds																
HH survey	85		87	88	89	89		86		89		90	84	90	89	88
School visit	89		78	96	75	92		76		77		92	85	93	81	85
Difference[1]	*4.3*		*-9.0*	*7.3*	*-13.9*	*2.6*		*-10.5*		*-12.1*		*2.0*	*0.0*	*2.7*	*-8.4*	*4.3*
14-15 year olds																
HH survey	83		84	77	90	80		89		90		84	86	80	87	85
School visit	81		74	97	81	90		85		92		91	88	95	93	88
Difference[1]	*-2.2*		*-10.0*	*20.4*	*-8.7*	*9.6*		*-3.2*		*1.7*		*6.4*	*2.0*	*14.5*	*5.9*	*-2.2*

1: In percentage points.

It is worth nothing, that school records did not always yield universally complete or plausible information – for example, some records suggested that the girl attended more days than were available in a given school year. This means that the school-based attendance figures do not necessarily represent a measure that is more reliable than self-reported attendance. Our cross-comparison indicates that the self-reported measure of attendance does not systematically over-estimate attendance in comparison with the levels measured in school. However, there are considerable discrepancies in some project areas which will need to be explored further at midline and endline.

Gender gaps in attendance

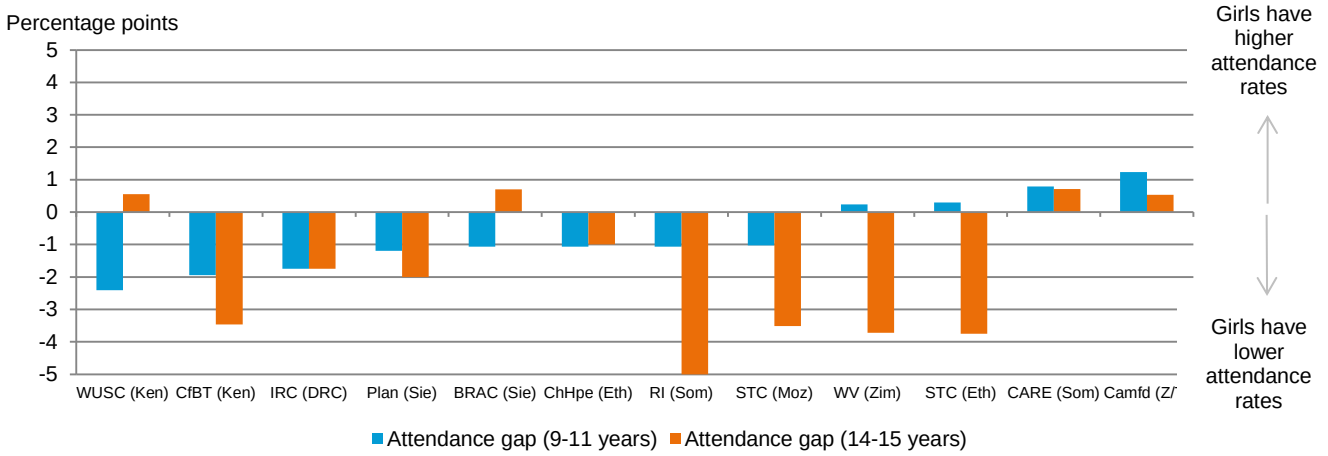
During the EM household survey, the primary caregiver was asked to also provide information on the attendance levels of one randomly selected boy in the household, in addition to reporting on one selected girl. On this basis, we are able to compare the self-reported attendance rates of boys and girls and to examine whether there are any systematic gender gaps in attendance (see Figure 7 and Table 20)[11]. The following are our key findings:

- For children aged 9-11, we observe a difference of 0.6 percentage points in the attendance of boys and girls across the SCW projects areas (excluding Afghanistan). Boys attend school slightly more often than girls in eight project areas, but the differences tend to be marginal.
- Among the 14-15 year olds, we observe a slightly larger difference in attendance rates of 1.8 percentage points at the disadvantage of girls. Boys attended more often than girls in eight project areas. We also observed more variation across project areas with gaps ranging from 0.7 percentage points to the advantage of girls in BRAC (Sierra Leone) and CARE (Somalia) project areas to 5 percentage points to the disadvantage of girls in Relief International (Somalia) project areas.
- In four project areas, it seems that the negative attendance gap (to the disadvantage of girls) observed among the 9-11 year-old widens among those aged 14-15. This is the case in PLAN (Sierra Leone), STC (Mozambique), CfBT (Kenya) and Relief International (Somalia) project areas. In two project areas we observed virtually no gap among the 9-11 year olds, but gaps became apparent among the 14-15 year olds. This is the case in Save the Children (Ethiopia) and World Vision (Zimbabwe) project areas. In Camfed (Tanzania/Zimbabwe) and CARE (Somalia) project areas, small gaps existed to the advantage of girls among the 9-11 year olds and narrowed slightly among the 14-15 year olds.
- Finally, in BRAC (Sierra Leone) and WUSC (Kenya) project areas, we observed small gaps to the disadvantage of girls among the 9-11 year olds, but these reversed into gaps to the advantage of girls among the 14-15 year olds.

[11] It was not possible to calculate gender differences in attendance rates for project areas in Afghanistan due to the way in which the household survey questionnaire was shortened to reduce respondent burden and the length of the survey.

In summary, it appears that there are small gender gaps in attendance among the 9-11 year olds in a majority of project areas and that these tend to widen among the 14-15 year olds. However, there are some contexts in which girls attend more often than boys in both age groups.

Figure 7: Gaps in attendance rates between boys and girls by age group (sorted by the size of the gap and direction of the gap among 9-11 year olds)



Note: It was not possible to calculate gender differences in attendance rates for project areas in Afghanistan due to the way in which the household survey questionnaire was shortened to reduce respondent burden and the length of the survey.

Table 20: Attendance rates of boys and girls, by age group (EM data)

Attendance Girls vs. Boys	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Actd Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Girls and boys aged 9-11 years																
Girls	85	88	88	88	88	88	89	87	83	89	89	90	84	87	90	88
Boys	86	n/a	89	90	88	89	88	89	n/a	90	n/a	90	86	90	89	89
Difference[2]	*-0.7*	*n/a*[1]	*-1.1*	*-1.5**	*0.1*	*-0.7*	*1.2*	*-2.9**	*n/a*[1]	*-0.4*	*n/a*[1]	*-0.2*	*-1.5*	*-2.7**	*0.5*	*-1.0**
Girls and boys aged 14-15 years																
Girls	86	90	88	86	85	85	89	89	89	89	87	85	86	85	88	87
Boys	85	n/a	90	84	89	89	88	88	n/a	90	n/a	89	89	90	87	88
Difference[2]	*0.6*	*n/a*[1]	*-2.4**	*1.8*	*-3.3*	*-3.9*	*0.4*	*0.2*	*n/a*[1]	*-1.5*	*n/a*[1]	*-4.1*	*-3.7*	*-5.1*	*1.2*	*-0.7*

Notes: 1: It was not possible to calculate gender differences in attendance rates for project areas in Afghanistan due to the way in which the household survey questionnaire was shortened to reduce respondent burden and the length of the survey.
* indicates that the p-value from two sample t-test is strictly below 0.05.
2: In percentage points.

Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards to attendance

Our findings on attendance suggest that older girls attend school just about as much as younger girls once they are enrolled. In comparison with EM evidence on enrolment, we also found attendance rates to vary less across project areas and to fall within a relatively narrow range of 83-93%.However; it is worth noting that the EM measure of attendance is based on self-reported data provided by the caregiver in the household survey. School records showed considerably lower attendance rates in a number of project areas which indicates that more research is required to establish reliable measures of attendance.

In terms of gender differences, boys aged 9-11 appear to attend slightly more often than girls and this gap tends to widen among the 14-15 year olds. However, there are some contexts in which girls attend more often than boys in both age groups, which suggest that the prevalence of gendered disadvantages may vary across contexts.

Retention rates

Projects are not required to report systematically on retention at baseline and this outcome is not captured in the outcome spreadsheets. In this section we focus on retention data from the EM household survey. However, additional information from projects baseline reports and the reanalysis of project data is included in the project profiles, if it was available (see Annexes D1-D15). We present year-on-year retention rates that can also be understood as being complementary to the year-on-year drop-out rate (for a more detailed explanation of this indicator, see Section 2.3.1, #3.2)

As shown in Figure 8 and in Table 21, analysis of EM data shows an average year-on-year retention rate of 98% among the 9-11 year olds across all SCW project areas. At the project-level, year-on-year retention rates ranged from 90% in IRC (DRC) project areas to 100% in six other project areas.

Figure 8: Comparison of year-on-year retention rates across project areas and data sources, 9-11 year olds

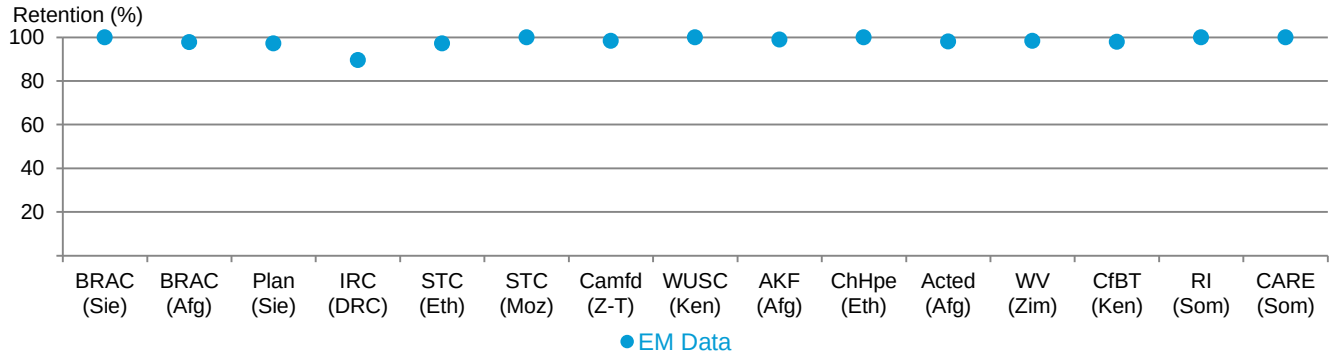


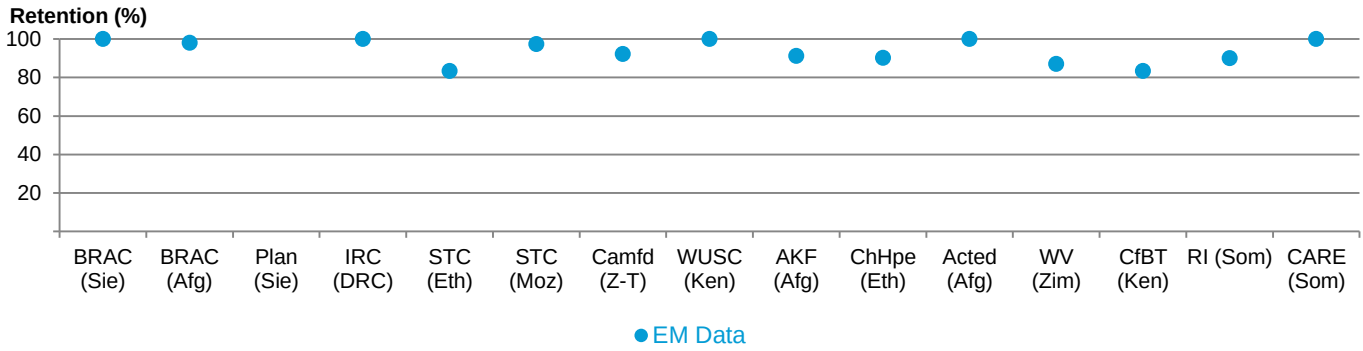
Table 21: Year-on-year retention rates by project area and data source, 9-11 year olds

Retention % 9-11	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
EM Data	100	98	97	90	97	100	98	100	99	100	98	98	98	100	100	98

When comparing retention between 9-11 year olds and 14-15 year olds, we found that there was more variation in the rates of the latter age group (Figure 8 and Figure 9) and that average year-on-year retention rates were slightly lower[12] among 14-15 year olds than among 9-11 year olds.

As shown in Figure 9 and Table 22, the analysis of EM data suggested an average year-on-year retention rate of 94% among the 14-15 year olds across all SCW projects. At the project-level, year-on-year retention ranged from 83% in IRC (DRC) and CfBT (Kenya) project areas to universal (100%) retention in five project areas.

Figure 9: Comparison of year-on-year retention rates across project areas and data sources, 14-15 year olds



[12] The differences between age groups have not been tested for significance using statistical methods such as a t-test.

Table 22: Year-on-year retention rates by project area and data source, 14-15 year olds

Retention % 14-15	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
● EM Data	100	98		100	83	97	92	100	91	90	100	87	83	90	100	94

While the year-on-year retention rates found across the SCW project areas appear relatively high, it is important to translate them into the cumulative retention or drop out across the entire school phase, as year-on-year retention is only a snapshot of retention at one point in time.

Table 23 compares survival rates across the primary school phase, from UNESCO data (2010) and those derived cumulatively from EM year-on-year retention rates. The UNESCO data shows the percentage of a cohort of pupils enrolled in primary grade 1 who are expected to reach the last grade of primary school, regardless of repetition. This survival rate was relatively low in three out of four GEC countries for which data was available, notably 49% in DRC, 42% in Ethiopia and only 29% in Mozambique. It was relatively high, in comparison, in Tanzania (87%).

Table 23: Survival rate across the primary school phase (approximate) by project area and data source

Survival rate (%)	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
UNESCO data 2010				49	42	29	87			42					
EM data	99	87	90	62	32	83	52	69	64	72	84	78	88	59	31

Source: UNESCO Institute for Statistics Database (UIS) database; EM household survey data.

The survival rate across the primary school phase derived from the year-on-year retention rates in the EM data is the product of the year-on-year rate across the relevant period. The resultant approximate survival rates vary considerably across GEC project areas and do not align closely with UNESCO estimates, with the approximated rates being markedly higher than UNESCO data in Save the Children (Mozambique) and ChildHope (Ethiopia), and lower in Camfed (Tanzania/Zimbabwe) project areas. The estimated survival rates are very low for some project areas such as CARE (Somalia) or STC (Ethiopia).

As explained in Section 2.3.1, we could not measure gender differences in retention at baseline. However, we will carry out more detailed analysis of retention (for both genders) at the midline and endline, including analysis of individual learning trajectories.

Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards to retention?

In summary, our analysis of year-on-year retention using the EM data indicated that on average across the SCW, only a small proportion of 9-11 year old girls had dropped out of primary school from one year to the next. On average, 98% of girls remained enrolled. Even though there was little variation in year-on-year retention rates across the SCW, we found that small differences accumulate across the primary school phase, leading to approximate primary survival rates ranging from 31% in CARE (Somalia) project areas to 99% in BRAC (Sierra Leone) project areas.

In our analysis of barriers (Section 4) we address some of the factors and barriers that affect the retention of girls in secondary school.

With regards to 14-15 year olds we found lower year-on-year retention rates than among the 9-11 year olds and a higher degree of variation between project areas. They ranged from 100% year-on-year in four project areas to only 83% in two project areas, meaning that in these communities roughly seven out of forty girls do not continue secondary school in the following year. This supports the GEC assumption that retaining girls in school becomes more challenging as the girls grow older.

3.1.2 What are current learning outcomes?

Learning, in addition to attendance, is the second of the GEC's key outcomes and consists of reading fluency and numeracy. As discussed in Section 2.3.2, projects used different test tools to assess girls' reading fluency and numeracy levels. Projects adapted existing tests to their specific contexts, target groups and languages of instruction, and chose different formats to present the test results (see Table 24). As a consequence, the reading fluency and numeracy levels measured at the project level are not easily interpretable and comparable across the SCW project areas.

Table 24: Overview of literacy test and the format of results reporting used by SCW projects

	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
	BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTED	WV	CfBT	RI	CARE
	Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Type of learning assessment used															
ASER											✓				
EGRA	✓	✓		✓	✓	✓		✓	✓	✓		✓			
National Test							✓								
UWEZO													✓	✓	✓
Format of results reported in the outcome spreadsheets															
Words per minute					✓					✓		✓			
Percentage	✓		✓		✓	✓	✓			✓		✓		✓	✓
Levels											✓		✓		
Unspecified				✓											

As shown in Table 24, nine SCW projects used EGRA/EGMA tests to assess the literacy and numeracy skills of girls in their target communities. Three projects followed the example of the relevant PbR guidance provided by the FM in summarising EGRA reading scores in terms of words per minute (wpm) attained on the oral fluency subtask. The remaining six projects specified their literacy scores as a total EGRA score (out of 100) in their outcome spreadsheet. The EM reports test results as an integrated reading fluency score that is scaled to be closely equivalent to words per minute, and is directly comparable with the three projects reporting wpm (for a brief description of the methodology used to calculate this integrated reading fluency score, see Section 2.3.2, #2 of this main report; for a detailed description see Sections 4.3.1 and 4.4 of the methodological Annex B). Literacy scores expressed as a total of 100 can be compared but are difficult to relate to international benchmarks expressed in words per minute. We therefore do not report those comparisons in the section below.

The FM PbR guidance required all projects using the EGMA test to report a score out of 100 in their outcome spreadsheets, weighting each subtasks equally, and to clearly report and agree on any deviations from this methodology. However, as discussed in Section 2.3.2, there is no internationally established way of aggregating EGMA results across subtasks to achieve an easy-to-interpret score similar to the words per minute score. As a consequence, there are currently no international benchmarks for the assessment of EGMA results.

Four projects used Uwezo or ASER tests for literacy and numeracy skills and reported results as competency levels. Table 25 provides an example of the Uwezo competency levels that were used in the 2012 Uwezo assessment in Uganda. Every competency level relates to specific literacy and numeracy skills that children were expected to demonstrate in a broadly sequenced staging. However, it is worth noting that some SCW projects in the GEC adapted the Uwezo tool for their own purposes, defined a larger number of competency levels or used exercises of a different level of difficulty (e.g. tasks that were equivalent to grade 5 rather than grade 2 exercises when testing older girls). Therefore, the example provided in Table 25 can only provide an indication as to how Uwezo and ASER levels can be interpreted. Relief International (Somalia) used the Uwezo tool but appear to have reported a percentage of correct answers which is not typical for reporting Uwezo test results. Given our uncertainty about the correct interpretation of these scores, we have refrained from commenting on them in the discussion below. We have also not commented on scores reported by Camfed (Tanzania/Zimbabwe) that are based on tools used for national examinations, due to our unfamiliarity with how these tools were used by projects.

Considering the heterogeneity of approaches used by the SCW projects to measure and report on learning outcomes, the following section focuses on findings from the EM-led EGRA and EGMA assessments and comparing these findings across SCW projects. Nevertheless, we present all available streams of evidence and comment on any observable differences in outcomes between age groups.

Table 25: Uwezo assessment levels for literacy and numeracy

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

Note: These assessment levels were used by the 2012 Uwezo assessment in Uganda during which around 80 000 children aged 6-16 were tested.

Reading fluency scores

In this section we present evidence on girls' reading fluency levels at baseline, drawing on the projects' outcome spreadsheets and the analysis of EM data. We provide data on literacy scores that was extracted from project baseline reports or the reanalysis of project data in the individual project profiles (see Annexes D1-D15). We only compare data from the project outcome spreadsheets with EM data where the projects clearly stated that they reported EGRA scores as words per minute (wpm) and as such used the same unit for reporting as the EM.

As shown in Figure 10 and Table 26 (below), our key findings on the literacy levels of 9-11 year old girls who were enrolled in school across the SCW are as follows:

- **Outcome spreadsheets:** At the time of writing, data on the literacy of 9-11 year olds was available from 11 projects' Outcome spreadsheets. Three of these projects reported EGRA results as words per minute with scores ranging from 10 wpm in STC (Ethiopia) project areas to 49 wpm in ChildHope (Ethiopia) project areas. Four projects reported Uwezo/ASER levels and these ranged from a level of 1.4 in Plan (Sierra Leone) project areas to a level of 4.1 in CfBT (Kenya).
- **EM data:** Based on the analysis of EM data, we were able to generate comparable EGRA scores for all 15 SCW project areas. Among 9-11 year old girls we found an average EGRA score of 28 words per minute across the SCW. We measured the lowest reading fluency levels in STC Ethiopia project areas (2 wpm) and the highest in World Vision (Zimbabwe) and CfBT (Kenya) project areas (54 wpm and 53 wpm, respectively).

Figure 10: Comparison of literacy (i.e. oral reading fluency) scores in words per minute across project areas, EM data only, 9-11 year olds (enrolled in school)

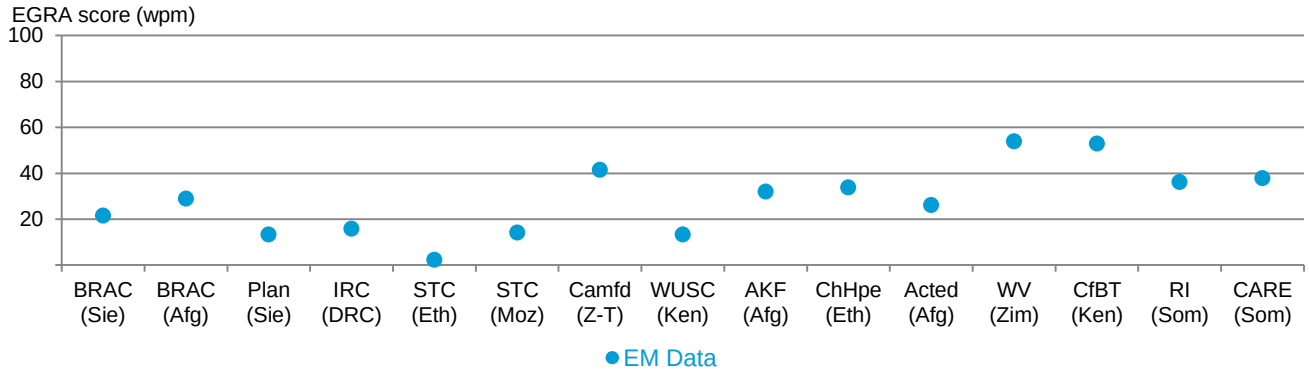


Table 26: Literacy scores by project area and data source, 9-11 year olds (enrolled in school)

Literacy scores In-school girls 9-11	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Test - project	EGRA	EGRA	ASER	EGRA	EGRA	EGRA	National	EGRA	EGRA[1]	EGRA	ASER	EGRA[1]	UWEZO[2]	UWEZO	UWEZO[1]	
Unit	total/100	wpm	total/100*	unspec	wpm	total/100*	total/100	unspec	wpm	wpm	levels	wpm	levels	total/100	levels	
● Outcome spreadsheet	45		1.4	47	10	50	34			49	2.0	50	4.1	91		
Test - EM	EGRA - augmented and harmonised oral reading score (in words per minute)															
● EM Data	22	29	13	16	2	14	42	13	32	34	26	54	53	36	38	28
Years behind[3]	-3.9	-2.4	-4.6	-4.2	-4.2	-4.4	-2.5	-4.5	-2.4	-2.4	-2.9	-2.2	-2.2	-3.2	-3.4	-3.2

1. Reported by age. 2. ASAL only. 3. As compared to international literacy benchmarks in words per minute.

The EM learning assessment showed an average EGRA score of 28 words per minute among girls aged 9-11. This is below the 45 wpm norm for 7-year old students in developing countries that we use for benchmarking purposes (see Table 9 above). The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) suggest that children reading less than 45 words in grade two (i.e. age 7-8) can be considered “at risk”. At age 9-11, the suggested benchmark reading fluency for students would be 85-108 wpm. On this basis, an average EGRA score of 28 wpm indicates an average gap in performance that is equivalent to three years of schooling (see the bottom row in Table 26). At the project level, gaps ranged from two years behind to over 4 years behind.

Based on our analysis of EM data, we found that performance gaps tend to widen among older girls aged 14-15. The EM data suggested that literacy gaps were on average twice as large among the 14-15 year olds as among the 9-11 year olds (compare Table 26 and Table 27).

As shown in Figure 11 and Table 27 our key findings on the literacy levels of 14-15 year old girls who were enrolled in school across the SCW are as follows:

- **Outcome spreadsheets:** Figures on literacy among 14-15 year olds were available from two projects’ outcome spreadsheets. One project reported EGRA scores as wpm, which was ChildHope in Ethiopia (54 wpm). PLAN (Sierra Leone), reported Uwezo levels corresponding to this age group (i.e. level 5.9).
- **EM data:** Based on the analysis of EM data, we were able to generate comparable EGRA scores for all 15 SCW project areas. Among the 14-15 year old we found literacy levels equivalent to an oral reading fluency averaging 55 wpm across the SCW project areas. We measured the lowest literacy scores in STC (Ethiopia) project areas (5 wpm). We measured the highest literacy levels in Camfed (Tanzania/Zimbabwe) project areas (89 wpm).

Figure 11: Comparison of literacy scores (words per minute) across project area, EM data only, 14-15 year olds (enrolled in school)

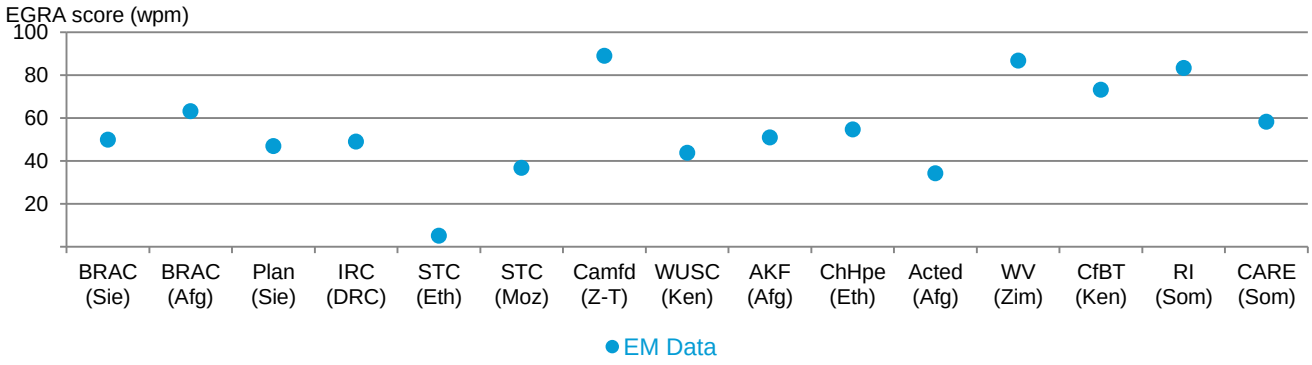


Table 27: Literacy scores by project area and data source, 14-15 year olds (enrolled in school)

Literacy scores In-school girls 14-15	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Test - project	EGRA	EGRA	ASER	EGRA	EGRA	EGRA	National	EGRA	EGRA	EGRA	ASER[1]	EGRA[1]	UWEZO[2]	UWEZO	UWEZO[1]	
Unit	total/100	wpm	total/100*	unspec	wpm	total/100	total/100*	unspec	wpm	wpm	levels	wpm	levels	total/100	levels	
● Outcome spreadsheet			5.9							54						
Test - EM	EGRA - augmented and harmonised oral reading score (in wpm)															
● EM Data	50	63	47	49	5	37	89	44	51	55	34	87	73	83	58	55
Years behind[3]	-6.9	-5.6	-7.3	-7.1	-8.5	-7.8	-4.5	-7.3	-6.0	-5.9	-6.8	-4.9	-5.6	-5.3	-6.8	-6.0

1. Reported by age. 2. ASAL only. 3. As compared to international literacy benchmarks in words per minute.

As shown in Table 27, the EM data suggests that 14-15 year old students are able to read at an average level of about 55 wpm, across the SCW. This means that the tested girls are on average six years behind international benchmarks of oral reading fluency (see Table 9). We also found an average difference in literacy scores of 27 wpm between 9-11 and 14-15 year olds which corresponds to an increase in ability that is clearly lower than would be expected given that 14-15 year olds would usually have spent between four and five additional years in school.

It is worth noting that the reading fluency scores presented above were achieved by secondary-aged girls reading passages of texts at a level of difficulty appropriate to primary grade 3. However, international reading fluency benchmarks are pitched at grade appropriate texts. This means that in relative terms, the results may actually be worse than they see and that our analysis might still underestimate the extent to which girls in SCW project areas are marginalised in terms of their reading fluency.

Figure 12 shows the average gaps in reading fluency of girls tested by the EM across the SCW. It shows that girls fall further behind international benchmarks of reading fluency, the older they get. Our analysis of enrolment has shown that many girls are enrolled one or several years below their expected grade level and which could potentially explain why they read slower than expected for their age. However, our analysis shown in Figure 13 shows that at every respective grade level, the girls' average performance lags behind international benchmarks, suggesting that performance gaps in reading do not exclusively stem from girls not progressing from grade to grade at pace, but that advantages are being accumulated across the school phase, at every grade level. The finding that girls are not able to achieve gains in reading fluency that reflect their age and the time spent in education, suggests that educational barriers are impeding the learning of girls in SCW project areas and as such contribute to their educational marginalisation – this is in line with GEC-relevant assumptions

Figure 12: Average trajectory of literacy skills (i.e. oral reading fluency) across SCW, among enrolled girls, by age, in years behind international benchmarks

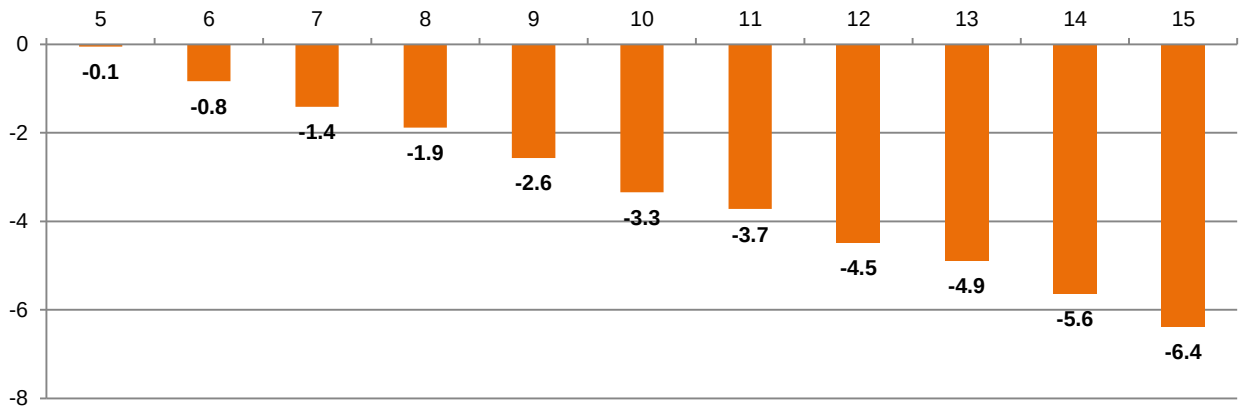
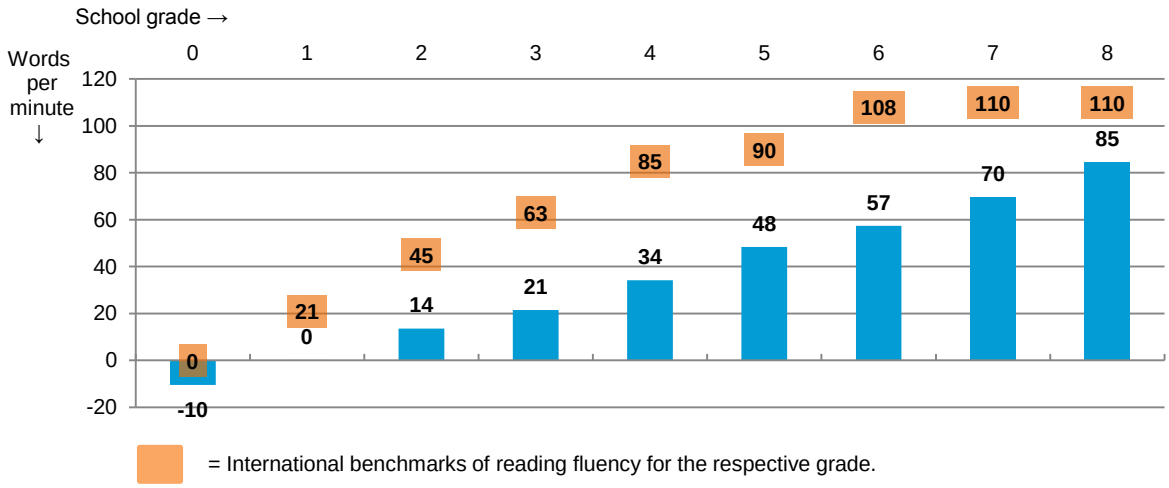


Figure 13: Average trajectory of literacy skills (i.e. oral reading fluency) across SCW, among enrolled girls, by grade, in words per minute, compared to international benchmarks



Gender differences in reading fluency

Gender differences in basic literacy ratios as measured by the EM's household survey

Through the EM household survey we asked the caregiver to report for every child aged 5-15 in the household whether they were able to read and write a letter. From this we derived basic literacy rates for boys and girls in the project areas as the proportion of boys and girls able to read and write a letter in the language of instruction.

Our key findings with regards to differences in basic literacy rates between boys and girls living in the surveyed households across 15 SCW project areas are as follows (see Figure 14 and Table 28):

- On average across all 15 SCW project areas, we found an average positive gap (to the advantage of girls) in basic literacy rates of 9-11 year olds of 4 percentage points (52% of girls reported as being able to read / write a letter compared with 48% of boys). We found that girls aged 9-11 had lower rates of reported basic literacy than boys in seven project areas, and higher rates of reported basic literacy in eight project areas.
- Among the 14-15 year olds, the picture is equally mixed. In six project areas we found that basic literacy rates were lower for girls aged 14-15 than for boys, while they were higher in seven project areas.
- On average, these variations evened out so that we observed a small gap (+4%) in favour of girls within the age group of 9-11 year olds, and virtually no difference between boys and girls aged 14-15 years.

In summary, our analysis of basic literacy ratios showed a mixed pattern across all 15 SCW project areas. Our findings do not support the GEC's programmatic assumption that girls generally have lower levels of basic literacy than boys. While this was found to be the case in about half the project areas, girls had higher measured basic literacy ratios than boys in the other half. This suggests that the nature and scale of gender differences in basic literacy ratios may vary across contexts.

Figure 14: Comparison of gaps in basic literacy rates among girls and boys, by age group (EM data)

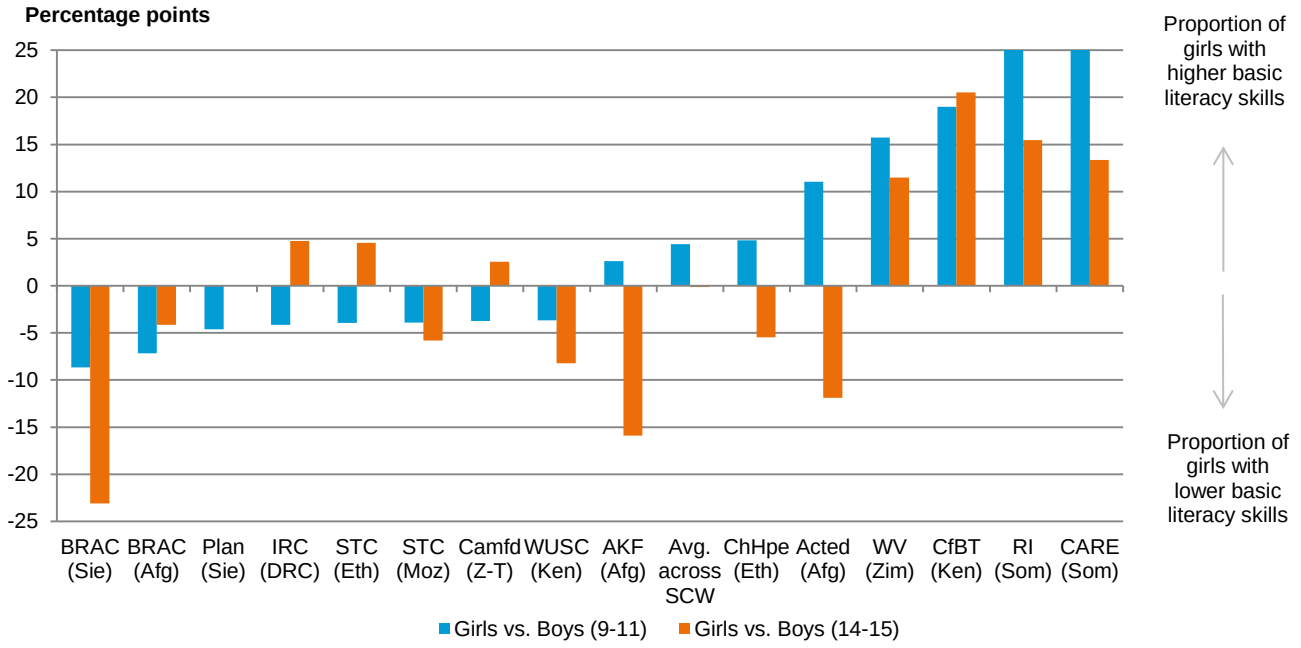


Table 28: Gaps in basic literacy rates among girls and boys, by age group (EM data)

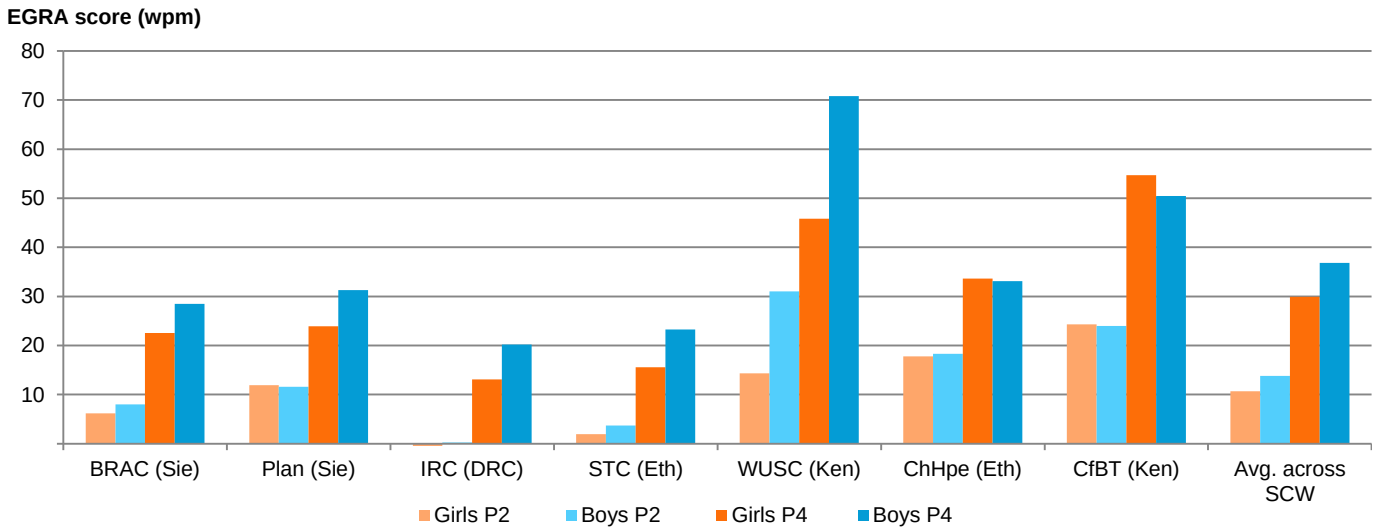
Basic literacy rates Girls vs. Boys	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Children aged 9-11																
Girls	63	60	61	30	25	27	54	50	55	75	36	57	72	58	55	52
Boys	67	69	65	37	29	23	29	54	53	47	40	38	57	47	59	48
Difference	*-5*	*-9*	*-4*	*-7*	*-4*	*5*	*25*•*	*-4*	*3*	*28*•*	*-4*	*19*•*	*16*•*	*11*•*	*-4*	*4*
Children aged 14-15																
Girls	86	64	81	64	47	67	85	75	69	92	57	81	94	73	80	74
Boys	86	88	89	68	53	73	70	71	85	79	53	60	82	85	77	75
Difference	*0*	*-23*•*	*-8*	*-4*	*-6*	*-5*	*15*•*	*5*	*-16*•*	*13*	*5*	*21*•*	*11*•*	*-12*	*3*	*0*

Notes:
*• Indicates that both p-values are strictly below 0.05.
* Indicates that only the p-value from linear regression is strictly below 0.05.
• Indicates that only the p-value from logistic regression is strictly below 0.05.

Gender differences in literacy scores as measured by the EM's school-based learning assessments

As part of the EM-led baseline research we conducted school-based learning assessments of boys and girls in four of the nine SCW countries, namely DRC, Ethiopia, Kenya and Sierra Leone. In each school, we tested the literacy and numeracy levels of children in primary grades 2 and 4. Figure 15 compares the literacy scores (as wpm) that we found among girls and boys in each of these two grades.

Figure 15: Comparison of literacy scores (words per minute) by gender and grade (EM school-based assessment)



Our key findings with regards to differences in literacy levels between boys and girls tested in schools in seven out of 15 SCW project areas are as follows (see Figure 15 and Table 29).

- In primary grade 2 (P2), the reading assessment (EGRA) showed an average reading fluency score of 11 wpm for girls and 14 wpm for boys across the seven project areas covered. In two project areas (i.e. CfBT (Kenya) and PLAN (Sierra Leone)) we did not find any difference in reading fluency scores among children at this grade level from our analysis of the data. In four project areas we found small negative gaps which suggest that girls read on average between one and three words less per minute than boys. In WUSC (Kenya) project areas, however, we found a gap of 17 wpm with girls reading only about half as many words per minute (i.e. 14 wpm) as boys (i.e. 31 wpm).
- In primary grade 4 (P4), the reading assessment showed an average reading fluency score of 30 wpm for girls and 37 wpm for boys. In two project areas (ChildHope (Ethiopia) and CfBT (Kenya)) we found small positive gaps (at the expense of boys). In four project areas, we measured negative gaps of six to eight wpm (at the expense of girls). In WUSC project areas in Kenya, we found a negative gap of 25 words per minute (at the expense of girls).

Table 29: Literacy scores (words per minute) by gender and grade (EM school-based assessment)

Literacy scores P2 and P4 Girls vs. Boys	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Children in P2																
Girls	6		12	-2	2			14		18			24			11
Boys	8		12	0	4			31		18			24			14
Difference	*-2*		*0*	*-2*	*-2*			*-17*•*		*-1*			*0*			*-3*
Children in P4																
Girls	23		24	13	16			46		34			55			30
Boys	28		31	20	23			71		33			50			37
Difference	*-6*•*		*-7*•*	*-7*•*	*-8*•*			*-25*•*		*1*			*4*			*-7*

Notes: For some project areas, cells are shaded in grey because they were not covered by the EM's school-based assessment.
*• indicates that both p-values are strictly below 0.05.
* indicates that only the p-value from linear regression is strictly below 0.05.
• indicates that only the p-value from logistic regression is strictly below 0.05.

Even though we found small differences in reading fluency scores in a number of projects (and larger differences in WUSC Kenya project areas), these would not make a substantial difference with regards to literacy levels. In P2, findings suggested that neither girls nor boys demonstrated a foundational level of reading fluency equivalent to international benchmarks suggested for grade 2 in developing countries. While gaps were slightly larger among older children they still indicated roughly similar levels of reading fluency among boys and girls that were low in comparison with international benchmarks (see Table 9).

Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards to learning (literacy)?

The analysis of EM household survey data shows that girls across the SCW achieve low literacy outcomes in terms of reading fluency scores. Girls aged 9-11 are on average three years behind oral reading fluency benchmarks for students tested in developing countries, and girls aged 14-15 are on average six years behind. This suggests that girls, rather than catching up, fall further behind as they progress through the school system, and advance by only a little in terms of their reading fluency skills. These findings highlight the importance of acquiring foundational reading skills in early grades as a prerequisite for effective learning in later grades, which supports GEC-relevant assumptions whereby girls are marginalised in terms of their learning outcomes.

Our analysis of gender differences in basic literacy levels and EGRA reading fluency scores does not show any substantive differences in these outcomes. We tended to observe small gaps in EGRA scores from the school-based assessment (at the expense of girls), but overall the scores achieved by both boys and girls suggested that they lag behind international benchmarks of oral reading fluency. We found that gaps in basic literacy (to the disadvantage of girls) existed in half of the 15 project areas. It seems that gender gaps in learning are context-specific and that further research is required to better understand possible differences in learning between boys and girls.

Box 6: Does the learning test disadvantage girls who do not speak the language of instruction at home?

The literature around the impact of learning in a language which is different from the language spoken at home is relatively well-established. UNESCO guidance has encouraged school instruction in students' mother tongue since 1953. The negative effects of learning in a language which is different from the language spoken at home on learning outcomes and retention are also fairly clear. Analysis conducted for UNESCO in 2008 which assessed data from 22 countries and 160 languages found that children who are taught in the same language spoken at home are significantly more likely to be enrolled in school and significantly less likely to drop out[13]. Studies have also found significant negative effects on learning outcomes. The 2011 PIRLS assessment found that students not taught in their mother tongue were significantly less likely to achieve minimum learning standards in reading than students who were taught in their home language[14]. Several key examples of these learning disparities stand out in the study: for instance in Benin, over 80% of Grade 5 students who are taught in their mother tongue achieve minimum scores in reading, compared with less than 60% of Grade 5 students who are not taught in the same language they speak at home.

In each project area, the EM learning assessment was conducted in the language of instruction in which the project expected to demonstrate an improvement in learning over the course of the GEC. As shown in Table 30 there are several project areas in which a majority of girls do not usually speak the language of instruction at home.

This is the case, for instance, among roughly 95% of girls surveyed in the project areas of BRAC (Sierra Leone) and Save the Children (Mozambique). In other project areas, less than 20% of the surveyed girls do not speak the language of instruction at home. Finally, there are areas where the situation is mixed.

[13] Smits et al. "Home language and education in the developing world" Commissioned study for Education for All Global Monitoring Report 2009. Nijmegen Centre for Economics, Radboud University, 2008.
[14] UNESCO Education For All Global Monitoring Report 2013/2014 "Children need to be taught in a language they understand" (http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/GMR/pdf/language_factsheet.pdf)

Table 30: Girls tested who do not speak the language of instruction at home (EM household survey)

Not speaking language of instruction at home %	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
EM data	95	18	93	77	65	94	45	84	22	3	50	38	70	26	13

This heterogeneity raises the question of whether girls who do speak the language of instruction at home have an advantage over their peers who do not, when taking the EGRA and EGMA test. Figure 16 shows the average literacy score (i.e. words per minute) achieved by both groups of girls across all ages in each of the SCW projects. While girls speaking the language of instruction at home fared better in five project areas, they were actually outpaced by their peers who do *not* speak the language of instruction in as many as six project areas. Based on this evidence we have no reason to assume that girls not speaking the language of instruction at home are at a systematic disadvantage when taking the EGRA/EGMA test.

Figure 16: Comparison of average literacy scores (words per minute) of girls who do speak the language of instruction at home compared to girls who do *not* (EM household survey data)

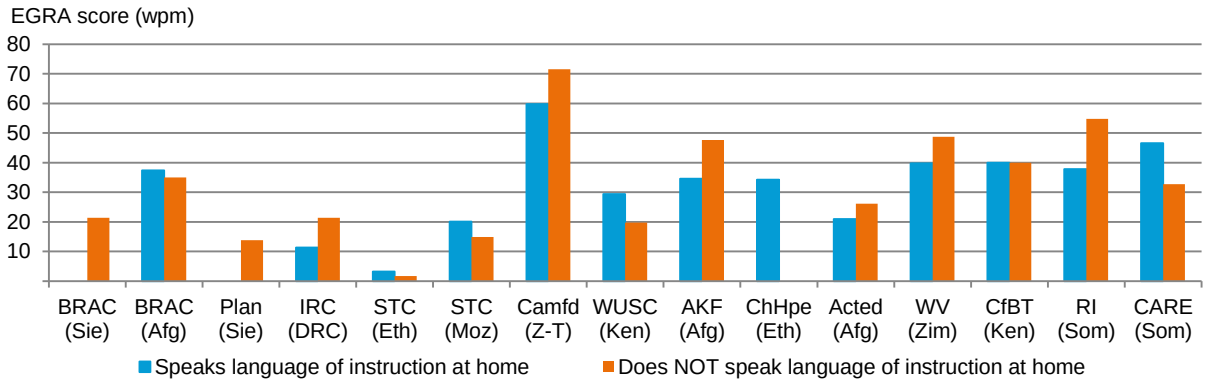


Table 31: Difference in EGRA scores measured among girls who do speak the language of instruction at home compared to girls who do not speak the language of instruction at home

EGRA scores (wpm)	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 ACTD Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
Speaking		37		11	3	20	60	29	35	34	21	40	40	38	47
Not speaking	21	35	14	21	2	15	72	20	48		26	49	40	55	33
Difference		*-2*		*10**	*-1*	*-5*	*12*•*	*-10•*	*13**		*5*	*9*	*0*	*17*•*	*-14*•*

Notes:
*• Indicates that both p-values are strictly below 0.05.
* Indicates that only the p-value from linear regression is strictly below 0.05.
• Indicates that only the p-value from Wilcoxon rank-test is strictly below 0.05.

Numeracy scores

As in the case of the literacy assessments, projects used different tools to assess the mathematical abilities of girls in their target areas and reported results in different formats. It is important to note that the EM-led research generated EGMA scores that are not directly comparable with those presented by the projects (for a more detailed explanation, see Section 2.3.2). In addition, there are currently no international norms or benchmarks applicable to EGMA scores, due to the fact that aggregate EGMA scores are rarely calculated and reported. As a consequence, we can only compare the EGMA scores measured in the EM data between project areas and age groups but we cannot relate these back to a qualitative indication of mathematical ability that would be similar to the words per minute benchmarks. Therefore, we cannot readily compare EGMA scores between project and EM data sources.

As shown in Figure 17 and Table 32, our key findings on the numeracy scores of **9-11 year old** girls who were enrolled in school across the SCW are as follows:

- **Outcome spreadsheets:** Figures on numeracy levels of 9-11 year olds were available from ten projects' outcome spreadsheets. Across the five projects reporting EGMA scores as total/100, the lowest EGMA score was reported by BRAC (Sierra Leone) with a score of 31, while the highest was reported by STC (Mozambique) with a score of 65.

  Two projects reported Uwezo/ASER as levels. ACTED (Afghanistan) reported an ASER level of 2.4 while CfBT (Kenya) reported an Uwezo level of 5.5 (which indicates an ability to solve at least two numerical written subtraction sums of Primary 2 difficulty).

- **EM data:** Based on the analysis of EM data, we were able to generate comparable EGMA scores for all 15 SCW project areas. We found an average numeracy score of 62 among girls aged 14-15 across the SCW project areas. [15] We measured the lowest EGMA scores in STC (Ethiopia) project areas (i.e. 27), and the highest EGMA scores in World Vision (Zimbabwe) and ChildHope (Ethiopia) project areas (i.e. 90 and 91, respectively).

Figure 17: Comparison of numeracy scores (EGMA score scaled from 0-100) across project areas, EM data only, 9-11 year olds (enrolled in school)

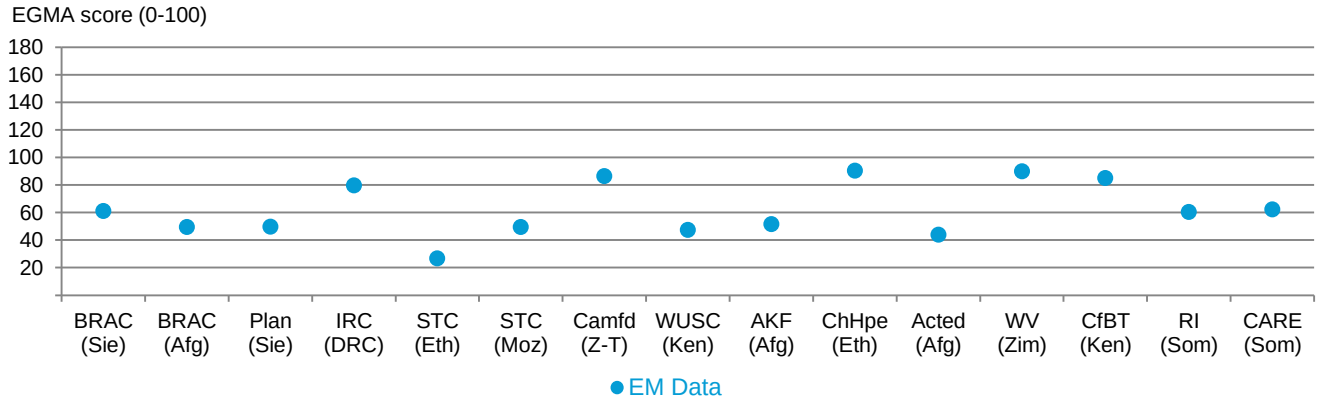


Table 32: Numeracy scores by project area and data source, 9-11 year olds (enrolled in school)

Numeracy scores In-school girls 9-11	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
Test used by project	EGMA	EGMA	ASER	EGMA	EGMA	EGMA	National	EGMA	EGMA	EGMA	ASER	EGMA[1]	UWEZO[2]	UWEZO	UWEZO[1]
Unit	total/100	total/100	total/100*	unspec	total/100	total/100	total/100	unspec	unspec	total/100	levels	total/100	levels	total/100	levels
Outcome spreadsheet	31		8.9	48	39	65				59	2.4	62	5.5	79	
Test used by EM	EGMA - augmented and harmonised numeracy score (scaled from 0 to 100)														
EM Data	61	49	50	80	27	50	86	47	52	91	44	90	85	60	62

*Unit in BL Report and Outcome spreadsheet differ (wpm/ total/100).
Notes: 1. Reported by age. 2. ASAL only.

As shown in Figure 18 and Table 33, our key findings on the numeracy levels of **14-15 year old** girls enrolled in school across the SCW are as follows:

- **Outcome spreadsheets:** Figures on numeracy levels among 14-15 year olds were available from four projects' outcome spreadsheets. Among projects reporting EGMA scores as total/100, the highest score

[15] These scores are out of a notional 0-100 in which all items are answered correctly in exactly the allotted time. Higher scores are possible when the scores are obtained in less than the allotted time.

was reported by ChildHope in Ethiopia (i.e. 78) while the lowest score was reported by World Vision in Zimbabwe (i.e. 75). One project, PLAN (Sierra Leone), reported an average ASER level of 14 for 14-15 year olds in their Outcome spreadsheet.

- **EM data:** Based on the analysis of EM data, we were able to generate comparable EGMA scores of 14-15 year olds for all 15 SCW project areas. We found an average EGMA score of 99 among girls aged 14-15 across the 15 SCW project areas. We measured the lowest EGMA scores in STC (Ethiopia) project areas (i.e. 40) and the highest in ChildHope (Ethiopia) project areas (i.e. 157).

Figure 18: Comparison of numeracy scores (EGMA score scaled from 0-100) across project areas, EM data only, 14-15 year olds (enrolled in school)

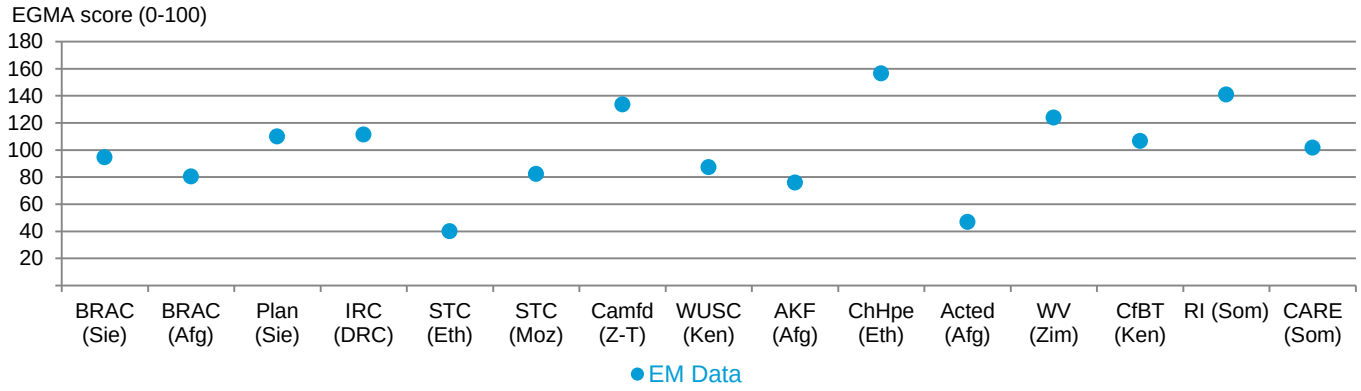


Table 33: Numeracy scores by project area and data source, 14-15 year olds (enrolled in school)

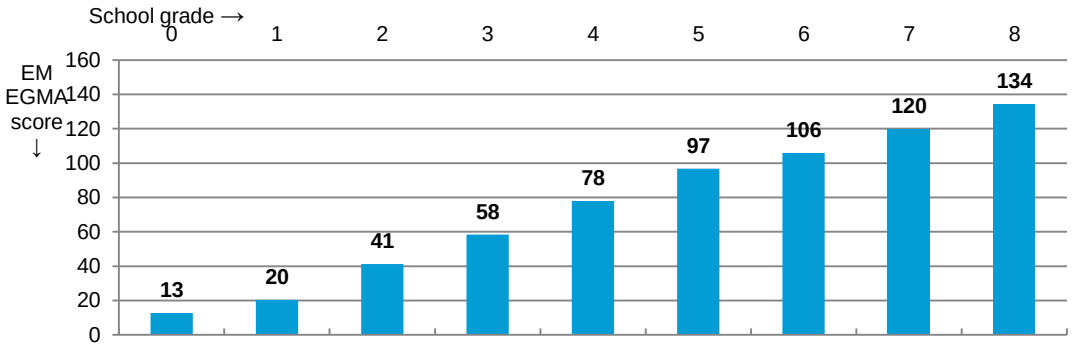
Numeracy scores In-school girls 14-15	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camfd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHpe Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
Test used by project	EGMA	EGMA	ASER	EGMA	EGMA	EGMA	National	EGMA	EGMA	EGMA	ASER	EGMA[1]	UWEZO[2]	UWEZO	UWEZO[1]
Unit	total/100	total/100	total/100*	unspec	total/100	total/100	total/100*	unspec	unspec	total/100	levels	total/100	levels	total/100	levels
Outcome spreadsheet			14				11			78		75			
Test used by EM	EGMA - augmented and harmonised numeracy score (scaled from 0 to 100)														
EM Data	95	80	110	111	40	82	134	87	76	157	47	124	107	141	102

*Unit in BL Report and Outcome spreadsheet differ (wpm/ total/100).
Notes: 1. Reported by age. 2. ASAL only.

In some project areas (e.g. STC, Ethiopia) girls aged 14-15 years achieved less than half of the possible scores awarded for the completion of the set exercises, meaning that their average performance in mathematics was below a basic foundational level (i.e. the level taught in the first grades of primary school). In contrast, there is other project areas where girls aged 9-11 attained an average score that was around 100, meaning that they completed the task correctly in the time deemed suitable for assessing early grade skills. In some locations, girls aged 14-15 obtained average scores above 100 meaning that they completed all mandatory exercises with time remaining (scores are adjusted above 100 when time is remaining). Such scores indicate that these girls had clearly obtained foundational numeracy skills.

As shown in Figure 19 our analysis of data from the EM EGMA assessment suggests the existence of a continuous learning progression from grade to grade. Nevertheless, it appears that girls reach a plateau in terms of numeracy skills in secondary school, with only a marginal increase in learning between S1 and S2. A similar plateau effect was found between S2 and S3 in terms of literacy skills. This may be an indication of ceiling effects when using EGRA and EGMA tests, which are designed to capture foundational skills, to assess the advanced abilities of secondary school girls.

Figure 19: Average trajectory of numeracy skills across SCW, among enrolled girls, by grade



Gender differences in numeracy

Our key findings with regards to differences in numeracy levels between boys and girls tested in schools in seven out of 15 SCW project areas are as follows (see Table 34).

- In P2, the maths assessment showed an average numeracy score of 54 for girls and 63 for boys across the seven project areas covered. Girls scored lower than boys in each project area except for PLAN (Sierra Leone) project areas where we did not measure any gender difference in numeracy scores in P2. The average difference in numeracy scores was nine EGMA points.
- In P4, the maths assessment showed an average numeracy score of 99 for girls and 114 for boys. Girls scored lower than boys across all seven project areas that were covered by the school-based assessment and the average difference in numeracy scores was 14 points.

Children participating in the school-based assessment generally achieved higher aggregate numeracy scores than reading fluency scores which is partly due to the different measurement scales used to analyse performance across sub-tasks in both assessments. As a consequence, gender differences in numeracy scores appear larger in absolute terms than differences in reading fluency scores even though they are actually smaller in relation to the total scores achieved by boys and girls.

Nevertheless, boys scored consistently higher than girls in both grades and across all project areas (with the exception of children in P2 grades in PLAN Sierra Leone project areas). At the same time, these differences do not appear to be substantial in terms of their implications for the children's foundational maths skills. In P2, boys and girls achieved more than half but less than two thirds of the available points, which indicates that both groups lacked foundational numeracy skills. In P4, girls reached almost 100 points (on average), suggesting that they may master foundational numeracy skills. Boys were, on average, able to complete the test with time remaining, or answered additional questions therefore reaching an average score above 100.

Table 34: Numeracy scores (EGMA) by gender and grade (EM school-based assessment)

Numeracy scores P2 and P4 Girls vs. Boys	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
Children in P2																
Girls	49		54	45	29			73		65			60			54
Boys	51		53	52	43			92		83			63			63
Difference	*-2*		*1*	*-7**	*-14*•*			*-19*•*		*-18*•*			*-3*			*-9*
Children in P4																
Girls	80		83	94	85			115		130			110			99
Boys	95		92	105	112			141		144			107			114
Difference	*-16*•*		-9*•	-12*•	-27*•			-26*•		-14*•			-2			-14

Notes: For some project areas, cells are shaded in grey because they were not covered by the EM's school-based assessment.
*• Indicates that both p-values are strictly below 0.05.
* Indicates that only the p-value from linear regression is strictly below 0.05.
• Indicates that only the p-value from logistic regression is strictly below 0.05.

Summary: Does the evidence suggest that 9-11 and 14-15 year old girls are marginalised with regards to learning (numeracy)?

The analysis of data from the EM EGMA assessment showed that average levels of mathematical skills varied markedly across SCW project areas.

In some project areas (e.g. STC Ethiopia) girls of secondary school age achieved less than half of the possible scores awarded for the completion of the set exercises, meaning that average performance was below basic foundational level (i.e. the level taught in the first grades of primary school). Given their age, this implies that a level of persistent educational marginalisation affects these girls throughout their time in the school system.

For high achieving groups in other project areas, their progress relative to international numeracy benchmarks can only be inferred as EGMA is not designed to assess more advanced skills and key foundational skills (by definition) do not progress in a linear way with age. However, it is clear that the majority of these girls are operating comfortably with key maths skills. Although we cannot say exactly how close they are to normed mathematical skills we can say that they are not as grossly marginalised as their peers in other project locations with regards to numeracy. In addition, this level of comfort and fluency with numeracy tasks speaks of familiarity and experience with numbers which implies meaningful learning support in mathematics on a regular basis over an extended period of time.

With regards to gender differences in numeracy levels, our analysis does not show any substantive gender gaps. Children in primary grade 2 appear to lack some foundational numeracy skills regardless of their gender, but both boys and girls appear to have achieved these skills by the time they enter primary grade 4.

Box 7: Learning outcomes among out-of-school girls

Nine out of 15 SCW projects target out-of school girls (see Table 45 in Section 5.1.2) and this is a group that we would expect to be particularly marginalised with regards to their education outcomes.

Table 35: Percentage of girls who are currently out of school, and those who have never been enrolled

Out-of-school status All ages	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
	% of all girls sampled in each project area															
Out-of-school	17	30	18	16	40	6	12	31	31	18	23	7	7	47	50	23
Never enrolled	14	26	14	9	32	3	3	28	27	14	22	2	4	39	45	18

As shown in Table 35, 23% of girls surveyed by the EM across the SCW were not enrolled in school at the time of the survey. This percentage includes girls who were previously enrolled but have dropped out. Eighteen per cent of all surveyed girls have never been enrolled according to their primary caregiver.

Based on analysis of EM data from the household-based EGRA assessments, Table 36 shows the average literacy (i.e. reading fluency) scores achieved by girls who were enrolled in school; girls who were out of school at the time of the household interview; and the subgroup of out-of-school girls who have never been enrolled, according to the primary caregiver surveyed in the household.

Table 36: Literacy scores (in words per minute) by school enrolment status, EM data only

Literacy scores (in wpm) All ages	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camd Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 Acted Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som	Avg.
	EGRA - augmented and harmonised oral reading score (in wpm)															
In-school	23	37	17	19	2	15	65	21	37	35	24	43	39	42	44	31
Out-of-school	-4	3	6	-13	-1	1	35	-3	-1	-3	-10	14	-11	3	2	1
Never enrolled	-8	-4	-2	-21	-1	-9	-42	-4	-4	-9	-10	-15	-25	-3	-3	-11

Table 36 shows that out-of-school girls read only 1 wpm on average across age groups and SCW project areas, compared with 31 wpm among the in-school girls. Among girls who have never been enrolled, we measured a negative average reading score of -11wpm.

Negative wpm scores are possible because our EGRA score is scaled to words per minute, but contains information from all EGRA subtasks. This enables us to measure differences in ability even among very low-performing girls who would otherwise obtain a common score of zero (i.e. we would observe a "floor" effect).

The literacy scores shown in Table 36 suggest that out-of-school girls are, on average, illiterate, but that those girls who have never been enrolled displayed even lower literacy ability when considering information from all subtasks. There is only one project area (Camfed, Tanzania/Zimbabwe) where out-of-school girls demonstrated an average literacy level above benchmarks suggested for students in grade 1.

Nevertheless, it is important to consider these scores from the perspective of the age distribution of each category and schooling to date. As shown in Table 37 the proportion of girls who are below the age of eight is considerably higher among out-of-school girls (53%) and the subset of girls who have never been enrolled (71%) than among in-school girls (30%) in our EM sample.

Table 37: Distribution of girls across age groups, by school enrolment status, EM data only

Distribution (%)	Enrolment status		
Age group	In school	Out-of-school	Never enrolled
< 6	5	20	32
6 to 8	25	33	39
9 to 11	29	11	9
12 to 13	19	12	7
14 to 15	17	15	5
16 to 19	1	2	0

It is likely that these younger groups contain many girls who are not *yet* enrolled because they have not yet reached their country's official school starting age (see Table 8). This would partly explain the low average literacy scores achieved by out-of-school girls.

3.1.3 Does the evidence confirm that target girls are educationally marginalised?

Based on the review and reanalysis of project data, and the analysis of EM data we have assessed the baseline levels of GEC outcomes and compared our findings with some of the programmatic assumptions underpinning the GEC. The basic assumption was that girls have poor learning outcomes that leave substantial space for measurable improvement. The following were our key findings with regards to this assumption:

- Across the SCW project areas we found that average **enrolment rates** of 9-11 and 14-15 year olds generally did leave room for improvement, especially among girls of secondary school age. However, in some project areas the EM data indicates that primary enrolment was already close to 100%. This would suggest that some projects may not be able to demonstrate a measurable improvement in enrolment over the GEC's lifecycle and that girls may be less marginalised in terms of enrolment than might have been expected based on the GEC's programme assumptions.
- In terms of **attendance**, we found virtually no differences between girls aged 9-11 and girls aged 14-15. Even though enrolment tended to be lower among older girls, they appeared to attend school just as much

as their younger peers once they were enrolled. Based on the EM data we found attendance rates between 83% and 93% at the project level. This suggests that girls still missed about three school days in a given month (assuming that the school operates five days a week) which would have negative effects on their learning and would indicate and area for improvement.

- In terms of **retention**, we found a wider spread in the year-on-year retention rates of 14-15 year olds, compared with 9-11 year olds. Moreover, all streams of evidence indicated that average year-on-year retention was slightly lower among 14-15 year olds than among 9-11 year olds, which is in line with GEC-relevant assumptions. However, the EM data showed retention rates of 100% in a number of projects which suggests that the projects would not be able to demonstrate a measurable improvement over the course of the GEC.
- With regards to **gender differences in enrolment**, the analysis of EM data did not suggest that girls have systematically lower enrolment rates than boys. Our evidence did not support the assumption that existing gaps generally widen when children reach secondary school age. We found that gaps exist in both directions and change in both directions.
- With regards to **literacy (i.e. reading fluency)**, the analysis of EM data showed low average literacy levels among girls of both age groups. The average reading fluency scores of 9-11 and 14-15 year olds suggested that the girls lagged several years behind international norms of reading fluency. These performance gaps tend to widen as the girls grow older, suggesting that their literacy levels increase only a little over the course of their schooling. These findings are in line with the GEC programme assumption that girls targeted by the GEC are marginalised in terms of their learning outcomes and progress.
- With regards to **numeracy**, the analysis of EM data showed that average levels of mathematical skills varied markedly across SCW project areas. In some project areas, girls of both age groups were unable to demonstrate basic foundational numeracy skills (i.e. at the level taught in the first grades of primary school). This suggests that girls aged 14-15 in particular experience a persistent level of educational marginalisation throughout their time in the school system. In contrast, in other project areas, girls aged 9-11 attained an average score that was around 100, meaning they completed the task correctly in the given time. In some locations, girls aged 14-15 obtained average scores above 100 meaning that they completed all mandatory exercises with time remaining (scores are adjusted above 100 when time is remaining). Such scores indicate that these girls had clearly obtained foundational numeracy skills. Although we cannot say exactly how close they are to normed mathematical skills we can say that they are not as grossly educationally marginalised in terms of numeracy as their peers in other project locations.
- In terms of **differences in learning** between boys and girls, we generally observed only small gaps (at the expense of girls) in reading fluency based on EGRA scores from the school-based assessment. The scores suggested that both boys and girls were lagging behind international benchmarks of oral reading fluency. Based on data from the EM household surveys we found that gaps in basic literacy (to the disadvantage of girls) existed in half of the project areas, but that girls had higher rates of basic literacy in the other half. It seems that gender gaps in learning are context-specific and that further research is required to better understand possible differences in learning between boys and girls.

4 Barriers to Girls' Education at Baseline

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

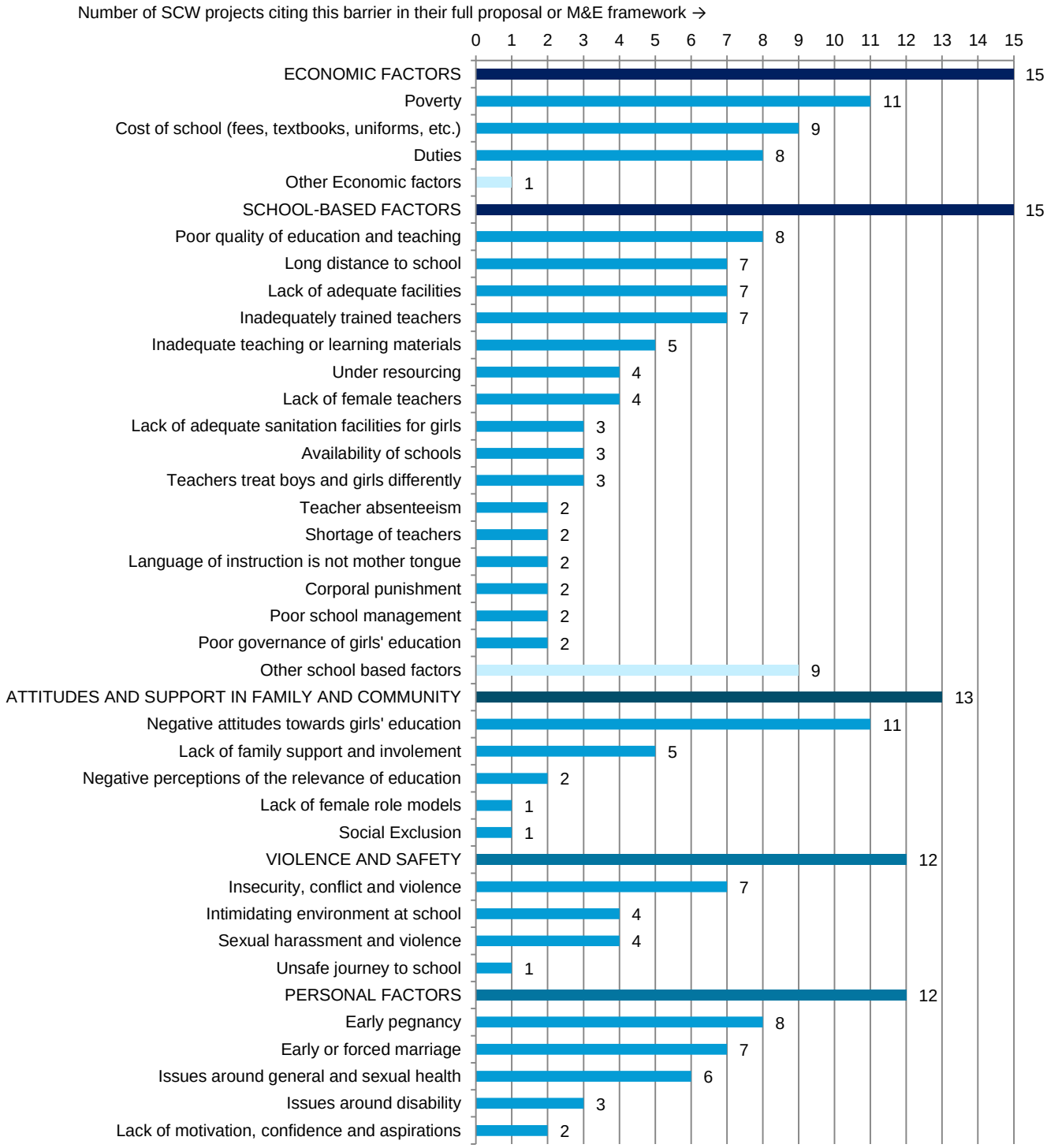
In their initial project proposals and M&E frameworks, SCW projects identified a range of potential barriers to girls' education which they expected to exist in their project areas (for details see the individual project profiles, Annexes D1-D15). We have grouped the various specific barriers mentioned by projects into five thematic categories: economic factors; school based factors; attitudinal factors; violence-related factors; and personal factors.

As shown in Figure 20 (below), **all 15 SCW projects assumed that economic and school-related factors were affecting girls' education in their target communities.** Thirteen projects assumed barriers relating to family or community attitudes towards girls' education and twelve projects assumed barriers relating to violence or personal factors. Within each category, the most commonly cited sub-barriers were the following:

- **Economic factors:** General poverty (11 projects); parents' inability to afford the cost of schooling (9 projects), and girls' domestic chores and duties (8 projects).
- **School related factors:** Poor quality of education and teaching (8 projects); long distances to school (7 projects); inadequate school or classroom facilities (7 projects); and inadequately trained teachers (7 projects).
- **Attitudes in the family and in the community:** Negative attitudes towards girls' education (11 projects); lack of family support or involvement in girls' education (5 projects); and negative perceptions of the relevance of education (2 projects).
- **Violence and Safety:** Insecurity, conflict and violence (7 projects); harassment at school (4 projects) and sexual violence (4 projects).
- **Personal factors:** Early pregnancy (8 projects); early or forced marriage (7 projects); as well as issues around general and sexual health (6 projects).

In summary, SCW projects suggested a wide variety of potential barriers to girls' education. In the following section, we present findings from our analysis of quantitative and qualitative EM data that aimed to explore these barriers (as far as data was available) and to assess the programme and project assumptions about their prevalence and influence on girls' education.

Figure 20: The number of projects citing different barriers by theme



Note: Other economic factors include: tradition of migrating to work as house girls (1 project); and families cannot afford lighting facilities (1 project). Other school-based factors (mentioned by one project each) include: poor access to nearby schools; negative boy-girl relationships; lack of school fences; poor school infrastructure; girls lack knowledge on their sexual and reproductive health; curriculum is unfitting to the communities' needs; inadequate training and mentoring of school councils; lack of extra-curricular activities; lack of psychosocial support for girls; disrespectful behaviour by male teachers; lack of learning time.

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

This section focuses on EM findings about barriers to girls' education across the SCW. The analysis is based on the following strands of qualitative and quantitative data that was collected by the EM in the intervention and control areas of all 15 SCW projects at baseline:

- the household survey (HHS) that was conducted with primary caregivers and selected girls in roughly 6400 households (intervention and control) across all 15 SCW project areas;
- the school-based assessment (SBA) that included classroom and facilities observations, teacher surveys and learning assessments with boys and girls in school, and was conducted at 28 intervention and control schools across seven project areas in DRC (IRC), Ethiopia (ChildHope and Save the Children), Kenya (CfBT and WUSC), and Sierra Leone (BRAC and PLAN). The analysis presented here is based on observations and learning assessments from a sub-set of 89 schools (for reasons that are discussed in detail in the methodological Annex B); and
- 800 qualitative in-depth-interviews (IDIs) that were conducted with households, community leaders and school officials in all 15 SCW project areas (intervention and control locations).

Project-specific findings based on project data are presented in the individual project profiles (see Annexes D1-D15) and summarised in Table 48 in Section 5.2.

We start our discussion of barriers in Section 4.2.1 by presenting findings from a multivariate analysis of potential barriers based on data from the EM household survey and EM school-based assessment. In this analysis we focus on those potential barriers that have a significant association with girls' education outcomes, having controlled for other potential barriers that we have data for. A detailed description of the variables and indices we used for analysis is shown in Table 48 in Annex C. In Section 4.2.2 we present a more detailed discussion of each potential barrier based on the analysis of qualitative data from the EM's In-Depth-Interviews (IDIs) and looking at significant associations between potential barriers and outcomes that were not discussed in Section 4.2.1 because they were not significant when controlling for other factors. We present a summary of our findings that relate back to the projects' assumptions about barriers in Section 4.2.3.

4.2.1 Analysis of the most significant barriers to girls' education

In this section we discuss our findings about barriers to girls' education based on the analysis of data from the EM household survey and the EM school-based assessment at the fund-level. Project-level tables are reported at the end of Annex C, which also includes a descriptive list of the variables and indices that we used to analyse the EM household survey data. We examine how barriers relate to the key outcomes of enrolment, attention and learning in terms of reading fluency. We present our analytical results in the form of regression tables that list all potential barriers that were introduced into a multivariate regression model, and highlight those barriers that emerged as significant when controlling for all other potential barriers. We did not generally include any interaction effects between different barrier variables in these regression models, except for gender interaction terms that we included in the analysis of data from the EM school-based-assessment.

The benefits and limitations of using multivariate regression analysis to identify educational barriers

Outcomes around "being-in-school" and learning are potentially influenced by a wide range of economic, social, structural and personal factors that interact with each other on different levels and scales. This implies that a single factor (or barrier) can often only explain a small part of the complex set of issues influencing these outcomes.

The analysis of relationships between only one barrier and the outcome of interest (i.e. of '**bivariate' relationships**) helps us explore whether the barrier and outcome are somehow related. However, **we cannot tell whether the barrier really *causes* changes in the outcome, or if any other factor(s) may be confounding this relationship**. There is a risk of jumping to conclusions without examining other potential explanations and without accounting for the complexity of causal relationships which generally involve several barriers interacting with each other.

One example of the limitation of bivariate regression in education studies is that of the influence of class size on students' learning outcomes. In our analysis we find that girls who study in more crowded classrooms tend to achieve lower reading fluency scores than their peers in less crowded classrooms. While it is possible that students receive less individual attention in crowded classrooms, we cannot simply assume that crowded classrooms *cause* students to have poorer results. To identify the proper causal link between class size and learning outcomes we

would need to include a wide range of other factors in the regression model such as: the average socio-economic status of students in the classroom; their past results; their motivation; but also some higher-level variables such as teachers' qualifications; the schools' performance and available resources. This is because some of these factors may actually drive the bivariate relationship that we observe in the sense that classrooms may be more crowded in areas where a schools face resource constrains and can afford only a few teachers, which could in itself impact on girls' learning outcomes. Many of these other factors may be unobservable or impossible to measure objectively, which implies that we will never get a perfect idea of the causality link between class size and student's results.[16] **A linear regression coefficient should therefore *never* be interpreted in terms of direct causality**.

However, by including a wide range of variables in a single regression model we can yield a more exhaustive picture of the potential barriers influencing the outcome of interest, and a more accurate estimate of the causal linkages between barriers and girls' education outcomes.

For each outcome of interest (i.e. enrolment, attendance and learning in terms of reading fluency), we have built a multivariate regression model including all of the 'eligible' barriers along with country dummies[17] and the girls' age as control variables. We then successively removed those barriers that did not have any statistically significant relationship with the outcome. The resulting multivariate model contains only those variables that retain a significant relationship with the outcome.[18] A wide majority of potential barriers did not make their way into the final multivariate model. This does not mean that they do not play an active role in explaining the outcome of interest because their influence may be "captured" by other variables and their statistical significance artificially reduced. In the case of educational barriers, we find that there is a high level of correlation between all of the potential barriers so that some bivariate relationships are likely to become invisible in the multivariate model.

Besides, a variable may have made its way into the final multivariate model but eventually account for a very small proportion of the observed variation of the outcome of interest. This is the case when the multivariate model fails to explain a significant part of the outcome variation – as reported at the bottom of our tables. This may also happen when the control variables used in the model (i.e. the girl's age and country dummies) have a large explanatory power, implying that most of the observed outcome is explained by age and country specific factors.

From a policy-maker's perspective, variables of the multivariate model would therefore be interpreted as the most salient barriers influencing the education outcome of interest at the level of the SCW overall. It is important to interpret the findings presented in Section 4.2.1 in conjunction with the qualitative evidence on these barriers presented in Section 4.2.2

We would ideally explore the models presented below not only at the SCW level, but also at the country level using project data as well as EM data**. However, this is not advisable until more project data is fully processed and prepared for analysis, which is currently pending due to inconsistencies in the data structure, and labelling. Once this data became available, **it would be possible to explore interactions between different barrier variables**, which should enable us to explain more variance in all outcomes, although for social science modelling of complex behaviours there are always limits to what can be predicted, as explained above. In general, quantitative modelling will not detect all relevant factors influencing girls' education or their interactions, but will help identify broad candidate barriers. In turn, qualitative analysis can identify more diverse patterns and explore the ways in which barriers are perceived to interact and depend on each other, but may not reveal associations that are not clear to the respondents themselves. **In summary, both the quantitative and qualitative analysis form partial and complementary approaches in the attempt to better understand barriers to girls' education.

Barriers to enrolment

Table 38 shows the results from our analysis of barriers to girls' enrolment based on data from the EM household survey. The final multivariate model includes twelve barrier variables that are able to explain 21% of the variation in

[16] In more technical terms, the R^2 of the regression (percentage of the outcome variance explained) will never reach 100% in practice.
[17] Including country dummies implies that our model is accounting for country-specific effects and should therefore be interpreted at the general fund-level.
[18] This means that that the e p-value of the associated beta coefficient is strictly below 0.1

girls' enrolment observed across the SCW, when including the girl's age and country dummies as controls. About half (9.7%) of the variation in enrolment is explained by the ten potential barriers alone.

Table 38: Results of the EM analysis of barriers to girls' enrolment

Barriers to enrolment	Unit / Range	Prevalence	Multivariate model[19] including all significant barriers[20]		Bivariate associations with outcome for all potential barriers	
					No country controls	With country controls
Description of Variable		In unit of variable	Beta coeff. & significance	Variance explained (in %points)	Beta coeff. & significance	Beta coeff. & significance
Economic factors						
Proportion of time spent on duties	**[0,1]**	**12%**	**-34%*** **	**2%**	**-53%*** **	**-38%*** **
Employment situation in the household	**[-1,1]**	**-0.09**	**-3%*** **	**0%**	**-4%*** **	**-4%*** **
Housing conditions	**[0,2]**	**1.22**	**2%***	**0%**	**-3%** **	**-2%** **
Costs associated with schooling	Yes/No	51%			10%***	5%***
No source of lighting or firelight only at home	Yes/No	13%			-6%*	-8%***
Household income after housing costs (reversed and standardised within country)	SD	0.32			-3%*	0%
Material deprivation	[0,5]	3.09			-1%	-3%***
Subjective poverty	[-3,3]	0.29			0%	-1%
School based factors						
Language of instruction different from language spoken at home	**Yes/No**	**55%**	**-7%*** **	**0%**	**4%***	**-9%*** **
Journeys to schools take more than 30 mins	Yes/No	26%	-3%†	0%	0%	-5%**
Toilets not satisfactory at attended schools	Yes/No	33%	2%†	0%	3% †	1%
Girl doesn't like school	[0,4]	0.55			1%	-1%
Schools attended are not girls only (mixed)	Yes/No	85%			1%	-6%
Teaching not satisfactory at attended schools	Yes/No	26%			2%	0%
Hours or schooling per day (not reversed)	[0,10]	5.77			3%***	0%
Attitudes and support in family and community						
Negative attitudes to girls' education	**[0,3]**	**0.36**	**-9%*** **	**2%**	**-13%*** **	**-13%*** **
Families not engaged with education	**Yes/No**	**82%**	**-22%*** **	**1%**	**-14%** **	**-24%*** **
Girls' education unusual in community	**Yes/No**	**15%**	**-8%*** **	**1%**	**-17%*** **	**-16%*** **
Social exclusion index	**[0,7]**	**1.16**	**-3%*** **	**1%**	**-4%*** **	**-5%*** **
Caregiver low aspirations for girl's educ.	**[0,2]**	**0.27**	**-5%*** **	**0%**	**-14%*** **	**-9%*** **
Low level of female autonomy in household	SD	0			-1%	0%
Violence and safety						
Local journeys dangerous	Yes/No	24%			3%	-1%
Reports of violence at girl's school	[0,4]	0.06			2%	1%
Personal factors						
Low level of family education	**[0,1]**	**0.64**	**-7%*** **	**0%**	**-20%*** **	**-15%*** **
Girls has difficulties relating to disability	Yes/No	4%	-6%†	0%	-3%	-10%***
Girl doesn't try to do well at school	[0,3]	0.03			-13%*	-10%*
Parents absent or deceased	[0,4]	0.48			1%†	-1%*
Young mothers in household	Yes/No	14%			1%	-1%
Additional control variables for the multivariate model	Afghanistan, DRC, Ethiopia, Kenya, Mozambique, Sierra Leone, Somalia, Tanzania and Zimbabwe country dummies. Girl age in years.					
Total variance explained by the multivariate model	21%					
Sample for the multivariate model	N = 5272					
Total variance explained by significant barriers	9.7%					

Note: Asterisks are used to indicate levels of statistical significance: *** indicates a p-value below 0.001; ** indicates a p-value below 0.01; and * indicates a p-value below 0.05. † indicates a marginal value of significance of $p < 0.1$. Barriers with too low prevalence were excluded from the table.

[19] controlling for other drivers
[20] after non-significant drivers ($p > 0.1$) removed sequentially

Based on the analysis presented in Table 38, the following barriers showed **statistically significant associations** with enrolment and are more likely candidates to be obstacles to girls' enrolment across the GEC as a whole.

#1 Economic barriers to enrolment

- **Proportion of time spent on duties** – The more time girls are reported to spend on household duties and livelihood activities the lower the chances that they are enrolled in school. This effect is relatively large.
- **Employment situation in the household** – Whether the primary caregiver and the head of household are employed in skilled jobs, unskilled jobs, or no jobs at all influences whether girls are enrolled in school or not.[21]
- **Housing conditions** – Poor quality of floor and roofing materials in the home seem to have a negative association with girls' enrolment.

#2 School-based barriers to enrolment

- **Language of instruction** – On average across the fund level, we measured a negative association between girls not speaking the language of instruction at home and their chances to be enrolled in school.

#3 Attitudes and support in the family and in the community as barriers to enrolment

- **Negative attitudes towards girls' education** – The more negative the caregiver's attitude towards girls' education, the lower are the chances for girls in these households to be enrolled.
- **Families are not engaged with education** – In villages where caregivers tended to state that no family members were involved in any school committees, girls were significantly less likely to be enrolled than in villages where families do get involved in their children's education.
- **Girls' education is unusual in the community** – Where caregivers stated that it was unusual for people in the community to send their children to school, girls were significantly less likely to be enrolled than in families that did not report girls' education to be unusual. An association should be expected with this variable by definition, but it is included here to control for family's perceptions about norms of community behaviour.
- **Social exclusion** – The indices of social exclusion developed from the survey data involved items such as recent moves of the family and a lack of supportive people or friends in the local community. We generally measured low scores on these social exclusion scales across the SCW but where households reported isolation and hostility of community members, girls tended to be less likely to be enrolled in school.
- **Caregiver has low aspirations** – The lower the level of education that the caregivers initially wanted their girls to achieve when they were young the less likely are these girls to be enrolled at present.

#4 Personal barriers to enrolment

- **Low levels of education in the family** – The lower the level of education in the family (considering the schooling of both the caregiver and the head of household) the lower the chances for girls to be enrolled.

While all of these associations are statistically significant, they contribute only relatively little to explaining the variation in enrolment observed across the SCW. The largest share of variance is explained by the proportion of time spent on duties, and negative attitudes towards girls' education, both of which explain 2 percentage points of the observed variation in attendance (compared with 21% explained by the model as a whole).

Summary: What are the barriers to girls' enrolment?

The evidence supports the view that based on the information available from households a combination of economic, school-based, attitudinal and personal factors function as the main potential barriers to enrolment. The barriers that specifically seem most important for explaining variance in enrolment are negative attitudes to girls'

[21] As explained above, a variable may have made its way into the final multivariate model but eventually account for a very small proportion of the observed variation of the outcome of interest. This is the case when the multivariate model fails to explain a significant part of the outcome variation – as reported at the bottom of our tables. This may also happen when the control variables used in the model (i.e. the girl's age and country dummies) have a large explanatory power, implying that most of the observed outcome is explained by age and country specific factors.

education and girls' duties in the home, followed by low levels of family education and community support and social exclusion. There will be more opportunity to determine causal factors when longitudinal data is available at midline and where pathways and interactions between factors can be assessed more clearly.

Barriers to attendance

We next consider barriers to the attendance of girls based on approximate attendance levels reported by the caregivers in the household survey (see Section 2.3.1 for a more detailed explanation of this attendance measure). Table 39 shows the results from this analysis. The final multivariate regression model can explain only 3% of the variation in school attendance that we observed across the SCW. It shows five potential barriers that remain significant predictors of attendance when controlling for other factors.

Table 39: Results of the EM analysis of barriers to girls' attendance

Barriers to attendance	Unit / Range	Prevalence	Multivariate model[22] including all significant barriers[23]		Bivariate associations with outcome for all potential barriers	
					No country controls	With country controls
Description of Variable		In unit of variable	Beta coeff. & significance	Variance explained (in %points)	Beta coeff. & significance	Beta coeff. & significance
Economic factors						
Household income after housing costs (reversed and standardised within country)	**SD**	**0.32**	**-1%***	**0%**	**-1%***	**-1%***
Employment situation in household	[-1,1]	-0.09	0%†	0%	0%	0%
Costs associated with schooling	Yes/No	51%			1%	1%†
No source of lighting or firelight only at home	Yes/No	13%			0%	0%
Housing conditions	[0,2]	1.22			0%	0%
Material deprivation	[0,5]	3.09			0%	0%
Proportion of time spent on duties	[0,1]	12%			2%	2%
Subjective poverty	[-3,3]	0.29			0%	0%
School factors						
Girl doesn't like school	**[0,4]**	**0.55**	**-1%****	**0%**	**-1%*****	**-1%*****
Hours or schooling per day (not reversed)	[0,10]	5.77			0%	0%
Journeys to schools take more than 30 mins	Yes/No	26%			0%	0%
Language of instruction different from language spoken at home	Yes/No	55%			0%	0%
Schools attended are not girls only (mixed)	Yes/No	85%			0%	0%
Teaching not satisfactory at attendedschools	Yes/No	26%			-1%*	-1%*
Toilets not satisfactory at attended schools	Yes/No	33%			0%	0%
Attitudes and support in family and community						
Caregiver low aspirations for girl's educ.	**[0,2]**	**0.27**	**1%***	**0%**	**0%**	**1%**
Negative attitudes to girls' education	[0,3]	0.36	-1%†	0%	-1%*	-1%*
Low level of female autonomy in household	SD	0	0%†	0%	0%	0%
Families not engaged with education	Yes/No	82%			-2%**	-3%**
Girls' education unusual in community	Yes/No	15%			-1%†	-2%†
Social exclusion index	[0,7]	1.16			-1%**	0%
Violence and safety						
Local journeys dangerous	**Yes/No**	**24%**	**-1%***	**0%**	**-1%†**	**-1%***
Reports of violence at girl's school	[0,4]	0.06			-1%†	-1%†
Personal factors						
Girl doesn't try to do well at school	**[0,3]**	**0.03**	**-4%***	**0%**	**-4%****	**-4%****
Girls has difficulties relating to disability	Yes/No	4%	-2%†	0%	-2%	-2%
Low level of family education	[0,1]	0.64			0%	0%
Parents absent or deceased	[0,4]	0.48			0%	0%
Young mothers in household	Yes/No	14%			0%	0%
Additional control variables for the multivariate model	Afghanistan, DRC, Ethiopia, Kenya, Mozambique, Sierra Leone, Somalia, Tanzania and Zimbabwe country dummies. Girl age in years.					
Total variance explained by multivariate model	3%					
Sample for multivariate model	N = 3939					
Total variance explained by significant barriers	1.8%					

Note: Asterisks are used to indicate levels of statistical significance: *** indicates a p-value below 0.001; ** indicates a p-value below 0.01; and * indicates a p-value below 0.05. † indicates a marginal value of significance of $p < 0.1$. Barriers with too low prevalence were excluded from the table.

[22] controlling for other drivers
[23] after non-significant drivers ($p > 0.1$) removed sequentially

Available evidence fails to explain much of the variation in attendance and it would be merited to analyse additional information on attendance where available from schools. Based on the findings presented in Table 39 the following barriers showed significant associations with attendance and are the best evidenced candidates to be obstacles to girls' attendance across the GEC as a whole:

#1 Economic factors

- **Household income (after rent)** – There is a significant association between household income and attendance. The smaller a family's income after rent, the lower the attendance rate of girls in these households.

#2 School-based factors

- **Girls don't like going to school** – The more negatively girls described their experience at school the lower their average attendance rate.

#4 Violence related factors

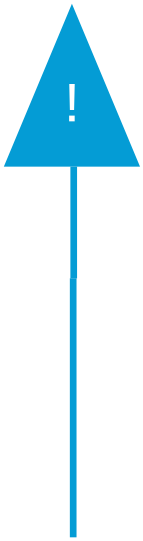
- **Local journeys are dangerous** – Where caregivers stated that the journey to the girl's school was dangerous, girls had a significantly lower attendance rate than in families that did not report insecurity. However, the change in attendance from one scenario to the other is relatively small.

#5 Personal factors

- **Girls don't try to do well at school** – Girls reporting that they were not trying to do well in school tended to have significantly lower attendance rates than their peers who said they tried to do well and pay attention.

The model also shows a significant *positive* association between **low levels of aspirations on the part of the caregiver**, and girls' attendance rates. This finding is counterintuitive and suggests that low parental aspirations do not systematically hinder attendance once girls are enrolled in school. This is consistent with other findings that some factors affect enrolment but once enrolled do not affect attendance. However, further analysis at the midline will be required to unpack and explore this finding further.

While all of these associations are statistically significant, they only contribute in a small way to explaining the variation in attendance observed across the SCW.



Using this measure, ***we have not been able to clearly identify any such factors, as indicated by the low percentage of variance explained by our multivariate model*** *(i.e. R^2 = 3%, see Table 39). To explain this, we have hypothesised that families make decisions about enrolment based on their assessment of possible risk factors or barriers, but once the girl is enrolled, they try generally to maintain attendance, but this hypothesis requires further detailed analysis. It is also plausible that for those making the sacrifices to overcome barriers to enrolment the factors that subsequently affect attendance may be relatively circumstantial and perhaps seasonal or short term, or relate to the phasing of the school year. Therefore they would not be easily identifiable by our analysis of broader barriers measured and addressed by GEC. Another issue is that there is also likely to be error in the variable representing the caregiver estimates of attendance since it is subjective, retrospective (and referring to a varying time period).*

In addition to this caveat, ***we would seek to analyse barriers to attendance specifically, using school-reported attendance as an outcome measure rather than the self-reported attendance from the EM household survey****. This might allow us to explain more variance in attendance. At the time of writing, school record data was not always available and where provided does not yield universally complete or plausible information (for example, some records suggested that the girl attended more days than were available in a given school year).*

Summary: What are the barriers to girls' attendance?

Our findings suggest that a combination of low household income, low aspirations of caregivers, little enjoyment of school on the part of girls, and dangerous journeys to school may function as barriers to girls' attendance. However our model explains only a relatively small proportion (3%) of the variance in attendance rates observed across the SCW. This suggests that there may be other factors influencing girls' attendance, which our evidence cannot reflect. There will be more opportunity to capture additional information on attendance and to identify potential drivers when longitudinal data becomes available.

Barriers to learning

In this section we present two strands of analysis to assess barriers that potentially affect girls' learning in terms of reading fluency. We first present the results from our analysis of data from the EM household survey (Table 40), followed by our analysis of data from a subset of the EM school-based assessment that is restricted to the 30% of schools where we were able to link students to the corresponding classroom and school-level data.

Ideally, we would have liked to analyse the personal and contextual barriers covered in the EM household survey and the school factors covered in the school-based assessment in the same multivariate model. This would have allowed us to assess the relative importance of factors such as poverty and attitudes on the one hand, and school-based factors on the other hand for girls' learning outcomes in terms of reading fluency. However, we have not been able to link a sufficient number of observations between these two datasets because they do not cover the same sample of girls.

As shown in Table 40, the final multivariate regression model using data from the EM household survey explains 47% of the variance in reading fluency scores observed across the SCW. Ten potential barriers retain a significant association with reading fluency when controlling for other potential barriers. Altogether these significant barriers account for about 10% of the variance in reading fluency.

Table 40: Results of the EM analysis of barriers to learning (reading fluency), EM household survey data

Barriers to learning	Unit / Range	Prevalence	Multivariate model[24] including all significant barriers[25]		Bivariate associations with outcome for all potential barriers	
					No country controls	With country controls
Description of Variable		In unit of variable	Beta coeff. & significance	Variance explained (in %points)	Beta coeff. & significance	Beta coeff. & significance
Economic factors						
Housing conditions	**[0,2]**	**1.22**	**-5*** **	**1%**	**-9*** **	**-9*** **
Proportion of time spent on duties	**[0,1]**	**12%**	**-16*** **	**0%**	**-30*** **	**-23*** **
Subjective poverty	**[-3,3]**	**0.29**	**-2*** **	**0%**	**-2*** **	**-3*** **
Material deprivation	**[0,5]**	**3.09**	**-1** **	**0%**	**-3*** **	**-5*** **
Costs associated with schooling	Yes/No	51%	2†	0%	13***	9***
No source of lighting or firelight only at home	Yes/No	13%			-11***	-10***
Employment situation in household	[-1,1]	-0.09			-2**	-3***
Household income after housing costs (reversed and standardised within country)	SD	0.32			-2	-1
School based factors						
Girl doesn't like school	**[0,4]**	**0.55**	**-2*** **	**0%**	**-5*** **	**-4*** **
Hours or schooling per day (not reversed)	**[0,10]**	**5.77**	**6*** **	**2%**	**7*** **	**7*** **
Teaching not satisfactory at attended schools	Yes/No	26%	-3†	0%	-5**	-7***
Language of instruction different from language spoken at home	Yes/No	55%			-5***	-4*
Journeys to schools take more than 30 mins.	Yes/No	26%			2	-2
Schools attended are not girls only (mixed)	Yes/No	85%			2	-6
Toilets not satisfactory at attended schools	Yes/No	33%			-4**	-3*
Attitudes and support in family and community						
Negative attitudes to girls' education	**[0,3]**	**0.36**	**-6*** **	**1%**	**-11*** **	**-9*** **
Social exclusion index	**[0,7]**	**1.16**	**-1***	**0%**	**-1***	**-3*** **
Families not engaged with education	Yes/No	82%			8*	-6***
Caregiver low aspirations for girl's education	[0,2]	0.27			-7***	-3*
Girls' education unusual in community	Yes/No	15%			-12***	-9***
Low levels of female autonomy in household	SD	0			-2**	-1
Violence and safety						
Local journeys dangerous	Yes/No	24%			3*	1
Reports of violence at girl's school	[0,4]	0.06			1	0
Personal factors						
Low level of family education	**[0,1]**	**0.64**	**-13*** **	**1%**	**-25*** **	**-24*** **
Girl doesn't try to do well at school	**[0,3]**	**0.03**	**-11** **	**0%**	**-21*** **	**-19*** **
Girls has difficulties relating to disability	Yes/No	4%			-10***	-11***
Parents absent or deceased	[0,4]	0.48			4***	0
Young mothers in household	Yes/No	14%			-4**	-2
Additional control variables for the multivariate model	Afghanistan, DRC, Ethiopia, Kenya, Mozambique, Sierra Leone, Somalia, Tanzania and Zimbabwe country dummies. Girl age in years.					
Total variance explained by the multivariate model	47%					
Sample for the multivariate model	N = 4474					
Total variance explained by significant barriers	9.8%					

Note: Asterisks are used to indicate levels of statistical significance: *** indicates a p-value below 0.001; ** indicates a p-value below 0.01; and * indicates a p-value below 0.05. † indicates a marginal value of significance of $p < 0.1$. Barriers with too low prevalence were excluded from the table.

[24] controlling for other drivers
[25] after non-significant drivers ($p > 0.1$) removed sequentially

Based on the findings presented in Table 40, the following barriers showed statistically significant associations with reading fluency scores and are more likely candidates to be obstacles to learning across the GEC as a whole:

#1 Economic factors

- **Poor housing conditions –** Poor quality of family housing in terms of roofing and flooring materials was associated with lower average reading fluency scores.
- **Material deprivation –** The higher the degree of material deprivation that households reported (in terms of not owning items such as a source of electricity, a TV or radio, a vehicle, a phone, a safe water source, cooking fuel, or a private toilet) the lower the girls' average reading fluency score. There is some ambiguity with regards to the ways in which material deprivation affects girls' learning. On the one hand, the absence of the above mentioned items may be an indicator of general poverty which may affect learning. On the other hand, the lack of electricity or safe water sources may have direct negative effects on learning, as they can reduce the girls' study time at home or make them more vulnerable to illness.
- **Time spent on duties –** The more time girls are reported to spend carrying out household duties and livelihood activities, the lower their average reading fluency scores. This effect is relatively large and highly significant.
- **Subjective poverty –** The higher a household's score on the subjective poverty index, the lower the girls' average reading fluency scores. The effect is relatively small but highly significant.

#2 School-based factors

- **Girls don't like going to school** – The more negatively girls described their experience at school the lower their average reading fluency scores.
- **Hours of schooling per day (not reversed)** – The higher the average number of hours spent in school per day the higher the girls' average reading fluency scores.

#3 Attitudes and support in the family and in the community

- **Negative attitudes towards girls' education –** The more negative the caregiver's attitude towards girls' education, the lower the girls' average reading fluency scores.
- **Social exclusion** – Where households indicated some degree of isolation or exclusion from their local community, girls tended to have lower average reading fluency scores.

#4 Personal factors

- **Low levels of education in the family** – The lower the level of education in the family (considering the schooling of both the caregiver and the head of household) the lower the average reading fluency score achieved by girls. This association is highly significant and the largest effect measured in the model.
- **Girls don't try to do well at school** – Girls reporting that they weren't trying to do well in school or trying to pay attention tended to have significantly lower reading fluency scores than their peers.

Our model further suggests that there is a significant *positive* association between **not speaking the language of instruction at home** and girls' reading fluency scores. This is counterintuitive and should be treated with caution. We have discussed this phenomenon in more detail in Section 3.1.2.

While all of these associations are statistically significant, they contribute relatively little to explaining the variation in reading fluency scores observed across the SCW. The highest share of variance was explained by the number of hours of schooling per day which contributes to more than 2% of average variation of the wpm score.

As shown in Table 41 , the multivariate regression model using data from the EM school-based assessment can explain 32% of the variance in reading ability across the SCW. This model has been run on girls only and contains school-level, class-level and individual-level variables (the prevalence shown in the tables having been computed as the relevant level). Seven potential barriers retain a significant association with reading fluency when controlling for other potential barriers – they are discussed in detail below.

We also calculated gender effects as the regression coefficient of the gender interaction term over the whole population (boys and girls). This coefficient was obtained by regressing the literacy score on the potential barrier, the girl dummy (variable equal to 1 if the student is a girl, and to 0 if it is a boy) and the gender interaction term

(which is a multiplication of the other two variables). Age, grade and country dummies were also included as controls. A negative gender effect means that the presence of the potential barrier tends to be associated with lower outcomes for girls specifically.

Table 41: Results of EM analysis of barriers to learning (reading fluency), EM school-based assessment

Barriers to learning (reading fluency)	Unit/ Range	Prevalence	Multivariate model[26] including all significant barriers[27] (girls only)		Bivariate associations with outcome (girls only)		Gender effect (girls and boys)
					No country controls	With country controls	With country controls
Description of Variable		In unit of variable	Beta coeff. & significance	Variance explained (in % points)	Beta coeff. & significance	Beta coeff. & significance	Beta coeff. of gender interaction & significance
School based factors							
% of girls in the class	**[0,1]**	**49%**	**-57.19****	**2.4%**	**-24.50**	**-41.96†**	**13.34**
Class size	**Nb st.**	**43**	**-0.24****	**2.2%**	**-0.21***	**-0.22***	**-0.03**
Classroom does not have electric lighting	**Yes/No**	**91%**	**-20.08***	**2.0%**	**-31.42****	**-38.38*****	**-6.19**
Teacher is a male	**Yes/No**	**64%**	**-11.42***	**1.6%**	**-17.03****	**-20.23*****	**-5.78†**
Teacher thinks corporal punishment is ok	**Yes/No**	**54%**	**-9.30***	**1.6%**	**-6.29**	**-9.52†**	**1.23**
School has no boundary wall taller than adult	Yes/No	83%	-16.82†	1.8%	-31.47**	-35.74***	-8.80*
% of students who do cleaning/tidying	[0,1]	7%			-2.93	-18.20	4.14
% of students victim of aggression	[0,1]	2%			84.18*	116.02**	50.63**
% of students showing distracting behaviour	[0,1]	19%			34.54***	40.28***	11.42
% of students reprimanded/punished by teacher	[0,1]	6%			65.56***	78.63***	10.69
% of students that do not have writing material	[0,1]	8%			-4.12	-16.50	3.51
% of students that do not have textbook	[0,1]	38%			9.91	-1.88	2.90
% of students that do not have chair/mat	[0,1]	14%			-7.29	-10.79	3.39
% of students that do not have bench/desk	[0,1]	13%			-11.95†	-12.46*	2.50
Number of teacher's years of experience	Years	10.7			-0.10	-0.31	0.31*
Teacher does not have a teaching certificate	Yes/No	28%			-4.58	-9.81†	1.86
Problems with teachers not turning up to work	Yes/No	28%			2.66	-1.64	6.12†
Shortage of teachers in the school	Yes/No	77%			-12.41*	-6.03	-6.77†
No mid-day meal served at school	Yes/No	66%			11.27†	-0.44	7.75†
School does not have electricity	Yes/No	73%			-27.11***	-28.32***	2.12
Classroom does not have a floor	Yes/No	22%			3.41	-3.49	4.03
School does not have separate girls toilet	Yes/No	37%			-3.38	-10.71*	3.67
Toilet is not private and cannot be locked	Yes/No	44%			0.50	-6.21	3.84
Unreliable payment of teachers in last 3 months	Yes/No	33%			-5.10	-5.14	-3.57
Teacher has no village activities outside school	Yes/No	37%			-0.38	3.96	-0.98
Teacher not involved in political activity	Yes/No	68%			4.31	8.93	-7.04*
No active union for teachers in the area	Yes/No	19%			5.20	0.23	5.35†
Personal factors							
Father has low education	**Yes/No**	**77%**	**-11.78****	**1.8%**	**-20.49*****	**-19.89*****	**-7.62***
Girl thinks education less important for girls	**Yes/No**	**3%**	**-13.91***	**0.4%**	**-8.81†**	**-11.58***	**-5.45**
Mother has low education	Yes/No	84%			-25.09***	-27.23***	-9.12*
Not attended this school since 1st grade	Yes/No	15%			3.16	3.73	-1.29
Additional control variables for the multivariate model	DRC country dummy; Ethiopia country dummy; Kenya country dummy; Sierra Leone country dummy; Engaged in P2 grade (as opposed to P4 grade); Girl age in years.						
Total variance explained by the multivariate model	32%						
Sample for the multivariate model	N = 813						
Total variance explained by significant barriers	13.8%						

Note: Asterisks are used to indicate levels of statistical significance: *** indicates a p-value below 0.001; ** indicates a p-value below 0.01; and * indicates a p-value below 0.05. † indicates a marginal value of significance of $p < 0.1$. Barriers with too low prevalence were excluded from the table.

[26] Controlling for other drivers
[27] After non-significant drivers ($p > 0.1$) removed sequentially

Based on the findings presented in Table 41, the following school-based barriers show statistically significant associations with reading fluency scores are the best evidenced candidates to be obstacles to learning in terms of reading fluency across the GEC as a whole:

#1 School-based factors

- **Proportion of girls in the class –** The average proportion of girls in classrooms observed in the school-based assessment was 51%. Analysis shows that girls' average reading fluency scores are negatively correlated with the proportion of girls in the class.
- **Class Size** – The higher the number of children in the classroom the lower the average reading fluency score achieved by girls in these classrooms.
- **Classrooms lack electric lighting** – Where classrooms lack electric lighting, girls have average reading fluency scores that are 20 words per minute points lower than girls studying in classrooms that have electricity. While a lack of electricity may affect girls' learning directly, it is also possible that it correlates with other, unobserved factors such as the degree of remoteness of the given school. This association should therefore be interpreted with care until more analysis can be carried out at midline.
- **Teacher is a male** – Several projects have assumed that a lack of female teachers functions as a barrier. The analysis shows a significant negative association between having a male class teacher and girls' reading fluency scores.
- **Corporal punishment** – Where class teachers state that corporal punishment in school is appropriate, girls tend to have a significantly lower reading fluency score than in schools where this is not the case. One possible explanation is that girls are intimidated and less assertive to participate and learn in a threatening school environment. Another possible explanation may be that corporal punishment is part of a canon of rigid teaching methods that are less effective in promoting learning than other teaching methods. A third option may be that discipline responds to levels of hostility that inhibits girls performance.

#2 Personal factors

- **Father has low education** – There is a significant negative association between girls reporting that their fathers have a low level of education, and their average reading fluency score. This is in line with findings from the analysis of the EM household survey data (see above) which suggests that low levels of education in the family may indeed be a barrier to girls' learning.
- **Girls think education is less important for girls than for boys –** Girls stating that they thought education was less important for girls than for boys tended to have significantly lower average reading scores than girls who believed that education was just as important for girls as for boys.

All of these associations are statistically significant. They each explain around 2% of the average variation in reading fluency scores observed across the SCW (with the exception of girls' views about the value of girls' education).

Summary: What are the barriers to girls' learning?

Our findings from the analysis of the EM household survey suggest that a combination of different factors function as barriers to girls' learning in terms of reading fluency. These include factors relating to poverty (i.e. subjective poverty; poor housing conditions and material deprivation), social exclusion and a low degree of active family engagement with their children's education; a low level of education in the family, and girls having low aspirations or not enjoying school. At present, our model explains almost half (45%) of the variance in average reading fluency across the SCW. There will be more opportunity to determine causal factors when longitudinal data is available at midline.

Analysis of data from the school-based assessment suggests that our analytical model of potential school-based barriers can explain around a third (32%) of the variance in reading fluency measured across the relevant schools. It is again a combination of different factors that appear to affect girls' reading fluency. These include the gender of the class teacher (with girls taught by a female teacher showing higher average reading fluency); teachers' beliefs that corporal punishment is appropriate; classrooms lacking electricity; class size; and the proportion of girls in the class. In addition some personal factors appear to be linked to lower reading fluency such as girls' believing that education is less important for girls than for boys, and the father's level of education.

4.2.2 Discussion of potential barriers by theme

In this section we take a one-by-one approach to discussing potential barriers to girls' education assumed by SCW projects. The discussion is organised by barrier theme, starting with the themes most often covered by projects. As shown in Figure 20, all 15 projects assumed barriers relating to economic and school-based factors and these will be discussed first and in greatest detail. We then proceed to the discussion of factors relating to attitudes, violence, personal and other issues. The findings presented in this section are based on the analysis of qualitative data from the EM's IDIs, as well as the analysis of quantitative data (EM household survey and school-based assessment) presented above. In this section, we will also discuss bivariate associations between a potential barrier and an outcome of interest even if these associations became insignificant when controlling for other potential barriers and should be interpreted with great caution.

Economic barriers to education

In this section we present quantitative and qualitative analysis on three potential economic barriers that were often mentioned by SCW projects and which were covered in our baseline data collection. These are poverty (11 projects), costs associated with schooling (9 projects) and duties (8 projects). We will unpack these barriers by analysing their multiple dimensions, as listed below:

- Poverty: Difficulty maintaining steady incomes or employment, poor housing conditions, material deprivation, subjective poverty, hunger; social stigma.
- Cost of schooling: Difficulty affording high school fees, uniforms, equipment and textbooks.
- Duties: Girls' housework commitments and domestic chores such as caring for siblings; participating in livelihood activities (e.g. farming; watching cattle; and working outside the home).

Economic barrier #1 – Poverty

11 out of 15 SCW projects have assumed that poverty is affecting girls' education outcomes. The analysis presented in Section 4.2.1 suggests that at the fund level, all three outcomes under scrutiny (enrolment, attendance and reading fluency) are influenced by some dimension(s) of poverty such as poor housing conditions, low household income, material deprivation, employment issues in the household, and subjective poverty. Evidence from the qualitative IDIs highlights additional dimensions of poverty such as food poverty and social stigma as potential barriers to girls' education. We will discuss these factors below.

Issues with employment and steady income: IDI respondents across the SCW reported the difficulties they face maintaining steady employment or a steady income. In some cases, this was because households rely on livestock which are sensitive to environmental disruptions or shocks. In other cases it was because of the difficulties faced by small farmers, who are unable to support themselves fully off their land and cannot find other work. Finally, in some cases households reported difficulties in terms of a lack of formal employment, or in terms of sickness within the household which prevents the adults from working:

> *This community depends on cacao and coffee plantation, if a particular year we have low harvest there will be a problem because our main source of income is in this plantation. Parent will find it difficult to enrol their child to school.*
>
> School Official, Gbeworbu, Sierra Leone

The EM analysis of **employment status** from household survey data showed that on average across the SCW, 43% of families reported that neither the head of household nor the girls' caregiver were in employment outside of the home. Some of these families are likely to be dependent on charity or to draw their support from subsistence farming. Although income from paid employment may also be unreliable, especially from unskilled work, livelihoods based on subsistence farming may be more vulnerable to seasonal disruptions. As a result, these households may face an increased risk of poverty and food insecurity, as discussed below. In 51% of households across the fund, either the head of household or the caregiver were in semi-skilled or skilled employment.

We measured a significant negative association between household employment status and girls' enrolment even when controlling for other variables. We also observed a bivariate association between employment issues and reading fluency, but this became insignificant when controlling for other barriers, suggesting that some other barrier(s) related to economic factors may be more immediately associated with girls' reading fluency (e.g. the quality of housing, see below). We did not find any significant association between household employment and

attendance, but there was an association between low household income (after housing costs) and low attendance. This association remained significant even when controlling for other potential barriers.

Based on the household survey data we could examine different dimensions and symptoms of income poverty.

Subjective poverty: Households scored on average 0.29 on a subjective poverty index ranging from -3 to 3. The index is constructed based on two questions about the caregiver's satisfaction with the family's living conditions and wellbeing. Around half the GEC respondents were located on the zero score which means that they recorded some aspects of self-assessed hardship. Around one in eight respondents perceived lower levels of hardship and the remainder perceived higher levels with around a quarter of families on the highest score (+3). Higher scores of perceived hardship are associated with lower reading ability among girls and the association remains significant when controlling for other dimensions of poverty, suggesting that perceptions of hardship may affect how well girls perform in school, or that they are a proxy for other facades of poverty that influence girls' education.

Quality of housing: Across the SCW, 53% of homes had low quality roofing materials (such as cardboard) and 69% had floor materials that were less stable or secure such as mud or dung. Low quality housing materials were associated with lower levels of enrolment and reading fluency among girls in these families, even when controlling for the effect of other barriers. It appears unlikely that the quality of floors and roofs would directly influence girls' chances to be enrolled and learn but housing quality is likely to further reflect the degree of poverty and resources available to a family, which in turn affect girls' education through different pathways.

Material resources deprivation: In addition to income, employment, subjective poverty and quality of housing, we also reviewed access to material resources. To this end we constructed an index that captured slightly different resources in different contexts according to which household items were correlated with one another (see Table 42 below). Across the SCW, households had an average score of 3 on our material resources deprivation index that ranges from 0 (lowest degree of deprivation) to 5 (highest degree of deprivation). This indicates that many families tend to lack some of the relevant household items.

Table 42: Construction of a material resources deprivation index by SCW context

Material resource deprivation index	Type of household item considered for material resource deprivation index						
Context	Electricity supply	TV or radio	Car or bicycle	Telephone	Quality of water access	Quality of cooking facilities	Quality of toilet facilities
DRC, Kenya, Mozambique, Sierra Leone, Tanzania	✔	✔	✔	✔			
Afghanistan	✔	✔			✔	✔	
Ethiopia, Somalia	✔	✔			✔		✔
Zimbabwe	✔	✔				✔	✔

Note: Countries were grouped according to the household items that were correlated according to the data collected within each country.

In fact, 84% of households across the SCW stated that they had unreliable or no access to electricity. Half of the households stated to have neither a radio nor a television. In DRC, Kenya, Mozambique, Sierra Leone and Tanzania, the availability of a phone or vehicle was also correlated with household income and we examined these factors as additional indicators of material deprivation. In these countries, 76% of families had no means of transportation (either a car or a bicycle), and 76% had no telephone. In other countries, we used the availability of a private toilet, safe water source or the quality of cooking fuel as part of the indicator of material deprivation.

A higher deprivation score was associated with a significant decrease in girls' reading fluency, even when controlling for other economic barriers. While material deprivation (as well as housing condition), may capture the effects of poverty more generally, the material manifestations of poverty may also affect girls' learning directly. For instance, a lack of electricity in the home may limit study time and a lack of access to a safe water source may increase the risk of illness, which can disrupt school attendance.

The qualitative research suggests some ways in which income poverty may affect girls' enrolment, attendance and learning that were not covered in the household survey. Projects across the SCW, particularly in Zimbabwe,

Afghanistan, Somalia, Sierra Leone and Ethiopia, reported that basic food security was an issue, as households were sometimes forced to choose between paying for school expenses and paying food:

> *I don't have enough income for school expenses and food expense; sometimes I can't pay for both school and the household food.*
>
> Household, Somalia

Other households noted the effects that going to school hungry has on children's ability to concentrate and learn:

> *When I'm going to school and I don't have lunch, I only have one exercise book. This is making me not to concentrate in class. When the teacher is teaching and I'm hungry I can't even pay attention to what he is teaching in class*.
>
> (Household, Malegohun, Sierra Leone)

Households in several SCW project areas, including Afghanistan and Somalia, also noted the psychological effects that poverty and the inability to afford school fees can have on children, particularly in terms of social shame and embarrassment, which can also discourage children from attending school:

> *My girl wishes to have school fees paid on time, which doesn't happen, as she would like. She always feels intimidated whenever the teacher asks her to stand up and get out of class due to my failure to pay fees on time.*
>
> Household, Somalia

In terms of the linkages between poverty, attendance and learning, respondents also reported that poverty disrupts attendance, when children are turned away from school for being improperly equipped (not having a clean uniform, textbooks, or other required school materials). This decreases the amount of time these children are able to spend in class, as well as discouraging them from returning to school, reducing their wellbeing and ability to learn:

> *There are some girls who are not learning, because their families are very poor to fulfil their learning material. There are some where the school fulfilled these materials and they started learning. The school can't help all of them though. In general their problem is poverty.*
>
> School Official, Amhara, Ethiopia

While a lack of food and social stigma were reported by IDI respondents in relation to poverty, the issue most often mentioned as a specific poverty-related barrier to education was parent's inability to afford the cost of school, which we discuss in the next sub-section.

Economic barrier #2 – Costs associated with school

Nine SCW projects identified costs associated with school as a barrier to education, including the cost of uniforms, school books and school fees. The multivariate regression analysis presented in Section 4.2.1 found some evidence of an association between costs, enrolment and learning, and costs were one of the most common concerns raised by IDI respondents who described multiple ways in which costs affect girls' education.

Dropping out due to costs of school: Enrolment in primary school and especially in secondary school is a major long-term economic commitment for many households in the SCW project areas. IDI respondents across the SCW commonly stated that families' inability to afford schooling costs caused children to miss class on some days, to drop-out altogether, or to not continue school after the end of primary school. This is reflected in the following quote:

> *Many people don't send their girls to school. This is mainly the poor people. These people have no money to pay school fees.*
>
> School Official, Somalia

Struggling to pay additional costs even when it's meant to be 'free': Many IDI respondents across the SCW noted that they struggled to pay for school-related costs even when education was provided for free. Some respondents reported that students were sent home from school because they were lacking school materials or uniforms, missing a few days until the necessary money or materials could be found. At worst, this could lead to student dropping out of school altogether. This problem was stressed in Zimbabwe by the following household:

> *There are many things to think about pertaining to the long lists of school requirements beginning of school year. I have to sell some of my farm produce to buy [girl's name] school shoes, uniforms and other things. I thank God that Camfed is helping pay her school fees otherwise I don't know what I will do.*
>
> Household, Zimbabwe

Costs affecting school quality: In terms of learning, a few respondents (primarily school officials and teachers) reported they had difficulty paying for teacher salaries, school resources and materials if parents did not pay school fees, affecting the quality of education they were able to provide. At the same time, schools and teachers did not receive sufficient funds from the government to cover the cost of school materials, or even teacher salaries. This point was made by a school official in Somalia:

> *The school is sometimes closed because students cannot pay the fees at the end of the month and there is nothing to run the school with financially and the teachers want to be paid so you are forced to shut the school.*
>
> School Official, Somalia

While most aspects of this barrier were not described as specifically gendered, some respondents did describe cases where households were less willing to pay for girls' school fees because they expected them to get married so that the investment would be seen as a waste.

Half (51%) the households surveyed in the SCW project areas stated that they had to pay for school-related costs such as school fees, uniforms or teaching materials. About half equally stated that they faced difficulties affording the costs of school. We observed a negative bivariate association between the cost of school and girls' enrolment and reading fluency. However, these bivariate associations were not significant when controlling for other barriers.

Since the costs of school were a particularly salient issue in the qualitative research, it is possible that these significant bivariate relationships were 'captured' by other economic factors in our multivariate model, such as barriers relating to poverty which are obviously related to difficulties affording the costs of school. They could also have been obscured by systematic differences between project areas with different levels of enrolment and attendance. Finally, families and girls themselves may use coping strategies to overcome difficulties associated with cost-related barriers. Findings from the qualitative research highlight ways in which families adapt to the negative effects of costs by employing a range of coping strategies (see Box 8, below).

Box 8: Coping strategies: Overcoming the cost of school

Even though many households reported that they struggled to pay school related fees and costs, some IDI respondents also described the great economic sacrifices that they made to provide their girls with the opportunity of education. Selling off cattle, negotiating payment plans with the school, taking on extra work and borrowing money from relatives were a few of the different economic coping mechanisms that households described, like this respondent:

> *I worried about the kids. I sent them to school but they failed, so I sold my agricultural land and sent them to private college. Now I am worried about that college fee.*
>
> Household, Amhara, Ethiopia

There are clear policy-relevant imperatives for GEC in considering the impact of households trying to resource education. If families sacrifice long term stable resources such as land to meet an enhanced demand for education stimulated by the GEC the investment trade-off should be considered. This should form an integral part of the final impact evaluation and as far as possible the measurement strategy for midline and endline.

The majority of coping strategies used to help girls to enrol and attend primary school involved support from an external source rather than strategies employed by the household itself. This assistance was usually provided by the government or the school itself and in some cases by the local community or international donors.

School fees paid by school / government

The most commonly cited strategies through which poorer households can afford girls to go to primary school was through government-funded school places or through schools exempting them from paying fees. Nevertheless, it is important to note that mention of government or school-provided places was almost exclusive to Zimbabwe (i.e. the BEAM government scholarship programme[28]) and Somalia, with schools exempting children from very poor backgrounds from paying the school fees. The following comments highlight the important role of government scholarship programmes:

> *Younger girls are not affected that much as primary school is quite affordable to many and many children in primary school are on BEAM. When they are now going to secondary school it becomes a problem because fees are expensive and many drop out at this stage.*
>
> Household, Zimbabwe

Community contributes to education

Respondents discussed a number of examples in which the local community provides financial assistance for girls' education. In most of the cases this assistance involved raising money to help deprived families pay school fees. Other examples included: a local women's group that provided sanitary pads and pens for girls; a community that assisted the school with the provision of firewood and drinking water; or an Ethiopian community that helped to equip girls with school uniforms:

> *Some of the girls do not wear uniforms because their parents can't afford to buy one, in this case the school administration together with the contribution from the community will buy uniform for the students.*
>
> School Official, Ethiopia

International donor pays for school fees, meals and books

IDI respondents also described assistance provided by international donors, ranging from provision of books, uniforms and equipment to paying schools fees, examination costs and teacher salaries.

> *CARE now provides the food in schools, which lures these children to attend lessons. Some schools prepare some porridge for the children. There is also UNICEF that had provided textbooks to local schools. For primary schools, UNICEF went to the extent of donating exercise books, pens and pencils for children.*
>
> Community Leader, Zimbabwe

Girls provided with bursaries

A small number of IDI respondents mentioned bursaries as a mechanism through which children from poor backgrounds can attend school. The interviews suggested that the extent to which bursaries are available ranged from a limited number for children from poor families or exceptionally bright children to large numbers of children within a community. The source of bursaries was not always stated but those mentioned included the government, the school and in one case an individual person:

> *If you have a bright child in school but no school fees, you can be assisted through government bursary, some people have found sponsors who educate their children who were lacking basic needs*.
>
> Community Leader, Kenya
>
> *There are schools that provide free education for girls. Also when families have five children and send all of them to the school and such families go to the teacher and tell him to give them one scholarship. Then these families give the scholarship to the poor girls.*
>
> Household, Somalia

[28] The Basic Education Assistance Module (BEAM) in Zimbabwe aims to help orphans and vulnerable children access education by addressing demand-side barriers such as the inability to afford the cost of schooling.

Economic barrier #3 – Domestic chores and livelihood activities

Eight projects cited domestic chores and livelihood activities as a potential barrier to girls' education outcomes. Such responsibilities include: taking care of siblings; helping with farming; or guarding the livestock. Structurally, such duties are likely to be related to economic circumstances as poorer families may be more reliant on girls to carry out domestic duties, subsistence activities like farming or other livelihood activities such as working for money or assisting with a family business.

Significant housework duties were reported fairly often by respondents in the qualitative IDIs and often directly cited as a reason for children not going to school and/or learning. IDI respondents frequently stressed that children missed school days because they were supporting the household, generating income or helping with livelihood activities. Difficulties with enrolment and attendance due to helping with livelihood activities were mentioned particularly often with reference to pastoralist households in Kenya, Ethiopia and Somalia:

> *We entirely depend on livestock, and livestock also must be looked after and that's why it's hard to enrol all the children belonging to one family.*
>
> Household, Samburu, Kenya
>
> *The livelihood of most families depends on livestock. Almost each family of the community has some kind of animals around like goats or camel. So, if drought comes and the child is in the school they just move with their child and look for pasture and water for their animals. They may need the child's support during long walks for pasture and water. Because the parent may not understand the importance of education and give more value to their livestock and because their lives are at risk. So the most difficult time [is the] drought seasons.*
>
> School Official, Somalia

Analysis of data from the EM household survey showed that **a majority of girls across the SCW were involved in household duties** such as doing housework (66%) or caring for other members of the household (55%). Less common, but still mentioned by 22% of households was that girls helped out with farming. It appears less common that girls work in a business outside of their parents' home (7%). On average across the SCW girls spent 12% of their time on such duties.

Findings from the multivariate analysis of household survey data supported the qualitative research findings on girls' duties - the **higher the proportion of time that they reportedly spent on duties, the lower the chances that girls were enrolled and the lower their reading fluency scores.** These negative relationships were highly significant even when controlling for the influence of other barriers. The relationship between household duties and attendance was less clear than that for enrolment and learning and we did not find any significant association. This may imply that while girls' commitments shape the decision to enrol in school, once enrolment occurs, attendance is less affected by the level of household duties girls have to undertake. In other words, families make a decision about whether to enrol girls based on their duties, but having made that decision, arrangements are made for the girl to attend school despite these responsibilities (see Box 9 on coping strategies below). Nevertheless, our findings also suggest that such arrangements come with a cost attached in terms of the girls' learning.

This is in line with findings from the IDIs as respondents in all projects areas stated that duties had a negative impact on learning in the sense that girls completed their tasks and chores before coming to school or after going back home in the evening. They would be exhausted by the time they get to school and unable to concentrate, or they would be busy at home and unable to do their homework. This was stressed by a school official in Ethiopia:

> *Their participation is very low. This is a result of influence on girls from family. They come to class very tired; sometimes they sleep in the class.*
>
> School Official, Amhara, Ethiopia

In terms of the **gendered effects of duties inside and outside the home**, IDI respondents were split, describing the need for children to support household incomes as being the same for boys and girls, but that some household responsibilities, particularly around taking care of younger siblings and home chores, specifically affected girls. Additional quantitative analysis (controlling for age and differences between countries and projects in Kenya) showed that duties also had negative associations with boys' enrolment.

Box 9: Coping Strategies: Overcoming duties as a barrier to attendance

Findings from the IDIs support the sense that girls and their families may use coping strategies to enable school attendance despite considerable duties and responsibilities at home. A common strategy, mentioned in particular by respondents in Afghanistan, is for the girl to undertake her household chores before and/or after school.

> *Yes she cares for the younger children too and this doesn't affect her either and she goes to school in the morning and she does the housework after school.*
>
> Household, Afghanistan
>
> *She also looks after her children and there is no problem with going to school because her school time is afternoon and she does her activities in morning.*
>
> Household, Afghanistan

Summary: How do economic factors affect girls' education?

We found both qualitative and quantitative evidence to suggest that economic factors play an important role in girls' education. The quantitative analysis indicates that employment issues in the family, and girls' domestic chores and duties may influence the families' decision not to enrol them in school, or shape their own decision to drop out. Evidence from the qualitative research suggests that a common reason for dropping out of school relates to difficulties in affording the costs associated with attending school (in particular secondary school). These factors appear to have less of an influence on the attendance of girls who are enrolled in school, suggesting that they and their families may use coping strategies to overcome barriers relating to the costs of school, and to work around domestic chores and duties. Finally, it is worth keeping in mind that there are some limitations to the robustness of the EM's self-reported attendance measure and that further research will be necessary to confirm these initial baseline findings.

Finally, the quantitative analysis suggests that a range of poverty dimensions are related to girls' learning, such as housing conditions, material deprivation and subjective poverty. The qualitative research highlights some of the pathways through which poverty may actually affect learning, such as social stigma and psychological effects, hunger, or the practice of sending girls home from school if they haven't paid their fees or haven't bought textbooks and uniforms. Both the qualitative and quantitative findings further suggest that girls' duties at home have adverse effects on their learning.

School-based barriers to education

All 15 SCW projects assumed that school-based factors are influencing girls' learning. In this section we present quantitative and qualitative findings on a range of school-based factors. As projects mentioned a variety of factors we grouped these into six broader categories as listed below:

- Quality of education and teaching: General concerns with quality of education; lack of qualified teachers; teacher absenteeism; corporal punishment.
- Behaviour in the classroom: Patterns of student interaction.
- Supply and resourcing: Overcrowded classrooms; under resourcing; availability of schools.
- Facilities: Lack of desks and chairs; lack of buildings or buildings in need of repair; lack of basic infrastructure; lack of adequate sanitation facilities; lack of school meals; structural drivers.
- Learning environment: Lack of textbooks; lack of notepads; lack of uniforms.
- Accessibility: Long distances to schools; lack of access due to frequent resettlement.

School-based barrier #1 – Quality of education and teaching

Eight out of 15 SCW projects assumed that issues with the quality of education and teaching were a barrier to girls' education. The multivariate analysis of potential barriers suggests that factors relating to teaching have a significant negative association with attendance and reading fluency. In the IDIs, respondents across the SCW regularly reported that teachers at their children's school, or at schools in their area were unqualified, were frequently absent from school, or that there was a general shortage in teachers. They frequently described that teacher absenteeism

and a lack of teachers caused overcrowded classrooms where teachers were unable to give attention to individual students. In this section we look at the prevalence of a lack of qualified teachers, teacher absenteeism and general concerns about the quality of education, and the effects on children's learning.

It is worth noting that IDI respondents did not tend to describe barriers related to teaching as affecting boys and girls differently. Similarly, the quantitative analysis although presented here in terms of effects measured for girls **did not find differential effects on boys and girls**, except for the effect of having a female class teacher.

#1.1 Concerns with the quality of schools in general

As mentioned above, eight SCW projects assumed that poor quality of education functioned as a barrier to girls' education. In the qualitative research, many households expressed concerns with the general quality of teaching and education provided at local schools. These views were most strongly expressed in Zimbabwe and Kenya. Households primarily reported these concerns in terms of pass rates and literacy, noting that children were still unable to read after having attended school for some years:

> *Right now our children cannot even read or write. They cannot even spend twenty minutes speaking in English language. If you have some time here, I would have taken a Grade Three book and ask a Form Three student to read. They hardly can read.*
>
> Household, Matabeland South, Zimbabwe

Some households also reported having made efforts to enrol their children in higher quality schools, in urban areas or private schools in the area, after assessing the poor quality of local schools:

> *Before I transferred her I decided she should take exams from public school, and comparing the exam in public school to that of the private school, it was easier than the one from the private school so I decided it is not challenging enough.*
>
> Household, Nairobi, Kenya

While it is difficult to measure school quality without an independently conducted assessment, subjective measures such as perceptions of students and caregivers can be useful, especially since their value judgments about education are the ones that relate most closely to decisions about participation in school and learning. Our analysis of the EM household survey data shows a significant association between the caregiver's dissatisfaction with teacher quality expressed by around a quarter (26%) of caregivers, and girls' enrolment and learning outcomes.

As for the girls' perceptions, there was also a clear link between the extent to which girls say they enjoy their school experience and the levels of attendance and learning they achieve. Eight percent of enrolled girls said that they generally did not like school and a similar percentage stated that school was not generally a nice place to be. Twenty-seven percent stated that they didn't generally find that school was fun and 12% did not often feel happy at school. The less girls reported that they enjoy school, the lower their average attendance level and reading score. Clearly, these associations may reflect a reverse causality (success leading to satisfaction / enjoyment), but it is also consistent with the expectation that the quality of schooling affects learning outcomes. Findings on corporal punishment (see school-based barrier #1.4) also suggest that the friendliness of the school environment may affect girls' learning in school. We next review some of the more specific aspects of these links between schooling quality and outcomes.

#1.2 Lack of qualified teachers

Seven SCW projects mentioned inadequately trained teachers as a potential barrier to girls' learning; four mentioned a lack of female teachers as a barrier; and two mentioned more general teacher shortages. In fact, a lack of teachers – and a lack of qualified teachers in particular – was the concern most often reported by IDI respondents when speaking about issues associated with teaching. In Kenya for example, a caregiver made the following statement:

> *Teachers are not trained and the children don't learn much, I don't think they are learning useful things.*
>
> Household, Garissa, Kenya

In Zimbabwe in particular, respondents stated that it was common practice to hire teachers that might only have completed a primary level of education. In Afghanistan, respondents commented upon the lack of female teachers. IDI respondents further indicated that teachers may be forced to cover subjects in which they are not

knowledgeable, which can affect the quality of teaching, or mean that the subject will not be taught at all, causing reductions in learning or interrupted schedules. These findings indicate that there may be problems with the supply of teachers and a lack of qualifications among those teachers who are available.

Shortage of teachers: In the school based assessment, 77% of the relevant schools reported a shortage of teachers, which supports the qualitative research finding that teachers tend to be scarce across many SCW project areas. In schools that reported to lack teachers we measured systematically lower reading fluency scores among girls than in other schools. However, this negative association between teacher shortage and learning became insignificant once we controlled for other barriers in the multivariate regression model. This suggests that there may be some other barrier(s) in our model that are correlated with the absence of teachers and have a more significant influence on girls' learning outcomes.

Lack of female teachers: Around one out of three classes (36%) observed in the school-based assessment had a female class teacher. In these classes, we measured significantly higher average reading fluency scores among girls than in classes with male class teachers. This association remains significant when controlling for other potential school-based barriers in a multivariate regression model. This suggests that the gender of the class teacher may influence girls' learning and that a lack of female teachers can place girls at a disadvantage in terms of their learning.

Inadequately trained teachers: In terms of qualifications, teachers actually working at the assessed schools had, on average, 11 years of teaching experience. We did not find any significant association between teaching experience and girls' reading fluency. More than one in four teachers (28%) reported that they did not have a teaching certificate, which supports findings from the IDIs whereby teachers frequently lack formal qualifications. While further analysis showed a significant negative association between not having a teaching certificate and girls' reading fluency, this association lost its statistical significance when controlling for other potential barriers in the multivariate regression model. This suggests that a lack of a teaching certificate may correlate with other school-related barriers in our model that are better suited to explain the observed variance in reading fluency.

#1.3 Teacher absenteeism

Two SCW projects assumed that teacher absenteeism was a barrier to girls' education. In the qualitative IDIs the issue of teacher absenteeism was typically reported by respondents in Zimbabwe and Ethiopia. Often respondents pointed out that the absence of teachers made families less willing to send children to school, or that it discouraged the children themselves from going. This point was made, for instance, by a community leader in the Ethiopian Afar region:

> *For the sake of our cattle and goats and the fact that teachers come once or twice a week we are not that interested to send our daughters to school.*
>
> Community Leader, Afar, Ethiopia

Problems with teachers not turning up to work were reported by 28% of the schools covered by the EM school-based assessment. However, we did not find any statistically significant association between teacher absenteeism and girls' reading fluency. This suggests that teacher absenteeism may not be systematically associated with lower learning outcomes but that other barriers may be more important at the fund level. However, within the household data we found a significant bivariate relationship between the caregiver reporting teacher absence and lower reading scores, and also with slightly reduced levels of attendance. It may be that caregivers explain poor learning by reference to perceived problems with schools and also that schools which are prepared to report absenteeism are more diligent about monitoring in general – more research and analysis is required to clarify this issue.

Potential structural drivers of teacher absenteeism: IDI respondents often described teacher absenteeism as the symptom of structural problems. In the case of Ethiopia, respondents mentioned poor infrastructure, transportation and access to water as drivers of poor teacher attendance. It was also commonly reported that teachers were poorly paid and that this had negative effects on their motivation and attendance, leading to high turnover rates as teachers leave to find better paid positions, particularly in urban areas or in private schools. In other cases, low salaries were reported to be a cause (although perhaps not the only one) of insufficient numbers of trained teachers, as it is not seen as a desirable job:

> *When the teacher is not paid well he does not teach well, he is discouraged and that is a challenge to the school. Therefore teachers leave the school and look for better places.*
>
> Community Leader, Galadogob, Puntland

The analysis of EM school-based assessment data showed that 33% of the surveyed teachers stated that their payment had been unreliable in the preceding three months. However, this was not associated with any significant difference in the average reading fluency of girls taught by these teachers. Likewise, our analysis did not find any significant associations between teachers' activities outside of school (i.e. community activities or political activism) and their student's reading fluency. This should not be taken as definitive proof that there is no effect of teacher resourcing on learning outcomes, since by definition, teachers who are not paid but who were still present at school and available to respond to our questions rather than having left their position to seek other work, may be more diligent and committed than average teachers, which in turn may be reflected in their students' learning outcomes.

#1.4 Corporal punishment

Two SCW projects suggested that the use or over-reliance on corporal punishment in schools may be a barrier to girls' education. The quantitative analysis showed a significant negative association between corporal punishment and girls' learning even when controlling for the influence of other barriers.

In the qualitative IDIs, corporal punishment did not emerge as a key obstacle to girls' education. Most caregivers who spoke about corporal punishment noted that, within certain limits, it was an acceptable form of discipline that the teacher could and should use in the classroom. Some caregivers noted concerns with corporal punishment that might go beyond what parents see as normal (termed here as 'non-normative'). In such cases parents might take issue with corporal punishment and in some cases confront the teacher:

> *The teacher is okay but she was a little bit too strict and she was beating them up, so they ended up refusing to go to school because they were scared of her. We then complained about it so she is fine now.*
>
> Household, Mashonaland West, Zimbabwe

Among teachers interviewed during the school-based assessment, 54% said that they considered corporal punishment appropriate. Girls taught by these teachers had an average reading fluency score that was nine words per minute lower than girls taught by teachers who did not speak out in favour of corporal punishment. In fact, this association was significant even after controlling for other school-based factors, including aggressive behaviour of students in the classroom, and was one of the few individual barriers that remained significant in the multivariate regression model. This evidence suggests that girls learn less well in teaching environments that promote the use of corporal punishment. This case shows that the perceptions and attitudes of IDI respondents, captured through the qualitative research, can diverge considerably from the statistical associations found by the qualitative analysis.

School-based barrier #2 – Supply and resourcing

Several SCW projects mentioned factors relating to the supply and resourcing of education as potential barriers. Seven projects mentioned inadequate classroom facilities and/or overcrowding; four mentioned under-resourcing more generally; and three mentioned the poor availability of schools.

#2.2 Overcrowding

In the qualitative research, overcrowded classrooms were often identified by IDI respondents as a barrier to learning and, to a lesser extent, as a barrier to attendance. Overcrowding is the result of the insufficient supply of school facilities and teachers to meet levels of student demand. The issue of teacher supply has already been addressed above so here we will address the issues concerned with the provision of school facilities and resources.

IDI respondents often mentioned negative effects on learning, caused by teachers having to teach overcrowded classrooms. They reported that high student-teacher ratios made it difficult for teachers to give individual attention to students in need, and to detect issues with learning at an early stage. In addition, respondents reported that tracking the performance of students and measuring attendance became increasingly difficult with larger class sizes. This point was made, for instance, by a school official in Ethiopia:

> *Because, the number of students in our school is very high compared to number of teachers, it is mismatched. We have got 130 students in a class. It is difficult for me to say the quality of teaching is good.*
>
> School Official, Oromia, Ethiopia

Respondents also noted that overcrowding can be caused by having insufficient numbers of classrooms or poor school buildings, resulting in classes being crowded together.

> *The biggest problem that we face is the shortage of classrooms because lots of classrooms are made from tents and containers; students and teachers are not comfortable in such classrooms, especially in bad weathers like in the summer or during a storm.*
>
> School Official, Kabul, Afghanistan

In some cases, particularly for projects in Kenya, Zimbabwe, Ethiopia and Mozambique, overcrowding appears to be related to national government policies around free primary education. While government policies have increased primary enrolment rates this has not been met by an equivalent increase in the supply of teachers.

Quantitative analysis of data from the school-based assessment showed an average class size of 43 children. In line with the concerns raised by IDI respondents, we found a statistically significant negative association between class size and children's reading fluency. This association remains statistically significant when controlling for other school-based barriers in the multivariate regression model. It suggests that overcrowded classrooms may in fact be a key barrier to learning. While a large body of social science research exists on the effects of class size on learning, there is no clear consensus on the extent to which smaller classes improve students learning[29]. Research is even scarcer on the specific effects of class size on reading fluency. This issue therefore merits further analysis beyond what has been possible within the context of the baseline analysis presented in this report.

Box 10: Coping mechanisms: classroom overcrowding

Several IDI respondents described coping mechanisms that schools are using to try and address the common issue of overcrowding and the related problem of a lack of teachers. These coping strategies included the following:

- 'Hot-seating' with groups of children being scheduled to use the classroom during specific time slots. In some cases, the remaining students are taught outside or sent home;
- Multi-grade classes where students from different grades are placed together. These were described as relatively common in the project areas;
- The practice of having open-air classes, often under a tree for shade as a way to manage overcrowded classrooms; and
- A variation of multi-grade classes that was described by some respondents, where two classes shared a classroom with students sitting back-to-back, making it difficult for students to concentrate with two teachers conducting lessons at the same time:

All of these coping strategies come with costs in terms of teaching quality and some incur a reduction in actual teaching time, which was reported to affect students' learning and attendance.

Potential structural drivers of overcrowding: IDI respondents in several SCW projects, particularly in Somalia, Mozambique, DRC and Sierra Leone noted that limited government capacity to support schools and train teachers lead to some of the supply-side barriers children faced at school, including overcrowded classrooms and insufficient numbers of trained teachers. Respondents noted that limited institutional support, both in terms of systems and finances, leaves schools unsupported in terms of obtaining resources and building capacity, often resulting in poor quality education. This issue was mentioned, for instance by a school official in Sierra Leone:

> *The teachers that are here are community teachers and they are not on payroll. The community is not supporting them we have tried our best for the Government to approve them, but we have not succeeded.*
>
> School Official, Kailahun, Sierra Leone

[29] See T. Filges, C. S. Sonne-Schmidt, T. Nielsen, A.-M. Klint Jørgensen (2012): Title Registration for Systematic Review: Small Class Sizes for Improving Student Achievement in Primary and Secondary Schools, Campbell Collaboration, http://www.campbellcollaboration.org/lib/download/2372/Filges_Small_Class_Sizes_Title.pdf.

To conclude, the overcrowding of classrooms appears to be a product of a shortage in the supply of both teachers and insufficient school facilities.

School-based barrier #3 – Facilities

Seven projects mentioned barriers relating to inadequate school and classroom facilities. Three projects explicitly mentioned inadequate sanitation. By facilities we are referring to the school buildings, classroom furniture, and basic infrastructure including water and sanitation and electricity. Problems with school facilities were reported relatively often by IDI respondents, even though they were not frequently cited as a direct reason for children not attending school.

#3.1 Lack of desks and chairs in the classroom

IDI respondents frequently mentioned the lack of desks and chairs as a concern in local schools, which forced children to sit on the floor as well as making their uniforms dirty. This discomfort was said to make it difficult for students to write and to concentrate. This issue was raised, for instance, in the following statement:

> *The other difficulty is the lack of school facilities like desks, as you can see, standard one pupil are sitting of the floor and others on blocks. Do you think that such a student to write properly?*
>
> School Official, Morogoro Region, Tanzania

Analysis of data from the school-based assessment showed that 14% of students in a classroom did, on average, not have a chair, bench or desk (see Table 41). While we did find a significant bivariate association between the lack of classroom furniture and reading fluency, this association became insignificant when controlling for other barriers.

#3.2 Lack of buildings or buildings in need of repair

IDI respondents also frequently mentioned that basic school facilities were lacking (leading to classes being taught in the open air), or in need of repair. Poorly built classrooms, structural damages, and leaking or missing roofs where reported relatively frequently by IDI respondents across the SCW. In some cases, respondents cited wind or storms as being the cause of the poor state of the buildings. More frequently, the lack of support from government and communities was cited as the key issue.

> *The worse thing is that students are studying in open area and without classrooms. They are studying under hot and cold weathers; they are studying on the ground. This causes the minds of students to get dismissed and don't learn anything.*
>
> School Official, Ghor, Afghanistan

As shown in Table 41, the school-based assessment found that one in four classrooms were lacking a proper floor, but statistical analysis did not show any significant association with reading fluency.

#3.3 Lack of basic infrastructure

A lack of basic infrastructure was regularly reported in IDIs across the SCW, but less often directly cited as a cause of children not going to school or learning. When mentioned in relation to education, infrastructure was associated with unsafe and unclean sanitation conditions that could cause disease outbreaks, deter students from attending, or cause long breaks in the school day while children walk to find water, which affects their learning.

Across the SCW, **water access and water security** was by far the most frequently cited barrier relating to infrastructure based on the IDIs, both in terms of prevalence and severity. In a few cases, IDI respondents stated that not having safe water and unsafe sanitary situations at schools was linked to outbreaks of cholera and other diseases among students. In other cases, students were forced to interrupt their school day to fetch water, which may require a long walk if the nearest water source is far away, as highlighted in the following quote:

> *What is not so good is access to water especially in winter, we get our water from a stream 700m away and it dries up in winter. The nearest borehole is 1.5km away.*
>
> School Official, Matabeland North Zimbabwe

The school-based assessment found that 73% of the schools and 91% of the classrooms visited had **no electricity** (see Table 41). A lack of electricity in the classroom had a significant negative association with girls' reading fluency even when controlling for other school-based factors in the multivariate model. While it is plausible that a

lack of electricity can hinder learning in school, it may also correlate with unobserved factors such as the resources available to the school or the community. Therefore, this association should be interpreted with caution.

Despite the relatively high prevalence of lacking electricity found by the quantitative analysis, IDI respondents did not widely report the lack of electricity as an issue. This may be due to expectations in which a lack of electricity is considered the norm and therefore rarely considered as an issue. However, in relation to learning outcomes, several respondents described how a lack of electricity was putting students at a disadvantage compared to students attending schools with electricity. A school official from Kenya explained:

> *No electricity in schools is causing the children to go home early putting them to a disadvantage with children from other schools where they do have electricity thus they can extend their learning sessions up to about 8pm.*
>
> School Official, Kilifi, Kenya

#3.4 Lack of appropriate sanitation facilities

Three projects assumed that a lack of separate and safe toilet facilities contribute to school drop-out, especially among older girls.

Analysis of data from the school-based assessment showed that 37% of the schools in the sample had no separate toilet facilities for girls and that 44% had toilets that could not be locked (see Table 41). We found only a marginally significant association between a lack of separate toilets and girls' reading fluency and this became insignificant when controlling for other barriers. Even though safe toilets are frequently lacking across the SCW, this does not seem to be directly related to girls' learning outcomes. This is in line with findings from the qualitative analysis, where the lack of toilets was rarely mentioned as a barrier to education.

#3.5 Lack of school meals

A barrier that was not assumed by SCW projects but frequently mentioned by IDI respondents across the SCW in relation to facilities and infrastructure was a lack of school lunches. IDI respondents often described meal provisions for students as a powerful incentive for attending school, such as this caregiver from Kenya:

> *That food used to help a lot, lunchtime they ate in school and so they didn't come back home for lunch, they only came back in the evening and that makes them concentrate with their education.*
>
> Household, Kilifi, Kenya

In many cases IDI respondents noted that schools are not able to provide full lunches due to a lack of funds. As shown in Table 41, the analysis of data from the school-based assessment showed that 66% of the surveyed schools did not serve a midday-meal. While we could not assess the relationship between school meals and attendance, we did examine the influence on reading fluency and did not find a significant association.

#3.6 Potential structural factors driving poor facilities

In the IDIs, respondents mentioned two structural factors in relation to the poor facilities of building, namely **environmental disruptions** and **poor government.**

Respondents in several projects areas, including in Afghanistan, DRC, Zimbabwe and Mozambique noted that school buildings can be damaged during major **storms**, and are often left un-repaired, contributing to a long-term reduction in the quality of education provided by that school.

Particularly in Afghanistan, respondents often noted that issues associated with poor buildings and a lack of services provided in schools could be attributed to **poor government support in terms of resources or systems**. A school official in Baghlan noted the following:

> *The bad point of our school is that we don't have enough teaching materials; chairs, desks and also the school window glasses are broken. Also, we had the chairs and desks but it's broken. We don't have budget to fix them and the Education Ministry doesn't give money to repair.*
>
> School Official, Baghlan, Afghanistan

In Afghanistan and Somalia, respondents cited the lack, or limited presence, of functioning government in their area as a cause for these issues:

> *There is no functioning government and the school is dependent on the student's fee as source of income. Such attempts made cannot solve more than 20% of the school financial problem.*
>
> School Official, Waaberi, Somalia

School-based barrier #4 – Learning environment

In addition to safe and functioning facilities, schools generally require a sufficient supply of stationary, textbooks, learning materials and teaching resources to provide a stimulating and effective learning environment. Five SCW projects mentioned inadequate teaching and learning resources as a potential barrier. Issues relating to a poor learning environment were discussed fairly often by IDI respondents who frequently mentioned these as a reason for children not being in school or learning. A lack of learning materials (e.g. textbooks, stationary or uniforms) was frequently mentioned as a barrier to attendance, as respondents reported that children were sometimes turned away from school for being improperly equipped. The quantitative analysis did not find that any of these factors had a significant association with learning when controlling for other school-based factors.

#4.1 Lack of textbooks

Many IDI respondents reported a lack of school materials and textbooks in their local schools. A school official from Matabeland North in Zimbabwe, for instance, stated that "*books are shared at times 10 - 15 pupils per book".* While it seems intuitive that a lack of textbooks would impede learning, only a few IDI respondents, mainly teachers, accounted for how the lack of textbooks affects students' learning processes, for example, by limiting opportunities for self-study and having a negative effect on pass rates. Respondents also noted that a lack of textbooks generally contributed to a difficult learning environment for students, affecting their motivation to study.

In some severe cases it was reported that a complete absence of textbooks resulted in teachers having to teach orally and make use of what teaching aids were available, which was reported to make it even more difficult to acquire reading skills, slowing down the overall learning process.

Data from the school-based assessment showed that 38% of students did not have a textbook. However, there was no statistically significant association with girls' reading fluency.

#4.2 Lack of notebooks

Less commonly than the lack of textbooks, IDI respondents reported a lack of notebooks as a barrier to learning. This issue was most often reported in World Vision (Zimbabwe), Camfed (Tanzania/Zimbabwe) and both of the Save the Children project areas. Not having enough notebooks was reported to interrupt the learning process and to lead to gaps in the advancement of writing skills, as explained in the following quote:

> *The school also has problems with parents not buying their children exercise books, so sometimes the children can go three days without writing anything. This affects the children and the teacher can do nothing about it.*
>
> Community Leader, Mashonaland West, Zimbabwe

It was also reported to limit the ability of teachers to assess student's performance:

> *For a teacher to know how good or how bad a child is doing, they base on written work, so if one is not writing, the teacher has no way of judging their performance.*
>
> School staff, Masvingo, Zimbabwe

Analysis of data from the school-based assessment showed that only 8% of girls in the observed classrooms were lacking stationary (see Table 41). We initially found that an increase in the proportion of girls not having stationary was associated with an average decrease in reading fluency but this association became insignificant when controlling for other school-based factors. This suggests that the observed association between a lack of textbooks and reading fluency may be confounded by other, unobserved factors e.g. lack of textbooks being an indicator of poverty which in turn affects learning in the ways described above.

#4.3 Lack of uniforms

A third issue mentioned by IDI respondents in relation to school equipment and the learning environment was a lack of school uniforms. Not having uniforms was often described as causing feelings of embarrassment and social exclusion among students, as uniforms were described as having high symbolic value for children. In a few cases,

respondents stated that having uniforms provided would encourage girls to go to school, giving them a sense of pride and raising their spirits.

School-related barrier #5 – Accessibility

In terms of barriers relating to the accessibility of schools, seven projects assumed that long distances to school prevent girls from enrolling in school, attending, and learning. While no projects mentioned a pastoralist lifestyle or frequent mobility as an explicit barrier, several projects target pastoralist communities, recognising that girls in these communities may face particular obstacles to accessing education. There is some qualitative evidence that local schools are not sufficiently accessible for girls from these groups.

#5.1 Long distances to school

While long distances to school was not among the most common issues reported by IDI respondents in the qualitative research, respondents in several project areas, notably in Mozambique, Faryab province in Afghanistan and Zimbabwe described that long journeys become a particular obstacle to school attendance when considering **seasonal disruptions** (e.g. impassable rivers). In the rainy season, one school official noted that the rivers and wells overflow, hindering attendance in school:

> *There are some families who stay a long distance from this school, like 4 to 5 kilometres away. Despite their willingness to enrol their children for grade zero, some parents do not do this because of long distance. In the end children just come to enrol for grade one which is against government policy. During the rainy season some children miss school because of flooded rivers.*
>
> School Official, Matabeland North, Zimbabwe

Respondents from SCW projects in Afghanistan particularly noted that long distances were a concern because of the fragile security situation and the risk that may suffer from violence, adverse weather conditions or abduction on long journeys.

> *In my opinion, school is very far away, they are scared that their daughter will be bothered or attacked on the way to school by anyone.*
>
> School Official, Faryab, Afghanistan

Data from the EM household survey suggests that in 26% of households across the SCW, girls would have to walk more than 30 minutes to reach the next school. Long journeys are associated with a significantly lower probability of being enrolled, as well as with lower reading fluency scores, but the latter association becomes insignificant when controlling for other factors.

While long distances stem from insufficient numbers of local schools in rural areas (which relates to issues about the supply and resourcing of education discussed previously), IDI respondents did not frequently mention the lack of rural schools as a barrier to education. They may have become accustomed to the limited availability of schools and therefore focus on related, but more immediate barriers, such as the resulting journeys that girls have to cope with in their everyday lives.

#5.2 Frequent moves and resettlements

Respondents from several project areas (World Vision Zimbabwe, CfBT Kenya, Save the Children Mozambique, WUSC Kenya and ChildHope Ethiopia) described how families who **move and resettle frequently**, such as families migrating in search of work or living in refugee settlements, face difficulty in terms of transferring and re-enrolling their children in school, which causes poor attendance, disruptions in enrolment or drop-out. Beyond the normal disruptions in attendance that such resettlements might lead to, IDI respondents in the World Vision Zimbabwe project areas noted that children face an additional difficulty as they are not able to re-enrol without a transfer letter, which they can only obtain from their previous school if they have paid all of their school fees.

No quantitative evidence was available to examine this issue in more depth.

Summary: How do school-based factors affect girls' education?

We have assessed a variety of school-based factors and many of these appear to be interrelated. They all seem to be part of a general problem of under-resourcing which leads to a lack of schools, long journeys, a lack of teachers and teacher training, overcrowded classrooms, poor school facilities, a lack of teaching and learning resources and poor accessibility of available schools. Evidence from the qualitative research suggests that most of these factors may not be gender specific but affect girls and boys to a similar extent.

With regards to the **quality of education and teaching**, IDI respondents across the SCW regularly reported a general lack of teachers, inadequately qualified teachers or a frequent absence of teachers who are available. In the school-based assessment, 77% of schools reported a lack of teachers, and only one in four available teachers had a teaching certificate. This evidence suggests that issues around teaching may be an obstacle to girls' education even though we did not find any significant associations with education outcomes in our multivariate model. As different school-based factors interact with each other it may well be that the effect of teaching is captured by another variable in our model. For instance, the model did suggest that girls learn less well if they have a male rather than a female class teacher, and if their teacher approves of the use of corporal punishment – issues that were not widely discussed among IDI respondents.

With regards to the **supply and resourcing of education**, IDI respondents often mentioned overcrowded classrooms as a barrier to learning and, to a lesser extent, as a barrier to attendance, resulting from a structural lack of schools, classrooms and teachers. This is supported by the quantitative finding that girls in large classes achieve lower average reading scores (after controlling for other factors). It is plausible that we would observe a similar effect among boys and the qualitative research did not suggest that overcrowding affected girls more than boys.

In the IDIs, respondents frequently mentioned difficulties with learning in school due to a **lack of facilities** such as benches and chairs in the classroom, proper school buildings (including steady floors and roofs) and access to a safe water source. The quantitative analysis did not find any significant relationship between these factors, and girls' learning, but girls were found to achieve lower reading scores in classrooms that have no electricity – an issue that concerned 91% of the assessed classrooms. While it is plausible that a lack of electricity can hinder learning, this should be interpreted with caution as a lack of electricity may also correlate with unobserved factors such as the resources available to the school or the community. The issue was not frequently mentioned by IDI respondents. The evidence remained inconclusive with respect to the importance of separate and lockable toilets for girls' learning outcomes.

IDI respondents frequently mentioned the lack of **teaching and learning materials** (e.g. textbooks, stationary or uniforms) as a barrier to attendance and learning, noting that children without the required equipment were sometimes turned away from school. The quantitative analysis did not find that any of these factors had a significant association with learning when controlling for other school-based factors.

With regards to the **accessibility of schools**, a lack of schools and long journeys to the schools available were sometimes mentioned in the IDIs, but were not a frequently reported barrier. The household survey suggests that girls in one out of four households have to walk more than 30 minutes to reach the nearest school, so it may be that long journeys are perceived as normal in many SCW contexts. There was a marginally significant association between the distance to the next school, and enrolment suggesting that girls in very remote areas may face the greatest obstacles to enrolment. This would support the assumptions of SCW projects that target rural and remote communities. In addition, IDI respondents pointed out that girls who resettle frequently with their families (such as pastoralists) may have difficulties transferring to schools due to bureaucratic hurdles.

Attitudes and support in family and community

In this section we examine factors relating to attitudes and support for girls' education and the effects on girls' education. Thirteen out of 15 SCW projects have assumed that some dimensions of family and community attitudes or support function as a barrier to girls' education. We will focus on the following factors:

- Negative attitudes towards girls' education: Perceptions about the relevance of schooling and parental aspirations for girls in particular, in the family and community.
- Family support and involvement in education: Parents are not involved in school activities.

- Negative perceptions of the relevance of education: Relevance of schooling regardless of gender.
- Social exclusion: exclusion of minorities; perceptions of hostility and isolation in the community.

Attitudes and support #1 – Negative attitudes towards girls' education

This barrier includes opinions in the family or community that are negative towards educating girls specifically, as opposed to being against education in a more general, non-gendered sense (which we discuss below, see Attitudes and support #3). Eleven SCW projects assumed that negative attitudes towards girls' education in families or communities was a barrier to girls' enrolment, attendance and learning, and three projects mentioned a lack of community support more specifically.

Preferences for marriage over girls' education: Negative attitudes towards girls' education were not frequently reported by IDI respondents across the SCW overall. However, when the issue did arise (which was frequently the case in Afghanistan and Somalia) it was regularly cited as a direct cause of girls not going to school. Negative attitudes were often said to stem from a belief that marriage is the top priority for girls and that education was either not relevant to them, or would benefit only the husband's family:

> *With the families around here, there are some who still think that sending girls to school will not solve anything. The girls will go and enrich the family she will go to when married.*
>
> School Official, Manicaland, Zimbabwe

In this latter case, households recognise a benefit to educating girls, but do not want to invest if they feel the benefits will accrue to another household. Receiving a dowry for a girl upon her marriage was also described by respondents as an added incentive for households to prioritise girls' marriage over education:

> *My male relatives have come here to complain, asking why I have to take all girls to school, saying that I deny them dowry that they could have gotten from the girls.*
>
> Household, Turkana, Kenya

Attitudes relating to the girls' role in the family: Another frequently stated reason for families to deprioritise girls' education was their feeling that girls were better suited for carrying out household chores and getting married, and that resources should therefore be invested in the schooling of boys in the family:

> *Then there is this category of families who do not value the education of girls because they think the girl's place is in the kitchen so educating them is a waste of resources that could be used to educate boys.*
>
> School Official, Masvingo, Zimbabwe

Cultural practice and values: Some respondents, particularly in Afghanistan and Somalia, noted that perceptions still exists whereby it is not culturally appropriate to educate girls. They described high levels of social pressure against educating girls which is considered shameful:

> *Currently there are some people who are not allowing their daughters to go to school. Some of those people even encourage my husband not to allow his to go to school. In some gatherings and meetings when my husband meets relatives, then those relatives tell him that you have done a really shameful thing for allowing your daughter to go to school, because it is not something that we often do in our area. Then he complains to me and says I am listening to all these things because of you. These people let their daughters only till 5 or 6th standard and then take them away from school.*
>
> *Household, Kabul, Afghanistan*

Fear of undesirable behaviour: Finally, particularly in WUSC (Kenya), CfBT (Kenya) and Save the Children's (Mozambique) targeted communities it was mentioned that educating girls might lead to behaviour that is not seen as acceptable by the family or community. This 'undesirable' behaviour was described in several ways, particularly by respondents in Mozambique and Kenya, including sexual relations with boys outside of marriage or 'prostitution:

> *But it is often that they end up being pregnant because of playing with boys. Thus this makes some parents for not sending their daughters to school to continue study [at secondary level] even if they have the possibility, they say that they will be prostitutes.*
>
> Household, Manica, Mozambique

Similarly, respondents noted that in some cases girls are forced to drop out of school and marry due to these fears of sexual activity. As described by one community leader:

> *There are men who believe that once a girl is 15 years old she is to be married off. They fear that the girl can engage in sexual activity with boys*
>
> Community Leader, Garissa, Kenya

A reason for not sending a girl to school was also sometimes described in terms of economic empowerment where **girls challenge social and behavioural norms** such as demanding equal property rights as male siblings, as described by one community leader:

> *Some parents complain that when you take the girl child to school, the girls lose control or become exposed. They look at their own interest and some even go to the extent of claiming for inheritance of family property, which is not customarily right in our community.*
>
> Community Leader, Samburu, Kenya

Similarly, respondents noted that men may be particularly wary of marrying a woman more educated than them for fear that this type of woman would upset traditional gendered household arrangements.

> *Yes, especially the men. You find that the men in some communities don't like to see their women more educated than them. That is why if you go around you will find very many housewives in these homes. Some got work but many of them are just at home doing nothing. Some men even stop them from going to work and force them to stay at home*.
>
> School Official, Kilifi, Kenya

In the EM household survey: 10% of caregivers stated that they believe that girls learn less than boys in school; 7% believed that it is best if a girl is married at age 18; and 18% believed that the girl being married or working was better than her being in education at age 18. These figures suggest that only a relative minority of caregivers have a markedly negative attitude towards girls' education. However, the more negative the caregivers' attitude towards girls' education, the lower the chances of these girls being enrolled. Out of all of the most significant barriers to enrolment, **negative attitudes are the factors that contribute the most to explaining variations in enrolment.** In addition, negative attitudes are also a significant predictor of lower average reading fluency, when controlling for other barriers. These findings suggest that negative attitudes towards girls' education do influence decisions about enrolment, and the girls' performance in school, where they prevail.

In 15% of the families, caregivers stated that it was unusual for people in the community to send their children to school. In these families, girls were significantly less likely to be enrolled than in families that did not report girls' education to be unusual. An association would be expected with this variable by definition, but it is included to control for family's perceptions about norms of community behaviour.

Attitudes and support #2 – Lack of family support and parental involvement

Five SCW projects assumed that a lack of family support and parental involvement was a barrier to girls' education. While this issue is closely related to negative attitudes, we focus on parents' behaviour in terms of active engagement with girls' education rather than their views and attitudes. While the qualitative research did not generate much evidence about the level of families' active engagement with girls' education, the quantitative evidence suggested that there may be a negative relationship between a lack of active family support, and girls' enrolment and learning.

The EM household survey suggests that 82% of families in SCW project areas are not actively engaged in their children's education in the sense that they do not participate in any school committee. In villages where caregivers tended to state that no family members were involved in school committees, girls were significantly less likely to be enrolled and had significantly lower average reading scores than in villages were families tended to get actively involved in their children's education. This association was significant even when controlling for other variables.

Attitudes and support #3 – Negative perception of the relevance of education

Negative perceptions of the relevance of education include all cases where respondents indicated that they themselves or others in their community did not see the value of education (for both boys and girls).Two projects assumed this to be a barrier to girls' education. Negative perceptions of the relevance of education were **regularly**

reported by IDI respondents across the SCW, and directly cited as a reason for children not attending school. Attitudes towards education in general were not measured in the EM household survey.

Perception that education is a 'waste of resources': Within most project areas, IDI respondents mentioned households in their communities that perceive education as not important or a waste of resources, because children's time could be better invested in livelihood type activities, and supporting the household economically:

> *They believe that education can't change someone's life and they prefer their children to look after their goats, camels and cattle.*
>
> School Official, Afar Ethiopia

In a few cases, especially in communities targeted by ChildHope (Ethiopia) and World Vision (Zimbabwe), some respondents reported that local families do not perceive children's education as very important, as the girls could seize other opportunities and find work abroad even without completing their education:

> *It has been the tendency here that school leavers and some never having gone to school, find easy solace in going into South Africa and easily get employment there. It dries up their appetite for school where they know they will not get jobs afterwards.*
>
> School Official, Matabeland South, Zimbabwe

Cultural and traditional practices: Some respondents, especially in CfBT (Kenya) and WUSC's (Kenya) project areas noted that education and schooling were not perceived as relevant because of cultural habits, traditional practices and lifestyles that were said to be strongly embedded within some families in these communities. This attitude was described with regards to the Samburu, Turkana and Somali communities in Kenya:

> *I would say Turkanas were against education because of illiteracy and their pastoralist culture, therefore their life was more about the animals, while Somalis arrived in [the community] to do business and they also are no usually very keen on schooling their children. They are focused more on religious school 'the Madrasa' and most of their children join in the businesses while women stay at home but in [community].*
>
> Community Leader, Turkana, Kenya

Respondents also identified communities influenced by religious practices and tradition who **do not value secular education** for either boys or girls, specifically as followers of apostolic churches in Zimbabwe:

> *We also have the white garment churches [apostolic sects] who do not value education. Their girls are married early and the boys are taught tin smithing and carpentry skills at an early age.*
>
> School Official, Mashonaland West, Zimbabwe

The EM household survey does not provide any data on perceptions of the relevance of education, although attitudes can be inferred from the caregiver's statements about whether education helps people make better lives for themselves; and preferences for what the girl should be doing at the age of 18. In terms of parental aspirations, 5% of caregivers stated that they had not wanted their girl to get any education when she was young, and 22% said that they hadn't wanted her to get more than a primary education. The lower the level of the caregiver's initial aspirations for the girl, the less likely these girls appeared to be enrolled at present. We also found an association between aspirations and girls' learning but this became insignificant when controlling for other barriers.

Attitudes and support #4 – Social exclusion

One SCW project assumed that the social exclusion of minority groups was a barrier to education. Issues of social exclusion were not widely discussed by IDI respondents, apart from stigma relating to early pregnancy which we discuss below (Personal factors #1). However, we did find some quantitative evidence which suggests that social exclusion may influence girls' education.

The EM household survey contained several questions on experiences of social exclusion that touched upon issues such as whether the family has people to talk to in the community, whether local people are hostile, and whether the girl has friends in the community. On the basis of these items we constructed a scale that generally measured low levels of exclusion across the SCW. However, in contexts where households reported isolation and hostility, girls tended to be less likely to be enrolled in school and had lower average reading fluency scores than their peers, even when controlling for other barriers.

Summary: How do attitudes and support factors affect girls' education?

Negative attitudes to girls' education were cited as potential barriers by around two thirds of the SCW projects. The qualitative research generated evidence to support this assumption and suggested several pathways through which attitudes may drive education outcomes. These typically related to traditional perceptions about the role of girls in the family and economic imperatives such as obtaining dowries. School was sometimes viewed as undesirable for cultural reasons or due to the perception that educated girls may develop behaviours that challenge established social norms and power relations. In our quantitative analysis, negative attitudes to girls' education could explain some of the variation in enrolment and reading fluency.

In addition, the **lack of active participation in education** (e.g. family members participating in school committees) was associated with lower enrolment and reading scores. **Negative perceptions of the relevance of education** (regardless of gender) were related to low attendance both in the household survey and IDI responses.

A final area related to attitudes and social circumstances relates to **social exclusion** as a potential barrier to education. Social exclusion was not widely cited by SCW projects or discussed by IDI respondents and indeed it is a fluid concept which may be expressed differently across contexts and subgroups. Only a few of the surveyed households (1%) reported feelings of social exclusion, but those that did we tended to find lower levels of girls' enrolment and reading.

Violence related factors

Twelve out of 15 SCW projects assumed that issues around safety and violence function as barriers to girls' education. In this section we will examine the following factors in relation to violence and safety:

- Harassment and insecurity: Insecurity, conflict, incidences of violence, domestic violence
- Sexual violence: Sexual harassment, assault or violence

Violence and safety #1 – Insecurity, conflict and violence

Seven projects assumed barriers relating to insecurity, conflict or violence, and four projects specifically mentioned harassment and violence in school as a potential obstacle to girls' education. One project specifically mentioned unsafe journeys to school. Incidences of violence within the family, school or community were one of the most commonly discussed barriers in the qualitative research. Respondents frequently described the negative effects of violence in the form of corporal punishment (discussed above) and active inter-tribal conflict on attendance and learning.

Active inter-tribal conflict: IDI respondents in WUSC and Save the Children (Ethiopia) project areas described that active inter-tribal conflict posed an obstacle to girls' going to school by destroying schools and discouraging children (particularly girls from the less powerful tribe) from attending during periods of active conflict:

> *When two tribes or clans fight one, the girls from the smaller tribe may not come to class because on their way, they might be stopped by the people who are fighting.*
>
> School official, Garissa, Kenya

In other instances, girl students were reported to be directly attacked, or students kept home by their families to avoid assault or various other potential traumas which might happen on the way to or from school:

> *It affects students because they lose their parents through war. They even killed an old woman last week and raped girls. It has affected our children a lot.*
>
> Community leader, Turkana, Kenya

Domestic violence: In several project areas IDI respondents mentioned incidences of domestic violence that usually involved the male and female caregivers that were often triggered by alcohol abuse. In most instances, reports of domestic violence and its impact on attendance and learning came from school staff members and community leaders rather than households themselves, like this teacher:

> *Yes we have seen parents' conflicts, which really affect the children. You will know when the parents have fought at home, the child will be reserved, will not participate. The child who used to be very clever will start dropping in performance, so it really affects.*

School official, Nairobi, Kenya

Respondents described a range of ways in which domestic violence affects girls' education. These included psychological trauma affecting children's concentration in class and children missing school days or fighting with other students as a result of witnessing violence at home.

Respondents in Zimbabwe and Kenya described context-specific ways in which harassment and insecurity manifest and affect children's education.

Violence around elections: In Zimbabwe, politics and political violence were often cited as a cause of insecurity and adverse student attendance, especially (but not exclusively) around election time. A community leader in Manicaland noted that although it might not have impacted on the local community, the political conflict in 2007 and 2008 affected schooling and caused insecurity:

Children were no longer going to school in fear of being attacked on their way to and from school. If a parent has been attacked, the child will not even do well in school. There were a number of youths especially dropouts, who were roaming around the village and road harassing people. There are those girls who drop out due to pregnancy. Such girls were also joining those militant youth group, inciting violence in the community.

Community leader, Manicaland, Zimbabwe

Gangs and insecurity in slums: A few caregivers and school staff members in Kenya, especially those living or working in slums, noted that local gangs and unruly groups led them to feel insecure and concerned about their children and students. Respondents were made insecure through harassment by these unruly groups, concerns about the presence of unsavoury characters, and fears that their children might be lured into joining such groups:

It is not very safe here. Since the boys here are naughty, some are members of the Mungiki [a banned organisation in Kenya, similar to organized crime], when you set up a job they come and demolish. If maybe you are cooking fries they come and spill them, unless you give them some money. They collect some amount from everyone doing business every day illegally and the government does nothing about it.

Household, Nairobi, Kenya

When asked about the kinds of violence that happen to girls on their way to school, a school staff member in Nairobi, Kenya more explicitly set out the key concerns, noting:

Usually they don't experience violence, but In the slums, like where our school is situated and with some children out there who are not going to school, some sniffing glue, collecting metal for selling, sometimes you find some of our children are lured into that life and by the time the teacher realizes this child has not been coming to school it is too late and they have already been introduced to sniffing glue or other harder drugs.

School Staff, Nairobi, Kenya

In the EM household survey, 24% of households stated that journeys to the girls' school were dangerous. This was associated with a small but significant decrease in girls' attendance rates even when controlling for other potential barriers. It was one out of six barriers that appear to influence attendance in the multivariate regression model. Initially we also measured bivariate associations between dangerous school journeys, enrolment and learning but these became insignificant when controlling for other factors. **The prevalence of violence in school, as reported by households, was relatively small across the SCW.**

Apart from dangerous journeys, households rarely reported incidences of violence. Only 4% of families stated that there had been reports of violence at the girl's school during the previous year, and 1% stated that the girl had become witness to violence at school herself. Less than 1% of households stated that the girl was afraid to attend school as a consequence of violent incidences.

These findings suggest that incidences of violence may be less widespread that we might think based on the qualitative IDIs. At the same time, it is worth noting that violence is a particularly sensitive topic to discuss in household interviews, so some level of social desirability bias may be present where respondents have in fact been exposed to violence but did not want to disclose that information during the survey, due to the personal and sensitive nature of such information or to present their household and community in the best light possible.

Also, many other potential barriers that are more common than violence do not explain much variation in outcomes in our multivariate models. A relatively infrequent barrier such as violence may appear insignificant but could have a marked impact on lives where it does occur and may actually be as important as other, more commonly reported barriers. Although relatively few families discussed that they or the girls are worried about attending school as a result of violence, clearly the real human impact of violence and fear of violence are reflected in their subjective importance even for those who are not directly exposed. As an important theme that affects family and community decisions about education it is important to monitor, research and understand further the effects of different forms of violence on education marginalisation throughout the course of the GEC.

Violence and safety #2 – Sexual harassment and violence

Four projects assumed that sexual harassment and violence pose a barrier to girls' education. Sexual harassment and violence were discussed by IDI respondents in the qualitative research and repeatedly described as a barrier to education. Due to the sensitivity of the issue, the EM did not collect any quantitative evidence to assess the prevalence or effects of sexual violence.

#2.1 Sexual harassment

Sexual harassment was described as a fairly common occurrence by IDI respondents across the SCW. Though sometimes described by respondents as a normal or accepted part of life, several respondents described sexual harassment as something that negatively impacts education outcomes, particularly in Zimbabwe, Ethiopia, Mozambique and Kenya. Respondents noted that sexual harassment can negatively affect girls' attendance at school as well as their psychological well-being. Most often, sexual harassment was described by households and community leaders as occurring to girls on their way to or from school, thereby discouraging girls from attending.

#2.2 Sexual violence

In most SCW project areas, caregivers mentioned that their girls faced issues in terms of **sexual assault and rape, usually on the way to or from school**. In project areas in Ethiopia, IDI respondents also discussed issues in terms of girls being abducted. These fears of sexual assault were reported to affect girls to varying extents. In some cases it was reported to prevent girls from attending school and in other cases it was reported to just shape their behaviour when traveling to and from school:

> *There were boys who would sit and wait for school children to harass them and rape some of them…children from that area began fearing going to school and for their safety they would travel in groups from school.*
>
> Household, Mashonaland West, Zimbabwe

To a lesser extent, respondents also noted that sexual assault also impeded learning, in the sense that victims of sexual assault may have difficulty concentrating in class after such trauma. Sexual assault and rape are particularly sensitive subjects, which respondents may be reluctant to discuss with interviewers. This may be due to the fear of social stigma, sensitivity or social desirability bias as respondents strive to portray their families and communities in a positive light. Nonetheless, the frequency with which sexual assault was mentioned by IDI respondents does provide some indication of the impact that sexual assault might be having on learning outcomes as well as providing a potential glimpse of the frequency with which sexual assault occurs. This issue could not be covered in the quantitative research due to its high degree of sensitivity around the subject.

Summary: How do factors relating to safety and violence affect girls' education?

Evidence from the qualitative research suggests that issues around **insecurity and violence** are a common concern among families in SCW project areas and affect girls' attendance and learning. The IDIs mention different forms of violence (e.g. political conflict, active inter-tribal conflict, domestic violence, or sexual harassment) and different effects on girls' education, ranging from the physical destruction of schools to psychological trauma or aggressive behaviour in school. Due to the highly sensitive nature of issues around violence, and sexual violence in particular, we have very limited quantitative evidence about this barrier. The household survey suggests that a significant proportion of girls (24%) have unsafe journeys to school and that this affects their attendance. However, further in-depth research is required to explore the prevalence and intensity of violence and harassment at home, on the way to and from school, at school and in the communities. This is a likely focus of one of the areas to explore further through the GEC thematic research.

Personal factors

Twelve out of 15 SCW projects assumed that personal factors influence girls' education. In this section we will examine the following personal factors:

- Early pregnancy: Attitudes towards early pregnancy
- Early and forced marriage: Attitudes towards early marriage
- Issues around disability: Accessibility, social stigma and discrimination
- Issues around general and sexual health: General health issues, menstruation, lack of sanitary towels
- Self-esteem, aspirations and motivation: Low self-esteem and confidence, low aspirations
- Low level of education in the family: Parental education; and
- Migration and mobility: Frequent resettlement, migration, pastoralist lifestyles

Personal factors #1 – Early pregnancy

Early pregnancy was one of the individual factors most often described by SCW projects as a barrier to education (eight projects). In the qualitative research, pregnancy was a commonly reported issue preventing girls from attending school across the SCW. Pregnancy was not measured in the EM's household survey as it is a sensitive subject and can be retrospectively recorded at later survey waves (i.e. midline and endline).

IDI respondents described **pregnancy as being a severe barrier to girls staying in school**, as in nearly all cases respondents reported that girls are not welcome back at school after giving birth:

> *Ah no, she would not be welcome because she would teach others bad thing like sleeping with men. Girls don't come back to school when they fall pregnant.*
>
> Household, Matabeland South, Zimbabwe

Incidences of unplanned pregnancy were reported in most project areas, and respondents noted that girls who become pregnant are often **subject to strong social stigma and discrimination**, similar to the concerns voiced by this respondent:

> Interviewer: *If a girl had been out of school for a while, or was pregnant or was disabled, would she be welcomed at school?*
>
> Respondent: *No, she will never be welcomed in case of pregnancy.*
>
> Interviewer: *Why they are not welcomed back?*
>
> Respondent: *Because she is already destroyed.*
>
> Household, Kilombero, Tanzania

Respondents also commonly reported a perception that girls are more likely to become pregnant if they attend school, so in some project areas the **fear of pregnancy can be a reason to keep girls away from school**, as highlighted by this Community Leader:

> *They [girls] came here [to school] with nothing but pregnancy. So because of that people think that it is a waste of time to send their daughters.*
>
> Community Leader, Moyamba, Sierra Leone

While the household survey did not ask whether the surveyed girl had ever given birth herself, it did contain a question about the presence of mothers under the age of 20 in the household, which is an indication of the probability that the girl herself or her siblings may have experienced an early pregnancy. There is a marked variation in the reported prevalence in project areas, ranging from 2% (ChildHope, Ethiopia) to 41% (Plan, Sierra Leone), and this variation is likely to be indicative of the range of rates of early motherhood. The presence of young mothers in the household was not significantly associated with girls' education outcomes overall across the SCW.

Personal factors #2 – Early and forced marriage

Seven SCW projects assumed that early or forced marriage functions as a barrier to girls' education. While we did not collect any quantitative evidence on this sensitive issue, early marriage was frequently discussed as a barrier by IDI respondents in the qualitative research.

The causal relationship between early marriage and leaving school was described in various ways and sometimes related to issues of pregnancy discussed above. Some IDI respondents said that girls became pregnant and dropped out of school after marriage, while others described that girls dropped out first and then got married. Respondents noted that girls' agency in these situations varies, and that they may be pushed into marriage in some cases, while others girls were said to push for marriage themselves (this was mentioned by respondents in Zimbabwe, and Mozambique).

Most often respondents described that early marriage forced girls to **drop out of school**, generally once girls reach puberty. Early marriage was often described as an accepted and expected part of the local culture or community:

> *Here these families are very tied to traditional values because children aged from 1st to 5th class manage to attend school but once the 1st menstruation arrives the girl become much more important in the community than at school. Then they prefer to tell her that you stay at home, do not go anymore to school and get married. Then the number of girls at 1st class is high compared to EP2 (6th and 7th class) and lower at secondary school. There is that thinking that me with this age I cannot go to school. I have to get married or because my friend got married. Then this limits girls from progressing at school.*
>
> School Official, Tete, Mozambique

In other cases, households reported that girls **get married as a way to provide extra income** for the household, through the bride payment or dowry. In these cases it appears that it is poverty that drives early marriage, making it an economic decision rather than a cultural expectation.

> *In my idea, the girls should marry at the age of 18 to 20 but our village people sell their daughters because they are poor at the age of 10 to 14. If we did not make our daughter marry, we would send her to school.*
>
> Household, Faryab, Afghanistan

Respondents frequently noted that **older girls are more likely to drop out of school, for marriage, due to pregnancy**, or other increased household and community commitments which indicate that households across the SCW view education for younger girls in a different way (generally more positively) than for older girls.

> *In our village there are some people that permit their daughters up to 4th or 5th grade and then don't let them to go to school and they don't like their daughters going to school. It is as their tradition that they don't permit girls going to school and suppose it as a shame for their selves that their [older] girls should go to school, and they tell that when girl become [older], they shouldn't go to school, that she must stay at home and education is not their right.*
>
> School Official, Balkh, Afghanistan

Data from the EM household survey is not available on attitudes towards early marriage, but respondents were asked whether they would prefer their daughter to be married, in education or in employment when she reaches the age of 18. The prevalence of caregivers preferring marriage to education or employment varied across projects, from 0% in World Vision (Zimbabwe) project areas to 19% in BRAC (Afghanistan) project areas. This is likely to be indicative of the attitudes to early marriage. We did not find any direct association with girls' learning outcomes, but as discussed in Section 4.2.1, the caregiver's general aspirations concerning the girls' level of education were a significant predictor of their chances to be enrolled.

Personal factors #3 – General and sexual health

Six SCW projects assumed that issues around health, personal hygiene or sexual and reproductive health were a barrier to girls' education. Two projects specifically described menstruation and the lack of sanitary towels as an obstacle. None of these issues was frequently mentioned in the qualitative research. The EM household survey did include questions about general health but we did not find any significant association between health and education outcomes. While the lack of sanitary towels during menstruation or poor health may affect girls'

attendance and learning, they do not emerge as key barriers from our baseline evidence, compared with some of the other factors discussed in this section.

Personal factors #4 – Issues around disability

Three SCW projects considered that issues around disability hinder girls from being in school and learning. These issues include a lack of physical access to schools, a lack of special learning aids, as well as social stigma around disability. The majority of IDI respondents across the window did not describe disability as a major barrier to attending school. However, the quantitative analysis suggested that disability may be barrier to attendance and learning, even though the observed associations were only marginally significant.

Even though issues around disability weren't widely reported by IDI respondents, some did describe obstacles that can cause children to drop out, such as a lack of equipment and resources in schools to support disabled children (e.g. wheel chairs and ramps), or teasing and discriminating behaviour on the part of abled students at school. However, IDI respondents in Zimbabwe, Kenya and Mozambique project areas often indicated that stigma and discrimination were not common and that help was generally available for disabled children to attend school. Respondents did **not generally note any particularly gendered differences** between challenges faced by disabled boys and girls.

Evidence from the EM household survey suggests that 4% of girls suffer from some kind of difficulty hearing, seeing, talking or moving around across the SCW with some variation by context. Girls who were reported to have such difficulties tended to have slightly lower attendance rates and lower average reading fluency scores than their peers even when controlling for other factors. However, this association was only marginally significant.

Disability is a difficult subject to examine through survey research, especially in cross-cultural surveys. Definitions and interpretations of disability may vary from one context to another, as may the degree of social stigma attached. It may be that different types of difficulty or disability affect different outcomes. More research is required to assess whether there are sufficient coping and support mechanisms in SCW communities to help disabled children attend and learn in school, as suggested by the IDIs. This is likely to be one of the focus areas of the GEC thematic research.

Personal factors #5 – Self-esteem, aspirations and motivation

Two SCW projects assumed that a lack of confidence, self-esteem and aspirations on the part of girls may be a barrier to their education. While we found some quantitative evidence that personal aspirations affect education outcomes, low self-esteem, self-confidence and aspirations were rarely mentioned as an issue affecting girls' education in the qualitative IDIs.

While the qualitative interviews included questions to capture girls' degree of confidence, younger girls in particular often remained quiet during their section of the interview. This made it difficult to assess their aspirations and levels of confidence. This silence might in itself be a sign of low confidence around strangers, or indicate that girls are not used to expressing their own opinions about themselves.

The quantitative analysis of EM household survey data found that girls who stated that they are **not trying to do well** in school tended to have significantly lower attendance rates and reading fluency scores than their peers, even when controlling for other potential barriers. In addition, girls who stated that **education was less important for girls** than for boys (in the school-based assessment survey) tended to have significantly lower average reading fluency scores than girls who believed that education was just as important for girls as boys. These findings support the assumption that girls' motivation and aspirations affect their learning outcomes, but there may also be a feedback effect of learning outcomes on the girls' motivation and aspiration.

Personal factors #6 – Parental education

SCW projects did not describe low levels of education in the family as a key barrier to education. They may have described other factors such as poverty, or targeted particular target groups that are known to have difficulty accessing education such as rural or pastoralist communities. However, the quantitative evidence suggests that parental education is a **key factor in relation to girls' enrolment and learning**, which is a common finding in international education research.

Findings from the EM household survey suggest that the level of education in the family is low in 64% of the households across the GEC. The lower the level of education in the family (considering the schooling of both the

caregiver and the head of household) the lower the chances for girls to be enrolled and the lower their average reading score. This finding is supported by evidence from the school-based assessment which shows that 77% of the fathers and 84% of the mothers of girls assessed in the schools had a low level of education. Low education on the side of the father was associated with lower average reading scores.

Personal factors #7 – Mobility and migration

Several SCW projects target mobile or pastoralist communities, but only one project specifically described migration as a barrier to girls' education. Based on the household survey we have only limited evidence on recent migration but not on the patterns of frequent resettlement. We did not find any significant association with learning outcomes although reading scores do vary by context in ways that may reflect in part differences in modes of living that are difficult to measure directly. In the qualitative research, however, IDI respondents regularly mentioned migration and resettlement, and fairly often cited these phenomena as a reason for children (generally boys and girls) not attending school.

Difficulties transferring children to a new school: The most widely reported way in which migration and mobility affect girls' ability to go to school was for families that **migrate in search** of work or **refugees** who are resettled, and then face difficulties transferring their children to a new school, causing disruptions in enrolment and sometimes drop-out. As mentioned above, in Zimbabwe respondents in World Vision project areas noted that children face an additional difficulty as they are not able to re-enrol without a transfer letter, which they can only obtain from their previous school if they have paid all their school fees.

Dropping out in search of work: A secondary issue respondents described concerned girls migrating themselves for work. Respondents from Zimbabwe and Ethiopia described the effect that the promise of work, in South Africa and the Middle East respectively, has on girls, causing them to drop-out of school at an early age to go in search of better opportunities and work there. The promise of paid work was reported by respondents to lure these girls to drop-out of school, although the quality and reliability of this work is unknown.

Irregular attendance for with seasonal migration: Finally, respondents in CfBT (Kenya) and Save the Children (Ethiopia) project areas described the particular barriers faced by children (and sometimes girls specifically) from pastoralist households:

> *Families' difficulties in this area are the problem of permanent settlement. Since they move with the changing season in search of rain their likelihood of being a resident at a specific place is very little. They move from place to place with their goats and cattle's. This is not a good life trend for their children's education.*
>
> School official, Afar, Ethiopia

Frequent migrations and children transferring between schools were also said to affect the teachers' ability to complete their lesson plans and teach a full year's curriculum:

> *Many students drop out school at drought seasons. So it hinders the teaching learning process. We can't perform as per our plan.*
>
> School official, Afar, Ethiopia

Another mobile group mentioned by IDI respondents in ChildHope (Ethiopia) and Save the Children (Mozambique) were the **landless poor**, that is households that do not own land and have to move more frequently than other families, due to the cost of living and their need to find work. While children from these families are able to enrol in school, migration may disrupt their learning as they transfer between schools, as these households are not able to settle in one place permanently.

Resettlement within refugee camps: Another group affected by migration and resettlement are refugees living in camps in WUSC's (Kenya) project areas. High numbers of respondents in Garissa identified themselves as refugees, which is to be expected given that WUSC is targeting two large refugee camps. Several respondents in WUSC's project areas described the educational difficulties faced by children from families:

> *Since the schools are free, most people enrol their girls but there are a few who want their girls to be at home and do housework duties, and others because of the nature of camp life, it is not clear whether it is permanent or we are soon moving to another place, they tend to not take education seriously, sometimes I understand them since camp life can also have a sense of hopelessness.*

> Community leader, Garissa Kenya

Schools trying to help pastoralist households settle permanently: Schools in these areas are making some efforts to retain students from pastoralist households, offering lunches in school and FAFA (food rations) to households who enrol their children in school. These incentives help to encourage and enable pastoralist households to remain in one location for longer and enrol their children in school. It is described by respondents as effective at accomplishing this:

> *We have FAFA. I said there is a diet /food/ for our children. As we have been taking FAFA, we will not go far looking for another settlement area. We are now limited to [the local community]. We have also access to education in our village.*
>
> Community leader, Afar, Ethiopia

Summary: How do personal factors affect girls' education?

Early motherhood and pregnancy along with **early or forced marriage** were often mentioned as barriers to education in the qualitative IDIs. In particular, IDI respondents described the stigmatisation of young mothers which often ends their participation in school. We could not directly measure the effects of pregnancy on schooling in the household survey and it may be that early pregnancy affects girls who are the most likely to not be in school for other reasons. The prevalence of early pregnancy also varies by context, and it is plausible that stigma would be less likely to occur or act as a barrier where early pregnancy is more common. Finally, there is also an association between leaving school deliberately to start a family based on considerations about the role of women and viable economic pathways rather than it being viewed as a failure or actual drop-out.

In the IDIs, **disability** was not generally viewed as a barrier to children's participation in education. The quantitative evidence showed that some forms of disability were marginally associated with attendance and learning, but more research is required, to explore potential linkages between disability and educational marginalisation.

There was some quantitative evidence that attendance and reading scores were linked with the **girls' motivation to do well in school, and their aspirations**, but this was not salient in IDI discussions and it may be that the causality runs in both directions with better performing girls being more motivated and aspiring as a result of achieving good results.

In general **aspects of health and health related hygiene** did not feature prominently in qualitative or quantitative evidence as factors related to education outcomes.

Low parental education was found to be associated with girls' educational outcomes. This is in line with the international literature about education and the intergenerational transmission of educational disadvantage, but low parental education was not specifically cited by projects as a barrier to education.

No quantitative evidence was available to link **mobility and migration** with poor education outcomes controlling for other factors, although reading levels in some pastoralist contexts were low (see Section 3.1.2). However, IDI respondents did mention migration and resettlement as causes of poor outcomes through the disruption of enrolment and attendance. These issues are likely to require more detailed analysis of the specific pathways between economic factors and mobility and how these interact with coping strategies.

4.2.3 Summary of baseline findings on barriers to girls' education

We have discussed the most salient barriers to girls' education based on evidence from multivariate regression analysis; and we have discussed potential barriers one by one based on the triangulation of evidence from the EM's qualitative and quantitative research. Our key findings from the multivariate models discussed in Section 4.2.1 are summarised in Table 43 below. This summary Table shows the statistical significance of associations that we found across the SCW (or in the countries covered by the school-based assessment), and in the relevant subset of countries where projects assumed the relevant barriers. We also show whether the qualitative evidence supported the assumptions at the SCW level.

When comparing the EM evidence with the projects' initial assumptions about barriers, the following key findings emerge:

- The individual barriers most frequently cited by projects were **poverty and negative attitudes towards girls' education** – cited by eleven projects each. These are equally the barriers most strongly evidenced by the EM's baseline research.

- Our quantitative findings suggest that **poverty**, in its various dimensions, affects girls' enrolment, attendance and learning. In addition, poverty was one of the most frequently mentioned barriers in the qualitative research, where it was often mentioned in parallel with issues relating to the **cost of schooling**.
- It appears that **negative attitudes towards girls' education** affect decisions about enrolment and conditions that support girls' learning. To what extent and how they affect attendance requires further research at the midline stage of the evaluation.
- Projects mentioned **various school-based factors** as barriers to girls' education. While the quantitative evidence showed some significant associations between girls' learning and issues such as lack of adequate facilities, class size or the use of corporal punishment, the role of individual school-based factors is difficult to capture statistically as they each contribute only a small share to explaining the observed variance in learning and tend to be interrelated. The qualitative evidence provides more nuanced insights into the barriers facing girls (and boys) at school and suggests that a general under-resourcing of education is a root cause for many of these barriers.
- In term of personal factors, more than one third of projects assumed that **early pregnancy** (8 projects) and **early or forced marriage** (6 projects) were barriers to girls' education. While we could not assess these assumptions statistically, there was strong qualitative evidence that these barriers are linked to low attendance and school drop-out.

It has become clear that many of the barriers discussed above are **interrelated and driven by a common set of structural problems**, including a lack of resources in households, communities, schools and government; as well as social norms, beliefs and attitudes that de-prioritise education (especially for older girls) compared to other options such as employment and marriage. Sustainability and leverage are a key GEC outcomes in addition to being in school and learning, and it is important that projects distinguish between symptomatic barriers on the one hand and structural drivers on the other hand, in order to achieve sustainable impact.

It is important to note that the findings discussed in this section refer to the SCW as a whole. Both the prevalence and salience of barriers tends to vary by context and issues may be salient in one project area, even though they do not emerge as key barriers across the window as a whole. We have calculated the same regression models presented in Section 4.2.1 for each SCW country and these tables are included in Annex C. The project briefs in Annex E provide a detailed discussion of qualitative findings on potential barriers in each project area. Finally, to achieve a more comprehensive picture of the structural drivers behind educational barriers and educational outcomes, we need to consider the political, economic, social, environmental and legislative context in GEC countries. In Annex A we provide a contextual background analysis for four selected SCW countries, namely Afghanistan, Kenya, Mozambique and Sierra Leone.

Table 43: Summary of findings on assumed barriers to girls' education based on EM evidence

EM evidence of assumed barriers	Number of projects assuming this barrier	EM quantitative evidence of a significant association between the potential barrier and the outcome of interest (controlling for other potential barriers)						EM qualitative evidence
Potential barrier assumed by SCW projects		Across the SCW			Only countries where barrier was assumed			Across the SCW
		Enrol.	Attend.	Learn.	Enrol.	Attend.	Learn.	Any outcome
ECONOMIC FACTORS	15							
Poverty	11	***	*	***	***	**	***	✔
Cost of school (fees, books, uniforms, etc.)	9			†				✔
Domestic chores and livelihood activities	8	***		***	***		*	✔
Other economic factors	1	●	●	●	●	●	●	●
SCHOOL BASED FACTORS	15							
Poor quality of education and teaching	8		**	***			*	✔
Long distance to school	7	†						✔
Lack of adequate facilities	7	†		*				✔
Inadequately trained teachers	7							✔
Inadequate teaching or learning materials	5							✔
Under resourcing (class size)	4			**				✔
Lack of female teachers	4			*				
Lack of adequate sanitation facilities	3							
Availability of schools	3							
Teachers treat boys and girls differently	3							
Teacher absenteeism	2							✔
Shortage of teachers	2							✔
Corporal punishment	2			*				
Language of instruction not mother tongue	2	***			†			
Poor school management	2	●	●	●	●	●	●	
Poor governance of girls' education	2	●	●	●	●	●	●	✔
Other school based factors	9	●	●	●	●	●	●	●
ATTITUDES AND SUPPORT	13							
Negative attitudes towards girls' education	11	***	†	***	***	*	***	✔
Lack of family support and parental involvement girls' education	5	***			†			
Negative perceptions of the relevance of education	2	***	*		**	†		✔
Social exclusion	1	***		*				
VIOLENCE AND SAFETY	12							
Insecurity and fear of violence	7							✔
Lack of safety or harassment at school	4				***	*		✔
Sexual harassment and violence	4	●	●	●	●	●	●	✔
Unsafe journey to school	1		*					✔
PERSONAL FACTORS	11							
Early pregnancy	8	●	●	●	●	●	●	✔
Early or forced marriage	7	●	●	●	●	●	●	✔
Issues around general and sexual health	6							
Issues around disability	3	†	†					
Lack of motivation, confidence, aspirations	2		*	**				
UNEXPECTED FACTORS	0							
Low levels of education in family	0	***		***	***		*	

Note: Asterisks are used to indicate levels of statistical significance: *** indicates a p-value below 0.001; ** indicates a p-value below 0.01; and * indicates a p-value below 0.05. † indicates a marginal value of significance of $p < 0.1$. Barriers with too low prevalence were excluded from the table. ● indicates that no evidence was available to assess this barrier.

The school-based assessment was only carried out in four countries, namely DRC, Ethiopia, Kenya and Sierra Leone. It was therefore not possible to assess relevant school-based barriers specifically for those projects that assumed them, as some of these project areas may not have been covered by the school-based assessment. Therefore the relevant cells in the table are greyed out.

5 Project Targeting and Changes to Project Design

5.1 Does the evidence support project targeting?

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

As a challenge fund, the GEC was designed to support projects that are "able to demonstrate new and effective ways to expand education opportunities to marginalised girls".[30] In the GEC business case, marginalised girls are broadly defined as "those […] who have not been enrolled or dropped out from school or [are] in danger of doing so (whether living in slums, remote areas, ethnic/religious minorities, girls with disabilities, girls who become pregnant, [or] girls affected by conflict)".[31] All projects were encouraged to focus on the girls who are most vulnerable and/or have the greatest educational needs within their communities or countries. On this basis, projects were invited to come forward with their own definitions of marginalisation. The projects then identified different drivers of marginalisation, educational barriers, and population sub-groups affected (see Table 44, below).

In the course of developing their theories of change, all projects formulated assumptions about the factors that shape girls' education in the targeted areas. On the one hand, projects identified educational *barriers* that can have an almost universal influence on girls within a given community or school. These include, for example: seasonal poverty; long distance to the next secondary school; corporal punishment in school; or a lack of trained teachers.

In addition, projects identified certain population *sub-groups* that are particularly affected by educational barriers or bundles of barriers due to girls being socially marginalised in terms of their livelihoods and/or status within society. For example, Relief International (Somalia) is targeting young mothers, disabled girls and forcefully displaced girls (among others), assuming that these groups face particular barriers to education.

There tends to be an element of overlap between the definition of barriers and population sub-groups. In Section 4 we have seen that different dimensions of poverty act as barriers to girls' education, and many projects have simply defined "the poor" as their target group. Similarly, we have treated disability as a barrier to girls' education, but girls affected by disability are also a population sub-group facing a distinctive bundle of barriers related to their disability (e.g. restricted mobility; dependence on learning aids; potential experience of social exclusion or stigma; elevated risk of being victim of abuse) that may affect their education. In this section, we have tried to distinguish between definitions of marginalisation that focus on girls' affected by social barriers to education such as poverty or disability; and definitions of marginalisation that focus on the girls' educational situation. In the first case, we use the term 'socially defined marginalisation'. In the latter case we use the term 'educational marginalisation'. Finally, there are projects that use an even wider definition of marginalisation by considering that all girls living in a geographic area are affected by significant social or educational marginalisation. Table 44 provides an overview of projects' definitions of marginalisation along these lines.

A couple of projects had not clearly articulated their understanding of marginalisation; although some have listed possible barriers to girls' education (see the project profiles in Annexes D1-D15).

[30] https://www.gov.uk/girls-education-challenge#girls-education-challenge--the-portfolio-of-projects
[31] DFID (2012), Girls' Education Challenge, Business Case Version 4, June 2012, p. 30.

Table 44: Conceptual approaches to defining marginalisation and projects' actual definitions

Approaches to defining marginalisation	Actual definitions of marginalisation adopted by SCW Projects
Focussing primarily on the socially marginalised	• **ChildHope** (Ethiopia) defines marginalised girls as those being affected by a number of social phenomena: early or forced marriage; unpaid/low paid domestic labour; uninformed migration; street-involvement; sexual exploitation; and/or low levels of parental education. • **Relief International** (Somalia) defines marginalised girls as those belonging to any of the following population sub-groups: orphans; disabled; young mothers; survivors of violence; members of the urban poor; rural and displaced populations. • **PLAN International** (Sierra Leone) defines as marginalised those girls who are: poor; living in rural areas; and who have a disability.
Focussing primarily on the educationally marginalised	• **Save the Children** (Mozambique) defines marginalised girls as those coming from poor households, who have dropped out of school; who are at risk of dropping out of school; or who have never enrolled in school.
Focussing on both the educationally and socially marginalised	• **Camfed** (Tanzania/Zimbabwe) defines as socially marginalised girls who: are orphans; affected by disability; and/or receiving any form of welfare. They define as educationally marginalised girls who have graduated from primary school but not transitioned to secondary school, or who are at risk of dropping out of secondary school. • **BRAC** (Sierra Leone) defines girls as marginalised if they are out of school; have low social or emotional skills; and/or live in an environment where girls' education is not valued.
Focussing primarily on socially marginalisation by geographic area	• **ACTED** (Afghanistan) considers that all girls living in its target areas in Northern Afghanistan can be considered marginalised by nature of their difficult environment. • **Save the Children** (Ethiopia) identifies girls living in pastoralist communities in the Afar region as marginalised due to their lifestyle. • **WUSC** (Kenya) focus on girls living in refugee camps and consider them marginalised because they are people who have been displaced from their homes living in relative poverty. • **CfBT** (Kenya) identifies marginalised girls as those living in rural, less developed parts of Kenya (i.e. in arid and semi-arid lands communities in Turkana, Samburu and Kilifi) or those living in slums (i.e. in Nairobi). • **The Aga Khan Foundation** (Afghanistan) is targeting girls in rural parts of Afghanistan, as they consider these areas most marginalised in terms of access to education. • **CARE** (Somalia) is targeting girls in poor households in five rural regions which it considers to be particularly marginalised. • Initially, **World Vision** (Zimbabwe) was targeting girls who live in rural parts of Zimbabwe which it considers particularly marginalised. It developed a more detailed assessment of marginalisation after baseline data collection.
Not defined	• **IRC** (DRC) has not provided a clear definition of marginalisation, although they have listed a set of barriers to girls' education. • **BRAC** (Afghanistan) have not specifically detailed their concept of marginalisation.

5.1.2 How have the projects defined their target groups (project beneficiaries)?

Based on their definition of marginalisation SCW projects identified specific contexts and groups of girls to target through their interventions. Table 45 provides an overview of each project's primary target groups, as set out in their full project proposal. When reviewing the project proposals, we aimed to distinguish primary target groups from other groups that projects mentioned as being marginalised and in need of support but did not specifically target.

Table 45: Project targeting – Primary target group(s) by SCW project

Baseline	Number of projects using this definition	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
		BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTD	WV	CfBT	RI	CARE
		Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
School Age																
Lower primary	12		✔		✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Upper primary	14	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔
Lower secondary	11	✔	✔	✔			✔	✔	✔	✔	✔		✔		✔	✔
Upper secondary	2		✔												✔	
Social Groups																
Disabled girls	3			✔									✔	✔		
Pastoralist girls	2					✔								✔		
Displaced girls	3								✔	✔					✔	
Remote girls (Rural)	6			✔					✔	✔			✔		✔	✔
Slum-dwellers	2													✔	✔	
Other girls[1]	4	✔									✔		✔	✔		
Child labourers	1										✔					
Poor/Hunger	6			✔			✔	✔	✔						✔	✔
Young mothers/expecting	1													✔		
Street Children	1										✔					
Educational Sub-groups																
OOS girls[2]	9	✔	✔	✔			✔	✔		✔		✔	✔	✔		
Girls dropped out[3]	4		✔				✔					✔		✔		
At risk of dropout	6			✔		✔	✔			✔		✔		✔		
At risk of poor learning	2								✔					✔		
Girls In-school	9	✔				✔	✔	✔	✔	✔		✔	✔	✔		

Key

1: "Other girls" include a number of different sub-groups such as girls affected by early marriage, migration, or domestic labour, teenage mothers or girls who have been victims of sexual abuse.

2: "OOS girls" refers to out-of-school girls (that is girls who are not currently enrolled).

3: "Girls dropped out" refers to girls who were enrolled in the past but de-enrolled prematurely.

All SCW projects, with the exception of Camfed (Tanzania/Zimbabwe), were targeting girls of primary school age (or grade level), while 11 out of 15 projects also targeted girls of lower secondary age. Only two projects – BRAC (Afghanistan) and Relief International (Somalia) – planned to engage girls of upper secondary school age. This means that younger girls (aged 5-12) are represented more strongly among the GEC SCW's targeted groups of girls, than older girls who are in upper secondary school (or have the equivalent age without actually being enrolled).

In terms of the current educational situation of marginalised girls, nine projects primarily targeted out-of-school girls – that is girls who are not currently enrolled in school. BRAC (Afghanistan) is the only project to focus exclusively

on out-of-school girls. Six projects planned to primarily target girls who are enrolled in school but who were described as being at risk of dropping out, and two targeted girls who were described as being at risk of achieving poor learning outcomes.

Most projects did not only define educational target groups, but also named specific social groups or geographic areas, which are listed in Table 45. The primary target group most commonly mentioned in the projects' full proposal were girls living in poverty or suffering from hunger and the least often mentioned were street-involved girls and young mothers, and child labourers. For those projects that had not defined their understanding of marginalisation the target groups tended to be difficult to establish.

Identification of primary project target groups during the project's baseline data collection

In their baseline studies, projects were encouraged to collect data that is representative of their target group(s), as well as of a control group of marginalised girls, who will not receive the intervention but are similar in other relevant respects. In the SCW, projects have achieved the representation of target girls to varying degrees.

In some project areas, target girls are relatively heterogeneous. WUSC (Kenya) for instance, engages girls in the slums of Nairobi, as well as in arid and semi-arid rural areas. Girls who live in different contexts or belong to different sub-populations are likely to face educational barriers of different types and degrees. They may also have different levels of exposure to the project interventions. Projects were therefore encouraged to collect data from a population that is sufficiently large and representative of the target population(s) so that results can be disaggregated to the level of relevant sub-groups or contexts later on. This is going to be crucial at later stages of the evaluation in measuring and understanding the different type and scale of effects on different types of marginalised groups.

Four SCW projects used a socio-economic index to identify marginalised girls within their population samples. During their baseline data collection, ChildHope (Ethiopia), World Vision (Zimbabwe), Camfed (Tanzania/Zimbabwe) and PLAN (Sierra Leone) asked surveyed girls questions that aimed to identify their level of marginalisation or poverty relative to the other girls in the sample or other girls in the country.

According to their baseline reports, projects sampled between 848 households (ACTED Afghanistan) and roughly 3,400 (IRC, DRC) households with the exception of Camfed (Tanzania/Zimbabwe), which did not survey households and instead primarily surveyed in schools. A majority obtained sample sizes of between 1,000 and 3,000 respondents. All projects sampled respondents in control areas in addition to those in the treatment areas. Some projects carried out additional surveys or learning assessments in schools or among specific target groups.

In their baseline reports, projects provided relatively little information on the representation of sub-groups in their samples. PLAN (Sierra Leone) indicated that they surveyed 224 disabled girls (out of which 81 were physically disabled) and about 650 girls who they identified as marginalised based on their marginalisation index. These girls were either disabled, lived in rural areas or in poverty (or were subject to a combination of the three factors). World Vision (Zimbabwe) and Camfed (Tanzania/Zimbabwe) also identified disabled girls in their sample, as well as orphans, poor girls and other specific target groups. Table 46 (below) provides a detailed breakdown of the sub-samples that projects achieved during their baseline research.

Table 46: Composition of project sample sizes, by project and population sub-groups

Composition of project samples	Total	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
		BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACT	WV	CfBT	RI	CARE
		Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Number targeted	448718	19577	66150	15669	54194	11095	19244	132577	27203	40465	9699	9432	40481	59724	24255	16802
Number sampled	24368	3120[4]	1280	1400	3434	2700	1437	5872[5]	1332	1078	1950	848	2850	2295	1897	3109
Treatment	16332	1040	640	1163	1726	1350	776	3562	1205	1078	975	545	1900	1650	1260	1809
Control	10475	1040	640	237	1708	1350	661	2310	127	0	975	303	950	645	637	1300
School Age																
Lower primary	1577				850		697			495			727		1406	1016
Upper primary	3598			125	2547		905			148			926		883	288
Lower secondary	6250	1803		1208			173	2880		64			359		1107	
Upper secondary	195	195								13						
Social Groups																
Disabled girls	1577		1280													
Pastoralist girls	6250			224				111					257			
Displaced girls	195							1809					561			
Remote girls (Rural)	1280					2700	1149								1897	549
Slum-dwellers																
Other girls[1]	592			651												
Child labourers	2370															
Poor/Hunger	6295			651			454	1987					388			
Young mothers/expecting																
Street Children	1834						1956			717						
Educational Sub-groups																
OOS girls[2]	3480			651			454	1987					388			
Girls dropped out[3]																
At risk of dropout																
At risk of poor learning																
Girls In-school	2673						1956			717						

Key

1: “Other girls” include a number of different sub-groups such as girls affected by early marriage, migration, or domestic labour, teenage mothers or girls who have been victims of sexual abuse.

2: “OOS girls” refers to out-of-school girls (that is girls who are not currently enrolled).

3: “Girls dropped out” refers to girls who were enrolled in the past but de-enrolled prematurely.

4: BRAC (Sierra Leone) set out to sample 2080 girls eligible for Community Girls’ Schools (1040 each in intervention and control areas), as well as 1040 non-eligible girls. In addition, they also sampled girls in government schools but those sample sizes are not included above.

5: The figures for Camfed contain the achieved samples for marginalised girls (in school) and out-of school girls in the intervention and comparison group, but not in non-GEC partner areas in Zimbabwe.

Identification of project target groups in the EM's baseline data

The EM conducted 400 household surveys in each of the project target areas to complement the projects' baseline research and to collect data that could easily be harmonised at the fund level. These household surveys followed a sampling plan that aimed to represent the general population in these areas, rather than capturing more specific groups targeted by projects (with the exception of data collection in Camfed's project areas in Tanzania and Zimbabwe. This means that the populations surveyed by the EM enumerators do not necessarily correspond to sub-groups being targeted by projects; instead they represent the general population in the communities being targeted by the project. It is important to note these differences in the composition of the samples when comparing findings between project and EM data. Table 47 provides a detailed breakdown of the Evaluation Manager samples achieved during the baseline research.

Table 47: Composition of EM samples, by project and population sub-group

Baseline	Number of projects using this definition	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
EM Data HH survey		BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTD	WV	CfBT	RI	CARE
		Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Number sampled	6324	376	400	395	384	377	410	681	423	399	363	400	414	481	404	417
School Age																
< 6	505	33	25	34	26	52	18	26	48	17	31	22	37	67	33	36
6-8	1708	107	111	134	82	129	112	84	134	89	87	117	105	168	128	121
9-11	1589	71	98	88	107	96	148	105	95	120	109	131	126	124	88	83
12-13	1093	57	90	57	57	46	77	128	68	98	87	68	75	56	66	63
14-15	1063	59	76	37	59	54	54	217	59	75	49	62	71	53	58	80
16-19	120							120								
Social Groups																
Disabled girls	576	47	9	36	29	16	60	115	48	14	18	6	62	66	23	27
Orphan girls[1]	673	32	10	34	31	21	43	186	59	5	38	8	103	47	23	33
Pastoralist girls	405	0	1	1	14	377	5	1	0	2	3	0	1	0	0	0
Displaced girls	3309	207	70	183	230	157	330	440	405	44	76	20	224	414	252	257
Remote girls (Rural)[2]	684	1	0	0	0	66	99	0	87	0	12	0	0	70	95	254
Slum-dwellers[2]	542	14	0	0	70	0	0	1	10	0	18	0	0	405	24	0
Other girls[3]	n/a															
Child labourers	638	84	8	84	15	26	55	120	9	20	27	26	96	40	14	14
Poor/Hunger	3573	164	147	236	254	293	188	405	341	128	227	195	283	288	216	208
Disadvantaged caste/ethnic minority	0															
Affected by HIV/AIDS	2310	200	93	169	186	120	159	304	126	68	132	19	192	192	189	161
Young mothers/expecting	742	94	22	154	32	9	78	44	26	63	6	87	24	23	34	46
Street Children	n/a															
Educational Sub-groups																
OOS girls[4]	1450	64	120	70	62	151	25	81	132	122	67	92	29	36	190	209
Never enrolled girls	1139	51	103	54	36	122	11	18	120	109	52	88	10	19	158	188
In-school girls	4871	312	280	325	321	226	384	600	290	277	296	308	385	445	214	208

Key

1: Including half-orphans.

2: Indicative figures based on extrapolated population density.

3: "Other girls" include a number of different sub-groups such as girls affected by early marriage, migration, or domestic labour, teenage mothers or girls who have been victims of sexual abuse.

4: "OOS girls" refers to out-of-school girls (that is girls who are not currently enrolled).

5.2 Has the evidence influenced project intervention design and targeting?

In this section we summarise the projects' baseline findings and review whether projects have changed their target groups, outcome targets or project designs (e.g. intervention activities), in response to their baseline research findings. It is important to note that the EM had limited information on the project design changes that took place after the baseline research. Project design changes were discussed between the FM and the SCW projects, and the EM used the information available for the purpose of this baseline research.

Summary of projects' baseline findings on educational barriers

In addition to evidence on outcome levels, projects also provided evidence about the prevalence of expected barriers to education. This evidence is compiled and presented in the project profiles (see Annexes D1-D15). As shown in Table 48, every project found baseline evidence to support at least some of its assumptions about barriers to girls' education, although the reported intensity of the barriers tended to vary across projects. Five projects found evidence that challenged some of their assumptions about barriers to girls' education. This may have prompted these projects to review their theories of change and consider adjusting their definition of target groups or their intervention design in order to address the most relevant barriers in the most effective possible way.

Table 48: Summary of project evidence on expected barriers (from baseline reports), by barrier category

Project baseline evidence – Barriers	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
	BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTD	WV	CfBT	RI	CARE
	Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Economic factors															
Poverty	•	✓	✓✦	✓				✓	✓		•	✓	✓	✓	✓
Costs	✓		✓			✓	✓	✓		✓		✓	✓	✓	✓
Duties			✓	✓	✓	✓	✓	✓						✓	✓
School based factors															
Teaching	?	✦	✓	✓	✓	✓	✓	✓	?	✓	✓	✓✦	?	•	•
Supply	✓	✓	✓		•	✓	?	✓✦	✓				✓	✓✦	✓
Facilities					✓	✓		✓✦			✓	?	✓	✓	✓
Governance	•		?					✓							
Attitudes and support in the family and community															
Attitudes		✓	✓	?	•	✓	✓		✓	?		?	✓		?
Lack of family support		✓		•					✓				✓	✓	
Relevance of education			✓										✓		✓
Exclusion				✓											
Violence and safety															
Insecurity/violence		✓		✓			•	✓	✓		✓			?	
Harassment at school	✓					✓				✓		?			
Sexual harassment			✓			✓								•	•
Unsafe journey to school														•	
Personal factors															
Early pregnancy	•		✓		✓		?					✓	?	✦	•
Early marriage		?	•			✓	✓					✓		✓	✓
Health	•		✓	•				✓					✦		✓
Disability	•		✓										•		
Motivation			✓					•						✓	✓

Key	Type of evidence in relation to barriers
✓	**Barriers found and reported**: Assumed barriers were mentioned by a relatively high number of respondents compared to respondents in other projects. Barriers found and reported are marked with '✓'.
✦	**Barriers not found**: Assumed barriers were mentioned by a relatively low number of respondents compared to respondents in other IW projects. Barriers not found are marked with '✦'.
✓✦	**Mixed evidence**: There was mixed evidence about a barrier.
?	**Ambiguous evidence:** Evidence reported does not have a clear interpretation.
•	**Barriers not reported**: Barriers were assumed but not reported/ discussed/ measured by the project. Missing evidence is marked with '•'.
	Non Applicable: Barriers neither assumed nor reported are marked in **Grey**.

Intervention Opportunities

All projects were required to report on the baseline levels of educational marginalisation (that is levels on outcome indicators), and encouraged to analyse barriers to education. In addition, some projects also reported on existing opportunities for their planned interventions to take place in the target communities. For example, some projects verified that textbooks are actually in short supply or that communities have not yet been exposed to community radio messages on girls' education. Table 49 (below) provides an overview of the broad intervention types that projects set out to implement according to their full proposal application. Grey cells indicate that a project was not planning an intervention of the given type. The table further indicates whether the baseline reports contained evidence that either challenged or supported the assumption that there was an opportunity for these interventions.

Table 49: Evidence reported on opportunities for planned project interventions

Intervention types and baseline evidence	5063 BRAC Sie	5085 BRAC Afg	5096 Plan Sie	5097 IRC DRC	5098 STC Eth	5099 STC Moz	5101 Camf Z-T	5136 WUSC Ken	5147 AKF Afg	5170 ChHp Eth	5224 ACTD Afg	5243 WV Zim	5252 CfBT Ken	5253 RI Som	5274 CARE Som
Access			✓										·		
Capacity	✓	✓			✓			✓	✓		✓			✓	✓
Community interventions	✓	✦	✓	✓	·	·	✓	✓	✓	✓	✦	✓	✓	✦	·
Governance			✓		✓	·			·	·	·	✓	✓	✓	✓
Learning support				✓	✓	·	✓	✓	·	✓	✓			✦	✓
Material Support	·	✓	✓	✓		·	✓	✓	✓	✓	·	✓	✓	✓	✓
Safe-spaces			✓✦		✓	✓	✓	✓	·	✓	✓	✓	✓	✓	✓
Teaching inputs	·	✦	✓	·	✓	·	✓	✓	·	✦	✓		·	✓	✓
Female Voice			✓						✓	·	✓			·	

Key	Type of evidence in relation to intervention activities
✓	**Evidenced intervention activities**: Evidence was reported by the project which is supporting proposed project intervention activities. Evidenced intervention activities are marked with '✓'.
✦	**Challenged intervention activities**: Evidence was reported by the project which is challenging proposed project intervention activities. Challenged intervention activities are marked with '✦'.
✓✦	**Mixed evidence**: There was mixed evidence about the need for this intervention.
•	**Missing evidence**: Opportunities for intervention activities was not discussed by the project. Missing evidence is marked with '•'.
	Non Applicable: Intervention activities not planned by the project are marked in **Grey**.

For the majority of projects, baseline evidence was broadly supportive in the sense that it indicated clear opportunities for the proposed interventions. In some cases, however, projects found evidence suggesting that some of their planned interventions may not be as relevant as they originally anticipated:

- In the case of two projects (BRAC Afghanistan and ChildHope Ethiopia) the baseline evidence challenged their intention to invest in the improvement of teaching inputs;

- In the case of BRAC (Afghanistan), ACTED (Afghanistan) and Relief International (Sierra Leone) the baseline evidence suggested that target communities were already relatively supportive of girls' education and that there may be less need for community interventions than originally anticipated;
- Relief International (Somalia) found that girls could already access supplementary lessons if they missed school due to menstruation, which suggests that additional learning support may be needed less than expected; and
- PLAN (Sierra Leone) found evidence that both supported and challenged their assumption that it would be worthwhile to generate safe spaces in school.

In response to these findings, projects may have wanted or needed to adjust their intervention design, to improve the likelihood of generating a measurable impact in the target communities within the lifetime of the project.

Revisions to the project design

A primary purpose of the projects' baseline research was to test assumptions about degrees and types of marginalisation, barriers to girls' education, and the rationale and opportunities for implementing planned interventions. The results of these tests should enable projects to adjust their outcome targets, the composition of their target groups or the intervention design before the start of project implementation. Table 50 (below) summarises the challenges that projects have encountered with respect to their assumptions about outcome levels, barriers and interventions, as a result of the baseline analysis. The table further indicates whether a project has made any changes or adjustments to the definition of their target groups, their outcome targets, or their intervention design.

Projects would most obviously adjust their **targets for changes in outcomes** on the basis of evidence about baseline levels of educational marginalisation, or because of evidence that certain barriers were more prevalent or of greater relative importance than expected. As shown in Table 50 most projects made adjustments to their outcome targets, even though only World Vision found evidence on baseline outcomes that clearly challenged GEC programme assumptions about educational marginalisation (in terms of enrolment).

Table 50: Summary of challenging findings and adjustments to the intervention design, by project

Baseline	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
	BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTD	WV	CfBT	RI	CARE
	Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Evidence challenges assumption about:															
Barriers	✓?	✓✦	✓✦	✓?	✓•	✓•	✓?	✓✦	✓?	✓?	✓•	✓✦	✓?	✓✦	✓•
Interventions		✦								✦	✦			✦	
Project made adjustments to:															
Target groups	✓		✓					✓			✓	✓			
Outcome targets	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓
Intervention design						✓		✓				✓	✓	✓	

Projects may have wanted to adjust their target population on the basis of evidence about marginalisation for either of the following reasons:

- Because a sub-group was found to be more or less marginalised than expected; or
- Because evidence about expected barriers was different than expected (for example the assumed barrier that the intervention targets is not unique to a sub-group).

A small number of other projects decided to adjust their target population based on the evidence collected at baseline, as indicated in Table 50, as summarised below:

- World Vision (Zimbabwe) found enrolment rates at baseline that were higher than expected and as a result made relevant changes to their target group by focusing more strongly on girls who are at risk of dropping out of school. World Vision (Zimbabwe) also decided to conduct further research about orphans and girls affected by migration. These are groups that also emerged as educationally marginalised from the EM's

qualitative research in the World Vision (Zimbabwe) target areas. In the case of World Vision, it seems that baseline evidence has been used to adjust the composition of their target population;

- PLAN (Sierra Leone) chose to drop girls in grade 6 from their target group, although they did not find any specific evidence suggesting that girls in this grade are not educationally marginalised;
- WUSC (Kenya) found that primary school girls demonstrated better learning and attendance than had been expected. They adjusted the composition of their target group to support a larger percentage of lower secondary school girls, many of whom demonstrated low levels of attendance and learning.

One finding that emerged from the EM's qualitative research was that girls with disabilities were not frequently described as being educationally marginalised. It is not entirely clear whether projects targeting this group of girls gained a similar insight, but none of the projects decided to stop targeting girls with disabilities following the baseline research.

Based on a review of the baseline evidence, projects may decide to change their intervention type or mix of interventions due to one of the following baseline findings:

- The evidence about one or several educational barriers contradicts assumptions about the way in which the intervention should support marginalised girls (for example, the barrier is not present in the population or operates in a different way or is less important than another barrier);
- The evidence about outcomes levels in the target groups contradicts assumptions about the educational needs of the groups of girls that are targeted (for example, the project finds that they need to help a larger group or less disadvantaged girls rather than a small group of very disadvantaged girls or vice versa); and
- The evidence about intervention opportunities suggests that there is no specific need for the planned intervention type.

As shown in Table 50 four projects found baseline evidence that challenged their assumption about existing opportunities for some of their planned activities. Only one of these projects, Relief International, adjusted their intervention design in order to account (among other things) for the finding that community attitudes towards girls' education were more positive than expected at baseline. WUSC (Kenya), CfBT (Kenya), World Vision (Zimbabwe) and STC (Mozambique) also made changes to their intervention design after baseline even though they did not find any evidence that clearly challenged their assumptions about intervention opportunities.

Summary: Has the baseline evidence influenced project targeting and project intervention design?

Projects' reported baseline evidence was mostly supportive of projects' planned interventions and project design. Based on a review of the evidence from the baseline research, most projects made adjustments to their outcome targets even though the outcome levels reported in project baseline reports rarely demonstrated levels that challenged GEC programme assumptions – this was though contrary to some of the findings on outcomes that emerged from the EM's re-analysis of project data and the analysis of EM primary data. All projects found evidence that supported at least some of their assumptions about barriers to girls' education, but five also found some challenging evidence. Five projects made changes to their proposed intervention activities, responding in part to challenging findings about expected barriers or intervention opportunities. Four projects found challenging evidence but did not make any adjustments, which may potentially reduce the opportunity for generating the required changes to these outcome levels and measuring the change that does occur. It is anticipated that more evidence will emerge about target groups and barriers as the GEC progresses, some of which will require longitudinal data to fully understand and evaluate.

5.3 Does the evidence support effective project evaluation?

5.3.1 Is the project evidence-base representative and reliable?

#1 Background

#1.1 Common framework for evaluating impact across 15 project areas

The GEC Evaluation Strategy encourages the **harmonisation of data collection approaches and tools across the SCW projects to develop a common framework for evaluation**, which would enable comparison across contexts and meta-analysis of project data across the window, while respecting differences in project approaches and contexts. As explained in Section 1.3 the GEC evaluation strategy requires all SCW projects to design their M&E frameworks around a number of core elements, including an experimental or quasi-experimental evaluation design; a longitudinal household survey in both intervention and control areas; structured qualitative data collection; longitudinal tracking of a cohort of girls in school; and administration of a learning assessment (for details on projects' data collection activities during the GEC baseline see Sections 2.2.1 and 2.3).

#1.2 Key principles of measuring additionality in the GEC

The FM has provided mandatory methodological guidance for projects to measure additionality in improving key GEC outcomes (i.e. in learning and attendance):

- **Measuring attributable changes in learning outcomes:** SCW projects are required to carry out three subsequent learning assessments (at baseline, midline, and endline), either as part of the household survey or at school (or a mixture of both). The assessments must be undertaken for a cohort of girls that is being tracked throughout the projects' lifetime, and which is representative of the population of girls expected to benefit from the project, as well as girls in the control group. Additionality in learning will be measured at midline and endline as the additional achievement of girls in the intervention group in terms of their literacy and numeracy, over and above the increase achieved during the same period by girls in the control group (i.e. using a difference-in-difference methodology).

  The EM will replicate this approach to assessing additionality in learning.

- **Measuring attributable change in attendance:** SCW projects are encouraged to measure attendance for a cohort of girls that will be tracked throughout the lifetime of the GEC, and that is representative of the target population in the intervention group and of girls in the control group. If they cannot measure attendance in a specific cohort, projects can measure attendance by selecting data from a random sample of intervention and control schools, covering the grades targeted by the intervention. Additionality will then be measured as the difference in pre-and post-intervention attendance rates in the intervention schools (i.e. the relevant grades) over and above the change that is observed in control schools.

  The EM will not measure attendance at the school level, but based on the self-reported attendance data for a tracked cohort of girls, that is collected during the household survey.

In many cases, project evaluation designs and data collection approaches evolved during the baseline design process and in some instances it became necessary to carry out remedial data collection post baseline or to re-design certain elements of the data collection strategy. **Some projects have used evaluation designs or data collection approaches which diverged from the standard evaluation template** for reasons related to their intervention population, such as the need to adapt tools for girls with disabilities; or to practical limitations, such as the use of paper and pencil questionnaires in Afghanistan.

#1.3 Joint sampling approach

There is a strong degree of alignment between the household survey conducted by the projects and that conducted by the EM. The project and EM household surveys were carried out separately, but based on a jointly developed sampling frame in each project area. Projects initially developed a draft sampling framework to prepare for the randomisation of intervention and control areas. The sampling framework was then quality-assured by the EM and used to draw the samples for the project and EM household survey in the relevant project area. A more detailed overview of the role and responsibilities of projects and the EM in this process is provided in Table 51.

Table 51: Division of responsibilities between projects and the EM in developing a joint sampling framework for the SCW household surveys

Project responsibilities	EM responsibilities
• Divide intervention areas into districts of operation and create a community-level sampling frame for each district, consisting of a list of settlements or urban areas. • Stratify districts into intervention and control areas. • Propose a protocol for sampling a representative selection of households (or the nearest equivalent) within the sampling point, including, where appropriate screening and oversampling. • Propose a sample size that will provide estimates of intervention effects on girls with a level of statistical precision that is proportionate to the targets for attributable change in key outcomes set by the project. • Account for relevant characteristics of the population, such as the anticipated variation between localities, and of the necessary sampling approach. • The sample must be representative of the overall target population to allow for inference from samples to that population.	• Quality-assure the community-level sampling frames, sampling protocols and sample sizes proposed by the projects. • Specify a 'boost' to the project sample for purposes of cross-validation and data augmentation. • Draw an appropriate sample of sampling points from the sampling frames across relevant intervention and control areas. • Divide the selected sample of sampling points randomly (but not in equal proportions) between the EM and the projects for the implementation of the surveys.

The sample sizes proposed at the project level varied depending on: the size, characteristics and clustering of the target population; the nature of the interventions; and, most importantly, on the target effect sizes which the projects were seeking to achieve – the smaller the anticipated effect, the larger the sample size needed to be to demonstrate an effect with confidence. Every SCW project was required to document the power calculation formula used to calculate the sample size for the longitudinal household survey and these were reviewed by the FM and the EM during the quality assurance of projects' M&E frameworks to ensure that the sample sizes were appropriate (e.g. that they account for attrition, or design effects if a clustered sampling approach was used). As a rough indication, the EM recommended that projects sample at least 1200 girls. The actual sample sizes achieved by projects are shown in Table 46, in Section 5.1.2.

The EM-led surveys involve sample sizes of on average 400 households per project area and wave of data collection, with EGRA and EGMA tests administered to one girl per sampled household in both treatment and control groups. This average sample size was calculated based on the following assumptions: a target effect size of 0.2 standard deviations; target statistical power of 0.8; a +/- 7.5% confidence interval; an attrition rate of 0.9; and design effect of 2. This is a conservative estimate that anticipates a high level of intra-cluster correlation, but may be revised down if the evidence suggests otherwise.

The EM's samples were not primarily designed to measure a similar effect at a similar level of precision and level of statistical significance as the projects' larger datasets. However, it is anticipated that on average, the EM sample sizes will be sufficient to validate or invalidate the project-led survey findings. Additionally, these sample sizes shall be sufficient to inform a robust evaluation of impact at the programme level, which was the priority for the EM.

As the EM's complementary data collection was based on the sampling frame developed jointly with the projects, the EM has adopted the projects' definitions of intervention and control groups rather than using a separate evaluation design.

#2 Baseline Challenges

The baseline process for the SCW has been an extended, staggered process, as different projects proceeded at different speeds. Some projects completed baseline data collection relatively early and were able to quickly move on to implementation. In other cases, this process has been more protracted. After conducting baseline data collection, some projects identified, in conjunction with the Fund Manager, a shortfall in the data they gathered,

either in terms of sample size or representativeness. This process has led to some re-sampling and re-designs of evaluation strategies, baseline data collection approaches, and tools.

SCW projects faced a diverse set of difficulties while conducting baseline data collection, issues both in and out of their control, which have been described in project baseline reports. From these reports, the most significant research challenges, experienced by around half of the projects across all or most regions, were: an inability to achieve full sample size; an inability to obtain reliable administrative data (particularly on attendance); and difficulties in survey logistics owing to travel distances or delays.

Several projects noted respondent fatigue during the household survey due to the length of the survey questionnaire. The questionnaire template was developed by the EM with a view to collecting information on a range of contextual factors, including poverty, violence, social cohesion, health and disability, to inform a thorough assessment of potential barriers to girls' education at baseline. In order to facilitate the harmonisation and aggregation of data across the SCW, all projects were required to use this EM template, propose adaptations if required, and to add context-specific questions where appropriate. While there was a clear rationale for maintaining a relatively comprehensive standard survey template, we recognise that there is a trade-off with regards to the burden placed on respondents. The EM will therefore seek to provide a shorter questionnaire for data collection at midline and endline.

Baseline Evidence

Even with perfect delivery of the M&E plans agreed with the EM and FM there was likely to be some imbalances or unrepresentativeness in the baseline data collected by projects, which might require remedial data collection activity. The emergence of issues and challenges to evaluation prospects were to be expected, given: the number of SCW projects; the challenging contexts in which they are working; and practical constrains to sampling such as adverse circumstances in the field or a lack of background knowledge at the time of designing the sampling frame. In most cases, projects overcame or mitigated these challenges. In some cases, however, issues appear to still be unresolved, either because these concerns have not been addressed by projects or because they were not discussed fully in project baseline reports.

Some issues were raised during the EM and FM's review of project baseline reports with regard to a lack of detailed data analysis or of a failure to make use of qualitative data to support analysis. These issues, combined with the often incomplete documentation of project data and the variety of sampling approaches make it more difficult to assess whether the evidence base for midline and endline is likely to be robust for every project.

#3 Representativeness

#3.1 Concerns relating to achieved samples

One aspect of the representativeness of baseline data involves the data's capacity to reliably identify target groups within the overall population. A number of projects appeared to have had some difficulties in identifying and articulating their target groups within their project areas. **Some projects faced challenges in fulfilling their intended sampling approach**. Where this affected primarily the size of the achieved sample we can expect a decrease in statistical precision but not necessarily in the representativeness of the data:

- **PLAN (Sierra Leone)** did not achieve the planned sample size and some data within household surveys was missing;
- **Camfed (Tanzania/Zimbabwe)** reported difficulties achieving the full sample size, particularly for out-of-school girls; it is unclear to what extent an external evaluator was involved in preparing the baseline report;
- **CfBT (Kenya)** reported difficulties achieving the planned sample size and have conducted a boost survey to gather more data;
- **ACTED (Afghanistan)** reported challenges to randomly selecting households due to the importance of first meeting the village elder and explaining the work before finding people to survey; and
- **CARE (Somalia)** had to carry out a re-sampling among their initial sample of respondents because households from Puntland were found to be highly over-represented due to enumeration errors. This led to a substantial loss in the number of observations.

However, some project baseline data was imbalanced relative to the planned sample, such as World Vision (Zimbabwe) who reported difficulties achieving their full sample size for out-of-school girls.

#3.2 Concerns relating to baseline attendance records

Another issue potentially affecting the representativeness of baseline evidence is the reliability or quality of the data. A number of projects raised **concerns about the baseline attendance records** gathered from schools. These included BRAC (Afghanistan), ACTED (Afghanistan), Save the Children (Ethiopia), WUSC (Kenya), Camfed (Tanzania/Zimbabwe) and PLAN (Sierra Leone). Some specific issues arose regarding the quality and completeness of data and with data processing, of which examples include:

- **BRAC (Sierra Leone)** did not describe data verification procedures;
- **Save the Children (Ethiopia)** reported that attendance data was not fully collected during baseline;
- **BRAC (Afghanistan)** did not collect attendance data at baseline and had to commit to doing so through on-going monitoring. The literacy assessment conducted lacked a timing component for reading fluency and was subject to scores bunching together for some age groups;
- **CfBT (Kenya) , WUSC (Kenya) and Camfed (Tanzania/Zimbabwe)** initially did not gather all of the data required;
- **BRAC (Afghanistan), IRC (DRC), Save the Children (Ethiopia) BRAC (Sierra Leone) and Camfed (Tanzania/Zimbabwe)** reported issues with data processing or analysis;
- **Relief International (Somalia)** found that school-based enrolment and attendance records were often incomplete; and where they were available, they often lack credibility because they showed perfect or near perfect attendance; and
- **CARE (Somalia)** reported difficulties with establishing linkages between girls surveyed in the households and the attendance records found during school visits.

Following the end of the baseline research, some of these issues have been addressed through remedial data collection activities. This process was negotiated with the FM on the basis of seeking to develop data which has a reasonable prospect of evidencing PbR requirements for project impact evaluation. The EM has provided input in the form of advice and guidance, although a number of the issues involved are specific to PbR requirements rather than to the broader GEC evaluation process. In addition, projects will carry out at least three unannounced spot-checks per year (one of which is to be conducted by the external evaluator) to cross-check and triangulate attendance data from school registries and improve the reliability of their attendance measures.

#3.3 Concerns relating to control matching

Another key area in terms of the representativeness of baseline data collection concerns the extent to which the control group is representative (or matched) to the intervention population. Some projects have noted issues at baseline or had questions raised about their control samples during baseline review:

- **ChildHope (Ethiopia)** reported some significant differences between treatment and control groups in their baseline report;
- **Save the Children (Ethiopia)** identified some differences between groups in terms of living conditions and enrolment rates, with control areas more disadvantaged than intervention areas. Contamination between treatment and control groups was another issue which has been mitigated by selecting new control groups;
- **CFBT (Kenya) and World Vision (Zimbabwe)** identified differences between intervention and control results;
- **IRC (DRC)** reported concerns with their counterfactual, as they wish to discontinue collecting data from out-of-school girls;
- **BRAC (Sierra Leone)** had identified differences between intervention and control data characteristics;
- **ACTED (Afghanistan)** reported difficulties relating to intervention and control locations being very near to each other in most areas. Security issues sometimes made it impossible to access both the intervention and control location in a given area; and
- **Relief International's (Somalia)** intervention groups could not be selected at random as they were selected purposefully by the three respective Ministries of Education.

A more in-depth discussion of projects' evaluation designs is provided in Section 5.3.2.

5.3.2 Will the project evidence support counterfactual analysis of impact?

As mentioned above, all SCW projects were required to identify comparison or control groups to enable an experimental or quasi-experimental evaluation design. It was understood that some projects may find it challenging to collect data from an appropriate control or comparison group and in such cases they were encouraged to develop an alternative evaluation design in consultation with the EM and FM to ensure that the research undertaken is as rigorous as possible given the project's circumstances.

Projects had differing outlooks on the feasibility and desirability of establishing control groups in their project locations. In some cases, projects pushed to adopt an RCT evaluation design while other projects raised concerns about using control groups, proposing to limit their use to the extent possible, usually out of concerns that the use of control groups would affect the quality of project implementation, or invoke ethical problems.

All of the different individual project evaluation designs and data collection approaches have been reviewed by the EM and FM, both as outline designs at the proposal stage and as detailed designs at the pre-baseline approval stage. Project designs were reviewed for their ability to represent target groups and to deliver representative data on key outcomes for target populations and control or contrast groups along with contextual data on barriers and context. While the EM reviewed evaluation approaches, did not 'approve' or guarantee their suitability – final approval rested with the FM. The focus on achieving specified precision on learning outcomes and attendance for PbR purposes has led to some unification of approach between projects, but some diversity of sample design and approach also remains.

Projects using Randomised Control Trials (RCTs)

A number of projects used experimental designs that randomly assign girls, schools, or communities to intervention or control groups to ensure that there is no selection bias. Randomised Control Trials (RCTs) are considered the 'gold standard' of evaluation designs and enable an assessment of additionality by comparing changes in treatment groups compared to control groups. However, they are less common in projects because random selection of sites and students is not always feasible.

The following projects used an RCT impact evaluation design:

- **BRAC (Sierra Leone) –** Randomisation occurred at the village level, and at the school level (for in-school interventions).
- **IRC (DRC)** – Randomisation happened at the school level. School clusters were categorized by province and subdivision, and selected using a stratified random sampling technique. School clusters within each subdivision were randomly selected to receive the intervention. Unselected school clusters were assigned to the control group.
- **Save the Children (Mozambique)** – STC is conducting an RCT using difference-in-difference and covariate analysis. Control and treatment areas were randomised at the "Zonas de Influência Pedagógica" (ZIP) level. Most of the interventions will take place at the school level, but some components are at the ZIP level and every community in the same ZIP will benefit from them.
- **World Vision (Zimbabwe) –** Schools were randomly assigned to intervention and control groups and sampling points were defined by school catchment areas that formed sampling clusters.

Projects using quasi-experimental designs

For ethical and/or practical reasons it is often not possible for projects to implement fully randomised control trials. In these circumstances, it may be more appropriate to use quasi-experimental evaluation designs. These designs still require a control group but differ from RCTs because the allocation of individuals to the treatment group is not random. Recipients would need to select control groups that are representative (closely matched) to their treatment groups. Wherever possible, we have eliminated bias (e.g. bias from picking the best performers) by randomising a sample from within these two groups so that both groups can be assumed to have similar characteristics.

The following SCW projects use a quasi-experimental design to measure impact at midline and endline:

- **PLAN (Sierra Leone)** – Control sites were purposively selected at the school and community level with a view to ensuring that they are sufficiently separate from intervention areas and to the greatest possible extent matched with the socio-economic characteristics of intervention communities.

- **Save the Children (Ethiopia) –** Intervention areas were selected from within eight districts (woredas), and the control cohort was sampled from separate sites. Considering the mobile nature of pastoral communities in the Afar region, STC sampled a control cohort from communities that are geographically far from project implementation areas (but sharing similar characteristics) to prevent spill-over effects. While it is not guaranteed that there will be no contamination of the control over the course of the GEC (i.e. members of the control group starting to receive some type of education support), participants were selected on the basis that they had not previously been benefiting from a specific project. To ensure the existence of 'pure' control groups throughout the GEC's lifetime, each non-intervention area is being monitored for the introduction of similar projects.
- **Camfed (Tanzania & Zimbabwe) –** Camfed uses an adapted quasi-experimental evaluation design, using a school survey rather than a household (population-level) survey, which accounts for specific aspects of the project contexts and is intended to provide a comparable level of rigour to the quasi-experimental models used by other SCW projects. Camfed selected comparison schools in districts where they had no previous intervention history.
- **ChildHope (Ethiopia) –** Within their larger intervention district ChildHope have identified a set of control kebeles (wards) based on criteria such as agro-ecological and socio-economic conditions, population density and distance to schools to ensure that they match intervention kebeles. Within every selected kebele, schools were randomly selected as the main sampling units. Finally, girls were randomly selected from the community roster where the selected school was located. ChildHope intend to use propensity score matching (PSM) to match individual girls in the control and intervention groups on pre-intervention characteristics.
- **CfBT (Kenya) –** CfBT purposively selected 500 schools and their communities for intervention. They were chosen based on criteria such as examination performance in Kenya Certificate of Primary Education and enrolment rates and gender parity index/numbers of girls to boys enrolled. They then identified 120 comparison schools and their catchment communities sharing similar characteristics with the intervention schools. Through clustered proportionate sampling, 150 intervention schools representing 30% of the total population were selected. In addition, 45 comparison schools were selected. The schools (intervention and comparison) were then linked to Enumeration Areas (EAs).

Projects that have dropped the use of control groups after baseline

During the course of the GEC baseline research, it became clear that some projects operate in high-risk environments where using a control groups poses an additional risk to the communities and data collectors. In consultation with DFID and the FM it was therefore agreed that the PbR would be adapted to allow six SCW projects to drop the use of control groups going forward. This was the case for the following projects which collected data from intervention and control groups at baseline but will not do so at midline and endline:

- **BRAC (Afghanistan)** – BRAC originally designed an RCT and collected baseline data from intervention and control groups. However, given the security risk involved in accessing control communities in Afghanistan, BRAC is no longer required to use control groups.
- **WUSC (Kenya)** – WUSC originally intended to conduct a quasi-experiment, using comparisons between intervention and control groups as well as comparison with a hypothetical 'do nothing' scenario. However, it has become clear that in refugee camps, tracking cohorts is very difficult, as is establishing comparable control groups due to high levels of mobility. WUSC have therefore been released from the requirement to use control groups.
- **AKF (Afghanistan)** – AKF is now using pre-and post-intervention comparison approach to compare cohort girls and sampled communities at baseline, midline and endline. They originally planned a quasi-experimental design in order to demonstrate additionality. However, the intervention design was revised in consultation with DFID and the FM after the AKF encountered a range of barriers in accessing government control groups during baseline.
- **ACTED (Afghanistan) –** At baseline, ACTED faced significant challenges in accessing control locations. They had originally selected control sites based on key characteristics such as ethnic composition, population size and similar geography, as well as access. However, only one or two areas did not have test

and control locations very near to each other. Moreover, security issues meant that at times, in two nearby locations, only one was accessible, highlighting the fluidity of the threat of violence in the target province. Due to these challenges, ACTED has been allowed to drop the use of control groups.

- **Relief International (Somalia) –** Relief International is now using a pre-post intervention comparison design. They had originally planned to conduct a quasi-experimental evaluation using propensity score matching to assess impact in primary schools, and before-after comparisons for secondary schools. After baseline, however, the FM, DFID and the project agreed to cease the use of control groups going forwards because of the security risks posed by the use of control schools.
- **CARE (Somalia) –** CARE originally designed a quasi-experimental evaluation, but observed political tension around surveying in control areas during baseline. There seemed to be a risk for exacerbating conflict as rivalries emerged between clans over who would receive project activities. In consultation with the FM and DFID CARE therefore decided to start rolling out project activities in the control areas. CARE will now carry out a longitudinal performance evaluation using a before-and-after comparison within the intervention schools and communities. The project's contribution will be assessed through triangulating data from multiple sources, taking into consideration whether other external factors (policy changes, violence outbreaks, drought, famine, etc.) might have had an influence.

Table 52 summarises which SCW projects will use an experimental, quasi-experimental or non-experimental evaluation design going forward.

Table 52: Evaluation designs used by SCW project to measure impact at midline and endline

Baseline	5063	5085	5096	5097	5098	5099	5101	5136	5147	5170	5224	5243	5252	5253	5274
	BRAC	BRAC	Plan	IRC	STC	STC	Camf	WUSC	AKF	ChHp	ACTD	WV	CfBT	RI	CARE
	Sie	Afg	Sie	DRC	Eth	Moz	Z-T	Ken	Afg	Eth	Afg	Zim	Ken	Som	Som
Randomised Control Trial	✓	✦		✓		✓						✓			
Quasi-Experimental Design			✓		✓		✓	✦	✦	✓	✦		✓	✦	✦
Discontinue use of control groups		✓						✓	✓		✓			✓	✓

✓	Projects use this design.
✦	Projects initially intended to use this design but decided to use a different design at midline and endline after encountering challenges during baseline research.
	Non Applicable: Intervention activities not planned by the project are marked in **Grey**.

In summary, four projects have adopted rigorous RCT approaches while five projects continue to use quasi-experimental designs. Out of these, four projects (Save the Children Ethiopia, ChildHope Ethiopia, CfBT Kenya and BRAC Sierra Leone) reported some differences between their treatment and control groups (as noted above) and six projects will discontinue the use of control groups at midline and endline following consultation with the FM and DFID.

All projects specified sample sizes that should provide a reasonable chance of detecting the agreed level of impact for the key GEC outcomes (attendance and learning). The precision of counterfactual analysis is always subject to individual circumstances of data collection and local variations. However, **the rigour of the projects' designs means that the collection of longitudinal data from intervention and control samples (of sufficient sizes), supported by complementary qualitative research should support counterfactual analysis of impact.**

Strategies to mitigate against risks for the robustness of the evaluation

Projects have already experienced some challenges and limitations with regards to: their planned evaluation designs; achieved sample sizes; data quality; and matching of control and intervention groups. These issues may make it difficult for some projects to demonstrate impact where it occurs as definitively as intended by the GEC evaluation strategy and PbR requirements. The use of probability sampling and multiple projects in the SCW means that there is always a risk that some projects will fail to evidence actual change or will falsely evidence or overstate non-existent impact. Nonetheless, there are aspects of the default evaluation approach that provide some protection against these risks and challenges:

- **Surveys and cohort studies are designed to be longitudinal** and this provides some scope to evaluate change even if intervention and control locations are not ideally matched. Longitudinal analysis will enable

us to estimate effects with a greater precision than if we used cross-sectional data because unobservable differences between individuals that are stable over time can be excluded, reducing measurement error.

- **The standard template for the household survey collects a wide range of demographic and socio-economic information** and we may be able to identify barriers to girls' education outcomes that can be used to control for systematic differences between the intervention and control groups where they occur, or to support matching work for the same purpose.
- **The EM's independent data collection can provide a second view of each project area,** in some instances with a distinct learning assessment tool that can be calibrated across project contexts. Where target groups are measured in common this can add some additional analytical support and on balance the error from the two sources will be smaller than from the project data alone. Where the target group of the project is a sub-group of the underlying population, the presence of the EM data will support analysis of the relationship between project data and population. This is expected to be available for household surveys at midline and endline and for qualitative in-depth interviews at endline.
- Where re-contact rates are lower at midline, projects may need to adapt to **implement a mixed longitudinal and cross-sectional approach** across their project locations.

We will seek to maintain a working approach with projects that should enable them to improve the quality of their datasets and develop evaluation tools and research instruments from existing templates without repeated upheavals and redefinitions. In summary we recognise and anticipate that some projects will experience challenges providing counterfactual evidencing of impact. Where possible these can be identified in advance through further analysis of baseline data in collaboration with the projects. While acknowledging the complex circumstances and challenges arising in the SCW, we are optimistic that we can provide support to projects, the Fund Manager and DFID to mitigate these risks to evaluation at the project level and minimise their impact on results evidencing and learning at the SCW level.

Possible Future Concerns

There are a number of concerns for the project level evaluations going forward:

- A number of projects are working with mobile populations: for example in refugee camps or pastoralist communities. Where sampled populations are displaced and/or migratory, this may make it difficult to find the same households at midline;
- Learning assessments will need to be maintained, modified and in some instances adapted to capture variation in outcomes for all sub-groups and age groups of relevance to measure the projects' impacts;
- At midline, the challenge for data collection and analysis will be to detect and identify the level of exposure for target groups to project activities and intermediary outcomes, which are quite diverse, while retaining as much consistency as possible across the GEC; and
- The absence of control groups in six project areas will make it impossible to robustly attribute observed changes to the project interventions and to identify the impact made by these projects over and above changes that would have happened anyway.

6 Conclusions and Recommendations

6.1 Conclusions

To what extent are target girls educationally marginalised?

Conclusion 1 – Girls targeted by SCW projects are educationally marginalised in terms of the pace at which they progress through school, and in terms of the literacy levels that they achieve. Our evidence suggests that the majority of girls in SCW project areas are enrolled in school, but that they tend to be enrolled below their expected grade level. This means that girls of secondary school age are often still enrolled in primary school. With regards to literacy, our evidence shows that on average girls tend to fall further behind expected learning benchmarks as they grow up, including those who are enrolled.

Across the SCW, target girls also appear marginalised in terms of their levels of numeracy, attendance and retention, although girls' were not *universally* disadvantaged. There was significant variation in numeracy and retention across project areas. There was no evidence of *systematic* differences in enrolment between boys and girls with gaps occurring in both directions, while we did observe a tendency towards small gaps in attendance that widen among older boys and girls. The differences in learning levels between boys and girls appear small with significant variations occurring between project areas.

Across the SCW we found evidence that confirmed girls were marginalised in terms of their enrolment, attendance and retention at school and that on average there was sufficient room for improvement in these outcomes. However, outcomes in terms of "being in school" are somewhat heterogeneous. For example, the EM data indicated an average enrolment rate of 87% among 9-11 year old girls across the SCW but we found significant levels of variation between project areas, ranging from 69% to close to 100% in several project areas. This suggests that **some SCW projects may struggle to demonstrate a measurable improvement in enrolment** over the GEC's lifecycle and that girls may be less marginalised in this respect than might have been expected based on the GEC's programme assumptions.

Another key finding on enrolment is that **while the majority of girls across the GEC are enrolled in school, less than half of those of secondary school age are actually enrolled in secondary school** which seems to be linked to the finding that girls on average are two years behind their expected grade level. Girls who are actually enrolled in secondary school tend to be closer to the expected age, which suggests that there is a relationship between delays accumulated across the school phase and opportunities for girls to transit into secondary education.

With regards to **literacy (as measured by the oral reading fluency score)**, **the analysis of EM data generally showed low average literacy levels among girls of the two reported age groups (i.e. aged 9-11 and 14-15).** The average reading fluency scores of 9-11 and 14-15 year olds suggested that the girls lagged several years behind international benchmarks of reading fluency, that are derived from the international literature. These performance gaps tend to widen as the girls grow older, with average literacy levels increasing only a little over the course of their schooling. These findings are in line with the GEC programme assumption that girls targeted by the GEC are marginalised in terms of their learning outcomes and progress, especially at secondary school age.

With regards to **numeracy**, **the analysis of EM data showed that average levels of mathematical skills varied markedly across SCW project areas.** In some project areas, girls of both age groups were unable to demonstrate basic foundational numeracy skills (i.e. at the level taught in the first grades of primary school). This indicates that girls aged 14-15 in particular experience a persistent level of educational marginalisation throughout their time in the school system. In contrast, in other project areas, younger girls aged 9-11 attained an average score that was around 100, meaning they completed the tasks correctly in the given time. In these instances, we cannot say exactly how close they are to demonstrating age-appropriate mathematical skills, but we are able to say that they are not as grossly marginalised with regards to these skills as their peers in other project areas Comparing the projects' baseline findings on learning is a difficult exercise as projects used different tests adapted to the context of their interventions, and reported test results that used different scales and units.

With regards to **gender differences in enrolment**, the analysis of EM data did not suggest that girls have systematically lower enrolment rates than boys. Our evidence did not support the GEC assumption that existing gaps generally widen when children reach secondary school age. We found that gaps exist in both directions and

change in both directions. This suggests that boys in some contexts may face degrees of educational marginalisation in relation to girls. With regards to attendance, we found that boys attend slightly more often than girls at age 9-11 and that these gaps widen slightly as the children grow older. In terms of **gender differences in learning** between boys and girls, we generally observed only small gaps in reading fluency (based on EGRA scores), and numeracy skills (based on EGMA scores) from our school-based assessments. With regards to reading fluency, scores suggested that both boys and girls were lagging behind international benchmarks for their age groups. Based on data from the EM household survey we found that gaps in basic literacy (that is the ability to read and write a letter in the language of instruction) existed in around half of the project areas to the disadvantage of girls. It seems that gender gaps in learning are context-specific and that further research is required to better understand possible gender differences in learning outcomes between boys and girls.

Which barriers were found to affect girls' education?

Conclusion 2 – Economic factors, negative attitudes, school-based factors and parental education emerge as the most likely candidates for barriers affecting girls' education. **Poverty appears to affect girls' enrolment and learning** through various dimensions such as an inability to afford the costs of school, material deprivation, poor housing conditions, and low subjective wellbeing. In addition, negative attitudes towards girls' education and the level of parental education appear to be linked with household decisions about enrolling girls in school and with how well they learn once enrolled. According to our qualitative research both economic factors and attitudes seem to influence the occurrence of **early marriage** in SCW communities which in turn is a potential barrier to enrolment. There are a range of **school-based factors that relate to the quality of education in schools across the SCW that influence learning.** Many of these factors are interrelated, stemming from poor resourcing of local schools, and they are likely to affect both boys and girls.

Our findings show that barriers to girls' education are complex and dynamic. While we found significant associations between individual barriers and education outcomes, these tended to explain relatively little of the variance in outcomes that we observed across the SCW. This is likely to be due to different barriers being interrelated and to outcomes being influenced by many other barriers that are likely to vary by context and sub-group that we have not been able to capture through the available data and analysis. It is important that we continue to develop our understanding of the relationships between these barriers, the ways in which they combine to affect girls, households and their communities and the educational outcomes that the GEC has set out to achieve.

We have grouped potential barriers to girls' education into five broader categories and unpacked these systematically based on the EM's baseline evidence. We have tried to understand the dimensions and relative influence of barriers relating to economic issues, school-based factors, attitudes and support in the families and communities, violence and personal factors. Our analysis suggests that barriers such as poverty or attitudes in the household affect girls' education in a variety of ways, which are challenging to analyse. However, it is important that projects develop an understanding of these complex pathways so that they are able to intervene at the right point, right time and in the right ways to influence the cause and effect relationships between a multidimensional barrier like poverty and the educational outcomes that they anticipate changing. This understanding is also important to enable projects to constructively tap into existing coping strategies that poor families employ, and to avoid interventions that could potentially have unforeseen consequences on such strategies.

As discussed in Section 3.1.1 and Section 4 we found relatively little variation in attendance levels across the SCW and our statistical model could only explain a small part of this variation. Nevertheless, it does seem likely that key barriers primarily affect decisions to enroll a girl in school or to remain enrolled; and shape the conditions under which girls learn. The influence of key barriers on attendance is harder to quantify but it may be that further analysis of attendance data gathered from schools will provide us with a clearer understanding. With regards to poverty, the lack of an apparent effect on attendance may be due to families using coping strategies to overcome difficulties affording the costs of schooling. The same appears to be true about the effects of girls' household duties on their education. It seems that the need for the girl to support her family shapes decisions about whether or not to enroll her in the first place; and may unavoidably influence her learning, but that families generally try to ensure that girls continue to attend school by developing coping strategies to reconcile their duties at home.

Poverty emerged as a fundamentally important structural and dynamic factor. EM analysis of the household survey data showed direct and indirect relationships between poverty, its different dimensions such as material deprivation, poor housing conditions, subjective wellbeing and household duties; and girls' enrolment and learning. It is clear from our analysis that poverty has a number of facets and that there are several complex potential

pathways between poverty and its effects on educational outcomes which require considerable work to identify and evaluate. In addition, poverty tends to be a dynamic factor. Rather than living at a stable socio-economic level, households across the SCW described how their livelihoods are regularly affected by storms, droughts and floods, which exacerbate or cause a household to 'dip' into acute poverty, especially if they rely on subsistence farming which seems to be the case for a considerable share of SCW households. Factors like this affect girls at key times during the school year, such as at the start of term, when school fees and costs must be paid, with implications for enrolment and attendance during the rest of the year.

Negative attitudes towards girls' education have not been shown to be widespread across the SCW but where they exist they prevent girls from being enrolled and learning at school. The qualitative research conducted by the EM suggests that negative attitudes are often linked to beliefs whereby marriage should take priority over education. These views are not necessarily based on prejudice but rather on an understanding of pathways available to girls that are consistent with local circumstances and realities of life. For example, families may consider that being educated will either become irrelevant once a girl is married, or will benefit her new relatives but not her own family. In addition, some families have doubts about the relative benefit of education, compared with the possibility of girls working either at home or abroad, and girls providing their families with a dowry through marriage. Overall our data shows that attitudes relate to cultural beliefs about the role of women, common societal arrangements, and to economic considerations and pressures. It is important to recognise and address such structural drivers in order to enable a fundamental change in attitudes where projects consider this necessary.

There is a variety of school-based barriers, many of which seem to be relatively common across the SCW – and many of these interrelated factors work together to shape the learning environment in school. The household survey and the school-based assessment showed that: three quarters of the assessed schools reported a lack of teachers; nine out of ten classrooms did not have electric lighting; one in four schools reported problems with teacher absenteeism; and one in four teachers did not have a teaching certificate. Both qualitative and quantitative findings highlight the negative effects of overcrowded classrooms, poor facilities, and an unfriendly school environment on girls' learning. Many of these factors stem from structural problems such as: a general under-resourcing of schools; the irregular payment of teachers; and the lack of funds to maintain school facilities and teacher salaries, especially in areas where schools depend on fee payments that many parents cannot afford on a regular basis. Rather than being gender-specific barriers, school-based factors appear to affect all children enrolled in disadvantaged schools. However, it is likely that they affect some groups of the population more than others, namely children living in remote and poor communities with few resources to maintain the quality of education at local schools.

Early pregnancy and early or forced marriage were often mentioned in our in-depth interviews as salient barriers' to girls' education, especially for older girls. Our discussion of these barriers has shown that they cannot be understood as isolated phenomena. They affect girls in ways that are shaped by social norms, cultural values and economic pressures and considerations. Girls who become pregnant may drop out from school because they are being socially stigmatised and actively excluded. However, leaving school prematurely may not be viewed as drop-out but as a natural step in a young girl's progression through life. Early marriage is associated with views whereby more advanced education is irrelevant to girls whose role is defined by marriage. In addition, early marriage emerges as one way to alleviate economic pressures as it provides the girl with a livelihood, and her family with a dowry. Projects addressing these social issues need to understand what structural factors drive them; how exactly they affect girls' education outcomes; what change can be achieved and how.

Some issues emerge as important barriers in the qualitative research but did not feature significantly in the quantitative analysis. This may be due to their sensitivity as a topic for discussion, or due to the fact that they may be more salient in communities as a whole that in individual families, which is where the data was collected. The household survey found a relatively low incidence of reported **violence** across the SCW, but the IDIs suggests that violence can have severe effects on girls' education when it occurs. Our in-depth interviews (IDIs) further indicate that **sexual violence** occurs in all project areas with detrimental effects on girls' attendance and learning. **Early pregnancy** and **early marriage**, as discussed above, were emphasised by IDI respondents but they were not covered in the household survey due to their sensitive nature. Finally we found little clear evidence (both in the qualitative and quantitative research) that **disability** makes it difficult for girls to attend school and learn. This seems counterintuitive given the barriers faced by all children in attending school and may be due to under-reporting of the difficulties attached to living with a disability. These issues merit further in-depth research that allows for the use of specific methods and approaches tailored to researching sensitive and difficult topics. The

GEC thematic research undertaken by the EM will offer an opportunity for such additional research to help us better understand how these barriers affect girls' education.

A key area that merits further investigation is **the role of prior educational experiences** in interacting with some of the barriers identified in shaping outcomes. Analysis of outcomes shows clearly that learning progress is often relatively slow for those in the school system. As we have seen from analysis of the school-based assessments, there are a number of plausible explanations for this in terms of school-based factors. Some of these may be universal, but others may vary by context requiring further investigation. It's also clear from the qualitative evidence how families are often acutely aware of the lack of progress made by children in school and may go to extreme lengths to seek out schools that are more challenging for their children. This lack of prior progress in learning is likely to impact on attitudes to learning, motivation, and retention and make further learning more difficult as girls and their peers fall further behind. These issues are likely to interact with the variety of barriers analysed in this report. For example, if families are poor, then losing time in an education system that does not bring any tangible benefits or marketable skills while incurring opportunity costs may be viewed as a poor investment. Conversely, when schooling is effective the decision-making process may be quite different. The role of prior progress may also make it more challenging to isolate the effect of barriers quantitatively as these are known from the qualitative evidence to fluctuate over time (in particular for example poverty or economic circumstances). For these reasons, a more detailed analysis of pathways, both between barriers to outcomes and across time through school-careers will be an important next step for analysis and this should be built into the planning of the longitudinal research.

Finally, many of the barriers discussed above are interrelated and driven by key structural problems, notably a lack of resources in households, communities, schools and government; and social norms, beliefs and attitudes that de-prioritise education (especially for older girls) compared to other options such as employment and marriage. It is important that projects **distinguish the symptoms and the drivers** of the barriers that they aim to address to **ensure that their interventions have a sustainable impact**. Projects need to understand how and why families adapt to the barriers they face as well as when they are overcome by them. Unless projects are able to **develop a reasonably holistic and comprehensive view of the barriers to education provision and take-up among their target communities**, then there is a risk that interventions will be confounded by barriers that projects are either unaware of or are unable to mitigate against in a strategic manner.

It is understood that some structural barriers such as seasonal poverty or lack of government resources may not be within the projects' control and are impossible to address through quick solutions. Nevertheless, projects need to have a clear understanding of these structural factors in order to understand where and how they can best intervene to achieve feasible and lasting change within the given structural constrains. In addition, projects may want to keep these structural issues in mind when trying to influence policy agendas.

Does the evidence support project targeting and project design?

Conclusion 3 – The ways in which projects have defined their target groups and the baseline evidence reported about them does not consistently demonstrate a sufficiently granular understanding of the complex inter-relationships between the different types of barriers that particular sub-groups face and how these affect their educational outcomes. For some projects, this potentially means that interventions will not be as effective as they could be, which may affect the type and amount of changes anticipated by their theories of change. Related to this, there is a need for greater understanding and evidence across the whole SCW about the extent to which the effects of projects' interventions on complex and dynamic problems will be sustained beyond the life of the programme.

Projects were encouraged to collect data from a population that is sufficiently large and representative of their target population(s) so that results can be disaggregated to the level of relevant sub-groups or contexts later on. It is critical at later stages of the evaluation process to measure and understand the different type and scale of effects on different types of marginalised groups. Our baseline analysis shows a **tendency across the SCW for definitions of barriers and sub-groups within a target population to overlap.** For example, we have identified different dimensions of poverty that act as barriers to girls' education in differing ways and to differing extents. However, a number of projects have simply defined 'the poor' as their target group. Similarly, girls with disabilities have been identified as a key target group by several projects, but girls affected by disabilities can also be part of other sub-groups and facing other barriers, such as those experiencing intense poverty and hunger that also affect their educational outcomes and would need to be taken into account.

Our analysis demonstrates the importance of understanding, as far as possible, the differences and relationships between, on the one hand social barriers to education and on the other hand being marginalised from education in terms of the GEC's outcomes relating to being in school and learning. These relationships are complex and dynamic and analysis will need to continue throughout the GEC as more evidence becomes available. Generally, projects do not sufficiently understand the effect(s) of a specific barrier on a particular educational outcome, relative to other barriers that also affect the same educational outcome. For those projects with a relatively narrow or overly simple definition of marginalisation for their sub-groups, it is possible that the **design of the interventions will not be as effective as they could be because of a lack of capacity to address the complex nature of the base problem**.

A key part of understanding the complex relationships between barriers and educational outcomes is developing an understanding of the coping strategies that households, teachers and children use to overcome the barriers that they face. For example, our analysis of coping strategies relating to poverty shows that while poverty-related factors are an evident barrier to girls being in school and learning that typically families find ways of overcoming these at sometimes a significant opportunity cost. **It is not clear that projects have paid enough attention to the effects of coping strategies employed by target groups and communities** in response to the barriers to education that they have reported. This is important both in terms of understanding why impacts may be less than anticipated (since many families cope already) but also for thinking through ways to help more people adapt their coping strategies and make them both more effective and less of a strain on their families. Understanding the interactions between coping strategies and intervention innovations are likely to be an important element of GEC learning gains throughout the programme life-cycle.

Finally, leverage and sustainability is a key outcome area for the GEC. There is currently **very little baseline evidence relating to the sustainability of project interventions** and project baseline reports rarely discussed the implications of baseline findings in terms of sustainability. Arguably, a sustainable intervention is one that intervenes to address (either directly or indirectly) key causal factors that result in a particular educational outcome. If causal factors or barriers are not sufficiently understood and considered as part of the intervention design strategy then **it is less likely that changes resulting from a focus on single barriers or symptomatic effects will be sustained beyond the life of the project**.

Conclusion 4 – The designs of project interventions and targeting strategies were influenced to a reasonable extent by the baseline evidence that projects themselves collected and the analysis they undertook. This flexibility was considered appropriate in the context of the GEC objectives for the SCW, which involved quickly establishing a large and diverse population of target groups. However, it is clear from the EM's baseline research and analysis that further adjustments and corrections to delivery may be identifiable and relevant for some projects prior to the midline stage.

Projects have generally adapted their project designs in response to the findings in their own baseline reports. There were some instances where projects do not appear to have responded as would be expected to their own baseline evidence – four projects found evidence that challenged their original assumptions about their project designs but did not make any adjustments. As a result, these projects may find it difficult to generate the required changes in the levels of outcomes among their target groups. They may also find at midline and endline that the type and size of the changes experienced by their target groups may be difficult to measure and report.

Our reanalysis of the project data that was available and in a suitable state for reanalysis, together with our analysis of the primary quantitative and qualitative data that we collected, suggests that **further adjustments to the design of project interventions are probably merited.** However, in the context of DFID's ambitions for the SCW, in particular to establish large, diverse populations in a relatively short time and the nature of longitudinal evaluation, it is inevitable that more refined lessons about the interplay and 'design fit' between beneficiary needs, desired programme outcomes and project interventions will continue to emerge from analysis at all stages of the programme. The documentation, harmonisation and standardisation of data sources remains a high priority to enable the GEC to understand how different factors, pathways of change and effects relate to one another.

Does the evidence support effective project evaluation?

Conclusion 5 – The baseline evidence collected by projects and the EM and the level of rigour in the design of project and programme evaluation strategies are expected to reasonably support effective project evaluation in the majority of contexts. However, some projects have experienced challenges in the collection, collation and reporting

of their data and analysis, which can be mitigated against through on-going collaboration and discussion between the FM, projects and the EM. However, significant evaluation design and implementation issues will persist for several projects given the challenging nature of their project environments and the types of barriers that their target groups and communities face.

The baseline evidence collected by SCW projects and the EM will generally support effective project evaluation and counterfactual analysis of the impacts of SCW projects. The level of rigour of the projects' evaluation designs means that the collection of longitudinal data from intervention and control samples of sufficient sizes, supported by complementary good quality qualitative research should be able to support the impact evidence and learning requirements of the GEC.

It is clear though that in some project areas designing and implementing a counterfactual evaluation design has been challenging and that some issues still persist. The precision of counterfactual analysis is always subject to individual circumstances of data collection and local contextual variations. Some issues were raised during the reviews of project baseline reports in terms of a lack of sufficiently detailed data analysis or of a failure to make use of qualitative data to support analysis. These issues, combined with the incomplete documentation of project data and the variety of sampling approaches make it more **difficult to determine whether the evidence base for midline and endline is likely to be robust for all projects.** Some projects experienced challenges in identifying and achieving a representative and reliable sample suitable for supporting longitudinal research and impact evaluation at midline and endline.

For a few projects, significant problems with the design and implementation of their M&E frameworks persist due to high levels of mobility among target populations (e.g. those living in refugee camps in Kenya and pastoralist communities in Ethiopia) and concerns about security and safety. In six project areas, such challenges have resulted in projects discontinuing the use of control groups following consultation with DFID and the FM. This will have a significant effect on the GEC's capacity to robustly attribute observed changes to the project interventions, to identify the impact made by these projects over and above changes that would have happened anyway and also to learn what works in different contexts.

6.2 Recommendations

Recommendations for DFID and the Evaluation Manager

1. There is sufficient variation across the SCW project areas in education outcomes relating to enrolment, attendance and retention to suggest that for some projects achieving a significant and measurable improvement in these areas may be challenging. This is potentially **an important policy consideration when reviewing approaches to targeting education programmes through a universal outcome relating to accessing education and being in school**.
2. From a policy perspective, DFID should consider the wider programme and policy **implications of significant variations in gender differences between boys and girls with regards to enrolment and learning**. It is evident that boys are often just as marginalised as girls in terms of their educational outcomes in particular contexts and as such there is no evidence of *systematic* differences across the SCW. Further research is required to understand the key drivers and identifiers of real gender differences between boys and girls in specific conditions.
3. The Evaluation Manager work with projects to help them to **clarify the content of the data that they have documented to produce a more robust baseline for the SCW**. This will facilitate more detailed analysis of the relationship between barriers, sub-groups and contexts that will significantly contribute to the effectiveness of the evaluation process at midline and endline.
4. **Additional thematic research** is needed to better understand sensitive issues and themes that were difficult to assess using the household survey and in-depth interviews. The GEC thematic research should focus on eliciting outstanding questions on issues such as: the extent to which **pregnancy and early marriage** cause girls to drop out of school rather than girls leaving school on purpose to have children and get married; the extent and types of **violence** affecting girls at home and in school and their effects on educational outcomes; and finally the ways in which families and children perceive and define **disability** and the extent to which disability hinders girls' education.

5. DFID and the EM could consider **including an assessment of education provision with regards to facilities, resources, materials and teachers at the midline**, given the apparent influence of these factors on learning and educational outcomes generally. Building on this point, if there is greater pressure to get girls into school, stay in school and learn but without the support for school resources to deliver learning gains girls can recognise, then adverse outcomes might be a consequence. More research is required and the findings from the baseline research that have emerged should feed into the design of thematic research with regards to these issues.

Recommendations relating to SCW projects' use of baseline findings

6. In the first instance, the FM and SCW projects should carefully review the findings and analysis presented in this baseline report. The primary purpose of this review should be to **compare these findings with the current responses by projects to their own baseline reports and to identify any further changes required** to the design of their interventions.
7. The FM and individual projects may want to discuss these with the EM to understand the full design and delivery implications of the analysis and findings presented to date. This is particularly relevant to those projects with interventions designed to improve enrolment, attendance and/or retention outcome levels but whose **baseline evidence suggest these levels are higher than were expected at the pre-baseline stage**.
8. As a priority, the FM and SCW projects should **consider the implications of their baseline findings for their project sustainability strategies.** This may require further data collection to inform changes in the way that projects intervene to bring about changes that are more sustainable by addressing factors that are beyond the control of the project, such as government education policy or government budgeting and resourcing for education.
9. Projects should **consider the implications of barriers relating to the supply of quality education as well as barriers affecting the demand for education.** This is to ensure that achievements in terms of enhancing enrolment and attendance are not being compromised by the negative effects of school-based barriers on learning; and in turn, that efforts to improve learning in school are not undermined by factors causing girls to drop out prematurely.

Recommendations relating to project M&E frameworks and data

10. It is important that **significant differences between the EM's reanalysis of key education outcome data and project's own analysis and findings** are reviewed and reconciled between now and the midline evaluation to ensure that the baseline for evaluation and PbR purposes is as reliable as possible.
11. **Evidence can be used more effectively to identify the potential causal drivers of educational marginalisation, and the population groups that are most concerned.** This should enable projects to assess how and to what extent interventions may be helped or hindered by the causalities identified. Associated with this is the need for projects to consider the ways in which girls, households and communities cope with the barriers that they face in order to understand, anticipate and measure the actual effect of barriers on education and of the remedial and mitigating decisions and actions that are taken in the different GEC contexts.