



# Working to Empower Girls in Nigeria

Highlights of the Educating Nigerian Girls in New Enterprises (ENGINE) Program

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By Jeni Klugman, Jennifer Parsons and Tatiana Melnikova

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## Preface

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Nigeria is a country with huge cultural diversities, and like many developing countries it faces significant economic and social challenges. Women and girls in more conservative areas of the country often face norms that constrain their ability to attend school, engage in paid work, and participate in decision-making at home.

In this context, as a part of the Coca-Cola 5by20 program, The Coca-Cola Company, together with several partners, launched the Educating Nigerian Girls in New Enterprises (ENGINE) program. ENGINE brought together public and private sector partners to support the most marginalized girls in school and out of school in poor communities. Its aim was to build girls' confidence; increase their skills in financial management, leadership, and business; and influence gender norms in the community to empower women and increase their agency.



### **Larai, 19,**

had to drop out of school to help support her family, despite the fact that she excelled academically.

She joined the ENGINE program, and with it, learned skills for saving money and establishing her own business. She got trained to be part of Coca-Cola's value chain, established a relationship with the wholesaler and received seed equipment and supplies.

She established her own soft drink spot in front of the small restaurant her mom operates on the outskirts of the market. She has been saving money and hopes to return to school. Ultimately she would like to be a doctor.

Photo: Corinna Robbins/Mercy Corps

The evaluation results reported here highlight the potential of targeted programs to improve girls' confidence, connect them to economic opportunities, and shift gender norms among community leaders and others who influence the activities in which girls can engage. The lessons from this evaluation can inform future programs to empower adolescent girls, helping to fine tune approaches to improve the outcomes and impacts of these important investments.

The analysis and program descriptions in this report come from several sources. These include five reports and the data collected by Preston Health Care Consulting Ltd.,<sup>1</sup> the program evaluation firm; pre-test questionnaires and data from Mercy Corps, the program implementer; and articles on the ENGINE program that were shared by Coca-Cola. The program literature was reviewed to gain an understanding of how ENGINE fits into the landscape of programs globally and in Nigeria that are working to empower girls and women and connect them to economic opportunities. The narrative of the challenges women and girls face in Nigeria draws on data from the World Bank; International Labour Organization; United Nations Educational, Scientific and Cultural Organization; Nigerian Demographic and Health Surveys; United Nations Development Program; and the World Values Survey, among others. No additional fieldwork was undertaken for this evaluation.

The ENGINE program involved multiple partners: The Coca-Cola Company, Nigerian Bottling Company, Mastercard Foundation, Nike Foundation, and the UK Department for International Development's Girls' Education Challenge, which worked together with local, state, and national government agencies, as well as civil society organizations. Mercy Corps, a global humanitarian aid agency, led the implementation of ENGINE, with support from Girl Effect Nigeria, d.light solar social enterprise, Action Health Incorporated, Community Action for Popular Participation, and Society for Women Development and the Empowerment of Nigeria. In addition to The Coca-Cola Company, the program received funding from Nike Foundation, MacArthur Foundation, and Mastercard Worldwide. The Khana Group and Preston Health Care Consulting Ltd. evaluated ENGINE.

# Executive Summary

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A major challenge for countries around the world is ensuring that youth find their place in the world of work. As documented by the International Labour Organization,<sup>2</sup> the World Bank,<sup>3</sup> and others, young women face especially difficult transitions where lack of education, lack of mobility, and restrictive norms impose additional constraints. A range of programs have been tried to address these constraints, with a growing body of evidence pointing to the need for multipronged approaches to address the multiple challenges young women face.

In this context, The Coca-Cola Company, together with several partners, launched the Educating Nigerian Girls in New Enterprises (ENGINE) program with the aim of boosting the learning outcomes and economic status of marginalized adolescent girls in Nigeria, the most populous country in Africa. Nigeria has a young population, with a median age of about 18 years. The national economy is dominated by a vibrant oil production sector, but threats from terrorist organizations like Boko Haram create major insecurity and instability. Women and girls are often constrained in their pursuit of education and employment by restrictive gender norms. Nigerian women are less likely than men to engage in paid work, and those who do work for pay are more likely to work informally.

ENGINE sought to reach marginalized girls, defined by such criteria as being married, pregnant or having a child before the age of 18; girls who are divorced or widowed; unmarried girls who are orphans or come from a single-parent household; having a disability; living in a household with a family member who has a disability; or being unable to pay school fees. The program sought to expand opportunities for girls ages 16–19, both those who were in school and those who were not, by building their confidence; increasing their financial management, business, and leadership skills; and working to influence gender norms around women and girls' economic empowerment in the community. Key components of the program included providing safe spaces for girls and tutoring them in math, English, and financial management, leadership, and life skills. For girls who were not in school, the program provided additional support, mentoring girls who were running their own businesses, connecting girls to value chains, and providing opportunities to join savings groups. The program ran in two nine-month cycles, beginning in 2014 and ending in 2016.

By March 2017, the program had reached some 21,000 girls, with an average age of 18, in the poor northern states of Kaduna and Kano, the sprawling metropolis of Lagos, and the capital, Abuja. Drawing on evaluations that compared learning outcomes, economic activities, savings practices, and self-confidence between girls in the program and girls who did not participate in ENGINE, this report highlights and shares lessons to inform future programs that work to empower marginalized adolescent girls.

What difference did ENGINE make? Overall, the results are encouraging. ENGINE succeeded in creating a space for marginalized girls to access life and business skills, boost confidence and agency, and expand their opportunities to be economically more empowered.

Both girls who were in school and girls who were out of school who participated in the program reported gains on several fronts that would be expected to expand their future economic opportunities. Notably, by the end of the program:

- Participants were much more likely than nonparticipants to have run their own business or managed a family business at any time by project end (55 percent of participants and 27 percent of nonparticipants).
- More than 10,000 out-of-school participants (out of 13,024) were linked to employment, with 6,000 of these girls joining the Coca-Cola value chain (58 percent of out-of-school program participants).
- More girls across all four program areas had savings accounts (65 percent of participating girls in cycle 1 compared with 37 percent of nonparticipants).
- Participants had higher self-confidence and better knowledge of skills needed to run a small business, including business negotiations and financial management, as measured by responses to questions on business and financial management skills.
- Student participants felt more confident and competent in English and math, although this was not reflected in the results on tests conducted for the evaluation.
- In Kaduna and Kano, two of the more conservative implementation states, students identified the importance of secondary education and learning new skills.
- Gatekeepers (people who are influential in the girls' lives, such as parents, other family members and relatives, and religious and traditional leaders) of participants in ENGINE were generally positive about schooling for girls, with the exception of those in Kano.

Not surprisingly, given Nigeria's size and diversity, program success varied. The good news is that even in the most challenging areas (Kano and Kaduna), girls gained a better grasp of good business practices, knew more about finances, and were saving at higher rates at the end of the program. In the thriving metropolis of Lagos, out-of-school girls performed better at the end of the program across all measures, including employment, business skills, savings accounts and practices, and empowerment.

Among other insights from the program is the finding that many girls were averse to using bank accounts, which provide autonomy and financial independence, and preferred to save at home. It is important to consider why that might be and to develop strategies to facilitate girls' interactions with financial providers. Overall, the failure to boost test scores could reflect the need for programs that are longer than nine months and that are delivered earlier in the girls' school career. It may also be the case that girls may not have had the time to practice the skills they learned if gatekeepers were not willing to reassign household chores that traditionally fall on girls.

# 1. Context and Motivation for the Program

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Nigeria is the most populous country in Africa.<sup>4</sup> It is a major petroleum exporter,<sup>5</sup> and its economy is the largest in Africa. But poverty rates are also very high, with an estimated 54 percent of the population living on less than \$1.90 a day.<sup>6</sup> Income inequality is also very high. Nigeria has a young population, with a median age of about 18 years.<sup>7</sup>

Nigeria ranks toward the bottom of various indices of human development. On the 2017 Women Peace and Security Index, for example, Nigeria ranks 128 of 153 countries on dimensions of women's inclusion, justice, and security and performs especially poorly on indicators of women's education, bias in favor of sons over daughters, and organized violence.<sup>8</sup>

Many women and girls in Nigeria experience poverty and face major impediments to accessing social services and employment opportunities, especially those who live in poor households.<sup>9</sup> While Nigeria has made some progress in closing gender gaps, the 2015 National Human Development Report notes that women continue to have access to fewer economic, political, and social resources than men do.<sup>10</sup> Women's political representation is very limited: the vast majority (94 percent) of parliamentary seats are held by men.<sup>11</sup> According to the World Values Survey, 83 percent of Nigerian men strongly agree or agree that men make better political leaders than women.<sup>12</sup> A National Gender Policy (2008) committed to women's empowerment and the elimination of traditional harmful practices, with the goal of reducing the gender bias that arises from traditional cultural norms.<sup>13</sup> Yet discriminatory norms remain pervasive in Nigeria and continue to be a barrier for women's advancement.

Responses to the World Values Survey reveal unequal power relations between men and women:<sup>14</sup> 76 percent of men and 55 percent of women agree that when jobs are scarce, men should have a greater right to a job than women.<sup>15</sup> Discriminatory norms can manifest in a variety of ways, including through intimate partner violence.<sup>16</sup> More than one-third (35 percent) of Nigerian women believe that a man is justified in beating his wife. Negative perceptions of self-worth, including acceptance of wife-beating, impede women's access to health care and family planning, and impact their overall well-being.<sup>17</sup> Women are further limited by institutional and legal constraints when seeking employment and credit.<sup>18</sup> While there is some regional variation, traditional inheritance rights tend to limit women's ownership of assets and access to finance.<sup>19</sup>

Nigeria has a federal structure of government. At the Federal level, public expenditure on social services including health, education, and social protection, was about 19 percent of the budget – low compared with South Africa's 25 percent, for example.<sup>20</sup> A low ratio of taxes to GDP (about 8 percent) limits public financing and provision of services in Nigeria.

## Regional diversity

Nigeria is diverse as well as populous, home to nearly 350 ethnic groups that speak more than 250 languages.<sup>21</sup> In the southern parts of the country many Nigerians are Christian, whereas Islam is more prominent in the north.<sup>22</sup>

Lack of infrastructure and high levels of poverty, particularly in the northeast, have been associated with conflict and instability. Islamists in northern Nigeria have sought to establish Shari'a<sup>23</sup> governance. Since 2009, at least 20,000 people have been killed in violence orchestrated by Islamic State-aligned Boko Haram.<sup>24</sup> Designated as a foreign terrorist organization by the U.S. Department of State, Boko Haram is often translated as "Western education is forbidden/sinful," and the group specifically opposes the education of girls.<sup>25</sup> The areas where Boko Haram militants have attacked include Kano, Kaduna, and the Federal Capital Territory (FCT), three states where ENGINE was implemented.<sup>26</sup>

## Economic opportunities

According to the National Bureau of Statistics, in 2015, 65 percent of women and 71 percent of men participated in the labor force.<sup>27</sup> Women worked primarily in the services industry or in agriculture. In 2010, more women than men worked in the informal economy, and more women owned businesses in the informal sector.<sup>28</sup> Estimates based on the Nigerian 2013 Demographic and Health Survey suggest that approximately 80 percent of women who were employed in the preceding 12 months were self-employed,<sup>29</sup> working primarily in retail and wholesale trade, manufacturing, and services.<sup>30</sup> The unemployment rate for adult women is 3.4 percent.

The situation is harder for young women. The unemployment rate is 11.5 percent for women ages 15–24. Further, 24 percent of female youth are not in employment, education, or training, compared with 18 percent of men.

## Education

In principle, the government provides nine years of free, compulsory education; however, educational attainment levels vary widely by gender and region. The national average is 7.4 years of education, ranging from 3.8 to 10.7 years regionally.<sup>31</sup> Women have a median of 5.6 years of education, ranging from 11.3 in Lagos and 11.2 in Abuja to zero in many parts of the northwest and northeast.<sup>32</sup>

Only two in three women nationally have completed primary school, compared with more than four in five men. Fewer than one in two women have completed secondary school, compared with almost two in three men. According to the Global Gender Gap Report, Nigeria is among the bottom ten countries in terms of primary and secondary education.<sup>33</sup> About 20 percent of men have a university degree – which is double the rate for women.<sup>34</sup> Literacy rates are lower than the national average in Kano (49 percent) and Kaduna (44 percent) and higher than average in Abuja and Lagos (67 and 96 percent).

Progress in education is a cornerstone of economic and human development and can generate large social and economic returns, especially for women and girls.<sup>35</sup> As investigated in the 2016 National Human Development Report, girls in Nigeria are at a disadvantage in educational attainment, school completion, and knowledge and skill retention after leaving school, with achievements especially weak in the northern states.<sup>36</sup> Low school enrollment in poorer households puts girls in these households at highest risk of early marriage.

## **Early marriage and partner violence**

In 2016, according to the United Nations Children’s Fund (UNICEF), 43 percent of girls in Nigeria were married before their 18th birthday, and 17 percent before age 15, with a range from 76 percent in the northwest to 10 percent in the southeast.<sup>37</sup> Early marriage is strongly related to education levels: 82 percent of women with no education marry before they are 18 compared with 13 percent of women who have completed secondary education.<sup>38</sup> Education, child marriage, and poverty in Nigeria are connected in ways that perpetuate gender discrimination across generations,<sup>39,40</sup> yet child marriage rates have not declined with rising average levels of education. In 1999, 40 percent of women ages 20–24 had married by age 18. That rate fell negligibly, to 39 percent in 2003, but then rose to 43 percent in 2013.<sup>41</sup>

Men marry later than women, on average. According to the Nigerian 2013 Demographic and Health Survey, the median age at first marriage is 27 for men and 18 for women.<sup>42</sup> This age difference, coupled with a lack of educational and economic opportunities for women, reduces women’s agency and increases their vulnerability to physical abuse.<sup>43</sup> Women have very little say in how their households are run, including how household income is spent.<sup>44</sup> A study in northeastern Nigeria found that education levels are strongly and negatively correlated with justification of wife-beating, a proxy indicator for agency and vulnerability to physical abuse.<sup>45</sup>

Rates of gender-based violence are high. Almost 28 percent of women ages 15–49 have experienced physical violence at home in their lifetime, ranging as high as 52 percent in the south.<sup>46</sup>

## **What has been tried to boost the opportunities of girls?**

Across low-income countries, women and girls face unique challenges to improve their economic empowerment and agency. In recent years, a number of programs that aim to provide skills training and access to job markets and to encourage entrepreneurship among women have been implemented across the world. A number of programs fall under the heading of “girls’ clubs,” for example, and these are becoming increasingly popular. The results are generally, though not always, encouraging. These programs typically provide life and vocational skills training (such as financial literacy, livelihood skills, and employment assistance) and may be based in formal centers or in the community.

A recent global review by the Bill & Melinda Gates Foundation, as a part of its Strategy for Gender Equality, suggests that programs that incorporate life skills training, business management, and training for specific jobs can enable women and girls to start their own business.<sup>47</sup> A review by the World Bank of constraints and interventions related to gender and youth employment in Sub-Saharan Africa found that interventions that address multiple constraints simultaneously are the most effective, but they are also the most difficult to evaluate.<sup>48</sup>

The World Bank's Adolescent Girls' Initiative, conducted in eight countries, supports programs whose goals and activities are similar to those of ENGINE. It aims to reach the most vulnerable girls, increase their agency, connect them directly to labor markets, and build entrepreneurial skills and resources for starting a business. The programs were subject to rigorous evaluations, and the preliminary results suggest success in employment and earnings but mixed results for empowerment measures such as self-esteem and autonomy in decision-making.<sup>49</sup> Programs in Latin America and Jordan, which worked with local businesses to train young people and connect them to job opportunities after training, have increased employment.<sup>50,51</sup>

Community-based life skills programs run by the Population Council in Ethiopia and Iraq have reported positive results. In Ethiopia, the measured outcomes include delayed marriage, higher school enrollment, and greater use of family planning methods, especially among adolescents.<sup>52</sup>

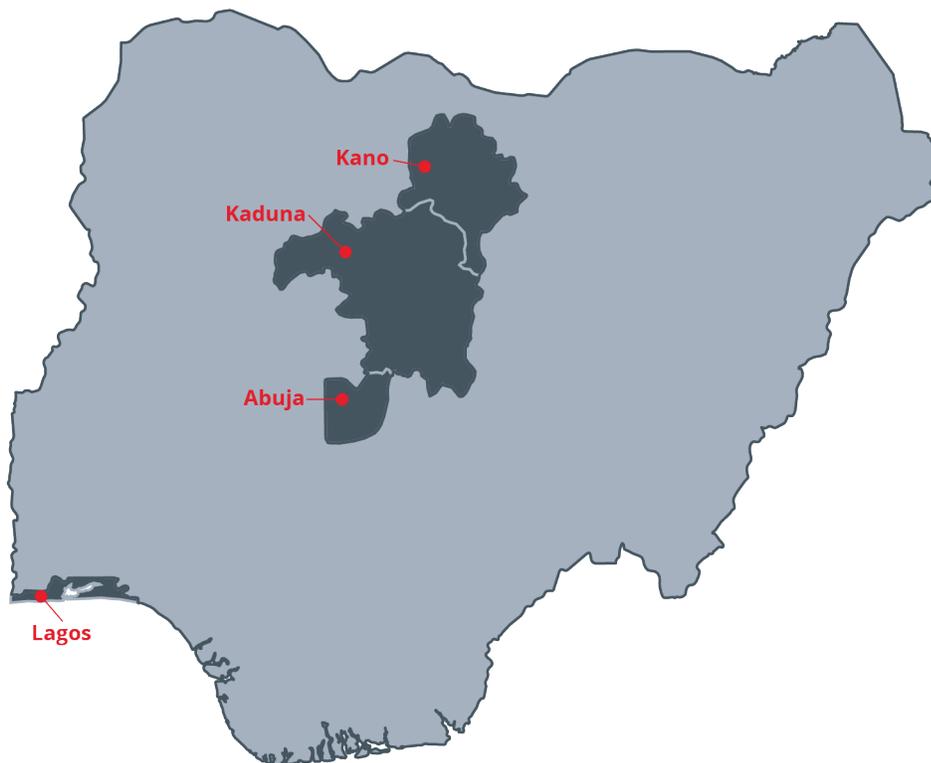
Multiple initiatives have sought to promote opportunities for poor women and girls in Nigeria.<sup>53</sup> One is Voices 4 Change, funded by UK Aid, which has an approach similar to that of ENGINE – including providing safe spaces (learning centers), involving gatekeepers, focusing on increasing girls' confidence and leadership skills, and working to change societal perceptions.<sup>54</sup> Women for Women has run programs in Nigeria to educate women about their rights and assist them in setting up small businesses. Evaluations of these programs suggest that participants have attained greater self-esteem, lower acceptance of violence, more involvement in leadership opportunities,<sup>55</sup> and higher average incomes.<sup>56</sup>

Overall, the most promising programs are set in girl-friendly settings and provide a combination of information about sexual and reproductive health and complementary training and assets. However, because programs usually combine skills training, mentoring, social support, and other features, it is hard to know exactly which components contribute the most to successful outcomes.

## 2. The Educating Nigerian Girls in New Enterprises Program

The Educating Nigerian Girls in New Enterprises (ENGINE) program aimed to improve the learning outcomes and economic status of marginalized adolescent girls. The program served girls ages 16–19 years during 2014–2017 in two nine-month cycles, working across 209 communities in 18 localities in the states of Kaduna, Kano, Lagos, and the Federal Capital Territory of Abuja (map 2.1). During cycle 1, ENGINE enrolled over 8,450 girls who were out of school and 4,305 girls who were in school. During cycle 2, ENGINE enrolled 8,425 girls who were out of school and 3,309 girls who were in school. Thus, out-of-school girls constituted about two-thirds of program participants, who totaled 24,489. (For a timeline of the program and evaluation, see annex 1.)

Map 2.1 Nigerian states participating in the ENGINE program



Source: Nigeria with States by FreeVectorMaps.com

By the end of the program, in March 2017,<sup>57</sup> over 24,000 girls had participated, 21,162 girls had graduated from the program, and 8,622 girls had been placed in internships and vocational training or started their own business.<sup>58</sup>

The goals of the program, part of the Coca-Cola 5by20 program (box 2.1) were to provide adolescent girls with business skills to connect to Coca-Cola value chains, encourage entrepreneurship and provide employment (box 2.1), build agency and confidence, and work to change community gender norms on child marriage and women and girls' economic empowerment. The model involved teaching business development skills and promoting local entrepreneurship opportunities. For girls still in school, the program complemented formal education. ENGINE brought together public and private sector partners to support the most marginalized girls in school and out of school in poor communities.

### **Box 2.1 Coca-Cola's 5by20 Program**

The Coca-Cola Company launched its 5by20 Initiative in 2010, aiming to economically empower five million women entrepreneurs globally by 2020. The company recognized the important role that women play across its value chain as producers, suppliers, distributors, retailers, recyclers, and artisans. The initiative focused on addressing barriers women face in starting and growing their businesses, particularly in emerging market economies, by providing business skills training and access to financial services and mentoring networks. To promote the sustainability of its programs and create lasting empowerment for women, Coca-Cola has built partnerships across companies, governments, and civil society to implement programs in 75 countries, track results and lessons, and scale successful programs to reach more women.<sup>59</sup>

## **Target groups**

ENGINE's multipronged approach worked separately with girls who were still in school and girls who were out of school. The activities and expected results of the program are summarized in table 2.1.

For out-of-school girls, the program had a two-pronged approach, working with girls and with groups and institutions that could provide girls with economic opportunities, mentorship, and support, including vocational training.

For students, the program also worked with the girls and with people who are influential in the girls' lives (gatekeepers) – parents, other family members and relatives, religious and traditional leaders, and school board members. The objective of working with gatekeepers was to increase support for girls' education.

**Table 2.1 Activities and expected results of the ENGINE program**

<b>Group and activities</b>	<b>Expected results</b>
<b>Out-of-school girls</b>	
<ul style="list-style-type: none"> <li>• Safe Spaces for girls that included weekly instruction sessions (2 hours a week) in business, financial, leadership, and life skills</li> <li>• Connections to value chains (Coca-Cola, Aritel, d.light)</li> <li>• Access to savings groups</li> <li>• Mentors and support to girls running businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Increased income</li> <li>• Increased business, financial management, and entrepreneurship skills</li> <li>• Increased life and leadership skills</li> <li>• Small businesses opened</li> <li>• Savings groups joined</li> </ul>
<b>Students</b>	
<ul style="list-style-type: none"> <li>• Safe Spaces for girls that included weekly instruction sessions (2 hours a week) on academics and financial, leadership, and life skills</li> </ul>	<ul style="list-style-type: none"> <li>• Improved learning outcomes in math and reading</li> <li>• Better financial management skills, including increased savings</li> <li>• Better life and leadership skills</li> <li>• Increased secondary school completion rate</li> </ul>
<b>Gatekeepers of students</b>	
<ul style="list-style-type: none"> <li>• Organized “Champion days” to showcase girls’ activities</li> <li>• Worked with School Based Management to implement strategies to keep girls in school</li> <li>• Worked with religious leaders to promote girls’ education in sermons and outreach</li> <li>• Worked with State Advisory Groups that promoted policies and actions that support girls’ education</li> </ul>	<ul style="list-style-type: none"> <li>• Improved perceptions of girls</li> <li>• Girls empowered to make more decisions about their future</li> </ul>

The ENGINE program was intended to reach the most marginalized girls in the project sites. Marginalization criteria – based marital status, pregnancy and childbirth status, health (own and family members), and ability to pay school fees – and age were used to determine eligibility (box 2.2). To be eligible for the program, girls had to be 16–19 years old and had to meet at least one of the criteria. The marginalization criteria questions were asked directly of female students, while heads of household were questioned for girls who were out of school.

## Profile of participants

During cycle 1, ENGINE enrolled over 8,450 girls who were out of school and 4,305 girls who were in school. During cycle 2, ENGINE enrolled 8,425 girls who were out of school and 3,309 girls who were in school. Thus, out-of-school girls constituted about two-thirds of program participants, who totaled 24,489. (For a timeline of the program and evaluation, see annex 1.)

The average age of in-school and out-of-school program participants was 18. A majority of out-of-school girls (87 percent) had attended some school, which is noteworthy considering that 39 percent of women nationally have received no education.<sup>60</sup> Twenty percent of out-of-school girls and 4 percent of students were married, both lower than the national average for child marriage (43 percent). While only 5 percent of students had given birth, 21 percent of out-of-school girls had done so, which is higher than the national average of 11 percent.<sup>61</sup>

### *Out of school girls*

One in five out-of-school girls in the program had been married and one in five had given birth. Kaduna had the highest percentage of girls who had been married (46 percent) and had children (49 percent), reflecting the conservative nature and gender norms in those communities. Most of the girls in the program (87 percent) had previously attended school, but the share was lower in Abuja, where only 72 percent of girls had attended school. On average, 27 percent of program girls spoke English, ranging from more than 60 percent in Abuja to only 40 percent in Kaduna and ten percent in Kano.

### **Box 2.2 Marginalization criteria for ENGINE program eligibility**

- Married, pregnant, or had a child before age 18
- A sick parent or husband lives in the household
- Divorced or widowed
- Has a disability
- An orphan; or single-headed household
- Parents or household head cannot pay school fees

The families of girls in Kaduna were also the poorest in the sample. Across all four states, 40 percent of families were not able to meet basic needs without charity assistance and 13 percent of heads of households were unemployed, whereas in Kaduna 75 percent of families could not meet their basic needs and 25 percent of heads of household were unemployed. Abuja, the most urban of the four sites, had the highest rate of female-headed households (50 percent) and fewer restrictions on women's movement. Across all four states, 88 percent of families were connected to the electricity grid, 95 percent owned a television or radio, and 30 percent had their own means of transportation (a bicycle, car, scooter, or motorcycle).

### ***Students***

Some 18 percent of student participants were orphans, and nearly half lived with someone who was sick or had a disability. School girls in Kaduna were the most likely to be orphans (32 percent) and were the poorest girls in the sample. Abuja had the lowest incidence of girls living with someone with a disability (12 percent). Female students had lower rates of marriage than out-of-school girls (4 percent versus 20 percent) and childbearing (5 percent versus 21 percent). Fewer students than out-of-school girls spoke English (22 percent versus 27 percent). The highest frequency of English being spoken by girls and heads of household was in Abuja. About 85 percent of students came from communities where it was "usual for the community to send girls to school."

### **Program components**

Program components differed for the two participant groups (see box 2.3). ENGINE operated in nine-month cycles. There were two cohorts of both school girls and out-of-school girls who participated in ENGINE, but only one cohort of out-of-school girls (cycle 1) was evaluated.

For out-of-school girls, ENGINE offered training in business, entrepreneurship, financial management, and leadership skills, as well as mentoring and support. The program also offered participants opportunities to join savings groups. Activities took place at 672 Safe Space locations (87 in Abuja, 82 in Kaduna, 136 in Kano, and 367 in Lagos). Safe Space facilitators, selected from the local community, conducted weekly sessions of two hours of instruction per week. In addition to Safe Spaces, girls had access to learning and economic opportunities through links to supply chains, low-cost inputs, training, mentoring support, engagement with trusted brands, and options to enter Coca-Cola and other value chains, such as d.light, a solar lighting company that makes products for households and small businesses (box 2.4).

## **Box 2.3 Summary of ENGINE program components**

### **Out-of-school girls**

- Average of two-hour weekly sessions over the course of nine-month educational cycle
- Opportunity to enter Coca-Cola value chain
- Links to other value chains (d.light) and donor programming supporting both traditional and nontraditional sectors for women's participation
- Participation in savings groups and formal banking
- Training in business, entrepreneurship, leadership, and financial skills
- Curriculum adapted from that used by Coca-Cola in other countries: the Shopkeeper Training and Resources (STAR) curriculum and the International Labour Organization's Gender and Entrepreneurship Together (GET) Ahead for Women in Enterprise
- Mentoring and support to girls running select micro-franchises/enterprises

### **Students**

- At least two hours a week over the course of the nine-month education cycle
- Average of one weekly meeting for a minimum of 2 hours per session
- Academic tutoring covers 50 percent of the session. Study guides are tied to the national curricula
- Financial education covers 25 percent of the session. Coordinators use an adaptation of Microfinance Opportunities' Financial Education Materials for Adolescent Girls
- Leadership and life skills training covers 25 percent of the session

### **Gatekeepers**

- Events to publicly recognize gatekeepers for their support of girls' education and building girls' social and economic assets
- Household and community motivation to support girls' access to education
- Faith and traditional leaders identified in each geographic area to promote girls' education in their sermons and outreach

## Box 2.4 Connecting girls to Coca-Cola and d.light value chains

Safe Space activities assisted girls in defining their interests. Girls who expressed an interest in running a retail business were linked to the Coca-Cola value chain and were introduced to micro- franchising opportunities from Coca-Cola retail businesses or d.light businesses. Girls were provided with several types of support:

- Links to a distributor and depot to ensure long-term supply
- Assistance in finding a sales venue
- Additional merchandising training
- Trade assets and two crates of beverage as working capital

By allocating trade assets, which are typically offered under a scaled incentive scheme to the best performing retailers, and lowering outlet creation requirements, Coca-Cola removed some of the barriers to entry for girls.

For students, ENGINE provided weekly after-school sessions to improve learning outcomes (half the session), with the balance equally devoted to training in basic financial management and leadership and life skills to improve self-awareness and confidence. These sessions were provided through 378 Safe Spaces linked to schools (110 in Abuja, 134 in Kaduna, and 134 in Kano). Facilitators (mostly teachers from the associated schools) conducted weekly sessions lasting a minimum of two hours during the nine-month education cycle.

ENGINE involved gatekeepers in various ways, reflecting the importance of engaging gatekeepers in any program for adolescent girls, particularly in countries or areas where programs may challenge traditional gender norms, such as Nigeria.<sup>62</sup> At public events, gatekeepers were recognized for their support of girls' education. ENGINE also worked with faith leaders to encourage them to promote girls' education in their sermons and outreach work. Through interactions with households and communities, ENGINE agents tried to motivate support for girls' access to education, including working with gatekeepers to encourage them to allow girls to stay in school and to reassign household chores to give girls more time for homework and attending school.

## Program evaluation

Several evaluation methodologies were employed to assess the program. These are explained briefly in box 2.5 and in more detail in annex 1.

### Box 2.5 Evaluation methodology for the ENGINE program

#### Sampling strategy

A cluster randomized control trial was adopted for the program to enable an evaluation of individual-level impacts of the ENGINE program. The basic approach was first to select local government authorities and then to select a random sample of wards, schools, and communities that met specific criteria. Schools and communities were randomly assigned to program (treatment) or non-program (control) groups. Individuals from these schools and communities were then randomly selected to participate in the evaluation.

#### Survey instruments

Several quantitative survey instruments were used to collect data on demographic characteristics and the socioeconomic situation of girls and their families, as well as on literacy and numeracy skills, life skills, financial literacy, and self-perception of knowledge. Qualitative data were collected through focus groups and in-depth interviews.

Cycle 1 findings compare program participants with non-program participants at the end of the cycle only, complemented by qualitative data. Cycle 2 findings present before-and-after comparisons for program and non-program participants. Gatekeepers' views were assessed through in-depth-interviews that took place once during each cycle.

The assessment instruments are fully described in annex 1.

### 3. What Difference Did the Program Make in Girls' Lives?

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The Educating Nigerian Girls in New Enterprises (ENGINE) program was designed to empower girls, increase their agency and participation in entrepreneurship, and help them feel more secure about their ability to make decisions about their lives.

Empowerment and agency are difficult to quantify and measure. Empowerment is the process whereby individuals who have been denied the ability to make strategic life choices acquire that ability,<sup>63</sup> while agency refers to the ability to transform those choices into desired outcomes.<sup>64</sup> ENGINE evaluators asked girls questions that captured measures of self-confidence and decision-making, as proxy indicators for empowerment and agency. This included questions on leadership, perceptions of women's roles in society, involvement in community activities, participation in decisions in the household and community, and confidence in academic coursework.

#### Headline findings

Here are the headline findings.<sup>65</sup>

*Increased employment opportunities.* Out-of-school girls learned business skills and 58 percent were connected to Coca-Cola and d.light value chains, which provided them with sustainable employment opportunities. Girls who participated in the program also gained skills in financial management and were more likely to be participating in value chains and running their own business at the end of the program.

*New savings accounts.* Participants participated more in savings activities by nearly 40 percent, albeit mainly in community savings rather than formal bank accounts.

*Greater empowerment.* Girls who participated in ENGINE were more self-confident and showed increased agency, believing they were equal to boys in their communities and showing confidence in using skills they had learned in the program.

*Improved confidence in learning objectives.* School girls gave credit to ENGINE for a rise in confidence in their abilities in math and English. Although girls reported increases in confidence, that was not reflected in changes in learning outcomes for girls in tests of math and English skills.

*Engaged gatekeepers.* Gatekeepers were generally positive about schooling for girls, supported girls' skills acquisition, and were willing to reassign girls' chores to give them more time for schoolwork. The exception was in Kano, one of the more conservative regions in Nigeria.

*Diverse results across diverse regions.* Outcomes reflect Nigeria's cultural and economic diversity. Lagos, Nigeria's largest city and an urban and commercial center, stands out as the only state where participant outcomes improved across all measures, including employment, business skills, savings accounts and practices, and empowerment. In the more conservative states of Kano and Kaduna, improvements were observed in self-confidence and savings.

The following sections elaborate on the activities and results behind the headlines.

## **Outcomes for out-of-school girls**

Nearly two thirds of the girls enrolled in the ENGINE program in 2014–2016 were out of school. The key gains for out-of-school participants were related to participation in value chains and improvements in business skills and financial management practices. By the end of the program:

- Participants were much more likely than nonparticipants to have run their own business or managed a family business at any time over their lifetime. By the end of the program, almost three in five participants were involved in value chains, and some girls also reported starting businesses using their savings.
- Participants had better knowledge of the skills needed to run a small business, business negotiation practices, and financial management than nonparticipants, as measured by responses to questions on business and financial management skills. In focus group discussions, many participants confirmed that they had acquired business skills through ENGINE and noted that these skills helped them feel independent.
- A larger share of participants engaged in savings activities (65 percent) than nonparticipants (37 percent), and a larger share of participants reported increase in savings (84 percent) than did nonparticipants (69 percent). This finding was echoed in the focus group discussions.

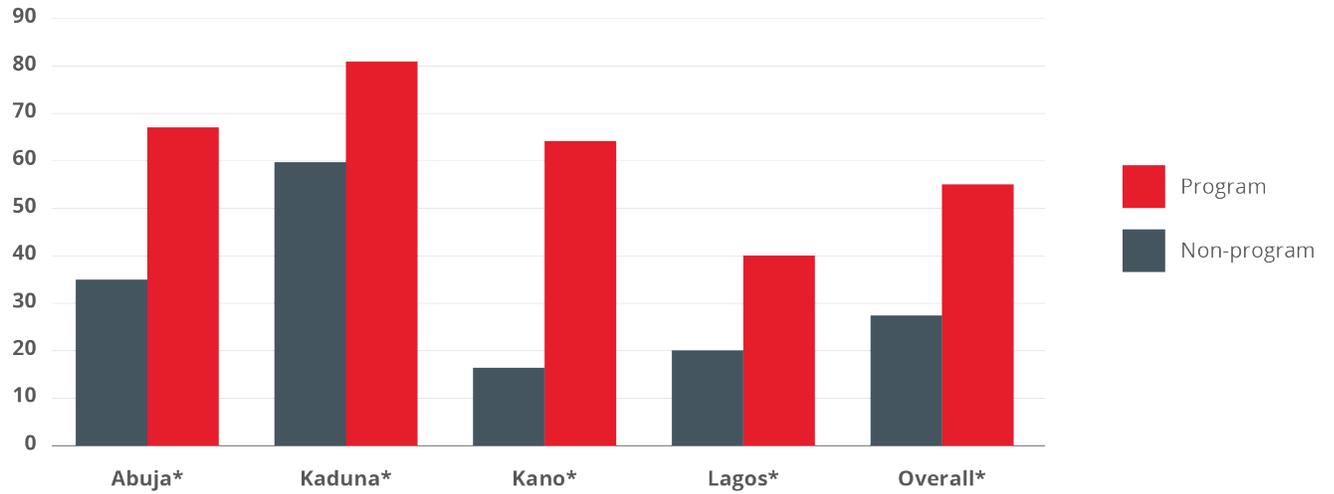
### ***Employment outcomes***

Overall, by the end of cycle 1, more out-of-school participants (55 percent) than nonparticipants (27 percent) had run their own business or managed a family business at some time in their lives (figure 3.1). This relationship was observed across all four states, ranging from a high differential of 64 percent versus 16 percent in Kano to a low of 40 percent versus 20 percent in Lagos.

By the end of the program, 58 percent of out-of-school participants were involved in value chains, with either Coca-Cola or d.light. The highest participation rates were reported in Abuja (64 percent), followed by Lagos (62 percent), Kaduna (55 percent), and Kano (48 percent); (figure 3.2). Some girls in the program also reported starting businesses using their savings.

**Figure 3.1 A higher share of out-of-school participants than nonparticipants had run their own business or managed a family business**

Percent of out-of-school girls



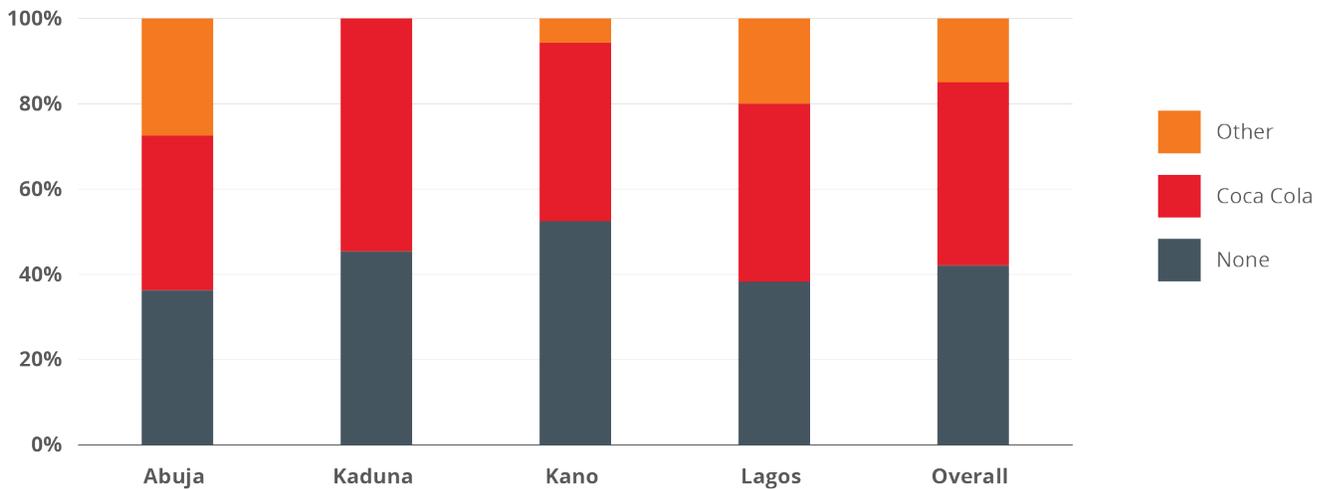
**Note:** As of the end of cycle 1. Cycle 1 data collection took place between May 2014 and May 2016.

\* indicates statistically significant results in each figure

**Source:** ENGINE program evaluations.

**Figure 3.2 Nearly 60 percent of out-of-school participants were involved in value chains by the end of the program**

Percent of participating out-of-school girls



**Note:** As of the end of cycle 1. Cycle 1 data collection took place between May 2014 and May 2016.

**Source:** ENGINE program evaluations.

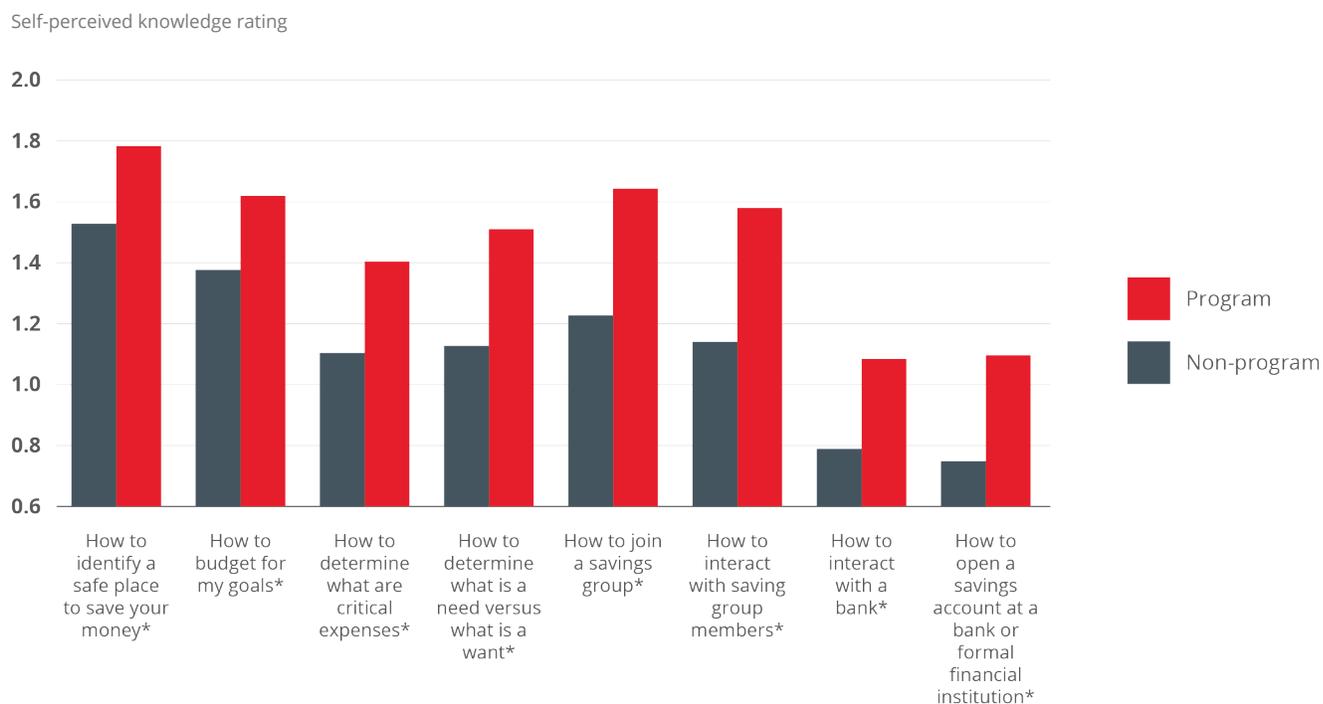
## Knowledge about business and entrepreneurship development

Knowledge of good business practices was assessed using five true or false questions about how to approach business negotiations, ideal outcomes, and the need for planning.<sup>66</sup>

Results were mixed: a larger share of out-of-school participants than nonparticipants provided correct responses only for two of the five questions: question 1 “State what you want and then compromise” (92 percent for participants versus 88 percent for nonparticipants), and question 5 “These skills are useful at home” (92 percent versus 88 percent). The results vary across states, with those in Kano most favoring participants over nonparticipants.

Overall, participants had significantly better knowledge of personal financial management practices by the end of the program than did nonparticipants, based on self-perceived knowledge in eight areas of personal financial management (figure 3.3). This finding held in Lagos and to a lesser extent in Abuja and Kano, but not in Kaduna. For all girls, the lowest levels of knowledge related to interacting with banks and opening savings accounts at formal financial institution – which is consistent with the low levels of use of formal financial services. The highest level of knowledge was on identifying a safe place to save money.

**Figure 3.3 Out-of-school participants had higher rates of self-perceived financial management knowledge than nonparticipants by the end of the program**



**Note:** Girls rated their self-perceived knowledge on a scale of 0, no knowledge, to 2, good knowledge, as of the end of cycle 1. Cycle 1 data collection took place between May 2014 and May 2016.

**Source:** ENGINE program evaluations.

### *Savings activities*

More out-of-school participants (75 percent) than nonparticipants (37 percent) engaged in saving activities, and the differences were sizable across all four program sites. For example, in Kano 65 percent of participants saved compared with 28 percent of nonparticipants (figure 3.4a).

Among out-of-school girls who saved, more program participants (84 percent) reported increasing their saving than did nonparticipants (69 percent). The largest difference was in Abuja (93 percent versus 67 percent; figure 3.4b).

The qualitative survey confirms these improvements, finding that participating girls had been saving and were excited about the savings group in Lagos. Asked about savings over the past three months, girls said that they had saved 1,000–7,000 naira, or 3,600 naira on average (roughly \$3–\$19 and an average of \$10).

However, there was a strong preference for home- and community-based saving methods over bank accounts in all states except Lagos, where 66 percent of participants and 45 percent of nonparticipants had a bank account.

### *Girls' empowerment*

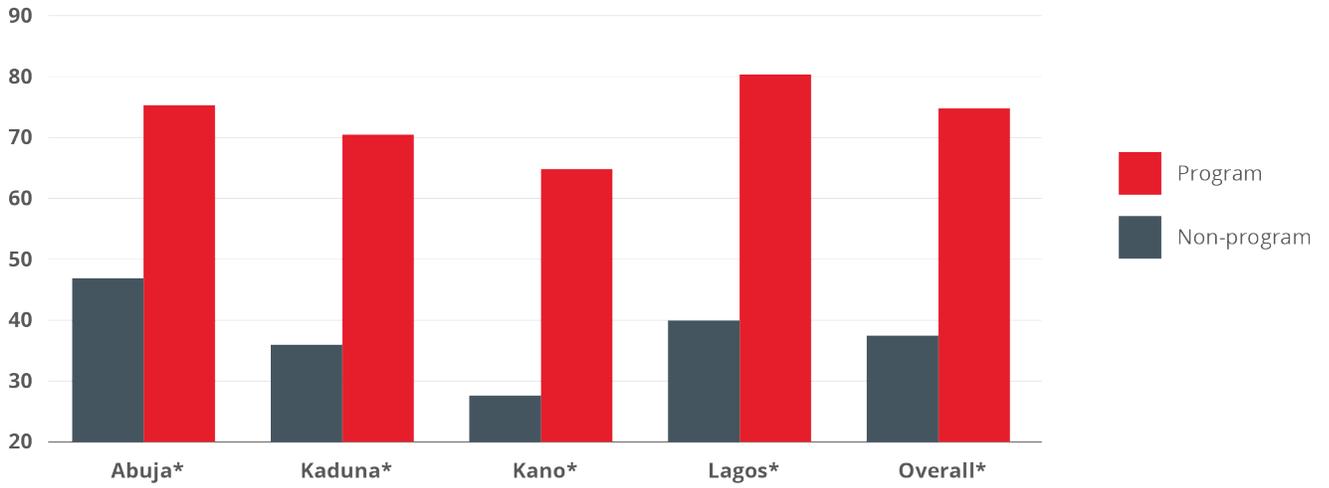
By the end of the program, out-of-school program participants generally revealed greater self-awareness, self-confidence, and agency than nonparticipants, although not in all states. Girls were asked to respond to six statements, rating their perceptions of themselves on a scale of 1–5, with 1 being strongly disagree and 5 being strongly agree:

1. I know what I want to be in the future.
2. I can achieve my goals for the future.
3. I have a major role to play in determining what happens to me in the future.
4. I play an important role in making decisions about what happens in my life.
5. I am as good as the boys my age in my community.
6. I can do as well as any boy my age.

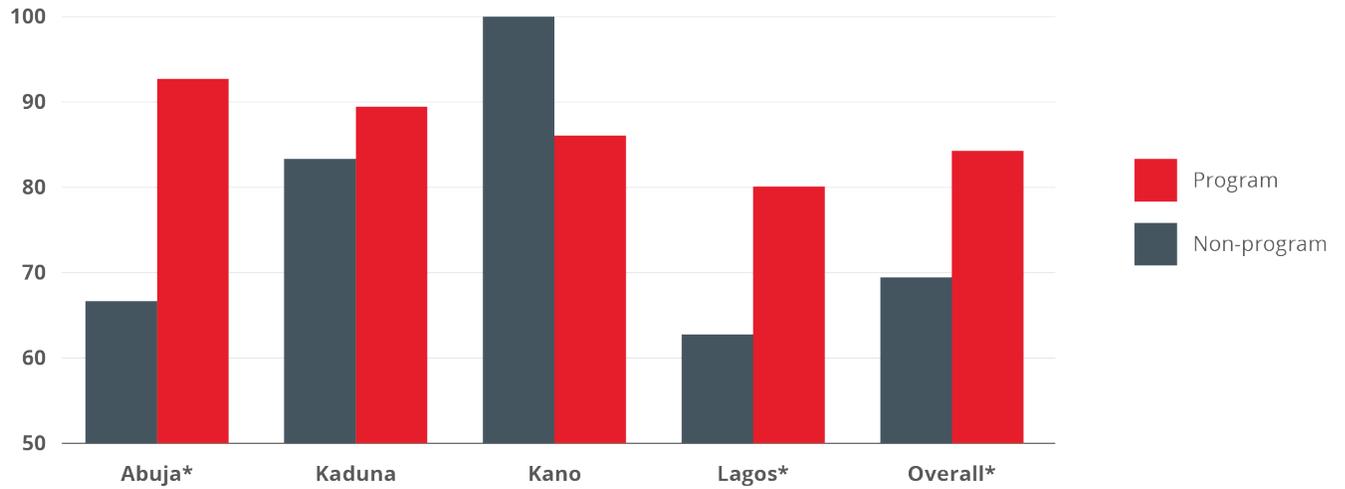
Those who strongly agreed or agreed with each statement were categorized as “more confident” in their abilities.

**Figure 3.4a & 3.4b More out-of-school participants reported having a savings account and increasing their savings than nonparticipants by the end of the program**

3.4a: Percent with savings accounts or in savings groups



3.4b: Percent of girls with savings accounts reporting an increase in savings



**Note:** As of the end of cycle 1. Cycle 1 data collection took place between May 2014 and May 2016.

**Source:** ENGINE program evaluations.

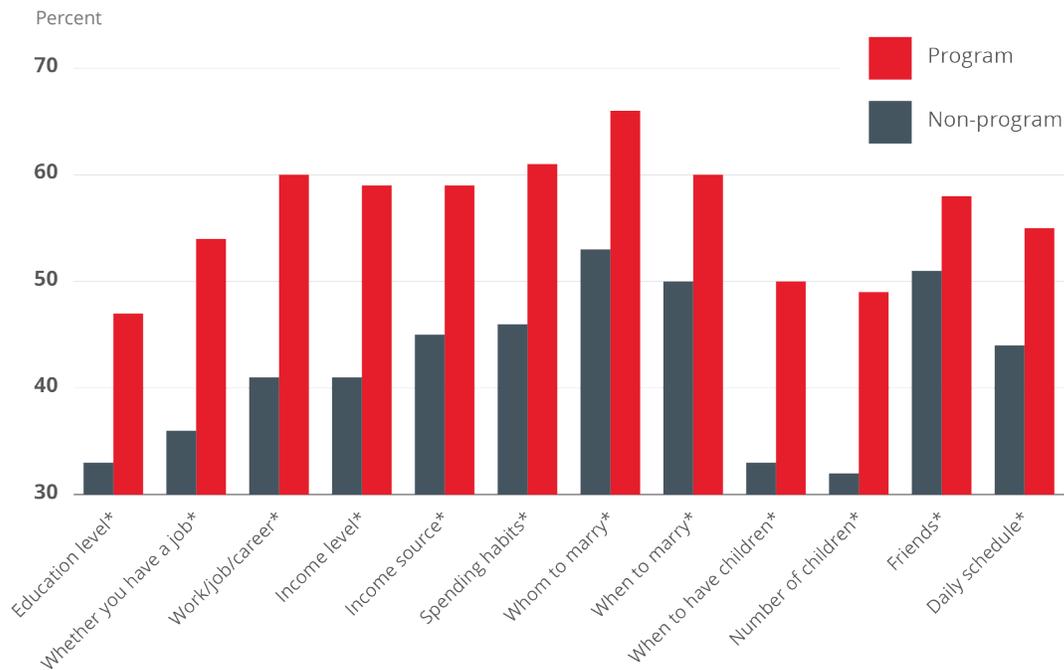
Overall, participants in Lagos were more confident than nonparticipants in their abilities and aware of their role in setting and achieving their goals. Differences between participants and nonparticipants were not significant in the other three program states.

Out-of-school girls were also asked how much control they felt they had over 12 life decisions related to education, work, money, marriage, children, and friends.<sup>67</sup> Response options were no control, a little control, or a lot of control.

More program participants than nonparticipants reported that they felt that they had “a lot of control” over their life decisions (figure 3.5), although the difference was significant only in Lagos.

Participants were generally more likely to report having full control over their income (64 percent) than nonparticipants (53 percent), although the difference was statistically significant only in Lagos (68 percent versus 49 percent). A larger share of participants (65 percent) than of nonparticipants (54 percent) disagreed with the statement: “My family will not support me if I want to start a business,” but again the difference was statistically significant only in Lagos (72 percent versus 49 percent).

**Figure 3.5 Out-of-school participants reported greater agency over 12 life decisions than nonparticipants by the end of the program**



**Note:** As of the end of cycle 1. Cycle 1 data collection took place between May 2014 and May 2016. Figure includes girls who reported having “a lot of control” over these life decisions.

**Source:** ENGINE program evaluations.

## Outcomes for students

ENGINE program activities for girls who were in school supplemented their academic activities and also focused on empowerment and financial management. Activities were held in Safe Spaces, which were generally associated with schools. Each Safe Space was limited to 25 girls.

The key gains for students participating in ENGINE related to savings activities, self-confidence, self-awareness, and agency. Mixed results were found for learning outcomes measuring literacy and numeracy, such as words-per-minute read and numeric place values.<sup>68</sup>

### *Savings activities*

ENGINE was associated with greater participation in savings activities in both cycles. Participation in savings activities was higher for participants (42 percent) than for nonparticipants (25 percent) in cycle 1, across all program states (figure 3.6a). In cycle 2, participation in savings activities rose for all girls in Kano and Abuja, although especially among participants (up 27 percentage points for participants and 15 percentage points for nonparticipants in Kano and up 21 percentage points and 12 percentage points in Abuja; figure 3.6b).

While savings activity increased, the girls were not necessarily using financial services. Indeed very few girls held their money at banks (16 percent of nonparticipants and 10 percent of participants). Most preferred to keep their money at home with friends and family (44 percent among nonparticipants and 28 percent among participants). Discussions in focus groups generally confirmed this preference for home- and community-based savings.

The lack of formal bank accounts among students (also found for out-of-school girls) is an important finding. Future efforts to expand financial inclusion need to identify barriers to formal saving, such as distrust of banks, fees for deposits or withdraws, and difficulty getting to a physical bank.

“There has been changes as a result of the ENGINE program; it has increased my savings at home”

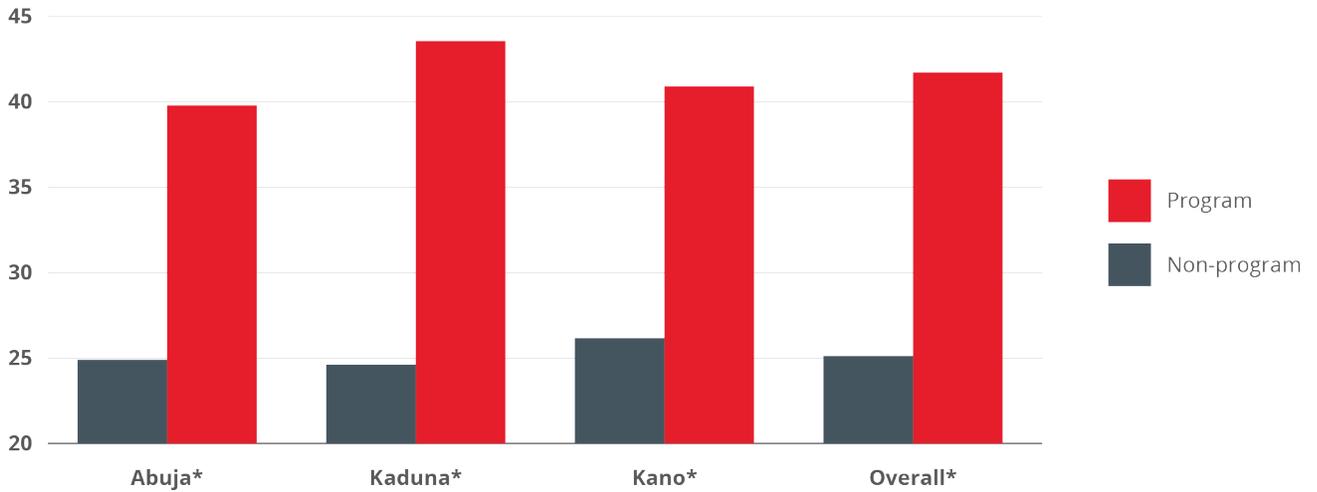
—*Girl in Kaduna*

“Every day I keep money, it continues to increase since my participation in the ENGINE program”

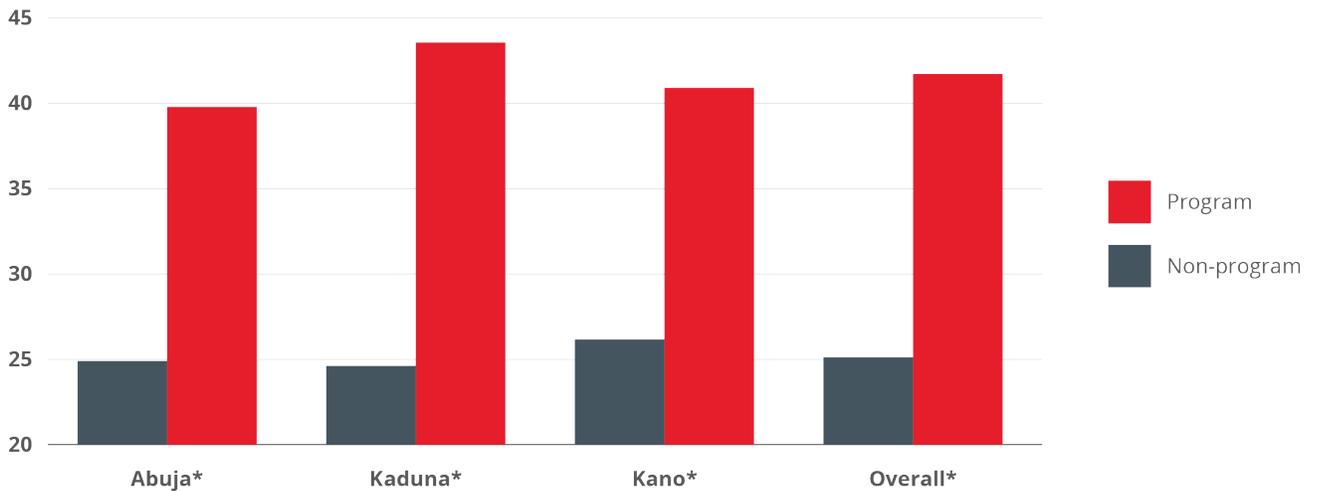
—*Girl in Kano*

**Figure 3.6a & 3.6b In general, participants in both cycle 1 and cycle 2 saved at a higher rate than nonparticipants by the end of the program**

3.6a: Percent of students with savings accounts or in savings group (cycle 1)



3.6b: Percentage point change in students with savings accounts or in savings groups (cycle 2)



**Note:** As of the end of each cycle. Cycle 1 data collection took place between May 2014 and May 2016. Cycle 2 compares rates at baseline and at the end of the program; cycle 2 data collection took place between October 2015 and November 2016.

**Source:** ENGINE program evaluations.

## *Girls' empowerment*

**Cycle 1 results.** Focus group discussions suggest that ENGINE helped school girls feel more confident when talking to others, both individuals and crowds, and exercise greater agency. Program participants reported that they had previously avoided asking questions in class for fear of being ridiculed and that ENGINE helped them reason better and voice their opinions without fear of retribution or rejection.

Encouraging results emerge from school girls' changing attitudes toward girls and women as leaders. A larger share of participants (72 percent) than nonparticipants (67 percent) agreed that girls can make as good leaders as boys. This relationship was observed in Kaduna (68 percent of participants versus 59 percent of nonparticipants) and Kano (53 percent versus 42 percent); there was no significant change in Abuja. Program participants were more likely (75 percent) than nonparticipants (67 percent) to agree that girls should be able to join in community meetings and activities. This pattern was observed in Kaduna (72 percent of participants versus 60 percent of nonparticipants) and Kano (62 percent versus 42 percent); there were no significant difference in responses between groups in Abuja.

Kano also reveals encouraging trends in school girls' perceptions of support. A larger share of participants (98 percent) than of nonparticipants (91 percent) felt that their parents or husband would support them in achieving their education and financial goals. In Kano, a larger share of participants (81 percent) than nonparticipants (68 percent) agreed that girls should play a major role in determining their future. There were no significant changes in Abuja and Kaduna, nor overall.

**Cycle 2 results.** During cycle 2, participants again generally experienced gains in self-confidence, self-awareness, and agency relative to nonparticipants, although the extent varied across states and across questions.

Most girls reported feeling more confident at school and at home than before the program, with a slightly larger share for participants (97 percent) than nonparticipants (93 percent). This pattern was observed in Abuja (96 percent versus 90 percent) and Kano (91 percent and 85 percent); differences were not significant in Kaduna (figure 3.7a).

**“I used to be shy because I’m not used to crowds, but now I speak confidently.”**

—*Girl in Kaduna*

**“I personally have registered a very great difference in the interaction with my friends and family due to the ENGINE Programme, unlike the previous year.”**

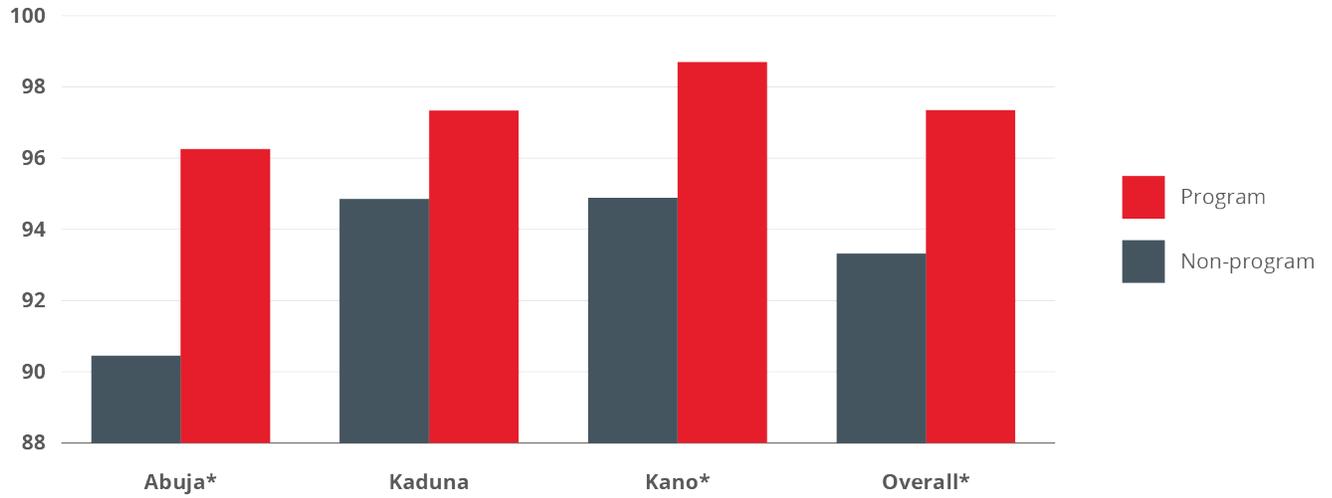
—*Girl in Kano*

**“I will rate my confidence 85 percent...because I know I now have high self-esteem; unlike before, I can now speak to anyone.”**

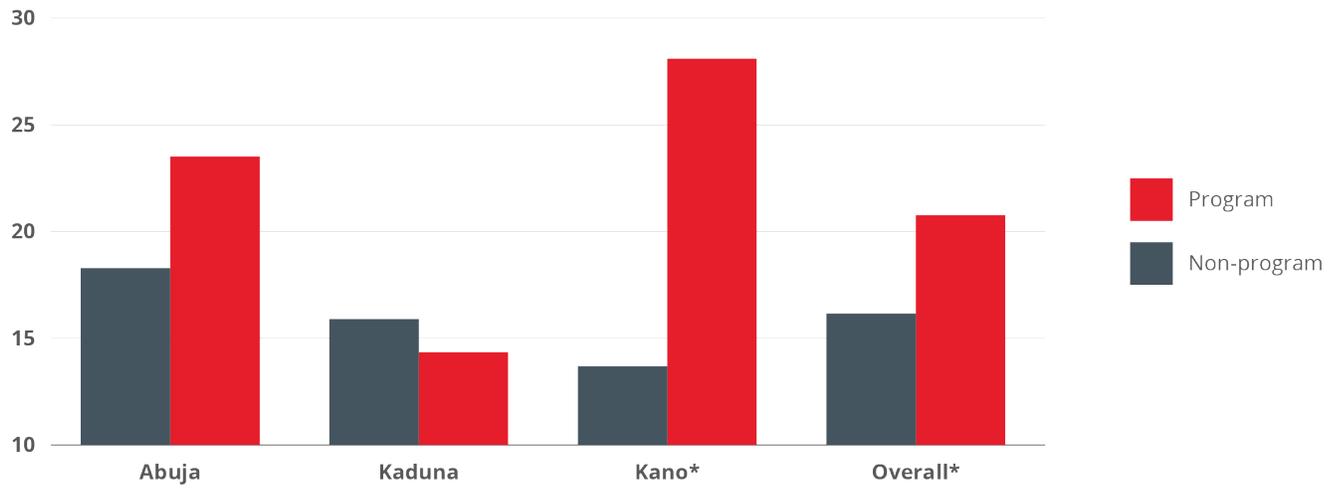
—*Girl in Abuja*

**Figures 3.7a & 3.7b In general, program participants in both cycle 1 and cycle 2 felt more empowered and supported by the end of the program**

3.7a: Percentage of students whose confidence at school and home increased compared to a year ago



3.7b: Percentage point change in students who felt that their parents/husbands supported their education and financial goals



**Note:** As of the end of cycle 2, which compares rates at baseline and at the end of the program; cycle 2 data collection took place between October 2015 and November 2016.

**Source:** ENGINE program evaluations.

By the end of cycle 2, more girls felt that they had a say in their future, although the gains were larger among nonparticipants (17 percentage points) than among participants (11 percentage points). In Kano, the pattern was reversed (29 percentage points for participants and 17 percentage points for nonparticipants), and in Abuja the difference between the two groups was not significant.

Girls reported feeling that they had more say by the end of cycle 2 in how money was used in their household, with the difference larger for ENGINE participants (19 percentage points) than for nonparticipants (3 percentage points). This relationship was significant in Kaduna (28 percentage points versus 2 percentage points) and Kano (21 percentage points versus 5 percentage points).

By the end of cycle 2, more school girls reported feeling that their parents or husband supported them in their education and financial goals; again, the difference was greater in Kano among participants (28 percentage points) than among nonparticipants (14 percentage points; figure 3.7b).

By the end of the cycle, girls reported more favorable perceptions of women's and girls' roles in society. Specifically, more girls agreed with the following statements: "Girls make just as good leaders as boys," "Girls should be able to participate in community meetings," "Women should have the same leadership opportunities as men," and "Girls should have a major role in determining their future." Fewer girls agreed with the statement that "When money is scarce, boys should be sent to school before girls."

Overall, participants were more like to agree that "Girls should be able to participate in community meetings" and "Women should have the same leadership opportunities as men." The size and significance of differences between program participants and nonparticipants varied across states and indicators.

Likewise, fewer girls, especially among participants, agreed with the following statements, which assumed that men should control household financial resources and that violence against girls and women is acceptable: "Men shouldn't allow wives to have a job/have control over financial resources," "It's okay for men to beat their wives if they do something wrong," and "Slapping/pushing/hitting girls/women is a normal experience." Again, the size and significance of differences between program participants and nonparticipants varied across states and indicators.

### ***Learning outcomes: literacy and numeracy***

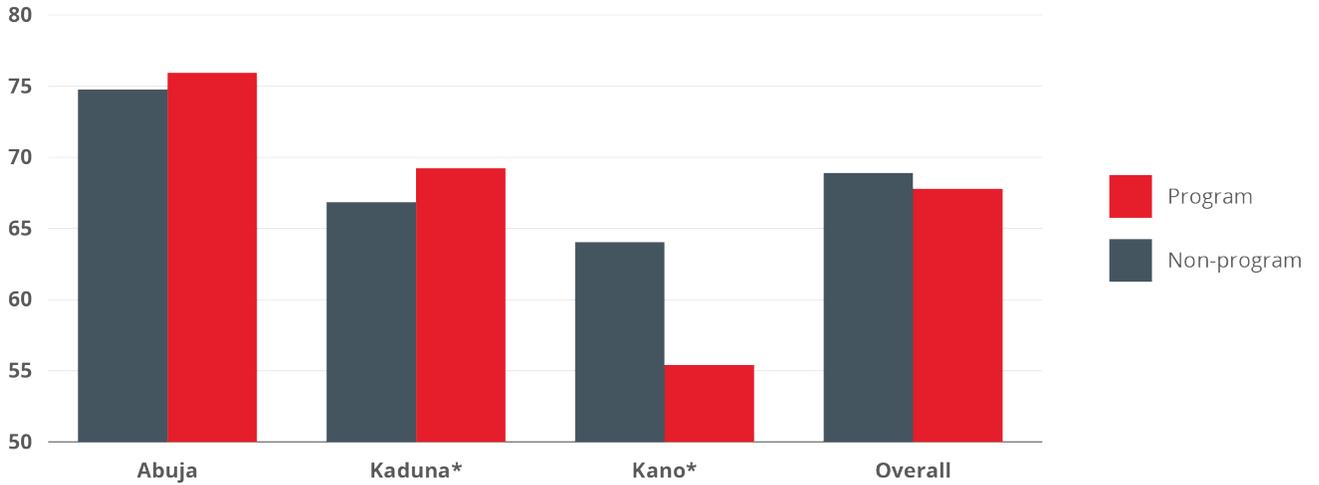
**Cycle 1.** There was no overall impact of the program on learning outcomes – basic literacy<sup>69</sup> and numeracy.<sup>70</sup>

The evaluation measured several learning outcomes, and found:

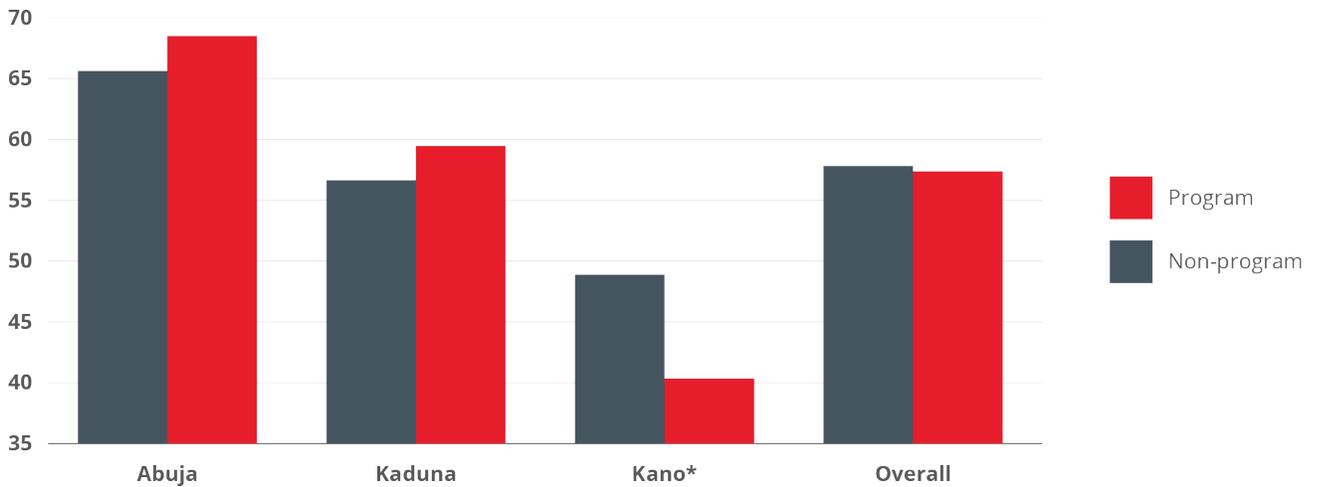
- Total literacy scores were similar for program participants and nonparticipants, with some variation in levels across states (figure 3.8a). Only in Kaduna did participants perform better than nonparticipants.
- Total numeracy scores were also similar for program participants and nonparticipants, though still not significant, with the largest margin of difference in Kano (figure 3.8b), where nonparticipants performed 9 points better than participants. Across all states, girls performed better on money and quantity discrimination and less well on numeric place values.

**Figure 3.8a & 3.8b Results for reading and math scores were mixed**

3.8a: Percent of maximum reading score



3.8b: Percent of maximum math score



**Note:** As of the end of cycle 1; data collection took place between May 2014 and May 2016. Literacy skills as assessed using the Early Grade Reading Assessment; numeracy skills as assessed using an adapted version of Early Grade Math Assessment.

**Source:** ENGINE program evaluations.

- Overall, participants were able to read more quickly (80 words per minute) than nonparticipants (76 words per minute), although there was no significant difference in Abuja and Kano, and girls in Kano were slower readers than girls in other states.
- Girls' performance varied across literacy skills, but patterns were similar for program participants and nonparticipants and across states, with almost all girls performing well on sound knowledge and real-life reading but poorly on listening comprehension.

Girls in Kano had the worst literacy and numeracy scores relative to girls in the other program states. As noted previously, gatekeepers in Kano were less likely to reassign chores so girls could attend school and study and were less in favor of educating girls than boys.

There are several potential reasons for the observed lack of impact on learning outcomes. Because the same teachers who taught girls at school held the tutoring sessions in Safe Spaces, it is possible that the teaching styles, which would have been the same, were not effective in enabling change. Interviews with gatekeepers (discussed below) suggest that not all caregivers were willing to reassign household chores to facilitate girls' study; thus, girls may not have had enough time for homework and mastering the material taught in Safe Spaces.

Nonetheless, almost all girls, both program participants and nonparticipants, said that they liked school and planned to complete secondary school.

**Cycle 2 results.** Overall, program participation did not appear to boost the literacy and math skills of participants, although there is some variation across states. Despite that, participants suggested in qualitative interviews that they believed that their academic performance had improved, which they attributed to ENGINE.

By the end of the program cycle, girls were generally able to read more quickly, although there were no significant differences associated with program participation. There was variation across states, with greater progress among participants in Kaduna, while nonparticipants did better in Abuja. Participants suggested in qualitative interviews that they believed that their academic performance in English had improved and attributed this to ENGINE.

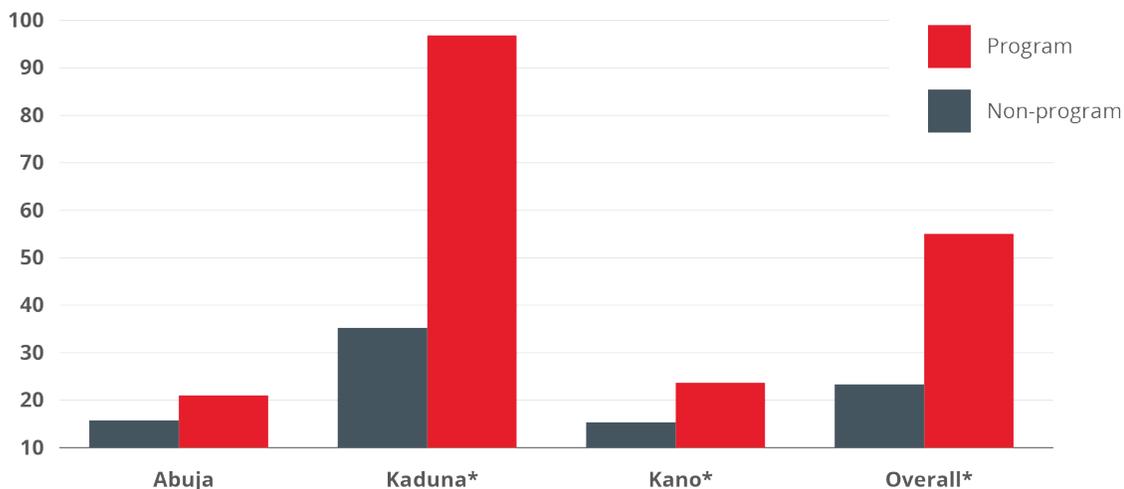
Progress varied across specific literacy skills, but was generally similar for program participants and nonparticipants. In Abuja and Kaduna, progress in literacy skills was greater for participants than for nonparticipants; the reverse was true in Kano.

As noted above, girls generally had better numeracy skills at the end of the cycle, though the differences between program participants and nonparticipants were not significant. There was some variation across skills.

Nonetheless, focus group discussions revealed that participating in the ENGINE program increased school girls' confidence in their math skills. For example, in Kano, all participants felt that participation in the ENGINE program boosted their grades. Program participants also appeared to feel an increased sense of personal responsibility and self-efficacy in math.

**Figure 3.9 Positive perceptions of education increased among program participants by the end of the program**

Percentage point change in students who agree that it is important to get secondary education and learn new skills



**Note:** As of the end of cycle 2, which compares rates at baseline and at the end of the program; cycle 2 data collection took place between October 2015 and November 2016.

**Source:** ENGINE program evaluations.

Perceptions of the importance of a secondary education and of learning new skills improved for all girls, but more so for program participants (55 percentage point rise) than nonparticipants (23 percentage point rise). The difference was largest in Kaduna (97 percentage points versus 35 percentage points); the difference was not significant in Abuja (figure 3.9).

## Gatekeepers

ENGINE worked with gatekeepers of students to help change household and community perceptions about the role of girls and women in society and attitudes towards girls' education and skills acquisition.

Several types of activities were supported under ENGINE – for example, publicly recognizing gatekeepers for their support of girls' education, encouraging faith leaders to promote girls' education in their sermons and outreach work, and encouraging parents to allow girls to stay in school and reassigned household chores to give girls more time for homework and school.

## *Attitudes toward girls' education*

Although there was no quantitative evaluation of this component, the qualitative results that emerge from in-depth interviews suggest that gatekeepers were generally supportive of girls' education and skills acquisition.

While attitudes towards girls' education varied, attitudes were generally more positive in Kaduna and Abuja than in Kano. Most gatekeepers of girls in the program in Kaduna and Abuja mentioned that if they could afford to send only one child to school, they would either send a girl or not consider gender in the decision. One gatekeeper in Abuja explained the reason to send a girl: "she will definitely extend it to the remaining members of the family." Gatekeepers also noted that if money were available, they would prefer for girls in their charge to attain a university education. One gatekeeper in Abuja remarked that the girl in her household would attain "the highest level, even to professorship, the highest level in the whole world." In Kaduna, a gatekeeper mentioned that the girl in the household would ascend to the "university level... professorship."

**"I prefer to send a female child because educating girl child you are educating the whole society and we learn from her."**

*—Gatekeeper in Abuja*

In Kano, most gatekeepers who did not have girls in the program mentioned that under the same circumstances they would send male children to school, while the responses of gatekeepers of girls enrolled in ENGINE were mixed. A gatekeeper in Kano notes: "In a scenario where you have a male and a female child, observe both of them and see the one who is more serious with studies and send to school." One gatekeeper in Kano preferred to send a male child because "he is [the] next of kin and the girl will always be married out to another man's house." Another noted that "the girl can only be prepared for marriage." Gatekeepers in Kano were not supportive of a girl pursuing a university degree unless her husband wanted her; as one remarked: "because the life of a girl is to a certain limit, if she is married it depends on the husband to decide the level of education that he wants her to attain. You know a girl has two types of life. At first, she is with her parents then secondly she is in her husband's house." These views point to the need for continued programmatic engagement in the most challenging environments for girls.

Across states, school board members reported that their schools were engaged in strategies to promote girls' education. The measures included visiting the gatekeepers of absent girls, providing adequate sanitary facilities, and making schools a physically safe environment for girls. In addition, schools provided support services like counseling, tutoring, and learning aids, as well as employing qualified teachers. Some schools used parent teacher and community meetings and academic prizes to motivate students. Other tools include lunch allowances, free transportation, writing materials, uniforms, no or reduced school fees, a conducive environment for learning, library/computer training, and organized seminars and workshops. Community leaders also mentioned their efforts to support education within their community, including following up with parents who refuse to allow their daughters to attend school. It is not clear whether these measures had already been occurring or whether they were adopted as a result of the ENGINE program.

### *Attitudes toward girls' skill attainment and gender roles*

Gatekeepers' attitudes toward girls' skills acquisition were mostly positive and tended to emphasize future financial returns. However, the focus was on traditional female skills, such as sewing and hairdressing and soap, jewelry, and perfume-making in Kano; interior decoration, baking, knitting, and catering in Kaduna; and catering, knitting, farming, carpentry, and arts and crafts in Abuja. At the same time, some of the discussions – in Kaduna and Abuja at least – also highlighted computing as a desirable skill.

With respect to the importance of life skills, the responses of gatekeepers in Abuja and Kaduna spanned a wide variety of skills, while in Kano the gatekeepers of girls who participated in the program were particularly interested in girls learning “how to run a business.” A life skill often cited by

“When you observed, you will realize that we don't have enough of this medical personnels in the society. So if we support our girls to acquire this skills it will help as parents and as a nations at large.”

—*Gatekeeper in Kano*

gatekeepers of girls not in the program was “women's health,” especially in Kano. Gatekeepers felt that girls should know how to take care of their health (bodies) and at the same time use that skill to help others. Female healthcare providers are in great demand in the northern part of the country, where social norms prevent male health care workers from attending to girls and women. As a consequence, many women give birth at home rather than in health facilities, which leads to high maternal and child mortality rates.

Across states, most gatekeepers were willing to reassign female household chores (sweeping, cleaning, cooking, and baby-sitting) to allow girls to attend skills training sessions. However, a diversity of views was expressed. One gatekeeper explained that the ENGINE program had influenced her willingness to reassign tasks: “with the understanding I have now, I will [reassign chores]. I now know that girls in this part of the world are marginalized and they need to be empowered; there is need to empower a girl child to help her in the future.” However, in Kano, a gatekeeper said: “I will not allow her to leave her task because the task at home is her primary work.”

## 4. Limitations of the Evaluation

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The results of the evaluation of the Educating Nigerian Girls in New Enterprises (ENGINE) program should be interpreted in light of several limitations in the design and implementation of the evaluation and the program. These relate to the risk of spillover effects, as well as other practical difficulties.

Data collectors for the evaluation team were aware of which interviewees had and which had not participated in the program. As a result, some selection and reporting bias may have occurred if data collectors expected certain types of responses from participants and others from nonparticipants.<sup>71</sup>

Because both cycles of ENGINE took place in the same districts, there was a risk of overlapping interventions in schools and communities. As a result, there may have been girls who did not participate in the program during the first cycle but who learned about the program and its components from classmates or other girls in their community who were participating. Gatekeepers who were not directly involved in the first cycle of the intervention may have been informed about the program through other parents or religious and community leaders. These potential spillover effects make it hard to isolate programmatic impact.

Data collected at baseline for cycle 1 were incomplete, making it difficult to conduct before-and-after comparisons, so the results reported here for cycle 1 are from end of project data only. Additionally, there was a change in evaluators half way through the first cycle, which also created measurement and comparability difficulties for cycle 1.

Evaluators reported that gatekeepers who were guardians but not parents were very unfriendly and uncooperative during the survey, potentially resulting in incomplete data collection.

## 5. Lessons Learned

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Interest in programs for adolescent girls is growing, and accumulating evidence is pointing to the ways such investments can promote education, delay marriage and pregnancy, and expand economic opportunities for girls.

The experience of the Educating Nigerian Girls in New Enterprises (ENGINE) program highlights promising impacts for poor adolescent girls along all these fronts. ENGINE targeted poor communities and showed that it is possible to engage the most marginalized girls in education, training, employment, and confidence-building activities and for the girls to retain new attitudes and skills over the duration of a program.

Important features of ENGINE included:

- **Linking to value chains.** ENGINE worked with girls to identify their interests and skills. Girls who were interested in micro-franchising and business were connected to Coca-Cola, trained, and supported to create their own outlet for sales and distribution.
- **Using local resources.** ENGINE trained teachers and volunteers from the communities to become Safe Space Coordinators. These were adults whom the girls in the program and their gatekeepers likely already knew and trusted, which may have made it easier for girls to participate in Safe Space activities.
- **Working with gatekeepers.** ENGINE engaged heads of households, school board members, and religious leaders to promote the activities of girls who participated in the program. ENGINE showcased gatekeepers in communities as examples of how to support and empower girls and talked to heads of households about how the program could improve their daughters' livelihood.

Overall, the program shows the potential of private–public partnerships to meaningfully engage community members to address challenges at a local level and cooperate in creating solutions that improve the lives of women and girls over the long term.

Some lessons about future program design also emerged from the program and its evaluation:

- **Program duration.** The activities of the ENGINE program took place once a week over nine months. Despite the short duration, there were measurable gains among participants. However, the timeframe might not have been long enough to improve participants' math and literacy scores as well as agency and self-efficacy. Longer engagement of girls may lead to improved results over time, especially in learning outcomes. Changing norms and expectations among gatekeepers and others in the community may also require more time for new ideas to take hold. Additional research is needed to isolate effective components of these types of interventions and investigate longer-term impacts.<sup>72</sup>

- **Program timing.** Starting programs to build confidence and improve learning outcomes earlier – before girls enter secondary school – could lead to better and more long-term outcomes. This may be particularly important in Nigeria, which has high rates of early marriage and childbearing. Summertime, when school is not formally in session, could also present larger opportunities for engaging girls. Girls may have more time in the summer to devote to studying and activities besides household chores. Programs could offer tutoring and skills training during non-school months.
- **Curriculum design.** Focusing the curriculum on fewer topics and diving deeper into a few focused areas may allow girls to gain and retain a better understanding of specific topics. Qualitative assessments identified a lack of time outside of the program to study and reinforce safe spaces curriculum as an obstacle.

Our findings that a program working with marginalized girls in one of the world’s most challenging contexts can achieve such positive results within a short period of time is very encouraging. The experience underlines the potential for the private sector to work with girls and their communities and governments to effectively deliver targeted programs which can boost girls’ confidence as well as their economic opportunities.

### Charity, 19,

Charity, 19, is married and has a 3-year-old daughter. Her father died when she was young and her mother couldn’t support her.

Through the program that targets out-of-school girls, Charity learned about life skills, basic financial literacy, savings, and began to believe that she could achieve her dream of starting her own business.

She started selling soap in her village, and small amounts of fruit. She saved every Naira and grew her business little by little. This year she built her own shop with 40,000 Naira she saved. Now she sells food and household provisions in her shop on the main street in her village. Her goal is to grow her business and eventually become a wholesaler herself.

Photo: Corinna Robbins/Mercy Corps



# Annex: ENGINE Program Methodology and Characteristics of Program Participants

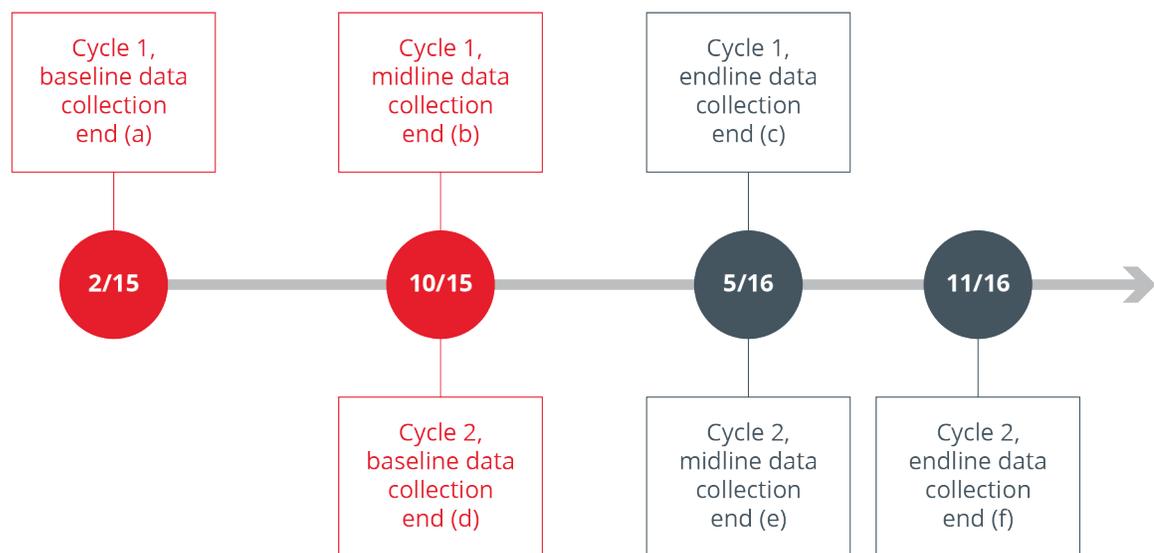
This annex details the program evaluation methodology, timeline, and sampling strategy used to select the local government authorities, schools, and individual girls who participated in the program. Descriptive characteristics of girls and their households are also provided.

## 1. Evaluation Methodology

A cluster-randomized control trial was adopted to measure individual-level impacts. The basic approach was to select local government authorities then, from a random sample of wards, from a random sample that met specific criteria, schools and communities were randomly assigned to treatment or control groups. Individuals from these schools and communities were evaluated.

Data were collected at baseline, midline, and endline for each cohort (figure A1.1). Overall, cycle 1 data collection took place between May 2014 and May 2016, and cycle 2 data collection between October 2015 and November 2016.

Figure A1.1: ENGINE evaluation timeline



- a. Quantitative data was collected for students and out-of-school girls. Baseline data collection was completed in February 2015.
- b. Focus-group discussions for students and in-depth interviews for gatekeepers, as well as attendance spot checks for girls and academic record reviews, were completed in October 2015.
- c. Data collection for in-school girls was completed in Kaduna and Kano during February and in Abuja during May 2016. Data collection for out-of-school girls was done in April and May 2016.
- d. Quantitative data was collected and focus group discussions were held for students in October 2015.
- e. In-depth-interviews for gatekeepers, as well as spot checks for girls and academic records, were held in May 2016.
- f. Quantitative data was collected and focus group discussions were held for students in November 2016.

### ***Assessment instruments***

Several survey instruments were used to collect data, as described below. Quantitative survey instruments were used to collect data on demographics, socio-economic situation of girls and their families, as well as literacy and numeracy skills, life skills, financial literacy, and self-perception of knowledge. Qualitative methods were used to verify and provide additional detail and depth to quantitative data.

#### **Quantitative assessment**

- ***Girls' questionnaire*** collected detailed demographic and socio-economic information.
- ***Literacy assessment*** was administered to students. It is an adaptation of the Early Grade Reading Assessment (EGRA) in addition to the Nigerian National Basic Education Certification Examination and Regional West African Senior Secondary Certificate Examination Assessment. EGRA consists of five sections: sound knowledge, word reading, oral reading fluency and comprehension, listening comprehension, and real life reading.
- ***Numeracy assessments*** were adapted from the Early Grade Math Assessment (EGMA) in addition to the Nigerian National Basic Education Certification Examination and Regional West African Senior Secondary Certificate Examination Assessment. The EGMA tool consists of the following sections: number identification, whole numbers (missing number, quantity discrimination, place values), addition and subtraction, multiplication and division, time, and money.
- ***Mercy Corps life skills survey*** assessed girls' knowledge of basic life skills as well as perceptions of girls in the community, efficacy, and self-worth, and was administered to both students and out-of-school girls
- ***Mercy Corps financial literacy survey*** measured girls' knowledge of basic financial literacy, including budgeting, savings, and the use of loans; it was administered to both students and out-of-school girls, with additional questions related to financial literacy and enterprises for the latter.

- ***Girl's Education Challenge Fund Household Survey*** collected basic household information on the sample population, including demographics, school enrollment (for both boys and girls), and other information about the household and local community. This survey was administered to a sample of parents, heads of households and other gatekeepers.

#### **Qualitative Assessment**

- ***Focus group discussions (FGDs)*** were administered to groups of 10 – 15 students and out-of-school girls and were designed to assess their career and educational plans; current employment, financial, and saving status; levels of financial literacy; as well as perceptions of girls in the community and self-worth.
- ***In-depth interviews (IDIs)*** were undertaken with gatekeepers of students (i.e., parents, brothers, husbands, other family members, religious and traditional leaders, relatives, and School Board members). They were designed to assess perceptions of girl children; their career and educational plans; gatekeepers' perceptions of what is acceptable for girls; as well as their willingness to encourage education for girls. These interviews were conducted once, at midline of both cohorts.

### ***Sampling strategy***

The ENGINE program was implemented in four Nigerian states. The following describes the process by which the Local Government Authorities, communities, schools and individual girls within those states were chosen for the evaluation.

#### **Selecting local government authorities**

Mercy Corps, as a lead partner, pre-selected 19 Local Government Authorities (LGAs)<sup>73</sup> within the four states in which to implement the ENGINE Programme – Kano, Kaduna, Abuja, and Lagos – based on the following criteria:

- Opportunities to leverage existing government programs, especially LGAs supportive of linkages between ENGINE and Ministry of Education schools
- Leverage existing donor initiatives supporting girls' education and/or income diversification (ESSPIN, GCE, etc.)
- Geographic density data<sup>74</sup>
- Pre-identified gatekeepers that can serve as accelerators for girls' education
- Local partner capacity and reach are in place
- High proportion of girls meeting eligibility criteria

Kano and Kaduna states are located in northwest Nigeria, Abuja is located in central Nigeria, and Lagos is located in southwest Nigeria.

## Cycle 1 cohort: students

### Selecting the schools

ENGINE was implemented in 14 LGAs across Kaduna, Kano, and Abuja. For the evaluation of cycle 1, researchers generated a list of criteria for schools in each of the 14 selected LGAs. Data was used from a number of sources<sup>75</sup> and schools that met the following four criteria were considered for the evaluation: (1) schools had ward data; (2) schools had at least ten girls enrolled; (3) schools had Senior Secondary School (SSS) or mixed Junior Secondary School/Senior Secondary School (SSS/JSS) grades; (4) schools were either government or Islamiya. Based on the size of the LGA and the characteristics of girls enrolled in school, the list of eligible schools was stratified across the 14 LGAs and 118 schools were selected for the evaluation.

### Selecting the girls

Once schools were selected, girls were randomly chosen and administered the marginalization screening survey. If a girl met at least one of the marginalization criteria, she was included in the study. Overall, 1,298 girls were selected for the evaluation. For a subsample of 374 girls, the head of household or primary caregiver of the girl was administered the Girl's Education Challenge Fund Household Survey.

Due to data collection difficulties at baseline, 185 girls (141 non-program group and 44 program) were lost to follow-up and had to be replaced at endline.

A random subset of students was selected to participate in focus group discussions (FGDs). There were two FGDs per state, one with girls in the program and one with nonparticipants. Each FGD was comprised of approximately 11 in-school girls (ISGs) (table A1.2).<sup>76</sup> A subset of ISG gatekeepers was randomly chosen to participate in IDIs (table A1.3).<sup>77</sup>

**Table A1.2: ENGINE student sample, cycle 1 endline**

State	Program			Non-program			Total		
	ISGs		For HH Survey <sup>a</sup>	ISGs		For HH Survey <sup>a</sup>	ISGs		For HH Survey <sup>a</sup>
	All	For FGD		All	For FGD		All	For FGD	
Abuja	187	11	55	242	11	55	429	22	110
Kaduna	264	11	55	275	13	55	539	24	110
Kano	154	11	77	176	11	77	330	22	154
<b>Total</b>	<b>605</b>	<b>33</b>	<b>187</b>	<b>693</b>	<b>35</b>	<b>187</b>	<b>1,298</b>	<b>68</b>	<b>374</b>

a. HH Survey refers to the Girl's Education Challenge Fund Household Survey

**Table A1.3: IDI participants, gatekeepers of students, cycle 1**

State	Gatekeeper Group	Number of Respondents		
		Non-program	Program	Total
Abuja	SBMC members	3	2	5
	Relatives	6	5	11
	Other <sup>a</sup>	6	5	11
Kaduna	SBMC members	3	2	5
	Relatives	4	3	7
	Other <sup>a</sup>	6	6	12
Kano	SBMC members	2	2	4
	Relatives	5	5	10
	Other <sup>a</sup>	4	5	9
Total	SBMC members	8	6	14
	Relatives	15	13	28
	Other <sup>a</sup>	16	16	32
	<b>Total</b>	<b>39</b>	<b>35</b>	<b>74</b>

*a. Includes parents, family members, and faith and traditional Leaders.*

### ***Cycle 1 cohort: out-of-school girls***

#### **Selecting the communities**

There was one cohort of out-of-school girls included in this evaluation of ENGINE's program for out-of-school girls targeting marginalized girls in 130 communities in 19 LGAs in Kano, Kaduna, after Abuja and Lagos. These communities were selected to align with the schools selected on the criteria described above. Once a community was assigned to either a program or non-program group, households were randomly selected to identify girls eligible to participate in the program.

### Selecting the girls

Once a household was selected, researchers approached the house to administer the marginalization screener. Households with no girls ages 16 – 19 were bypassed. If a girl in the target age group lived in the household, the marginalization questionnaire was administered to the head of household. If eligible, the remaining questionnaires were asked of the girl directly. In households with more than one girl aged 16 – 19, one girl was randomly selected. In total, 1,170 girls were selected for the evaluation (table A1.4). For a randomly selected subsample of 540, the head of household or primary caregiver of the girl was administered the Girl's Education Challenge Fund Household Survey to collect additional information.

Due to data collection difficulties at the beginning of the evaluation, over 40 percent of out-of-school girls were lost to follow-up and had to be replaced to complete the evaluation. To replace girls who had gone through the program, researchers randomly sampled girls from ENGINE Safe Spaces and included their responses in the data at the end of the program. To replace girls in the non-program group, researchers randomly chose out-of-school girls from control communities from households with 16-to-19-year-old girls. A random group of girls who were administered the quantitative tools were selected for FGDs and IDIs. In each state, there were two FGDs per group – program and non-program – with 10-15 girls in each group. ENGINE for out-of-school girls did not include targeted engagement with gatekeepers.<sup>78</sup>

**Table A1.4: ENGINE out-of-school girls sample, by state**

<b>State</b>	<b>Program</b>	<b>Non-program</b>	<b>Total</b>	<b>Selected for HH Survey<sup>a</sup></b>
Abuja	81	81	162	72
Kaduna	90	90	180	90
Kano	126	135	261	99
Lagos	288	279	567	252
<b>Total</b>	<b>585</b>	<b>585</b>	<b>1170</b>	<b>513</b>

*a. HH Survey refers to the Girl's Education Challenge Fund Household Survey*

## Cycle 2 cohort

Cycle 2 was made up of both school students and out-of-school girls, but only the school students in cycle 2 were evaluated. Selection process for cycle 2 was the same as cycle 1.<sup>79</sup> For cycle 2 evaluation, researchers used the cycle 1 methodology to select both students and their gatekeepers and to assign them to program or non-program groups.

A subset of students was randomly selected to participate in FGDs made up of 10-15 girls (table A1.5).<sup>80</sup> In each state, one FGD was held for the program group and one for the non-program group. A subset of gatekeepers was randomly chosen to give in-depth interviews (table A1.6). None of the participants were lost to follow-up between baseline and endline data collection.

ENGINE was a program targeting the most marginalized girls in communities. As such, participants were chosen largely from slums while nonparticipants were chosen from more urban areas. Thus, randomization was not entirely balanced and program and non-participants were not as comparable as would have been expected in a randomized controlled trial, which should be considered when interpreting evaluation results.

**Table A1.5: ENGINE in-school girls sample, cycle 2 baseline**

State	Program			Non-program			Total		
	ISGs		For HH Survey <sup>a</sup>	ISGs		For HH Survey <sup>a</sup>	ISGs		For HH Survey <sup>a</sup>
	All	For FGD		All	For FGD		All	For FGD	
Abuja	187	10	55	242	14	55	429	24	110
Kaduna	264	15	55	275	15	55	539	30	110
Kano	154	10	77	176	10	77	330	20	154
<b>Total</b>	<b>605</b>	<b>35</b>	<b>187</b>	<b>693</b>	<b>39</b>	<b>187</b>	<b>1,298</b>	<b>74</b>	<b>374</b>

a. HH Survey refers to the Girl's Education Challenge Fund Household Survey

**Table A1.6: IDI participants, gatekeepers of students, cycle 2**

State	Gatekeeper Group	Number of Respondents		
		Non-program	Program	Total
Abuja	SBMC members	2	3	5
	Relatives	2	2	4
	Other <sup>a</sup>	8	6	14
Kaduna	SBMC members	3	2	5
	Relatives	2	2	4
	Other <sup>a</sup>	6	6	12
Kano	SBMC members	2	3	5
	Relatives	2	4	6
	Other <sup>a</sup>	7	8	15
Total	SBMC members	7	8	15
	Relatives	6	8	14
	Other <sup>a</sup>	21	20	41
	<b>Total</b>	<b>34</b>	<b>36</b>	<b>70</b>

*a. Includes parents, family members, and faith and traditional leaders.*

## 2. Characteristics of Target Groups

**Table A2.1: Individual characteristics of out-of-school girls**

	<b>Non-program</b>	<b>Program</b>	<b>P-Value</b>
Age	17.3	18.0	0.000
Speaks English	24.8%	27.2%	0.351
Attended school	82.2%	87.0%	0.023
Lives w/ parents	59.8%	66.0%	0.029
Lives w/ disabled/sick	16.1%	20.20%	0.080
Ever married	14.9%	20.0%	0.021
Has children	18.1%	21.0%	0.211

Source: Program report data

**Table A2.2: Individual characteristics of students**

	<b>Cycle 1</b>			<b>Cycle 2</b>		
	<b>Non-program</b>	<b>Program</b>	<b>P-Value</b>	<b>Non-program</b>	<b>Program</b>	<b>P-Value</b>
Age	18	18	0.004	18	18	0.007
Speaks English	42%	41%	0.526	34%	22%	0.000
Lives w/ both parents	74%	79%	0.072	56%	58%	0.645
Lives w/ disabled/sick	16%	17%	0.726	56%	48%	0.004
Ever married	2%	3%	0.152	4%	4%	0.706
Has children	1%	0%	0.342	21%	5%	0.000
Has a disability	NA	NA	NA	2%	6%	0.002
Is an orphan	NA	NA	NA	10%	18%	0.000

Source: Program report data

**Table A2.3: Household characteristics of out-of-school girls**

	<b>Non-program</b>	<b>Program</b>	<b>P-Value</b>
# Household members (16 or older)	5	5	0.687
# of women in household (16 or older)	3	3	0.392
Head of household is a female	31%	26%	0.159
English spoken in household	14%	11%	0.331
Head of household is employed	87%	87%	1.000
Household women make travel decisions	31%	33%	0.620
Primary caregiver is a female	67%	67%	1.000
Household is connected to electricity grid	85%	88%	0.351
Household has own toilet	42%	39%	0.507
Household owns radio/tv	88%	95%	0.004
Household has bicycle/ scooter/ motorcycle/ car	42%	30%	0.004
Family rents a house	53%	51%	0.589
Household unable to meet basic needs w/o charity	41%	40%	0.853

Source: Program report data

**Table A2.4: Household characteristics of students, cycle 2 baseline**

	<b>Non-program</b>	<b>Program</b>	<b>P-Value</b>
# Household members (16 or older)	4	4	-
# of women in household (16 or older)	2	2	-
Head of household is a female	25%	16%	0.0397
Head of household speaks English	30%	23%	0.0932
Head of household is employed	79%	84%	0.1940
Primary caregiver is a female	56%	54%	0.6787
Primary caregiver speaks English	12%	6%	0.0826
Usual for community to send girls to school	91%	85%	0.0761
Enough community support for girls to succeed in school	72%	68%	0.4487
Household owns radio/tv	88%	95%	0.004
Household has bicycle/ scooter/ motorcycle/ car	42%	30%	0.004
Family rents a house	53%	51%	0.589
Household unable to meet basic needs w/o charity	41%	40%	0.853

Source: Program report data from data from Preston baseline data collection, cycle 2

# Endnotes

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- <sup>66</sup> Specifically: 1) In a financial negotiation or discussion about money, you need to clearly state what you want and be willing to compromise; 2) In a financial negotiation or discussion about money, you should ignore what the other person wants and fight until you get what you want; 3) The ideal outcome when discussing money or negotiating with someone else is both people win; 4) If you prepare ahead of time for a discussion about money, it can change the outcome of the discussion; 5) Strategies for discussing money can be useful at home.
- <sup>67</sup> Specifically: 1) The level of education you can reach; 2) Whether or not you work/have a job; 3) Your choice of work/job/career; 4) The amount of money you make; 5) The way you make your money; 6) How you spend your money; 7) Who you marry; 8) When you marry; 9) When you have children; 10) The number of children you have; 11) The friends you keep; 12) How you spend your day.
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- <sup>69</sup> Learning outcomes in literacy were assessed using an adapted version of the Early Grade Reading Assessment (EGRA) in addition to the Nigerian National Basic Education Certification Examination and Regional West African Senior Secondary Certificate Examination (WASSCE) Assessment. EGRA consists of five skill-specific sections: sound knowledge, word reading, oral reading fluency and comprehension, listening comprehension, and real life reading.
- <sup>70</sup> Numeracy skills were assessed using an adapted version of Early Grade Math Assessment (EGMA) in addition to the Nigerian National Basic Education Certification Examination and Regional West African Senior Secondary Certificate Examination Assessment. EGMA tool consists of five skill-specific sections: number identification, whole numbers (missing number, quantity discrimination, place values), addition and subtraction, multiplication and division, time, and money.
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- <sup>74</sup> Target LGAs were kept in clusters and separated into urban or peri-urban.
- <sup>75</sup> Education Management Information System (EMIS), school census, and the Education Sector Support Program in Nigeria (ESSPIN).
- <sup>76</sup> Only non-program group in Kaduna had 13 ISGs.
- <sup>77</sup> A minimum of 56 IDIs had to be conducted to ensure MDES of 0.3; however, to plan for possible loss to follow up, 74 gatekeepers were interviewed, with 39 in non-program and 35 in program groups.
- <sup>78</sup> Parents/caregivers of out-of-school girls were only asked to support the girls by attending ENGINE product exhibitions.
- <sup>79</sup> Cycle 1 and cycle 2 included different sets of girls and gatekeepers and thus cannot be analyzed in the context of dose response.
- <sup>80</sup> Only non-program group in Kaduna had 13 ISGs.



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