The Big Lift Descriptive Analyses

Progress Across Three Kindergarten Classes

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Key findings

High-Quality Preschool

- When compared with demographically similar peers, Big Lift preschoolers were 23 percentage points more likely to be kindergarten-ready than children who did not attend preschool and 8 percentage points less likely to be kindergarten-ready than peers who attended other community preschools.
- Children who attended two years of Big Lift preschool were 14 percentage points more likely to be kindergarten-ready than demographically similar children who attended only one year of Big Lift preschool.
- At the spring of kindergarten, Big Lift preschoolers had higher reading scores than those of demographically similar children who did not go to preschool, and they had reading scores that were on par with those of children who went to other preschool programs.
- At the fall of first grade, Big Lift preschoolers' reading levels were on par with those of demographically similar children who did not attend preschool and lower than those of children who attended other preschools.

Summer Learning

- More than 70 percent of children who attended Big Lift Inspiring Summers (BLIS) before first or second grade maintained or improved their reading levels.
- Within a subgroup of children from lower-income homes (families with an annual income of $100,000 or less), children who attended BLIS in the summer after kindergarten had reading levels at the start of first grade that were higher than those of demographically similar children who did not attend any summer programs.

INTRODUCTION ■ The Big Lift™ is "a bold social venture intent on transforming early learning" (The Big Lift, undated). In 2012, the County of San Mateo, the Silicon Valley Community Foundation, and the San Mateo County Office of Education (SMCOE) launched The Big Lift, a collective impact collaborative of more than 300 community organizations committed to boosting reading proficiency among the children of San Mateo County, California.[1] For the past seven years, the collaborative, which is led by SMCOE, the Silicon Valley Community Foundation, and the County of San Mateo, has worked diligently to meet this goal. The Big Lift consists of four programmatic pillars designed to improve third-grade reading proficiency in the county, targeting 11 school districts with third-grade reading levels below the county average. The four pillars of the Big Lift initiative (hereafter referred to as Big Lift) are as follows:

1. **High-Quality Preschool**: A comprehensive school-readiness strategy focused on high-quality preschool for three- and four-year-olds
2. **Summer Learning:** Inspiring summer learning opportunities for rising kindergartners, first-graders, and second-graders that enable children to maintain their academic and developmental gains from high-quality preschool through third grade
3. **Attendance**: A focus on reducing chronic absenteeism from preschool through third grade through interventions using evidence-based attendance reminders for families
4. **Family Engagement:** Strengthening family engagement through strategies that promote home literacy practices.

As of 2016, seven of the 11 targeted Big Lift school districts have been implementing services under the four Big Lift pillars. Big Lift selected the seven districts through two rounds of a competitive review process. In spring 2015, grants were awarded to four districts making up the first cohort (Cohort 1): Cabrillo Unified School District, La Honda-Pescadero Unified

This report is the third in the series of outcome studies that focus on two Big Lift pillars: High-Quality Preschool and Summer Learning.

School District, Jefferson Elementary School District (JESD), and South San Francisco Unified School District (SSFUSD). These districts began implementing Big Lift services in the 2015–2016 school year. In spring 2016, three additional school districts (Cohort 2) were awarded grants: Ravenswood City School District, Redwood City School District, and San Bruno Park School District. These districts began services in the 2016–2017 school year.

The RAND Corporation is conducting a multiphase evaluation of the initiative, including an implementation study of the four pillars—*The Big Lift Implementation Study: Final Report* (Faxon-Mills et al., 2018)—and a series of annual descriptive analyses focused on the outcomes of children who received Big Lift services. This report is the third in the series of outcome studies that focus on two Big Lift pillars: High-Quality Preschool and Summer Learning. The first report, *Big Lift Participation and School Entry Indicators: Findings for the 2016–2017 Kindergarten Class* (Gomez et al., 2017), focused on the early education experiences (prior to kindergarten entry) and kindergarten readiness outcomes of the 2016–2017 kindergarten class from the four Cohort 1 districts. In the second report, *The Big Lift Descriptive Analyses: Kindergarten Readiness and Elementary School Reading Outcomes for the 2016–2017 and 2017–2018 Kindergarten Classes* (Gomez et al., 2018), we continued to follow the 2016–2017 kindergarten class through elementary school, added data for the 2017–2018 kindergarten class, and explored children's summer learning experiences.

In this report, we focus on all three kindergarten classes that have been served by Big Lift to date—the 2016–2017, 2017–2018, and 2018–2019 kindergarten classes. Only the Cohort 1 districts contributed data for the 2016–2017 kindergarten class, while both the Cohort 1 and Cohort 2 districts are represented in the subsequent two classes. Looking across the cohorts and kindergarten classes, we compare children who had different preschool experiences, tracking their outcomes from the fall of kindergarten until the start of first and second grades. In addition, we explore the summer learning opportunities that children had access to following their kindergarten and

first-grade years. Where possible, we pool data across kindergarten classes, which allows for a more holistic understanding of how Big Lift children compare with their peers over time.

OVERVIEW OF THE RESEARCH

In the following sections, we draw on information from the second report in the series to describe the four Big Lift pillars.[2] We then present the research questions addressed in this report, describe the data sources used to conduct our analyses, and describe the study population.

The Big Lift Pillars

The Big Lift–funded districts initiated services under each pillar, as appropriate. The pillars were designed so that families could layer on different services as needed to support children's reading development. Although we discuss all four pillars in this overview,[3] the descriptive analyses that follow focus only on the High-Quality Preschool and Summer Learning pillars.

High-Quality Preschool

Under this pillar, Big Lift districts use funds to increase the number of center-based preschool slots available for three- and four-year-olds in the community and to increase the quality of preschool overall. *High-quality* is defined by the standards of the San Mateo County Quality Rating and Improvement System (QRIS), which is part of the California QRIS. To be eligible for Big Lift funds, centers must hold a QRIS Tier Level of 3 or above. Tier 3 represents the middle level of quality on the QRIS matrix, with Tier 1 representing minimal quality (meeting California licensing standards) and Tier 5 representing a rigorous level of quality across the seven elements assessed. All of the centers that receive funding serve children from lower-income families, although specific income requirements for enrollment vary by program, as do program fees.

As part of the initiative, all Big Lift preschool programs receive targeted coaching for teaching staff, professional development supports, and technical assistance from SMCOE or from internal staff paid with Big Lift funds. Big Lift preschool programs also have some discretion over how they use grant dollars to continue to improve program quality. Examples of how programs spend their discretionary funds include lowering teacher-child ratios by hiring additional teaching staff, hiring specialists to work with children and/or program staff (e.g., family engagement coordinators, early childhood mental health consultants, or behavior specialists), providing vision and dental screenings, purchasing equipment, and providing technology and learning materials to enhance the learning environment. In addition, Big Lift preschool centers partner with community-based organizations and local school districts to align, integrate, and maximize the effectiveness of all four Big Lift pillars.

When applying for Big Lift funds, the San Mateo County districts identified the preschool providers they would partner with if the grant were awarded; these programs became Big Lift preschools in the funded districts. Big Lift preschool programs represent a variety of different center-based early care and education programs, including nonprofit providers, state-funded preschool programs, and Head Start centers. The programs vary in their recruitment practices, enrollment, hours (full or half day), months of programming (traditional school year or full calendar year), and curriculum. Some of the preschools are not tied to district enrollment processes or to geographic bounds. This means that children might enroll in preschool programs in districts other than the district where they will enroll in kindergarten. Preschools in the Cohort 1 districts began implementing Big Lift preschool programs in the 2015–2016 school year, and programs in the Cohort 2 districts began in the 2016–2017 school year.

Summer Learning

The Big Lift Inspiring Summers program (BLIS) is a four-week summer enrichment intervention for rising kindergartners, first-graders, and second-graders that is free of charge to families.[4] BLIS is a joint program among Building Educated Leaders for Life (a national education service provider), the San Mateo County Libraries, and the seven Big Lift school districts. Children attend full-day camp from 8 a.m. to 4 p.m., Monday through Friday. The day begins with three hours of intensive language and literacy instruction based on the Building Educated Leaders for Life curriculum (Chaplin and Capizzano, 2006) and taught by credentialed teachers, followed by three

hours of science, technology, engineering, and mathematics learning activities in the afternoon provided by the San Mateo County Libraries. Big Lift advertised for BLIS on the initiative's website, at elementary schools in Big Lift districts, and at Big Lift preschools. BLIS prioritizes enrolling families whose children had previously participated in BLIS or a Big Lift preschool program and families earning 80 percent or less of the Area Median Income.[5] For the 2018–2019 school year, the BLIS income eligibility threshold was set at $117,000 or less. Summer 2016 was the first year of BLIS; all four Cohort 1 districts implemented the program with slots for rising kindergartners and first-graders during this year. Beginning in summer 2017, and in all subsequent summers, all Cohort 1 and Cohort 2 districts implemented the program with slots for rising kindergartners, first-graders, and second-graders (the grade levels that were served varied by district).

Attendance

In the 2015–2016 school year, 14 school districts in San Mateo County, including Big Lift Cohort 1 and Cohort 2 districts, participated in a program to deliver six attendance reminders during the school year to parents (of children in kindergarten through fifth grade) via postal mail as part of a Harvard University research study on the effectiveness of this approach to improve attendance rates. Following positive study results (Rogers et al., 2016), Big Lift provided attendance reminders starting in fall 2017 to transitional kindergarten (TK) through second-grade students in Cohort 1; in January 2018, all Big Lift preschoolers from both Cohorts 1 and 2 were added, along with TK through second-grade students in the Cohort 2 districts. Attendance messages for Big Lift preschools and children in TK through second grade in the Big Lift districts continued into the 2018–2019 school year. The messages focus on the importance of good attendance from an early age and primarily target families whose students' attendance is in the bottom 50 percent of the district. This report does not provide data on students' receipt of these reminders.

Family Engagement

In all Big Lift preschool programs, the Raising a Reader (RAR) programs, Play to Grow, and Ready4K are the primary evidence-based family engagement strategies. The RAR programs are designed to support preschool children's literacy skills by engaging children and their parents in regular book read-

ing practices (RAR, undated). As part of the standard RAR program, parents are invited to participate in an orientation in which staff present information about child development, early literacy skills, book reading, and home literacy practices. To ensure ready access to books, families receive a weekly bag of books to take home throughout the school year. Raising a Reader Plus (RAR+) is an augmented version of the standard program in which parents are offered a series of interactive education sessions focused on promoting home literacy practices. Some of the Big Lift preschools have been implementing RAR or RAR+ since the 2015–2016 school year, the first year Big Lift preschool was implemented.

Play to Grow is a five-session parenting series adapted from evidence-based parenting interventions. It focuses on family home practices that promote optimal child development, including language-rich interactions, parent-child play, routines, and positive discipline. Play to Grow was piloted at Big Lift preschools in the 2018–2019 school year and will be expanded to more programs in the 2019–2020 school year.

Ready4K is an evidence-based text messaging program that sends weekly text messages to preschool families with information and tips to promote children's language, literacy, and social-emotional skills (York and Loeb, 2014). The first year of implementation of Ready4K was the 2016–2017 school year. Consenting parents of all Big Lift preschool programs are enrolled in the program.

Because of data availability, we do not focus on the programs in the Family Engagement pillar in this report.

Research Questions Addressed in This Report

The goal of this evaluation is to provide an independent assessment of how well Big Lift is being implemented and whether it is achieving its objective of helping children achieve third-grade reading proficiency. This report is the third in a series of reports to present descriptive data and trends on children's Big Lift program participation and achievement outcomes over multiple years. In this report, we focus on all children who have been eligible to participate in Big Lift services to date, a group that consists of children from three kindergarten classes—school years 2016–2017, 2017–2018, and 2018–2019. We refer to these respective populations as the 2016 kindergarten (K) class, the 2017 K class, and the 2018 K class in the remainder of the report. We address three research questions focused on Big Lift preschool and BLIS. Broadly, the following questions

aim to compare children who received Big Lift services with their peers who did not, focusing on children's outcomes from kindergarten entry to the start of second grade:

1. Among the three kindergarten classes that were eligible to participate in Big Lift, how do the kindergarten readiness skills and home reading practices (reading frequency) of children who enrolled in Big Lift preschool compare with those of children who enrolled in non–Big Lift preschool or who did not attend preschool at all?
   a. Within a subgroup of children from lower-income homes (families making $50,000 or less), how do Big Lift preschoolers' readiness skills and home practices compare with those of their peers?
   b. How do the kindergarten readiness skills of children who had two years of Big Lift preschool compare with those of children who had only one year?
2. Among the three kindergarten classes that were eligible to participate in Big Lift, how do the reading outcomes at the end of kindergarten, the beginning of first grade, the end of first grade, and the beginning of second grade differ between children who enrolled in Big Lift preschool and children who enrolled in non–Big Lift preschool or did not attend preschool at all?
   a. Within a subgroup of children from lower-income homes, how do Big Lift preschoolers' reading outcomes compare with those of their peers?
3. Among the three kindergarten classes that were eligible to participate in Big Lift, how do the reading outcomes at the start of first grade and second grade for children who enrolled in BLIS in the previous summers compare with those of children who enrolled in non–Big Lift summer programs and children who did not enroll in any summer programs?
   a. Within a subgroup of children from lower-income homes (here defined as families making $100,000 or less), how do the reading outcomes of children who attended BLIS compare with those of their peers?

Study Population and Data Sources

The study population for this report consists of children in the seven Cohort 1 and Cohort 2 districts in the 2016 K class, the 2017 K class, and the 2018 K class. Figure 1 depicts which Big Lift services—Big Lift preschool and BLIS—these children were eligible for and when. Each row is dedicated to one kindergarten class, and we track their experiences from August 2015 to

August 2019, as shown along the top of the figure. Each August-to-August cell represents a school year and the following summer. For example, August 2015 to August 2016 represents the 2015–2016 school year and summer 2016. Within each kindergarten class row, the yellow and red labels identify which grade the children were in during each school year.

Children in the 2016 K class, which is composed of only the four Cohort 1 districts, are shown in the first row. As represented by the dark blue "Big Lift preschool" label, these children were eligible for Big Lift preschool one year before kindergarten (as four-year-olds) in the 2015–2016 school year. Note that this school year was the first year Big Lift services were available. The 2016 K class was then eligible for BLIS in the summers following preschool (summer 2016), kindergarten (summer 2017), and first grade (summer 2018), as depicted by the light blue "BLIS" labels. The rest of the figure follows this pattern of labeling to indicate years and Big Lift service eligibility for the 2017 and 2018 K classes.[6]
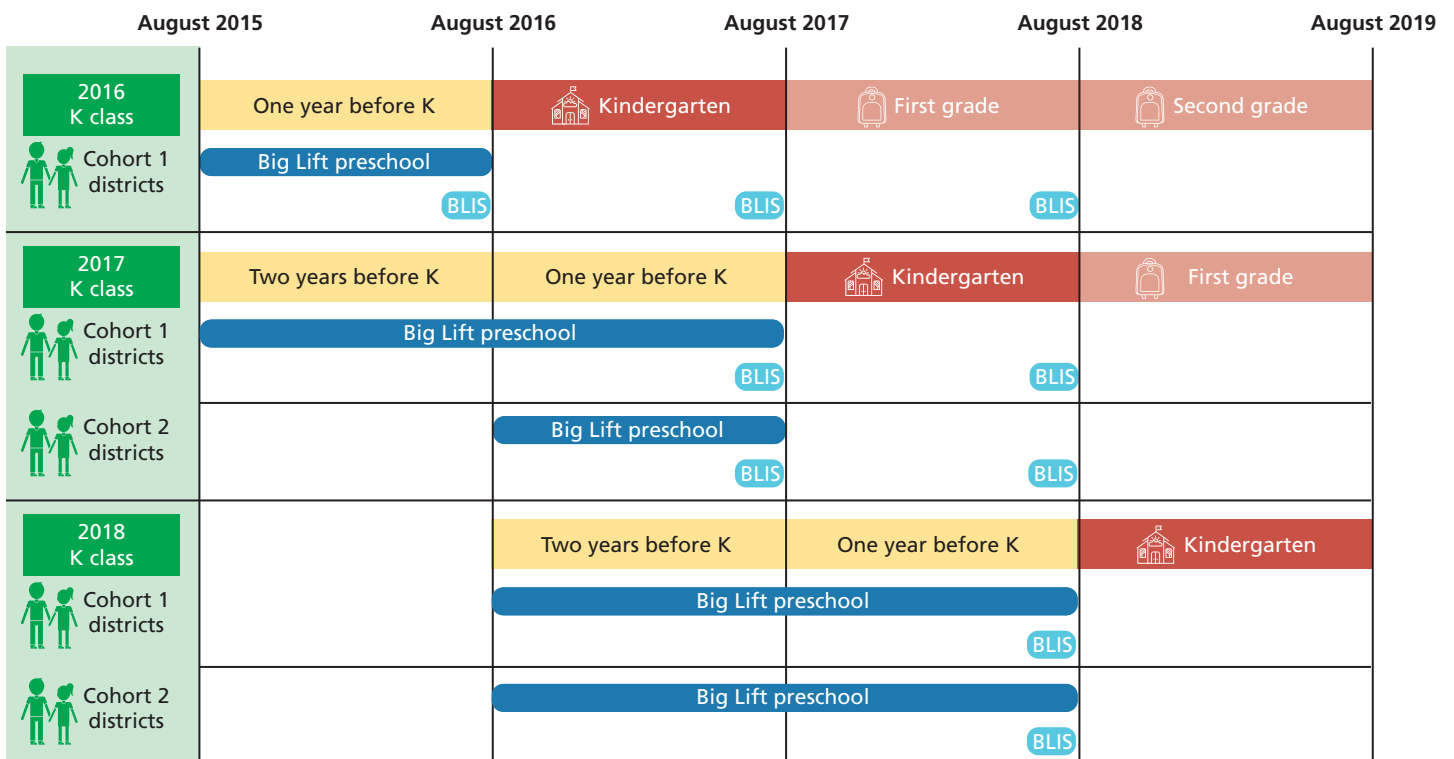
Child Cognitive Assessments

As part of the work of the Big Lift pillars, all seven Cohort 1 and Cohort 2 Big Lift districts agreed to administer com-mon early childhood assessments to their student populations. Figure 2 depicts the timing of when children in the Big Lift districts receive different assessments. We briefly describe the assessments here (see the Technical Appendix, which is available online, for a more-detailed discussion of each measure).

The Brigance Early Childhood Screen III (Brigance and French, 2013) was selected to measure kindergarten readiness. This assessment is administered to children in the fall of their kindergarten year (Figure 2) by classroom teachers. The Brigance is a global assessment of kindergarten readiness that measures multiple domains of development, including cognitive development, language development, and physical development. The Cohort 1 districts began implementing this assessment in the 2016–2017 school year, when the first class of Big Lift–eligible children entered kindergarten. The Cohort 2 districts began implementing the Brigance in the 2017–2018 school year. Both cohorts have administered the assessment to all entering kindergarteners in the fall every year since.

The Fountas and Pinnell Benchmark Assessment System (F&P) is a reading assessment implemented from kindergarten through eighth grade that is being used by all seven school districts as their core elementary reading level assessment (Fountas and Pinnell, 2007). The F&P measures decoding, fluency,

FIGURE 1. TIMING FOR BIG LIFT PRESCHOOL AND THE BIG LIFT INSPIRING SUMMERS PROGRAM BY KINDERGARTEN CLASS IN THE STUDY SAMPLE

vocabulary, and comprehension skills. Students are assigned an *independent reading level*—or the text level at which a student can read independently with minimal supports—based on their performances reading selected texts during the assessment. These levels serve as the outcome for some of the analyses in this report. The scores range from AA to Z, representing the most basic reading skills to advanced comprehension. All districts implement the assessment at the end of kindergarten and at the start and end of first and second grades (Figure 2). Because of the timing of data collection and analysis, this report only provides data on children through the start of second grade and does not report on children's scores at the end of second grade. Students are assessed by their classroom teachers and/or other school staff.

Kindergarten, First-Grade, and Second-Grade Entry Forms

Data on home reading practices and most of the child and family demographic data were drawn from common kindergarten, first-grade, and second-grade entry forms used by the Big Lift districts. As part of the forms, children's parents or caregivers voluntarily filled out a one-page questionnaire during school registration. The forms included questions on family characteristics (e.g., family income, parent education level), the number of books present in the home, and how often families read to their children. The kindergarten entry form was used by all seven Cohort 1 and Cohort 2 districts for all three kindergarten classes represented in the sample. This form had questions about children's preschool experiences. For entering kindergartners who did not attend Big Lift preschool, data on their prior year of preschool attendance were based on the responses on this entry form.

Because of resource constraints, only two Cohort 1 districts administered the first- and second-grade entry forms in the 2017–2018 and 2018–2019 school years—SSFUSD and JESD.[7] These forms had questions about children's educational experiences in the summers following kindergarten and first grade. For children who did not attend BLIS, data on their summer program enrollment were based on their guardians' responses on these forms.
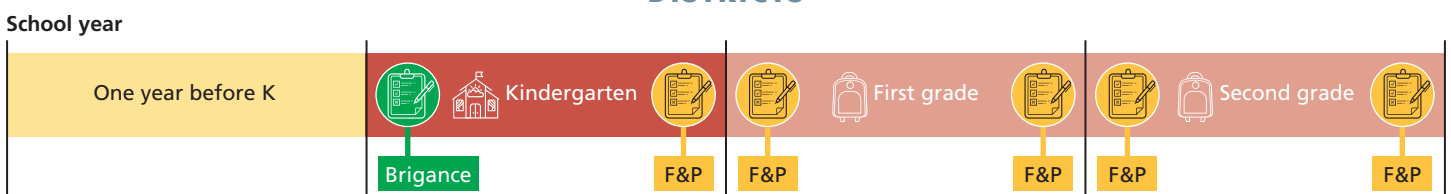
San Mateo County Office of Education Database and District Data

Information on Big Lift preschool and BLIS attendance is stored in SMCOE's administrative data system. Some demographic data also were drawn from data collected by the Big Lift school districts.[8] All data—enrollment data on Big Lift programs, child assessment scores, and demographic data—were provided to the RAND team for the analyses, using a unique child-level identifier.

Organization of This Report

In the following sections, we first compare the kindergarten readiness scores and home reading practices of children in the three kindergarten classes who attended Big Lift preschool with those of their peers who did not. We then turn to the analogous comparisons of the 2016 and 2017 K classes, following up on those children's reading skills from the end of kindergarten through the start of second grade. In the final section, we present results of the comparisons of a subset of children in the 2016 and 2017 K classes who had different learning experiences in the summers following their kindergarten and first-grade school years. We conclude by summarizing our findings and discussing implications for subsequent stages of the initiative and our evaluation efforts.

FIGURE 2. TIMING OF CHILD COGNITIVE ASSESSMENTS IN THE PARTICIPATING BIG LIFT DISTRICTS

School year

One year before K	Kindergarten		First grade		Second grade	
	Brigance	F&P	F&P		F&P	F&P	F&P

CHILDREN'S PRESCHOOL EXPERIENCES AND KINDERGARTEN READINESS

Variation in Preschool Experiences Across Three Kindergarten Classes

In this section, we address the first research question by examining the school readiness outcomes of children with different preschool experiences in three kindergarten classes: 2016, 2017, and 2018. This analysis encompasses all seven Big Lift districts in Cohort 1 and Cohort 2, for a total pooled sample of 6,802 children across the three kindergarten classes.[9] The 2017 K class and the 2018 K class each represent about 40 percent of the sample (*n* = 2,701 and *n* = 2,605, respectively), while the 2016 K class contributes the remaining 20 percent (*n* = 1,496).

As shown in Table 1, nearly 1,900 students, or about 28 percent of the pooled kindergarten sample, participated in Big Lift preschool.[10] The majority (about 70 percent) of these students attended one year of Big Lift preschool, and approximately 30 percent of Big Lift preschoolers attended for two years prior to entering kindergarten.[11] The comparison groups consist of a little more than 4,900 students, most of whom (69 percent) attended a non–Big Lift preschool program. The non–Big Lift preschool group also represents the largest share of the entire pooled sample, at nearly 50 percent. Of the remaining 22 percent of the kindergarten classes, about 14 percent did not attend preschool at all, and we lack information on the preschool experiences of the last approximately 9 percent. The distribution of children across preschool experiences is

extremely similar in each kindergarten class (see the Technical Appendix for descriptive statistics for each K class).

In Table A.1 in the appendix at the end of this report, we present descriptive statistics on the family and child demographic characteristics both for the full sample and disaggregated by Big Lift preschoolers, children who attended non–Big Lift preschool, and children who did not attend preschool. Similar to the patterns observed in the previous two reports, Big Lift preschoolers came from families who faced more social disadvantages than their peers in the comparison groups. For example, about 12 percent of Big Lift preschoolers—compared with more than 50 percent of non–Big Lift preschoolers—had a parent with a bachelor's degree or a higher level of education. Nearly 80 percent of Big Lift preschoolers came from homes with annual incomes of $50,000 or less; by comparison, less than 30 percent of non–Big Lift preschoolers came from comparably lower-income homes. Big Lift preschoolers also were more disadvantaged than children who did not attend preschool at all, but these differences were not as pronounced as the comparisons with children who attended other preschool programs.

We explore two different measures of kindergarten readiness—children's scores on the Brigance assessment and their families' home reading practices. The Brigance assessment is scaled such that a total score of 100 is equivalent to the national average among kindergarten-aged children. Children who score between 90 and 110 are considered to be in the average range, and any child scoring 90 or above is thought to be ready for kindergarten. Across the pooled sample, the average

Table 1. About One-Quarter of Children Across Three Kindergarten Classes Attended Big Lift Preschool

Preschool Experience	Number of Students	% of Big Lift Preschoolers	% Among the Comparison Group	% of Pooled K Class Sample
Big Lift preschool	1,895	100.0	—	27.9
One year of Big Lift preschool	1,336	70.5	—	19.6
Two years of Big Lift preschool	559	29.5	—	8.2
No Big Lift preschool (comparison groups)	4,907	—	100.0	72.1
Non–Big Lift preschool	3,390	—	69.1	49.8
No preschool	924	—	18.8	13.6
Non–Big Lift preschool unknown	593	—	12.1	8.7
Total	6,802	—	—	100.0

SOURCE: SMCOE database; kindergarten entry forms.
NOTE: The sample consists of children from the 2016, 2017, and 2018 kindergarten classes in the Cohort 1 and Cohort 2 districts. Disaggregated figures do not always sum exactly to the associated total because of rounding.
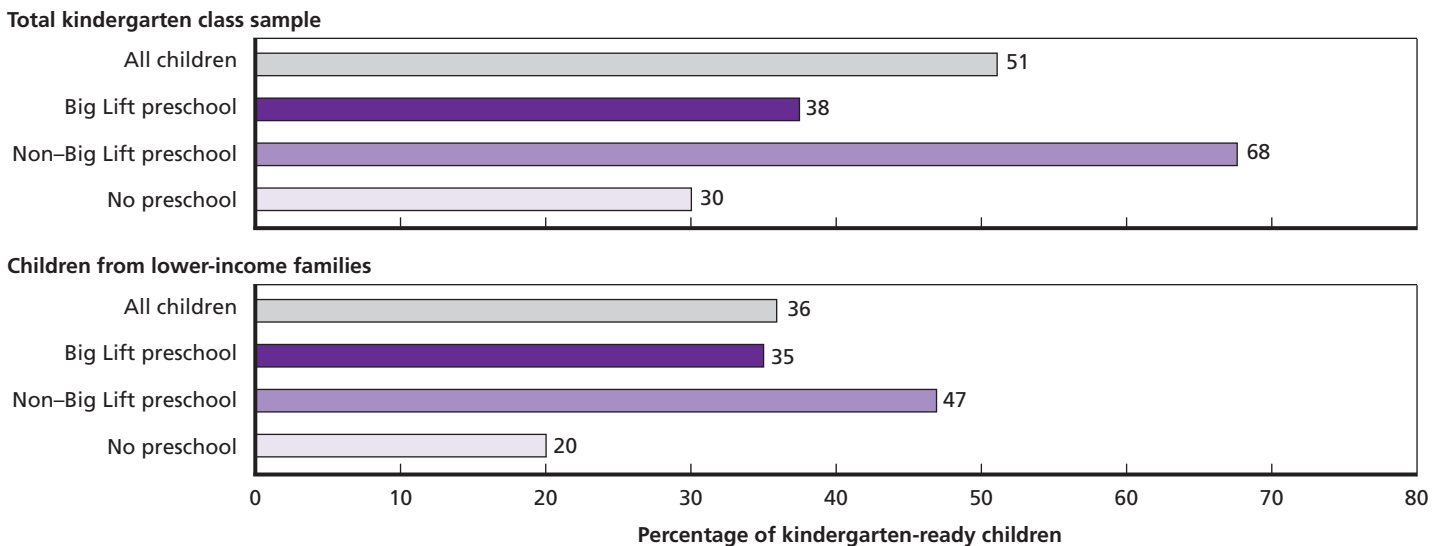
Brigance score was 90.4, indicating that, on average, children in the seven Big Lift districts score in the kindergarten-ready range. Even before child and family demographic and background characteristics are accounted for, variation exists in the average Brigance scores across the three preschool groups of interest: Big Lift preschoolers had an average score of 85.6, (below the kindergarten-ready range), children who did not attend preschool had a score of 82.2, and children who attended non–Big Lift preschools had the highest average score, at 96.4.

Given that the Big Lift initiative is focused on supporting children's school readiness as one way to promote reading proficiency by third grade, it is useful to document the percentage of children in the Big Lift districts who entered elementary school kindergarten-ready (with a Brigance score of 90 or above). In the top panel of Figure 3, we present this information for the total pooled sample. Overall, about one-half of kindergartners in the Big Lift districts began school kindergarten-ready. Echoing the patterns from the mean score, in kindergarten readiness, Big Lift preschoolers trailed behind children who went to other community preschools: About 38 percent of Big Lift preschoolers were kindergarten-ready, compared with about 68 percent of non–Big Lift preschoolers. About 30 percent of children who did not go preschool were kindergarten-ready.

We also break these figures out for a subgroup of children from *lower-income* families, defined for the preschool analyses as families with annual incomes of $50,000 or less. A total of 2,943 children, or about 43 percent of the pooled kindergarten class sample, fell into this group. This subgroup is important because it represents the lower-income families that Big Lift preschools aim to serve.[12] Indeed, approximately 85 percent of Big Lift preschoolers fell into this income category.

As the bottom panel of Figure 3 shows, the kindergarten readiness rates among children from lower-income families—compared with the full sample—were lower for all children and for each of the preschool groups. The relative patterns among the groups are consistent with the full sample—children who went to non–Big Lift preschools were the most likely to start school kindergarten-ready (47 percent), and children who did not attend preschool at all were the least likely (20 percent). About 35 percent of Big Lift preschoolers were kindergarten-ready, very close to the percentage from the total pooled sample. Note, however, that the difference between the percentage of Big Lift preschoolers who were kindergarten-ready and the percentage of children who did not attend preschool that were kindergarten-ready is *larger* in the lower-income subgroup than in the full sample. By contrast, the difference in kindergarten readiness between the Big Lift preschoolers and

FIGURE 3. APPROXIMATELY ONE-HALF OF KINDERGARTNERS IN THE BIG LIFT DISTRICTS WERE KINDERGARTEN-READY

Total kindergarten class sample

All children	51
Big Lift preschool	38
Non–Big Lift preschool	68
No preschool	30

Children from lower-income families

All children	36
Big Lift preschool	35
Non–Big Lift preschool	47
No preschool	20

Percentage of kindergarten-ready children

SOURCES: SMCOE database; kindergarten entry forms.
NOTE: The sample size for all children in the total pooled sample is 6,802. Within the total pooled sample, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 1,895, 3,390, and 924. Included in the all-children bar are 593 children with unknown preschool experiences. The sample size for all children in the lower-income subgroup is 2,943. Within the sample of children in the lower-income subgroup, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 1,487, 915, and 513. Included in the all-children bar are 28 children with unknown preschool experiences. The samples consist of children from the 2016, 2017, and 2018 K classes in the Cohort 1 and Cohort 2 districts.

the children who went to non–Big Lift preschool is *smaller* in the lower-income subgroup. The reader should note that, while all the children from the lower-income subgroup fall into the same broad income category, the preschool groups within this lower-income subgroup might still differ on other demographic characteristics. As a result, the adjusted analyses presented in the following sections represent a more rigorous approach to accounting for key demographic characteristics.

We also explored the home reading practices of kindergartners in the Big Lift districts—specifically, how often parents reported reading to their children at kindergarten entry. Slightly less than one-third of all families (29 percent) reported reading to their children every day. Children in the non–Big Lift preschool group had the largest share of children who were read to daily—nearly 40 percent. By comparison, about 18 percent of the Big Lift preschoolers and the children who did not go to preschool were read to every day. Of the subgroup of children from lower-income families, only 17 percent of all caregivers reported reading to their children every day. (We present full descriptive statistics for both the Brigance variable and the reading frequency variable in Table TA.2 in the Technical Appendix.)

Adjusted Differences in Kindergarten Readiness by Preschool Group

These descriptive statistics indicate differences in children's outcomes across the three preschool groups. However, these children come from varying family backgrounds. On nearly all demographic indicators, children in the Big Lift preschool group were more disadvantaged than their peers. These demographic differences might help explain some of the variation in outcomes across the groups. Thus, it is important to take demographic characteristics into account when comparing the preschool groups.

Here, we present the results of the adjusted comparisons of children's kindergarten readiness as measured by the Brigance. The adjusted differences are akin to comparing the Brigance scores of children in the three preschool groups who had similar family and demographic characteristics. These comparisons provide a more nuanced and accurate picture of how Big Lift preschoolers fared in relation to peers from similar home and family situations. However, it is important to note that, because of issues of selection, we cannot be sure that the adjusted differences were caused by variation in children's early childhood education experiences. As we explained in the first and

second reports in this series, research indicates that there are several social and demographic factors, such as family income, that are related to children's preschool participation and their kindergarten readiness.[13] Although our adjusted differences control for many important factors, there could be differences between the groups that are not measured in the available data, such as parents' beliefs about education or rationale for selecting a particular preschool program. Any estimated differences between the preschool groups could be caused by unmeasured factors, not preschool participation. For this reason, any results based on adjusted comparisons in this report should be viewed as descriptive, not causal, differences between the groups.
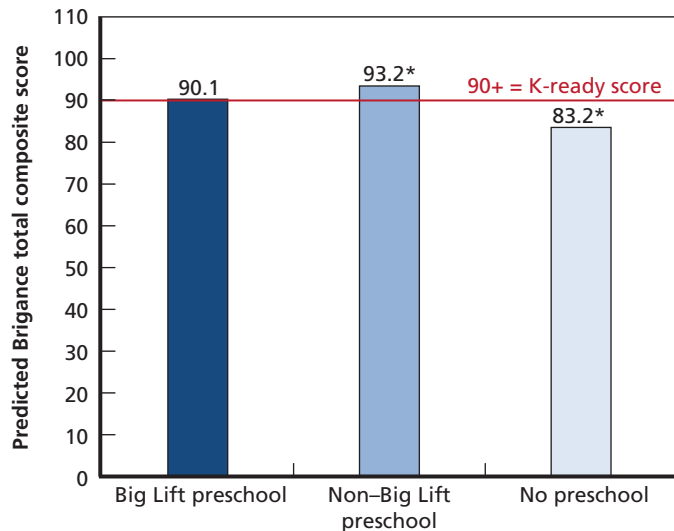
Brigance Scores

In Figure 4, we present predicted mean scores on the Brigance for each of the three preschool groups of interest. Here—and for all other group comparisons of children's Brigance and F&P outcomes in this report—the predicted mean scores were estimated using ordinary least squares (OLS) regression models (see the Technical Appendix for details). The predicted mean score for each group can be thought of as the score for a child who had average values on all the demographic characteristics in Table A.1. We indicate with an asterisk (*) whether the estimated differences between the adjusted means of each comparison group and the Big Lift preschool group are statistically significant. The differences among the adjusted means can be thought of as the differences between the groups when the demographic characteristics are held constant. If a result is statistically significant, we have confidence that the estimated difference represents a true trend and are not caused by chance or the idiosyncrasies of the particular sample or measurement occasion.

> Key Finding: Big Lift preschoolers scored higher on the Brigance than children who did not attend preschool and lower than children who attended other preschool programs, accounting for demographic characteristics.

Each bar in Figure 4 represents the adjusted mean score for each of the three groups—dark blue for Big Lift preschoolers, medium blue for non–Big Lift preschoolers, and light blue for children who did not attend preschool. As the graph shows, the predicted mean score for the Big Lift preschool group was about 90, just inside the average range. The predicted mean

FIGURE 4. BIG LIFT PRESCHOOLERS SCORED HIGHER ON THE BRIGANCE THAN DEMOGRAPHICALLY SIMILAR CHILDREN WHO DID NOT ATTEND PRESCHOOL

SOURCE: Authors' analysis of Big Lift data.
NOTES: Models control for demographic characteristics (presented in Table A.1). To calculate the predicted means, all covariates have been set to the sample means. See the Technical Appendix for full model details and results. The sample consists of children from three kindergarten classes in the Cohort 1 and Cohort 2 districts.
* = difference between comparison groups and Big Lift preschool groups is statistically significant at $p < 0.05$.

score was approximately 83 for the children who did not go to preschool at all, well below the average range. For children who went to non–Big Lift preschool, the predicted mean was 93. The asterisks above the latter two bars indicate that these predicted means are statistically significantly different from the Big Lift preschool predicted mean score. Specifically, these results suggest that Big Lift preschoolers scored an average of 6.9 points higher than children who did not attend preschool at all, demographic characteristics held constant.[14] This adjusted mean difference equates to an effect size of 44 percent of a standard deviation.[15] For context, this effect size is comparable with those found in other evaluations exploring the effect of attending preschool on child outcomes. As such, the advantage Big Lift preschoolers experienced relative to children who did not go to preschool is similar to the preschool advantage documented elsewhere in the literature (Karoly and Auger, 2016).

We also found that, when comparing demographically similar children, Big Lift preschoolers scored an average of 3.0 points *lower* than children who attended non–Big Lift preschool; the effect size is approximately 19 percent of a standard deviation.

We also can express these comparisons between preschool groups in terms of the likelihood of children scoring in or above the kindergarten-ready range on the Brigance. Specifically, Big Lift preschoolers were 23 percentage points more likely to be kindergarten-ready than children who did not attend preschool at all and 8 percentage points less likely to be kindergarten-ready than children who went to other community preschools.[16]

Because Big Lift stakeholders are particularly interested in supporting the development of children whose families are experiencing poverty and other social and economic disadvantages, it is helpful to compare the preschool groups within a subgroup of children from lower-income families, specifically families with incomes of $50,000 or less.[17] We used the same regression models to compare the preschool groups' Brigance scores in this subgroup, accounting for key demographic characteristics. When doing so, we found the same patterns of results as with the full sample. Specifically, lower-income Big Lift preschoolers scored higher on the Brigance and were more likely to be kindergarten-ready than similar lower-income peers who did not attend preschool. In addition, lower-income Big Lift preschoolers scored lower on the Brigance and were less likely to be kindergarten-ready than similar lower-income peers who attended other preschools.[18]

The pattern of results from the full sample and the lower-income subgroup is consistent with the findings on the 2017 K class presented in the previous report and with comparisons run only on the 2018 K class (see the Technical Appendix for a full set of results on the 2018 K class sample only). The results across the three kindergarten classes provide consistent evidence to suggest that, overall, Big Lift preschoolers experience an advantage over their peers who did not attend preschool, but do not score on par with children who attended other community preschools.

We note that the pattern of results in the 2016 K class differed in one notable way from the pooled results. In this class, we found that Big Lift preschoolers were as likely to be kindergarten-ready as children who attended other community preschools (see Gomez et al., 2017). The 2016 K class was the first to experience Big Lift preschool; it is possible that the preschool experiences of these children might have differed from the other K classes because Big Lift was still in its early stages. It also is possible that the early childhood education options might have shifted over time in the county, such that children in the 2016 K class who enrolled in non–Big Lift preschools attended programs that were qualitatively different (e.g., lower

or higher in quality) from the programs attended by children in the 2017 and 2018 K classes. Furthermore, the 2016 K class consists of children only from the Cohort 1 districts, so the children in this class are not representative of the complete Big Lift population. And, although the 2016 class looks similar to the other two classes on most demographic characteristics, the classes might differ on other unmeasured characteristics not captured here.[19]

Reading Practices

We found no statistically significant differences among any of the preschool groups when comparing their home reading practices, all demographic characteristics held equal.[20] We also made these comparisons within the subgroup of children from lower-income families, and the results were nearly identical—we found no statistically significant differences between the groups. This pattern of results is consistent with those in the 2018 and 2017 K classes,[21] but—as with the Brigance results—this pattern is different from the 2016 K class. The analyses using only the 2016 K class showed that Big Lift preschoolers were read to more often than children who went to no preschool at all (Gomez et al., 2017). These disparate patterns continue to suggest that the 2016 K class might have differed from the other classes in an underlying, unmeasured way.

One Year of Big Lift Preschool Versus Two

In this subsection, we explore the relationship between variation in the dosage of Big Lift preschool and children's kindergarten readiness skills. Although many preschool programs target four-year-old children in the year before kindergarten, research suggests that there might be benefits for children who attend two years of early childhood education prior to starting elementary school (see Gomez et al., 2018, for a discussion of the literature). All Big Lift–funded preschool programs have slots for three-year-olds (children who are two school years away from entering kindergarten) and four-year-olds (children who are one school year away from entering kindergarten). As shown in Figure 1, children in the 2017 K class (in the Cohort 1 districts) and the 2018 K class (in all districts) had the opportunity to attend two years of Big Lift preschool, first as three-year-olds, and again as four-year-olds. Some children in the 2016 K class also attended two years of preschool, but because the Big Lift services did not start until the 2015–2016 school year, preschool participation data for their first year is not avail-

able. Therefore, the 2016 K class is not included in these analyses.[22]

As shown in Table 1, 559 children—or approximately one-third (30 percent) of Big Lift preschoolers in the 2017 and 2018 K classes—received two consecutive school years of Big Lift preschool before starting kindergarten. We compared these 559 children with the 615 children who enrolled in only one year of Big Lift preschool and did not report attending any other early childhood program. Note that the group of 615 children who attended only one year of Big Lift preschool does not include children who reported attending another year of some other early childhood program prior to entering kindergarten ($n = 371$). We excluded these children to correctly isolate the comparison of one year of Big Lift preschool (and no other preschool intervention) with two years of Big Lift preschool. Nearly all ($n = 590$; 96 percent) of the children who attended just one year of Big Lift preschool attended as four-year-olds.

Before we made adjustments for key demographic covariates, the raw descriptive statistics suggested that children who attended two years of Big Lift preschool started kindergarten with stronger skills than children who had only one year of Big Lift preschool. Specifically, children who attended two years of Big Lift preschool had a mean score of about 87 on the Brigance, and 40 percent of them began school kindergarten-ready. By contrast, children who attended one year of Big Lift preschool had a mean score of 83 on the Brigance, and 30 percent of those children began school kindergarten-ready.

> Key Finding: On average, children who attended two years of Big Lift preschool scored higher on the Brigance than did demographically similar children who attended for one year.

When we compared children who attended either one or two years of Big Lift preschool, accounting for key demographic characteristics, the patterns found in the raw data persisted. Children who attended two years scored significantly higher on the Brigance than did children who attended only one year of Big Lift–funded preschool. Specifically, children who attended two years of Big Lift preschool before entering kindergarten scored 3.9 points higher than demographically similar peers who attended one year of Big Lift preschool (see the Technical Appendix for full results). This difference of nearly four points represents an effect size of 25 percent of a standard deviation. In addition, children who attended two years of Big Lift preschool

were 14 percentage points more likely to be kindergarten-ready than children who attended only one year. This finding aligns with previous research indicating that children who spend more time in early childhood settings prior to entering kindergarten start school better prepared to learn, and the finding is consistent with those from last year's report on the 2017 K class only. There were no statistically significant differences between the two groups on the home reading practices outcome.

Importantly, there is a confounding factor between attending two years of Big Lift preschool and starting preschool at an earlier age. Because almost no children in the sample attended a year of Big Lift preschool at age three and not at age four, almost all of the children who started preschool earlier also attended for two years. It also is possible that there is something uniquely important about a preschool year for a three-year-old that differs from one for a four-year-old. However, we cannot test for a difference between the correlation of attending one year of preschool at age three and children's outcomes versus the correlation of attending one year of preschool at age four and children's outcomes.[23]

FOLLOWING THE KINDERGARTEN CLASSES INTO ELEMENTARY SCHOOL: READING SKILLS FROM THE END OF KINDERGARTEN TO THE START OF SECOND GRADE

We now turn to research question 2 and follow two of the kindergarten classes—2016 and 2017—into elementary school. Specifically, we explore whether the pattern of differences that emerged when comparing the preschool groups at kindergarten entry (research question 1) persists or shifts as children move through first and second grade. The correlational results presented for research question 1 suggested the presence of a preschool advantage; on average, children who attended Big Lift preschool had stronger kindergarten readiness skills than children who did not go to preschool.[24] There are mixed findings in the research literature on whether the relationship between preschool attendance and improved outcomes persists past kindergarten entry. Some studies show long-term effects of preschool on children's outcomes (Barnett, 2011; Phillips et al., 2017; Yoshikawa et al., 2013), while other work suggests that children's preschool gains can "fade out" over time as the children who did not attend preschool "catch up" to peers who did (Phillips et al., 2017).[25] The following analyses provide

insight into which patterns from the literature emerge in the Big Lift districts.

For research question 2, we consider the two kindergarten classes that had aged into first and second grade at the time of this study. As detailed in Figures 1 and 2, the 2016 K class entered second grade in the 2018–2019 school year. Therefore, our data set contains reading outcomes for these children at four time points: the end of kindergarten, the beginning of first grade, the end of first grade, and the beginning of second grade. The 2017 K class entered first grade in the 2018–2019 school year; they contributed reading outcome data at the end of kindergarten and at the start of first grade. Given the nature of the sample, we present our analyses in two parts. First, we present analyses on a pooled sample of both kindergarten classes and compare children's outcomes at the end of kindergarten and the start of first grade, the two time points at which both kindergarten classes contributed data. Second, we focus on the 2016 K class only, following these children for two additional time points, at the end of first grade and the start of second grade.

Pooled Sample: Comparing Outcomes at the End of Kindergarten and the Start of First Grade

For both sets of analyses, we consider a balanced panel of children; that is, we only include children who contributed reading outcome data for all focal time points. For the pooled sample, we focus on data collected at the spring of kindergarten and the fall of first grade for the 2016 and 2017 K classes. The analytic sample consists of a total of 3,394 children—1,282 children from the 2016 K class and 2,112 children from the 2017 K class.[26] In this pooled sample, about 27 percent were Big Lift preschoolers, about 50 percent were non–Big Lift preschoolers, and about 14 percent did not attend preschool; this breakdown is very similar to that observed in the pooled kindergarten sample used in the Brigance analysis. (See Table TA.11 in the Technical Appendix for a full breakdown of the pooled sample).

The outcome of interest here is children's independent reading scores on the F&P. As we describe in more detail in the Technical Appendix, children's scores on the assessment reflect the level of difficulty of the assessment book they are able to read independently. Children can receive a reading level from AA to Z, with AA being the lowest reading level and Z being the highest. For the purposes of these analyses, it is useful to convert the reading levels into numeric values—from zero to 26 (see the Technical Appendix for a discussion of this analytic
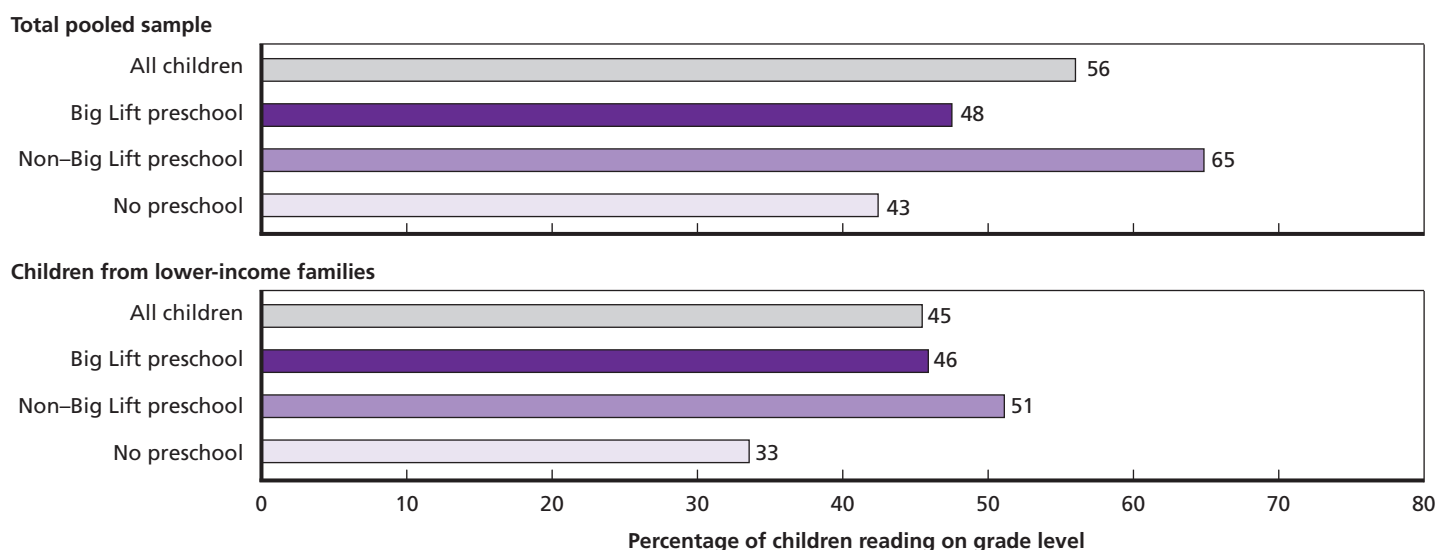
choice). For children's scores measured at the spring of kindergarten, the score conversion yielded an average F&P score among the sample of slightly more than three—equivalent to a level C score. The published F&P materials indicate that level C is the estimated expected reading score for children at the end of kindergarten.[27] Thus, on average, children in the Big Lift districts scored at the estimated grade-level expectation. However, scores varied widely across the sample.

In the top panel of Figure 5, we present the percentage of children who scored on grade level, both in the total pooled sample and disaggregated by preschool group. Fifty-six percent of the sample scored a C or above, indicating that a little more than half of the group was reading approximately on grade level. Figure 5 also suggests unadjusted descriptive differences between the preschool groups. Slightly less than half of Big Lift preschoolers scored at level C or above (48 percent), compared with almost two-thirds (65 percent) of children who attended non–Big Lift preschools and about 43 percent of children who did not go to preschool. On the bottom panel of Figure 5, we present analogous information for the subgroup of children from lower-income families;[28] this group comprised 1,519 children, or about 45 percent of the total pooled sample. A lower percentage (about 45 percent) of children from lower-income

families were reading at level C or above. And, as with the Brigance, the difference in the percentage of children reading on grade level between Big Lift preschoolers and children who did not go to preschool was larger in the lower-income subgroup (relative to the total pooled sample), and the difference between Big Lift preschoolers and children who went to other community preschools was smaller in the lower-income subgroup.

In Figure 6, we present identical information for children's scores measured at the start of first grade, although approximately one-quarter of children were tested in November or December, well into their first-grade year. As a result, some children's "start of the year" scores represent substantial learning during the school year. At this time point, the average score was 3.9—nearly a level D, and almost one level higher than the estimated expected score of a C for the start of first grade.[29] Indeed, about 60 percent of all children were reading at above the grade-level expectation. Similar to the scores at the end of kindergarten, for both the full sample and for children who came from lower-income homes, children who went to non–Big Lift preschool were the most likely to be reading on grade level. Within the total pooled sample, about the same percentage of Big Lift preschoolers and children who did not go to preschool were reading at a level C or above. However, within the lower-income sample,
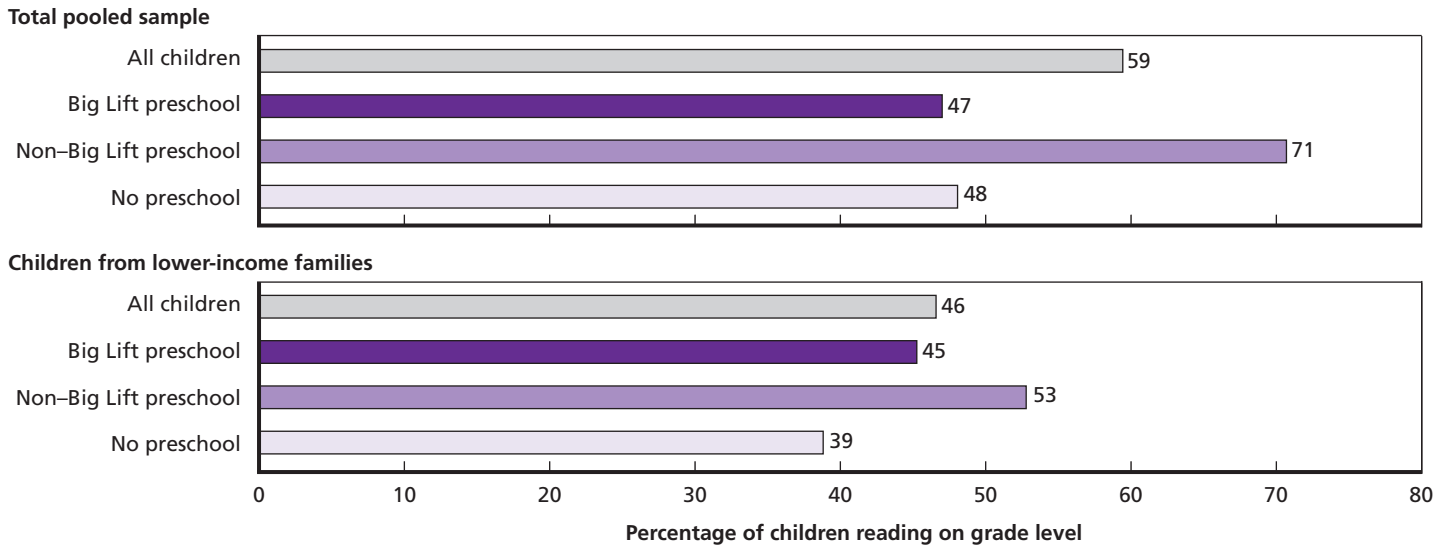
FIGURE 5. AT THE END OF KINDERGARTEN, APPROXIMATELY ONE-HALF OF CHILDREN IN THE BIG LIFT DISTRICTS WERE READING ON GRADE LEVEL

Total pooled sample

Group	Percentage
All children	56
Big Lift preschool	48
Non–Big Lift preschool	65
No preschool	43

Children from lower-income families

Group	Percentage
All children	45
Big Lift preschool	46
Non–Big Lift preschool	51
No preschool	33

Percentage of children reading on grade level

SOURCES: SMCOE database; kindergarten entry forms.
NOTE: The sample size for all children in the total pooled sample is 3,394. Within the total pooled sample, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 922, 1,741, and 461. Included in the all-children bar are 270 children with unknown preschool experiences. The sample size for all children in the lower-income subgroup is 1,519. Within the sample of children in the lower-income subgroup, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 755, 502, and 245. Included in the all-children bar are 17 children with unknown preschool experiences. The samples consist of children from the 2016 and 2017 K classes in the Cohort 1 and Cohort 2 districts.

FIGURE 6. AT THE START OF FIRST GRADE, ABOUT 60 PERCENT OF CHILDREN IN THE BIG LIFT DISTRICTS WERE READING ON GRADE LEVEL

Total pooled sample

Children from lower-income families

Percentage of children reading on grade level

SOURCES: SMCOE database; kindergarten entry forms.
NOTE: The sample size for all children in the total pooled sample is 3,394. Within the total pooled sample, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 922, 1,741, and 461. Included in the all-children bar are 270 children with unknown preschool experiences. The sample size for all children in the lower-income subgroup is 1,519. Within the sample of children in the lower-income subgroup, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 755, 502, and 245. Included in the all-children bar are 17 children with unknown preschool experiences. The samples consist of children from the 2016 and 2017 K classes in the Cohort 1 and Cohort 2 districts.

a higher percentage of Big Lift children were reading on grade level than children who did not attend preschool (45 percent of Big Lift children were reading on grade level, compared with 39 percent of their peers who did not attend preschool).

As we discussed in the previous section on research question 1, the preschool groups not only have different outcomes but also are different on several key demographic characteristics. We present full descriptive statistics for the follow-up sample in the Technical Appendix. However, the patterns described for the full pooled sample of the three kindergarten classes remain consistent here. On nearly all demographic characteristics, children who attended Big Lift preschool face more social disadvantages than both their peers who attended other preschool programs and those who did not go to preschool at all.

Adjusted Differences in Reading Levels at the End of Kindergarten and the Start of First Grade by Preschool Group
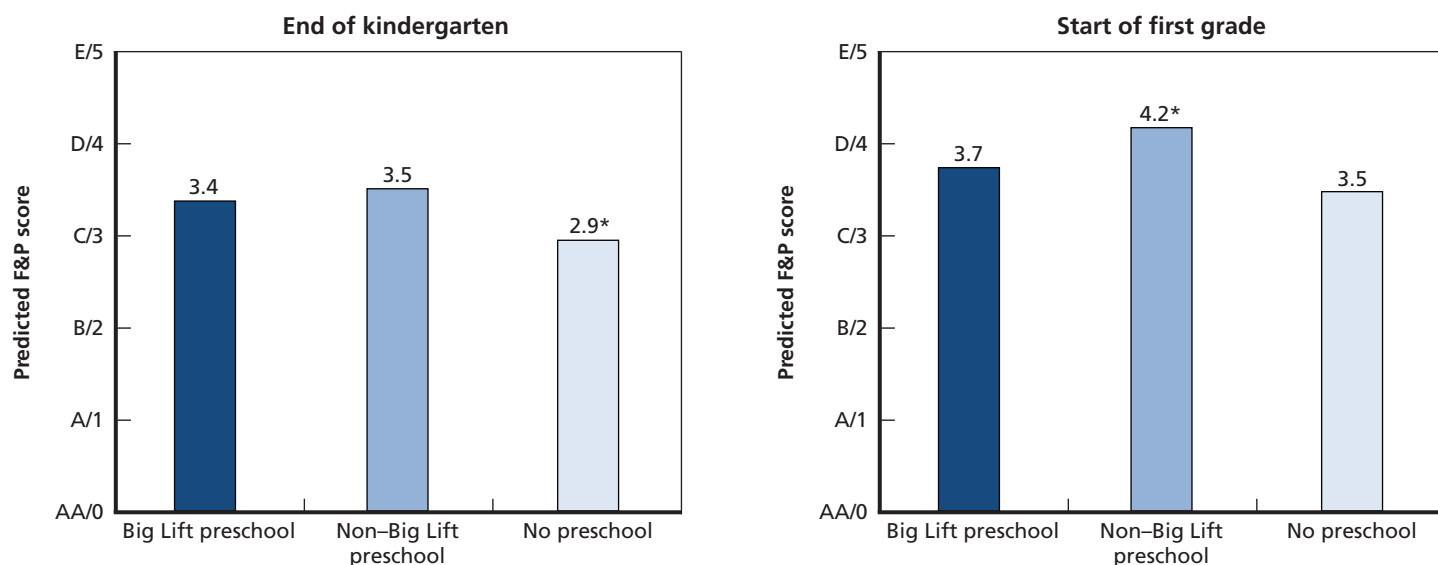
In Figure 7, we present the results of estimating adjusted differences in children's F&P scores at the end of kindergarten and the start of first grade, accounting for demographic characteristics. These adjusted comparisons allow us to test how Big Lift preschoolers fared in early elementary school compared with non–Big Lift peers who had similar home and family circumstances. The left panel presents results for the end of kindergarten and the right panel presents results for the start of first grade.

In Figure 7, the left side of the graph shows that the predicted mean score at the end of kindergarten for the Big Lift preschool group was a 3.4 (between a C and a D), 0.5 levels higher than children who did not go to preschool. This adjusted difference was statistically significant. Thus, when we controlled for key demographic differences, Big Lift preschoolers continued to show an advantage over children who did not go to preschool through the kindergarten year.

The non–Big Lift preschool group had a predicted mean of 3.5. The adjusted difference between Big Lift preschoolers and non-Big Lift preschoolers is not statistically significant. When we compared demographically similar peers, Big Lift preschoolers and non–Big Lift preschoolers ended kindergarten reading at the same level, with demographic characteristics held constant.

FIGURE 7. ADJUSTED DIFFERENCES BETWEEN THE PRESCHOOL GROUPS' READING SCORES AT THE END OF KINDERGARTEN AND THE START OF FIRST GRADE

SOURCE: Authors' analysis of SMCOE data.
NOTES: The sample consists of children from the 2016 and 2017 K classes in the Cohort 1 and Cohort 2 districts. The figure presents predicted mean scores and adjusted differences between groups. Models control for demographic characteristics presented in Table A.1. To calculate the predicted means, all covariates have been set to the sample means. See the online Technical Appendix for full model details and results.
* = difference between the Big Lift preschool group and the other group in question is statistically significant at $p < 0.05$.

> Key Finding: At the end of kindergarten, Big Lift preschoolers had reading levels that were higher than those of demographically similar children who did not go to preschool and that were on par with children who attended other preschool programs.

> Key Finding: At the start of first grade, Big Lift preschoolers had reading levels that were on par with those of children who did not go to preschool and that were lower than those of children who attended other preschool programs.

We conducted the same comparative analyses within the subgroup of children from lower-income families and found results that were nearly identical to those of the full sample. Specifically, when we adjusted for key demographic characteristics, lower-income Big Lift preschoolers scored significantly higher on the F&P (by 0.4 reading levels) than children who did not attend preschool, and lower-income Big Lift preschoolers scored on par with children who attended non–Big Lift preschools at the end of kindergarten.

The right side of Figure 7 shows a different pattern of results for the start of first grade. Here, we see that the predicted mean for each of the groups is higher at the start of first grade than at the end of kindergarten, a finding that is consistent with the unadjusted differences presented earlier. Big Lift preschoolers had a predicted mean of 3.7, non–Big Lift preschoolers had a predicted mean of 4.2, and children who did not go to preschool had a predicted mean of 3.5. The adjusted difference between Big Lift preschoolers and children who did not go preschool is not statistically significant. Thus, when we compared demographically similar peers, Big Lift preschoolers and children who did not go to preschool began first grade reading at approximately the same level. This is a different pattern than we observed on the left side of the figure; as we noted earlier, at the end of kindergarten, Big Lift preschoolers

scored, on average, significantly higher than children who did not attend preschool. Indeed, this pattern might suggest that by the fall of first grade, children who did not attend preschool had "caught up" to Big Lift preschoolers.

The 0.5-level difference between Big Lift preschoolers and non–Big Lift preschoolers (approximately half a reading level) is statistically significant. In other words, we find that when key child and family characteristics are controlled, children who went to Big Lift preschools began first grade scoring lower than children who went to other community preschools. This pattern, too, is different than that which we observed on the left side of the graph, at the end of kindergarten.

As with the scores from the end of kindergarten, we also compared the preschool groups' outcomes at the start of first grade within a lower-income subgroup; the results were similar to those of the full sample.[30]

Examining Late Fall Test Dates: Sensitivity Analyses

As we noted earlier, approximately one-quarter of children in the pooled sample were late fall testers—or had scores for the fall of first grade that were collected in November or December. When comparing key demographic characteristics of these late fall testers with characteristics of children who were assessed from August through October, we found that there were some important differences among the groups that deserve attention. First, the late fall testers tended to come from lower-income homes and have parents with lower levels of education.[31] In addition, the late fall testers attended only three districts in first grade—SSFUSD, Redwood City School District, and San Bruno Park School District—with a large majority (approximately 92 percent) attending only the first two districts. As a result, the late fall testers do not uniformly represent the Big Lift districts. Finally, the late fall testers are overrepresented in the non–Big Lift preschool group. Approximately 29 percent of non–Big Lift preschoolers were late fall testers, compared with about 21 percent of children who attended Big Lift preschool and who did not attend preschool at all. Given that children who were tested later in the year had more school year learning time and might have had higher scores as a result, the disproportionate number of non–Big Lift preschoolers in this group could influence the group comparisons.

Key Finding: Within a sample of early fall testers only, Big Lift preschoolers had reading levels at the start of first grade that were higher than those of children who did not go to preschool and lower than those of children who attended other preschool programs.

To address these testing date concerns, we conducted a sensitivity analysis in which we excluded the late fall testers from the preschool group comparisons of children's scores from the fall of first grade. The early fall tester sample consisted of a total of 2,552 children. These analyses yielded slightly different results than those of the full sample. Within the sample of early testers, we found that Big Lift preschoolers scored significantly higher than children who did not attend preschool, by about 0.4 F&P reading levels. This is different than the pattern observed in the full sample of late and early testers, where we found no difference between these groups. These results suggest that when the sample is limited to children assessed at the start of the year (October or earlier), Big Lift preschoolers began first grade reading at a higher level than children who did not attend preschool. This evidence might indicate that the catch-up observed in the full sample by children who did not attend preschool might be driven by the late testers and the learning they experienced during their first-grade year. In addition, this model continued to show that Big Lift preschoolers scored significantly lower than children who went to non–Big Lift preschool, by approximately 0.4 F&P reading levels (nearly the same estimated difference as in the full sample).

Making Sense of Shifting Patterns

These results indicate shifting patterns as we compared the groups of children with different preschool experiences from kindergarten entry to the start of first grade. Our analyses from research question 1 indicate that, at kindergarten entry, Big Lift preschoolers showed an advantage over children who did not attend preschool and scored lower than children who attended other community preschools (as measured by the Brigance).[32] The F&P results presented here show that by the end of kindergarten, children who attended Big Lift preschool maintained their advantage over children who did not attend preschool and scored on par with children who attended other community preschools. This pattern might indicate that over the course of the kindergarten year, the gap in skills between Big Lift

preschoolers and children who attended other center-based programs might have narrowed, because the statistically significant difference present at kindergarten-entry in Brigance scores was not present at the end of kindergarten in F&P scores.

However, the patterns shifted again by the start of first grade. By this time point, the statistically significant difference between Big Lift preschoolers and their non–Big Lift preschool peers reemerged, in favor of the non–Big Lift preschool group. In addition, we did not find evidence among the full sample that Big Lift preschoolers scored higher than children who did not go to preschool. Different reasons may explain this pattern. It is possible that the validity and reliability of the outcome measure, the F&P, might have affected the results. As described in the Technical Appendix, the F&P is designed as a formative assessment tool meant to inform instruction, not comparative analysis. In addition, different teachers administered the F&P at the end of kindergarten and the start of first grade. Varying degrees of accuracy in the scores between the two time points might have influenced the results.

The shifting patterns also might be related to variation in children's learning experiences at home or at school that our demographic covariates could not control for. Non–Big Lift preschoolers tended to come from families with more social advantages. These families might have been able to access higher-quality educational experiences for their children (e.g., enrolling in the higher-quality schools within the district or ensuring that their child had a teacher best-suited to their needs). Similarly, these parents might have engaged in learning practices at home or accessed high-quality summer learning experiences that benefited their children's development. The effects of these potential advantages, relative to Big Lift preschoolers, might be reflected in the scores from the fall of first grade.

The results from the full sample suggest that children who did not attend preschool "caught up" to Big Lift preschoolers by the fall of first grade; that is, we found no difference between these two groups on their outcomes from the start of first grade. However, this pattern does not hold when we exclude children with late fall testing dates. Indeed, within the sample of early testers, Big Lift preschoolers continued to score higher than children who did not attend preschool. These results suggest that any catching up among children who did not attend preschool might occur during the first-grade year, as a result of learning occurring in school. Indeed, the literature suggests that, in some cases, children who did not attend preschool do catch up to their peers who did over the course of early elementary school (Phillips et al., 2017).
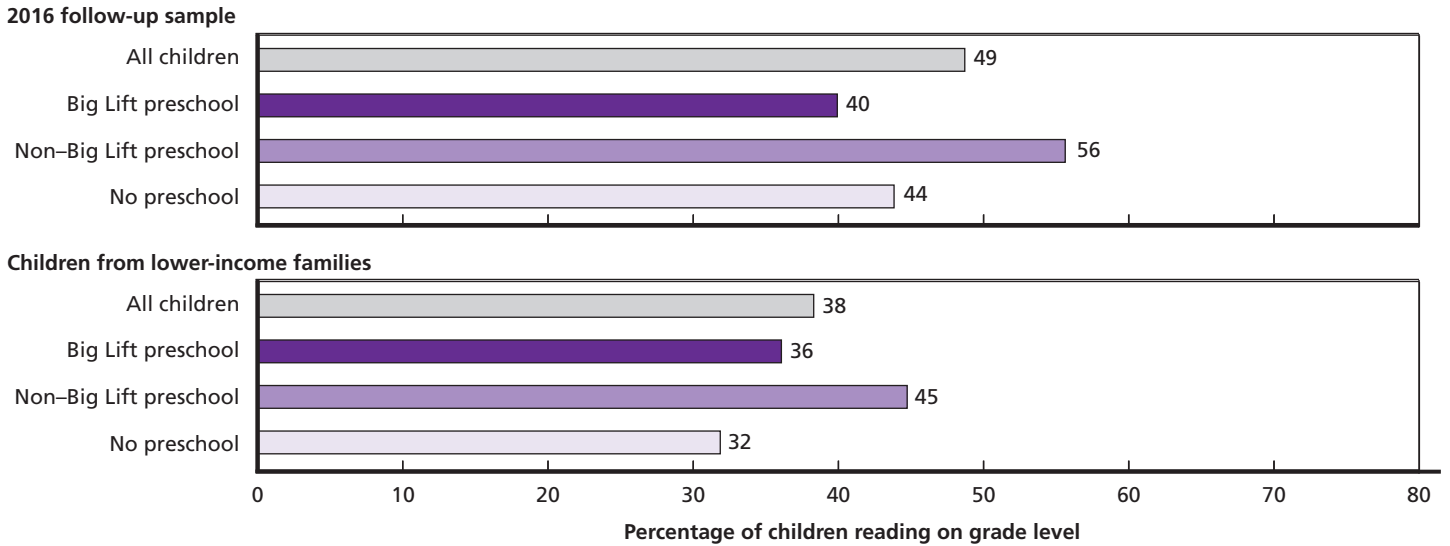
Finally, the pattern of results at the end of kindergarten and the start of first grade in this pooled 2016 and 2017 K class sample differs from that of the results presented in the previous report for the 2016 K class only. In the previous report, we found that at both time points, Big Lift preschoolers in the 2016 K class scored higher than children who did not attend preschool and on par with children who attended non–Big Lift preschools. The different results here, with the pooled sample, continue to suggest that the patterns observed in the 2016 K class do not appear to be replicated in the subsequent K classes served by Big Lift. With this fact in mind, we cautiously present the next set of exploratory results, which use data from the 2016 K class measured at all four time points for which the F&P was administered.

The 2016 K Class: Comparing Outcomes from the End of Kindergarten to the Start of Second Grade

A total of 1,133 children from the 2016 K class sample contributed data for all four possible time points, from the spring of kindergarten through the fall of second grade. This group, the 2016 follow-up sample, represents approximately 75 percent of the original 2016 K class present in the Brigance sample (with the group sample retention rates ranging from about 70 percent among children whose preschool experiences were unknown to 80 percent among Big Lift preschoolers). The distribution of children across the preschool groups is similar to that in the original 2016 K class and in the pooled samples, with 25 percent of children having attended Big Lift preschool. (See the Technical Appendix for a full breakdown of the 2016 follow-up sample.)

We explore the F&P outcomes for this group of children at all four time points for which they contributed data: end of kindergarten, start of first grade, end of first grade, and start of second grade. Here, we do not present descriptive statistics for this group on the first two time points because the distributions are very similar to those presented in Figures 5 and 6. In Figures 8 and 9, we present unadjusted descriptive statistics on children's scores, measured at the end of first grade and the start of second grade for the 2016 follow-up sample and the lower-income subgroup (n = 520). These data represent the first time the Big Lift evaluation has had information on children's reading scores for these latter two time points.
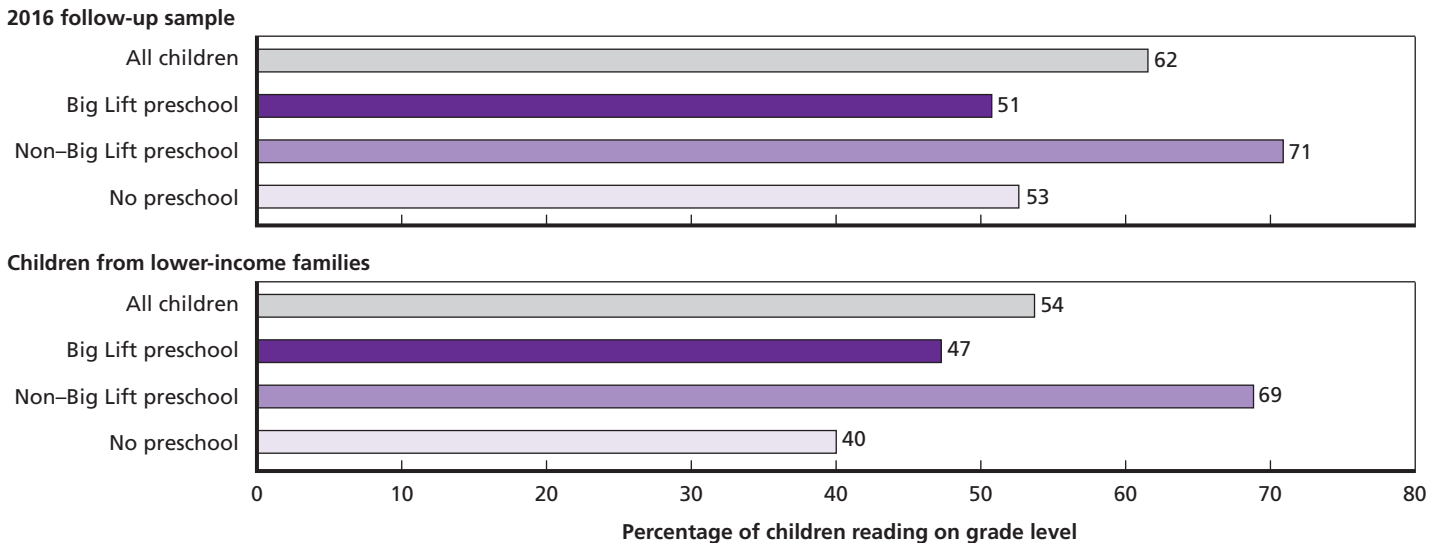
FIGURE 8. AT THE END OF FIRST GRADE, ABOUT 40 PERCENT OF BIG LIFT PRESCHOOLERS WERE READING ON GRADE LEVEL

2016 follow-up sample

Group	Percentage
All children	49
Big Lift preschool	40
Non–Big Lift preschool	56
No preschool	44

Children from lower-income families

Group	Percentage
All children	38
Big Lift preschool	36
Non–Big Lift preschool	45
No preschool	32

Percentage of children reading on grade level

SOURCES: SMCOE database; kindergarten entry forms.
NOTE: The sample size for all children in the total pooled sample is 1,133. Within the total pooled sample, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 286, 606, and 167. Included in the all-children bar are 74 children with unknown preschool experiences. The sample size for all children in the lower-income subgroup is 520. Within the lower-income subgroup, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 247, 186, and 85. Included in the all-children bar are two children with unknown preschool experiences. The samples consist of children from the 2016 K Class in the Cohort 1 districts.

FIGURE 9. AT THE START OF SECOND GRADE, ABOUT 50 PERCENT OF BIG LIFT PRESCHOOLERS WERE READING ON GRADE LEVEL

2016 follow-up sample

Group	Percentage
All children	62
Big Lift preschool	51
Non–Big Lift preschool	71
No preschool	53

Children from lower-income families

Group	Percentage
All children	54
Big Lift preschool	47
Non–Big Lift preschool	69
No preschool	40

Percentage of children reading on grade level

SOURCES: SMCOE database; kindergarten entry forms.
NOTE: The sample size for all children in the total pooled sample is 1,133. Within the total pooled sample, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 286, 606, and 167. Included in the all-children bar are 74 children with unknown preschool experiences. The sample size for all children in the lower-income subgroup is 520. Within the lower-income subgroup, the sample sizes for the Big Lift preschool, non–Big Lift preschool, and no preschool groups are 247, 186, and 85. Included in the all-children bar are two children with unknown preschool experiences. The samples consist of children from the 2016 K Class in the Cohort 1 districts.

As would be expected, the average reading levels at the end of first grade and the start of second grade are higher than those of the earlier time points. At the end of first grade and the start of second grade, the expected reading level is approximately an I. Children in the Big Lift districts scored an average of 8.2, or just above a reading level of H. As Figure 8 shows, about 50 percent of all children scored at or above grade level, while about 40 percent of children from lower-income families scored at grade level. At the start of second grade (Figure 9), the average reading level in the 2016 follow-up sample was 9.2 (a level I), a full level higher than the end of the previous year, and approximately on grade level. More than 60 percent of all children in the Big Lift districts from the 2016 follow-up sample were reading on grade level. Among Big Lift preschoolers alone, about 50 percent of children were reading at a level I or above.

When we make comparisons across the preschool groups, some patterns from the previous time points persist. For example, a higher percentage of children who attended non–Big Lift preschools, compared with children who attended Big Lift preschools, scored at or above the expected reading level at both time points. Big Lift preschoolers and those who did not go to preschool had more-similar scores. However, note that within the total 2016 follow-up sample, at both time points, a slightly higher percentage of children who did not go to preschool were reading on grade level, as compared with children who went to Big Lift preschool. The pattern is reversed when looking only at children from lower-income families (the Big Lift target population): A slightly higher percentage of Big Lift preschoolers were reading on grade level, as compared with children who did not attend preschool.

We also estimated adjusted differences in children's F&P scores at each of the four possible time points, from the end of kindergarten to the start of second grade, for this sample of children in the 2016 K class. Doing so allows us to present exploratory results on whether and/or how the pattern of results among groups with different preschool experiences persists across four time points. We deem these analyses exploratory because the results presented in both this report and the last indicate that the 2016 K class appears to be different in unmeasured ways from the other kindergarten classes served by Big Lift. In addition, this K class includes data only from children in the four Cohort 1 districts, and thus does not represent the entire Big Lift population. Although it is useful to take a preliminary look at the comparisons in this sample, we exercise caution in interpreting or generalizing the results. The most stable analyses and results

include data from at least two K classes and all of the Big Lift districts. The models presented here do not clear that standard.

When we compare the preschool groups in the 2016 K class sample at all four time points, a consistent pattern emerges. From the end of kindergarten to the start of second grade, children who attended Big Lift preschool scored higher than children who did not attend preschool and on par with children who attended other community preschools. The difference in the F&P reading levels between the Big Lift preschool group and children who did not attend preschool ranged from 0.6 reading levels to a little more than one reading level and varied in statistical significance.[33] Note that this pattern is consistent across all statistical models for the 2016 K class, with both the Brigance outcomes and the F&P outcomes, at all time points, from kindergarten entry to the start of first grade. Therefore, the evidence suggests that, for the 2016 K class only, children who attended Big Lift preschool had an advantage over children who did not go to preschool; this advantage was maintained from the start of elementary school through the start of second grade.

CHILDREN'S SUMMER EXPERIENCES AND READING LEVELS IN EARLY ELEMENTARY SCHOOL

In this section, we present results on the relationship between children's summer experiences after kindergarten and first grade and their F&P reading scores at the start of the following school year. These analyses focus on BLIS, the primary program under the Summer Learning pillar of the Big Lift services.[34] Using a pooled sample of children from two kindergarten classes—2016 and 2017—we compared children who attended BLIS as rising first-graders in summer 2017 (for the 2016 K class) or 2018 (for the 2017 K class) with children in the same kindergarten classes who attended other summer programs or who did not attend any summer program at all.[35] We will refer to this sample as the *pooled rising first-grade BLIS sample*.[36] In a sample of children from the 2016 K class only, we conducted a similar comparison of children who attended BLIS in the summer before second grade (summer 2018) with their peers who had different summer experiences. We will refer to this sample as the *rising second-grade BLIS sample*. We do not include the rising kindergartners who attended BLIS in the summers of 2016, 2017, or 2018. Because of a lack of data on the summer experiences of

children who did not attend BLIS, we are unable to construct valid comparison groups. It is for similar reasons that we include only two districts from Cohort 1: SSFUSD and JESD. These are the only two districts that collected the first- and second-grade entry forms and thus had information on summer program enrollment for non-BLIS families.

Children's Summer Experiences Before First and Second Grade

In Table 2, we present descriptive information on children's summer experiences for both the pooled rising first-grade BLIS sample and the rising second-grade BLIS sample in two districts. In both samples, about one-quarter of children attended BLIS. Approximately one-half of children in the samples did not attend any summer program, and the remaining one-quarter attended other community summer programs.

In the pooled rising first-grade BLIS sample, the average reading score at the start of first grade was 3.6, about halfway between a level C and a level D, and about 55 percent of children were reading at a level C or above (see Figure 10). The percentage of children starting first grade reading at a level C was similar across groups, with the exception of children who went to non-BLIS summer programs; 70 percent of these children were reading at a level C or above. In the bottom panel of Figure 10, we present the same statistics for a subgroup of children from lower-income families. For this analysis, we define *lower-*

income children as children from families whose annual income was $100,000 or less. We chose this definition to approximate the income eligibility criterion for BLIS participation, which was slightly more than $100,000 for summer 2018. The lower-income subgroup comprised 1,102 children. Similar to the patterns observed in the preschool analyses, fewer children were reading at grade level in this subgroup.

We observed a similar pattern within the rising second-grade BLIS sample for children's scores from the fall of second grade (Figure 11). The mean score in the sample is 9.5, or halfway between a level I and a level J, and about 64 percent of children were reading at a level I or above. Children who attended other summer programs scored higher than the other two groups. For example, 74 percent of children who attended other summer programs scored on grade level, as compared with 61 percent of children who attended BLIS.

BLIS was designed to help combat summer learning loss. With this goal in mind, it is useful to explore whether and how children's skills changed during the summer months. In Table 3, we display the number and the percentage of children in both the pooled rising first-grade BLIS sample (in the top panel) and the rising second-grade BLIS sample (in the bottom panel), who lost at least one reading level, maintained their reading level, or gained at least one reading level over the summers following kindergarten and first grade. Within the pooled rising first-grade BLIS sample, about 26 percent of students lost at least one level, about 30 percent saw no change
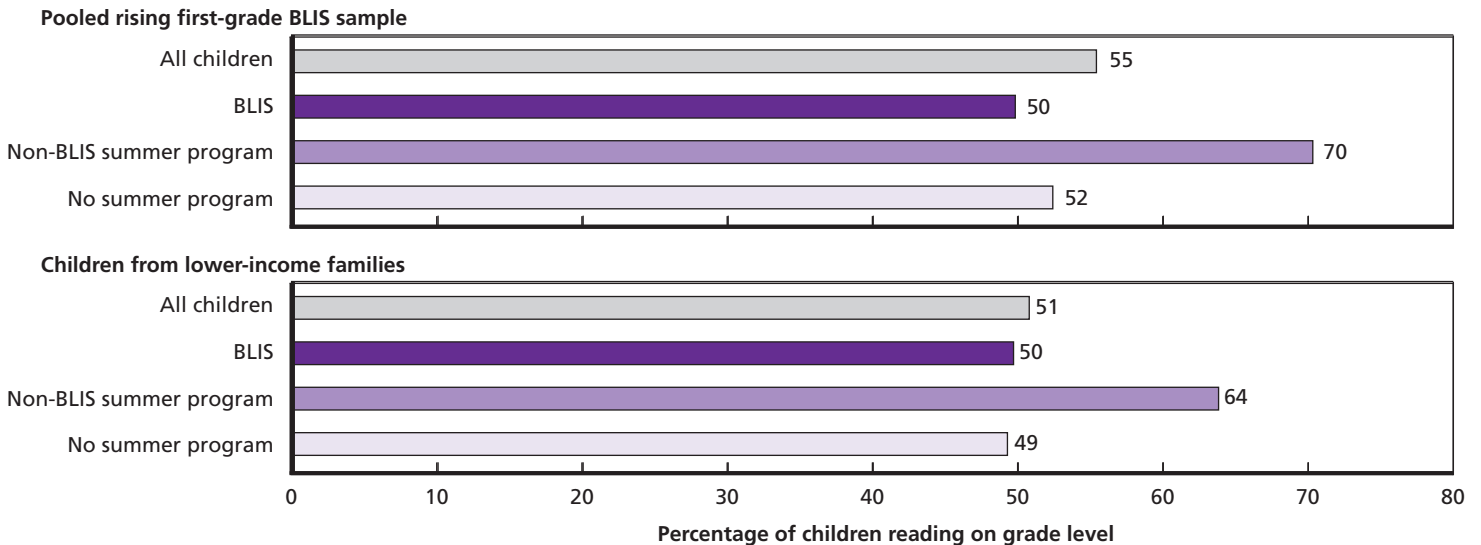
Table 2. About One-Half of Children in the BLIS Samples Did Not Attend Any Summer Program Following Kindergarten and First Grade

	Pooled Rising First-Grade BLIS Sample			Rising Second-Grade BLIS Sample		
	Number of Children	% of the Sample	% Among the Comparison Group	Number of Children	% of the Sample	% Among the Comparison Group
BLIS	385	24.9	—	220	22.4	—
Not BLIS (comparison groups)	1,159	75.1	100.0	760	77.6	100.0
Non-BLIS summer program	343	22.2	29.3	238	24.3	31.3
No summer program	774	50.1	66.8	512	52.2	67.4
Summer experience unknown	42	2.7	3.6	10	1.0	1.3
Total	1,544	100.0	100.0	980	100.0	100.0

SOURCE: SMCOE database.

NOTE: The sample includes children from the 2016 K class in the Cohort 1 districts. Disaggregated figures do not always sum exactly to the associated total because of rounding.
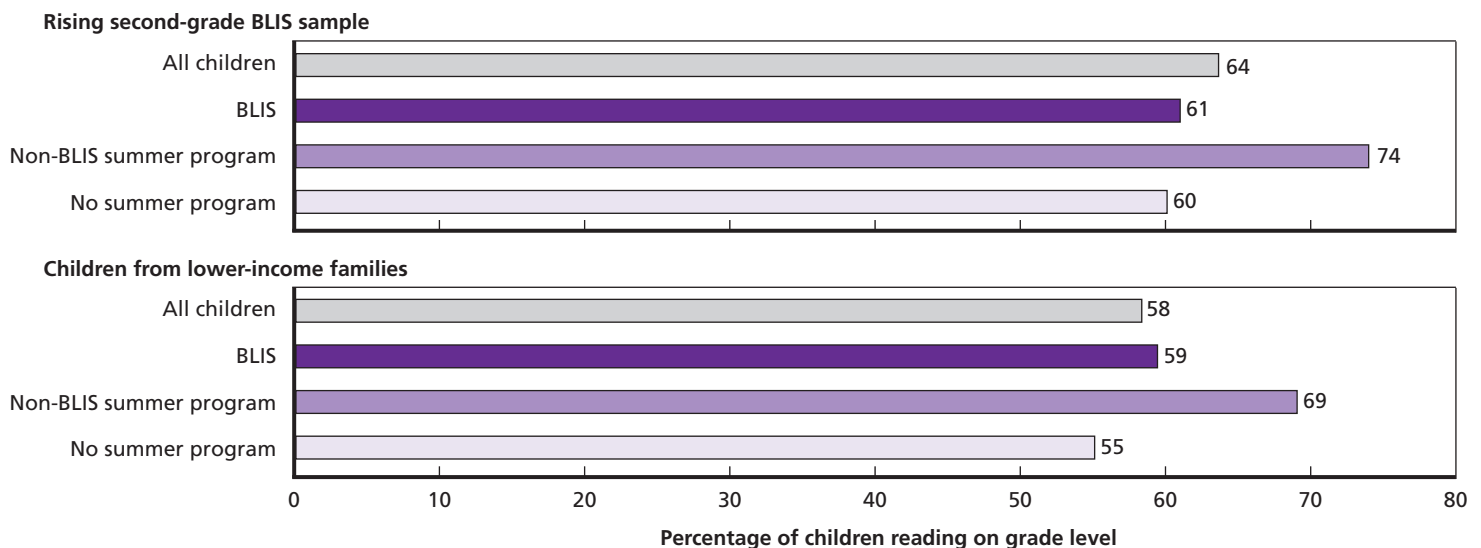
FIGURE 10. AT THE START OF FIRST GRADE, CHILDREN'S READING PROFICIENCY VARIED BY THEIR SUMMER EXPERIENCES

Pooled rising first-grade BLIS sample

All children	55
BLIS	50
Non-BLIS summer program	70
No summer program	52

Children from lower-income families

All children	51
BLIS	50
Non-BLIS summer program	64
No summer program	49

Percentage of children reading on grade level

SOURCES: SMCOE database; first-grade entry forms.
NOTE: The sample size for all children in the total pooled rising first-grade BLIS sample is 2,544. Within the pooled rising first-grade BLIS sample, the sample sizes for the BLIS, non-BLIS summer program, and no summer program groups are 385, 1,343, and 774. Included in the all-children bar are 42 children with unknown summer experiences. The sample size for all children in the lower-income subgroup is 1,102. Within the lower-income subgroup, the sample sizes for the BLIS, non-BLIS summer program, and no summer program groups are 345, 135, and 597, . Included in the all-children bar are 25 children with unknown summer experiences.

FIGURE 11. AT THE START OF SECOND GRADE, CHILDREN'S READING PROFICIENCY VARIED BY THEIR SUMMER EXPERIENCES

Rising second-grade BLIS sample

All children	64
BLIS	61
Non-BLIS summer program	74
No summer program	60

Children from lower-income families

All children	58
BLIS	59
Non-BLIS summer program	69
No summer program	55

Percentage of children reading on grade level

SOURCES: SMCOE database; second-grade entry forms.
NOTE: The sample size for all children in the total rising second-grade BLIS sample is 980. Within the total pooled rising first-grade BLIS sample, the sample sizes for the BLIS, non-BLIS summer program, and no summer program groups are 220, 238, and 512. Included in the all-children bar are ten children with unknown summer experiences. The sample size for all children in the lower-income subgroup is 677. Within the lower-income subgroup, the sample sizes for the BLIS, non-BLIS summer program, and no summer program groups are 192, 100, and 378. Included in the all-children bare are seven children with unknown summer experiences.

Table 3. The Majority of Children Maintained or Increased Their Reading Level During the Summers Before First Grade and Second Grade

Reading Level Gain/Loss	Full Sample		BLIS		Non–BLIS Summer Program		No Summer Program	
	Number of Children	%	Number of Children	%	Number of Children	%	Number of Children	%
Pooled Rising First-Grade BLIS Sample								
Lost at least one reading level	398	25.7	106	27.5	71	20.7	204	26.4
No change	486	31.5	123	32.0	82	23.9	265	34.2
Gained at least one reading level	660	42.8	156	40.5	190	55.4	305	39.4
Rising Second-Grade BLIS Sample								
Lost at least one reading level	176	18.0	37	16.8	47	19.8	89	17.4
No change	231	23.6	58	26.4	44	18.5	125	24.4
Gained at least one reading level	573	58.5	125	56.8	147	61.8	298	58.2

SOURCE: SMCOE database.

NOTE: Included in the full sample are 42 children from the pooled rising first-grade sample and ten children from the rising second-grade sample whose summer experiences are unknown.

over the summer, and slightly more than 40 percent gained at least one reading level. Among the rising second-grade BLIS sample, the distribution was similar, although a smaller share of children lost a level (only 18 percent) and a larger share of children gained at least one level (nearly 60 percent). Thus, the large majority of children in both samples (more than 70 percent) either maintained their skills or gained an F&P reading level over the summers before first and second grade. This pattern was true across all three summer groups—children who attended BLIS and their peers.

Similar to the patterns found among the preschool groups, children who attended BLIS were more socially and economically disadvantaged than children who attended other community summer programs (see Table A.1 at the end of this report). For example, about 30 percent of children in the pooled rising first-grade BLIS sample had a parent with a bachelor's degree or a higher level of education, as compared with about 60 percent of children who attended other summer programs. By design, children who attended BLIS tended to be from lower-income families. About 90 percent of children who attended BLIS came from families earning $100,000 or less, compared with less than 40 percent of children who attended other summer programs.

Adjusted Differences in Reading Levels by Children's Summer Experiences

Given the demographic differences among the children who had various summer experiences, it is important to account for child and family characteristics when comparing the outcomes of children who did and did not attend BLIS. The adjusted comparisons we present in this report not only account for demographic characteristics but also control for children's scores at the end of the school year prior to the summer of interest—the end of kindergarten for the pooled rising first-grade BLIS sample and the end of first grade for the rising second-grade BLIS sample. Controlling for the end-of-school-year scores is akin to comparing demographically similar children who had the *same reading level* at the start of the preceding summer. We first present results for the pooled rising first-grade BLIS sample and then turn to the rising second-grade BLIS sample.

> Key Finding: Within the pooled rising first-grade BLIS sample, children who attended BLIS in the summer following kindergarten had reading levels at the start of first grade that were on par with children who did not attend BLIS, accounting for demographic characteristics. Within a lower-income subgroup, children who attended BLIS in the summer following kindergarten had significantly higher reading levels at the start of first grade than children who did not attend any summer programs.

As shown in the first set of columns in Table 4, the predicted mean scores at the start of first grade across the three groups are all similar, between 3.6 and 3.8. Although the predicted mean for the BLIS group is higher than the other groups, the differences are not statistically significant.

As described in the introduction of this report, BLIS targets families who are lower-income and might have few resources available to send their children to costly summer programs in the community. Therefore, it is useful to compare the outcomes of children with different summer experiences within a lower-income–only subgroup. We conducted additional analyses comparing the summer groups, limiting the pooled rising first-grade BLIS sample to children whose families made $100,000 or less. We present these comparisons in the second half of Table 4 and in Figure 12.

As the exhibits show, we found that lower-income children who attended BLIS scored significantly higher than their similar lower-income peers who did not attend a summer program, accounting for demographic characteristics. The difference

in their scores was about one-third of a reading level. These analyses suggest that within the Big Lift target population of lower-income families, children who attended BLIS following kindergarten began first grade with stronger reading skills than children who did not attend any formal summer enrichment programs.

> Key Finding: Within the rising second-grade BLIS sample, children who attended BLIS in the summer following first grade had reading levels at the start of second grade that were on par with children who did not attend any summer program and that were significantly lower than those of children who attended other summer program, accounting for demographic characteristics.

The patterns observed when comparing children with different summer experiences before second grade differed from those presented for the summer before first grade. We compared children in the full rising second-grade BLIS sample and in a subgroup of lower-income children. As shown in Table 5, children who attended BLIS scored on par with children who did not attend any summer programs; this pattern held constant in the full sample and in the lower-income subgroup. We also found that children who attended BLIS in the summer before second grade scored significantly lower (by 0.7 reading levels) than children who went to other summer programs. When we considered only the lower-income subgroup, this difference was no longer statistically significant. (However, the size of the difference between the groups remained similar, at about 0.6 reading levels.)
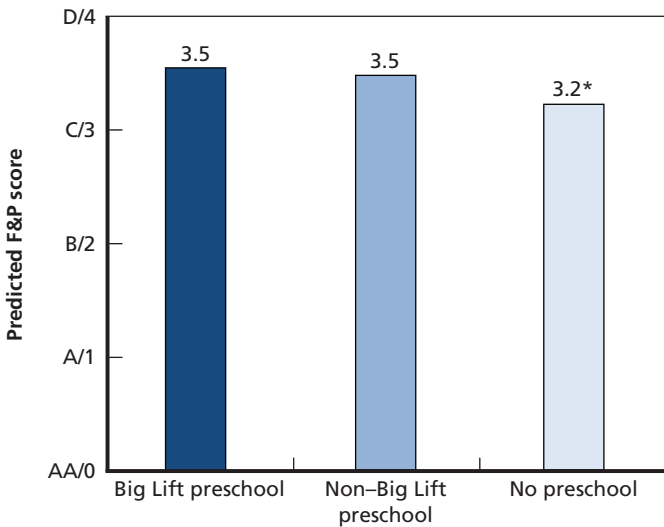
Table 4. At the Start of First Grade, Lower-Income Children Who Attended BLIS Scored Higher than Other Demographically Similar Children Who Attended No Summer Program

Summer Experience	Pooled Rising First-Grade BLIS Sample		Pooled Rising First-Grade BLIS Sample, Lower-Income Only	
	Predicted Mean Score	Adjusted Difference Compared with BLIS	Predicted Mean Score	Adjusted Difference Compared with BLIS
BLIS	3.8	—	3.5	—
Non-BLIS summer program	3.8	0	3.5	0
No summer program	3.6	−0.2	3.2	−0.3*

SOURCE: Authors' analysis of Big Lift data.
NOTE: The sample consists of children from the 2016 and 2017 K classes from the Cohort 1 districts. Models control for demographic characteristics (presented in Table A.1). To calculate the predicted means, all covariates have been set to the sample means. See the Technical Appendix for full model details and results. * = difference between groups is statistically significant at $p < 0.05$.

FIGURE 12. LOWER-INCOME CHILDREN WHO ATTENDED BLIS FOLLOWING KINDERGARTEN BEGAN FIRST GRADE SCORING HIGHER THAN DEMOGRAPHICALLY SIMILAR CHILDREN WHO DID NOT ATTEND ANY SUMMER PROGRAMS

SOURCE: Authors' analysis of Big Lift data.
NOTE: The sample consists of children from the 2016 and the 2017 K classes from SSFUSD and JESD. Models control for demographic characteristics (presented in Table A.1). To calculate the predicted means, all covariates have been set to the sample means. See the online Technical Appendix for full model details and results. * = difference between the BLIS group and the other group in question is statistically significant at $p < 0.05$.

It is important to note that we have little information on the other community summer programs that children in the Big Lift districts attended. These programs might have differed substantially in length and/or content as compared with BLIS. As the demographic characteristics showed, children who attended other summer programs were more likely to come from higher-income families.

It is unclear why the patterns in the BLIS analyses differ between the pooled rising first-grade sample and the rising second-grade sample. Similar to the preschool analyses, challenges regarding the F&P measure's reliability might have affected the results. It also is possible that because summer 2018 was the first time BLIS was offered to rising second-graders, the program staff had not yet adjusted the curriculum to address the learning needs of older children. Or, as noted, the second-grade sample consists of only children from the 2016 K class. Indeed, our analyses suggest that this class might differ from the children in the K classes that succeeded it.

Table 5. At the Start of Second Grade, Children Who Attended BLIS Scored on Par with Demographically Similar Children Who Did Not Attend a Summer Program

	Rising Second-Grade BLIS Sample		Rising Second-Grade BLIS Sample, Lower-Income Only	
Summer Experience	Predicted Mean Score	Adjusted Difference Compared with BLIS	Predicted Mean Score	Adjusted Difference Compared with BLIS
BLIS	9.3	—	8.9	—
Non-BLIS summer program	10.0	0.7*	9.5	0.6
No summer program	9.4	0.1	9.0	0.1

SOURCE: Authors' analysis of Big Lift data.
NOTE: The sample consists of children from the 2016 kindergarten class from SSFUSD and JESD. Models control for demographic characteristics (presented in Table A.1). To calculate the predicted means, all covariates have been set to the sample means. See the Technical Appendix for full model details and results.
* = difference between groups is statistically significant at $p < 0.05$.

SUMMARY, IMPLICATIONS, AND FUTURE DIRECTIONS

In this report, we analyzed data on two of the four Big Lift pillars—High-Quality Preschool and Summer Learning—for children in the Cohort 1 and Cohort 2 districts across three kindergarten classes. We compared the outcomes of children with different early childhood education experiences, including their preschool experiences prior to entering kindergarten and their experiences with summer enrichment programs during elementary school. Our analyses account for important demographic characteristics, such as home language and family income, allowing us to compare children with similar home and family situations. However, these comparisons cannot be viewed as causal estimates of the effects children's experiences in preschool or summer learning programs had on their kindergarten readiness or reading levels. These analyses cannot tell us whether Big Lift improved child outcomes or whether the programs "work." Rather, this report presents a set of descriptive findings meant to shed light on how children who received Big Lift services performed compared with their peers. As we will explain in more detail, these findings can be used to track trends over time and to help Big Lift stakeholders make decisions about how best to serve their communities.

Understanding Differences in Kindergarten Readiness Across the Preschool Groups

We conducted analyses on the school readiness outcomes of the three kindergarten classes served by Big Lift to date—the 2016, 2017, and 2018 K classes.

On average, Big Lift preschool children scored approximately seven points higher on the Brigance than children who did not attend preschool. In addition, children who attended two years of Big Lift preschool began kindergarten with significantly higher scores (by about four points) than children who attended only one year of Big Lift preschool. These findings were consistent in the full sample and in the lower-income subgroup. The results also are aligned with existing literature suggesting that preschool enrollment can support the development of young children compared with those experiencing care only at home with a parent or relative (Feller et al., 2016; Magnuson et al., 2004). In addition, these results suggest that more years of formal early childhood

education promote stronger school-readiness skills (Wen et al., 2012). We also found that Big Lift preschoolers had lower scores on the kindergarten entry assessment than demographically similar children who attended other non–Big Lift preschool programs. On average, Big Lift preschoolers scored three points lower on the Brigance than children who attended other preschool programs. This pattern might be an indicator of the demographic differences between Big Lift preschoolers and their peers; specifically, Big Lift preschoolers tended to be more economically disadvantaged than children who attended other preschools. Although we are able to control for several key demographic characteristics between the groups, it is likely that there are unmeasured differences between the groups that we cannot account for and that could drive the variation in outcomes. In addition, there is little available data on the other community preschools that children in the Big Lift districts attended. These preschools might offer different educational experiences from Big Lift preschools—such as different curricula or different levels of quality.

Following the Preschool Groups Through Elementary School

We conducted analyses to test whether the patterns observed when comparing the preschool groups at kindergarten entry persisted through early elementary school. Using a pooled sample of children from the 2016 and 2017 K classes, we compared the preschool groups at the end of kindergarten and the start of first grade. The patterns differ at the two time points.

At the end of kindergarten, Big Lift preschoolers scored about one-half of a reading level higher, on average, than children who did not attend preschool. Furthermore, Big Lift preschoolers scored on par with children who attended other preschool programs. These results, which were consistent among the lower-income subgroup and the full sample, are encouraging. Taken together with the Brigance results, this pattern suggests that over the course of the kindergarten year, Big Lift preschoolers maintained their advantage over children who did not attend formal early childhood education. In addition, the gap between Big Lift preschoolers and children who attended other community preschools might have narrowed. However, by the next school year, the pattern shifted.

At the start of first grade, Big Lift preschoolers scored on par with children who did not attend preschool and lower than children who attended other community preschools. This result might be due to a combination of factors.

It is possible that the measurement error in the F&P could account for the shifting patterns from the end of kindergarten to the fall of first grade. Or, the group differences might be related to the preschool groups' varying learning experiences in early elementary school and/or at home.

As we noted earlier, the results in the full sample suggest that children who did not attend preschool might have "caught up" to Big Lift preschoolers by the start of first grade. **However, when we compared the children's outcomes at the start of first grade among a sample of children tested early in the fall, we found that Big Lift preschoolers scored higher than children who did not attend preschool.** These findings might indicate that any "catch-up" among children who did not attend preschool might have occurred during the school year.

Comparing Children with Different Summer Experiences

We explored children's summer experiences before first and second grade in two participating districts, JESD and SSFUSD. When comparing children with different experiences, the findings are somewhat mixed.

Within a subgroup of lower-income children, children who attended BLIS before first grade had significantly higher reading scores at the start of the school year than lower-income children who did not attend any summer programs. Lower-income children who attended BLIS scored on par with children who attended other community summer programs. When conducting similar analyses in the full sample (with all income levels), we found no significant differences among the groups, although the comparison between children who attended BLIS and those who did not attend a summer program approached significance, favoring children who attended BLIS. Taken together, this evidence suggests that attending BLIS before first grade might support children's literacy development, particularly among children from lower-income families. These results are encouraging, given that BLIS is specifically designed to support children whose families might not have the financial means to access other community summer programs.

The same pattern did not emerge when addressing children's summer experiences before second grade. **On average, children who attended BLIS before second grade scored on par with children who did not attend a summer program and lower than children who attended other community summer programs.** This general pattern held true in the full sample and within a lower-income subgroup.

Future Directions

The comparative patterns presented here have implications for both research and practice. Both the results from this report and the previous analyses from this multiphase evaluation consistently indicate that children who attended Big Lift preschool enter school with stronger kindergarten readiness skills than children who did not attend preschool, and that attending two years of Big Lift preschool is associated with more benefits than attending just one year. With these results in mind, Big Lift stakeholders should consider ways to increase the number of Big Lift preschool slots—for both three- and four-year-olds—because offering early childhood education to families who would not otherwise have formal care is one way to promote the development of children in San Mateo county.

The results also show that Big Lift preschoolers do not enter kindergarten with the same skills as demographically similar children who attended other community preschool programs. Unpacking these differences might require more information on the specifics of children's educational and family experiences. Our findings from following the preschool groups into elementary school suggest that the advantage that Big Lift preschoolers had over children who did not attend preschool persisted through to the end of kindergarten but might not have lasted into first grade. Future analyses will allow us to test whether these patterns continue to shift as children move through elementary school. In the 2019–2020 school year, the 2016 K class—the children we have followed the longest—will enter third grade and take California's standardized state achievement assessments for the first time. These assessment data will provide Big Lift stakeholders with new information on whether the patterns that emerge from comparing the preschool groups' Brigance and F&P scores are reflected in a standardized assessment.

Our longitudinal analyses also have implications for practice. Big Lift is intended to be a comprehensive initiative that extends from preschool to third grade. A hallmark of other initiatives intended to support children from ages three to eight is an intentionally aligned continuum of connected educational experiences from preschool through early elementary school. For example, some initiatives extending from preschool to third grade include activities to promote a smooth transition from preschool to kindergarten. Others include aligned curricula and common teaching practices across all the early childhood grades (Bogard and Takanishi, 2005). To help maintain the advantage that Big Lift preschoolers experience at kindergarten entry, Big Lift stakeholders are beginning to implement more aligned services across the developmental continuum; develop-

ing and strengthening these services will continue as an important area of focus for the initiative.

Our future analyses will continue to explore BLIS participation. The next report will include two classes of children who could have attended BLIS in the summer before second grade and will therefore provide more data to understand the experiences of older children in the summer months.

In this and all our past reports, we have been limited in the outcomes available for analysis. Although academic measures, such as the Brigance and the F&P, are important for tracking children's progress toward reading proficiency, they are not the only outcomes that are of interest to the Big Lift community. In the coming years, other measures, such as those that capture children's social and emotional development, might be available for use. Indeed, research suggests that high-quality early childhood education can support the development of children's social and emotional competencies, such as emotional understanding and problem solving (Bierman et al., 2008). Future analyses might allow us to test whether similar patterns are observed in the Big Lift districts as well. Given that theory and research suggest that young children who develop positive social and emotional competencies are more likely to experience school success (Raver et al., 2011), focusing on social and emotional learning is in service of Big Lift's goals for children's academic skills and overall positive development.

APPENDIX

In Table A.1, we present the demographic characteristics for some of the analytic samples used in each of the three research questions. For research questions 1 and 2, we present information on the pooled kindergarten class sample across the 2016, 2017, and 2018 K classes. Note that the samples used in research question 2 are subsamples of this pooled sample (see the Technical Appendix for demographic statistics on each of the research question 2 subsamples). For research question 3, we present descriptive statistics for the pooled rising first-grade BLIS sample and the rising second-grade BLIS sample. We have disaggregated each sample by children's early learning experiences relevant to the research question.

| Characteristic | Preschool: Research Questions 1 and 2 | | | | Summer Learning: Research Question 3 | | | | | | | |
| | | | | | Pooled Rising First-Grade BLIS Sample | | | | Rising Second-Grade BLIS Sample | | | |
	Pooled Three K Classes Sample	Big Lift Preschool	Non–Big Lift Preschool	No Preschool	Summer Before First Grade Sample	BLIS	Non-BLIS Summer Program	No Summer Program	Summer Before Second Grade Sample	BLIS	Non-BLIS Summer Program	No Summer Program
Child age (years)	5.6	5.5	5.6	5.5	6.6	6.5	6.6	6.6	7.5	7.5	7.5	7.6
Child gender												
Female	47.9	47.9	48.2	50.5	50.3	49.4	44.3	53.7	49.7	48.2	44.5	53.1
Male	49.8	51.9	50.2	49.2	48.2	49.9	53.9	44.6	50.3	51.8	55.5	46.9
Missing	2.2	0.2	1.5	0.2	1.6	0.8	1.7	1.7	0.0	0.0	0.0	0.0
Race/ethnicity[a] *												
Hispanic	48.7	77.4	32.7	51.1	41.3	53.8	26.8	40.7	43.6	52.7	33.2	43.6
Black/African-American	1.1	0.9	1.1	0.9	1.4	0.5	1.7	1.4	1.5	0.5	2.1	1.8
White/Caucasian	14.8	4.4	23.3	6.8	8.4	4.9	12.0	8.1	6.5	5.5	10.9	5.1
Asian	26.1	14.1	32.0	32.7	43.2	36.1	50.1	45.0	45.2	37.7	48.3	47.7
Other	5.4	2.0	7.6	5.6	5.6	4.2	9.3	4.5	2.9	3.2	5.5	1.6
Missing	3.9	1.2	3.2	2.9	0.3	0.5	0.0	0.3	0.3	0.5	0.0	0.4
Home language*												
English	49.1	24.2	62.8	46.6	59.5	52.2	73.8	58.0	58.3	49.1	72.3	56.3
Not English	50.7	75.7	37.1	53.4	39.8	47.3	26.2	41.5	40.8	50.0	26.9	43.0
Missing	0.2	0.2	0.1	0.0	0.7	0.5	0.0	0.5	0.9	0.9	0.8	0.8
Mother age at child birth*												
Younger than 20 (teen mom)	4.4	6.9	2.9	6.6	3.7	4.9	0.9	4.5	4.0	5.5	2.1	3.9
Older than 20	80.2	87.7	87.1	86.3	89.3	89.1	91.5	88.9	87.9	86.8	88.7	88.5
Missing	15.4	5.4	10.1	7.1	7.0	6.0	7.6	6.6	8.2	7.7	9.2	7.6

| Characteristic | Preschool: Research Questions 1 and 2 | | | | Summer Learning: Research Question 3 | | | | | | | |
| | | | | | Pooled Rising First-Grade BLIS Sample | | | | Rising Second-Grade BLIS Sample | | | |
	Pooled Three K Classes Sample	Big Lift Preschool	Non–Big Lift Preschool	No Preschool	Summer Before Grade 1 Sample	BLIS	Non-BLIS Summer Program	No Summer Program	Summer Before Grade 2 Sample	BLIS	Non-BLIS Summer Program	No Summer Program
Parents in the home*												
Two-parent home	69.0	69.1	78.6	73.2	76.4	69.1	81.9	78.6	76.7	68.6	79.4	79.7
Single-parent home	17.1	24.3	14.5	21.5	19.7	24.9	15.2	18.6	19.4	25.9	18.1	16.6
Missing	13.9	6.6	6.9	5.3	4.0	6.0	2.9	2.8	3.9	5.5	2.5	3.7
Parent education*												
Less than high school degree	10.2	21.1	4.7	12.9	7.4	7.5	1.5	8.9	7.7	9.5	2.1	9.2
High school diploma/GED	31.9	52.7	21.7	44.4	34.7	43.4	19.0	37.5	35.1	41.8	18.9	39.6
Associate's degree	11.6	11.4	12.3	16.6	17.9	18.2	15.5	19.4	14.9	14.1	9.2	18.2
Bachelor's degree +	34.3	12.5	55.3	22.6	37.4	28.3	63.0	31.3	39.7	31.8	68.5	29.9
Missing	12.0	2.4	5.9	3.6	2.7	2.6	1.2	3.0	2.7	2.7	1.3	3.1
Family income*												
Less than $10,000	7.6	12.9	4.7	11.4	6.9	9.9	2.9	6.6	6.9	10.5	2.5	7.2
$10,001–$25,000	14.7	29.5	8.1	16.9	13.7	19.7	5.0	14.6	12.7	15.5	5.9	13.9
$25,001–$50,000	21.0	36.1	14.2	27.3	28.2	37.1	11.1	32.0	25.5	38.2	10.5	27.5
$50,001–$100,000	15.2	12.3	17.5	21.0	22.5	22.9	20.4	23.9	24.0	23.2	23.1	25.2

| Characteristic | **Preschool: Research Questions 1 and 2** | | | | **Summer Learning: Research Question 3** | | | | | | | |
| | | | | | **Pooled Rising First-Grade BLIS Sample** | | | | **Rising Second-Grade BLIS Sample** | | | |
	Pooled Three K Classes Sample	Big Lift Preschool	Non–Big Lift Preschool	No Preschool	Summer Before Grade 1 Sample	BLIS	Non-BLIS Summer Program	No Summer Program	Summer Before Grade 2 Sample	BLIS	Non-BLIS Summer Program	No Summer Program
$100,001–$150,000	9.8	1.5	16.2	8.9	11.8	4.2	22.7	10.9	13.5	6.4	20.2	13.3
More than $150,000	13.3	0.4	25.7	2.8	10.2	1.0	32.1	5.3	10.6	0.9	31.1	5.5
Missing	18.4	7.3	13.6	11.8	6.7	5.2	5.8	6.7	6.8	5.5	6.7	7.4
Number of children	6,802.0	1,895.0	3,390.0	924.0	1,544.0	385.0	343.0	774.0	980.0	220.0	238.0	512.0

SOURCE: SMCOE database; kindergarten, first-grade, and second-grade entry forms.

NOTES: The controls for research questions 1 and 2 were measured at the start of kindergarten for the 2017–2018 kindergarten class (fall of 2017); the controls for research question 3 were measured at the start of the school year following the summer of interest. Disaggregated figures do not always sum exactly to the associated total because of rounding. GED = general educational development.

[a] The race/ethnicity variables are mutually exclusive categories; see the Technical Appendix for more detail on variable creation.

* Indicates that there is a statistically significant difference between the groups of children with different summer experiences in the pooled rising first-grade BLIS sample on the indicated demographic characteristic. Group differences were determined from a Pearson's chi-squared test at an alpha level of $p < 0.05$.

+ Indicates that there is a statistically significant difference between the groups of children with different summer experiences in the rising second-grade BLIS sample on the indicated demographic characteristic. Group differences were determined from a Pearson's chi-squared test at an alpha level of $p < 0.05$.

NOTES

[1] *Collective impact* is a process through which individuals and organizations from a variety of sectors commit to a common agenda for solving a complex problem (Preskill, Parkhurst, and Juster, 2014).

[2] See Gomez et al., 2017, for a review of the research literature that helped motivate the Big Lift initiative and its pillars.

[3] The information presented in this section is drawn from Gomez et al., 2017, and Gomez et al., 2018.

[4] In summer 2016 and summer 2017, BLIS was a five-week program. Starting in 2018, all but one district (La Honda-Pescadero Unified School District) implemented BLIS for four weeks.

[5] The Big Lift income threshold is based on U.S. Department of Housing and Urban Development rent and income limits, updated annually (County of San Mateo Department of Housing, undated).

[6] Although not shown in Figure 1, BLIS was offered in summer 2019. Because the analyses in this report do not address BLIS 2019, we have chosen to leave it off the figure.

[7] No other districts in either Cohort 1 or Cohort 2 administered the first- or second-grade entry forms.

[8] The districts also supply data on children who were enrolled in TK in the year before kindergarten. Children who went to TK and did not go to Big Lift preschool were included in the non–Big Lift preschool group. Children who went to TK and also went to Big Lift preschool were included in the Big Lift preschool group. We do not control for TK attendance in our primary models because of issues related to data quality and completeness. However, sensitivity analyses indicate that controlling for TK would not change our primary results.

[9] The pooled sample represents from 95 percent to 99 percent of the full kindergarten classes. Specifically, the 2016 K sample represents 96 percent of the full kindergarten class in the Cohort 1 and Cohort 2 districts, and the 2018 K class sample represents about 95 percent of the kindergarten class in the districts. The 1–5 percent of children not included in our sample comprises children enrolled in special education classes (the districts do not administer the Brigance to these children) and children who were not assessed on the Brigance because of absence.

[10] Note that it is possible that children who attended Big Lift preschool might not have enrolled in kindergarten in a Big Lift district. Because the SMCOE data system only tracks children who enrolled in one of the seven participating Big Lift districts, we are unable to follow Big Lift preschoolers who did not attend kindergarten in one of these districts.

[11] Note that the children who attended one year of Big Lift preschool are a heterogenous group. Among the 2017 and 2018 K classes, we estimate that approximately 63 percent of children attended only Big Lift preschool and 37 percent of children attended another type of preschool or early education program (in addition to Big Lift preschool) before entering kindergarten. For example, some children attended Big Lift preschool at age four, but their parents reported that they attended a different preschool at age three. Unfortunately, because of data collection practices, similar information does not exist for the 2016 kindergarten class. As a result, we are not able to fully estimate, or account for, the variety of experiences among the group of children who had only one year of Big Lift preschool.

[12] The Big Lift preschools all serve families who face economic disadvantages, although the specific income requirements vary by program. Of the income categories captured on the kindergarten entry form, $50,000 is the best approximation of the income of the Big Lift preschool target population. For example, Big Lift preschool programs include both the California State Preschool Program (CSPP) and Head Start centers. The income eligibility criterion for the 2019–2020 school year for CSPP was approximately $76,000 for a family of four (SMCOE, undated); for Head Start, the cap was about $26,000 for a family of four (Benefits.gov, undated). The average of these two figures is $50,000 or less per year, and a reasonable approximation of the Big Lift target population.

[13] See Gomez et al., 2017, for a detailed discussion of the confounding factors.

[14] The Big Lift preschool group consists of children who attended one or two years of Big Lift preschool.

[15] The effect sizes are Cohen's d calculated with full sample standard deviation, 15.8. Effect sizes often are used to compare the magnitude of effects across studies. For context, Karoly and Auger's review (2016) of primarily causal evaluations of preschool programs found that most programs with positive statistically significant effects on children's school readiness had effect sizes that ranged from 17 percent to 120 percent of a standard deviation, with most between 20 and 50 percent. Thus, 44 percent of a standard deviation, the difference between Big Lift preschoolers and children who did not attend preschool, is within this range.

[16] These statistics were estimated from logistic regression models that compared the three preschool groups model with a binary outcome measuring whether children were kindergarten-ready (earned a score of 90 or above). See the Technical Appendix for details. The reader also should note that the percentage-point difference in the share of children likely to be kindergarten-ready is a different kind of statistic than the effect sizes expressed in the standard deviation units. The effect size presented in text is the difference in points on the Brigance represented as a percentage of a standard deviation. Both statistics—the percentage-point difference and the effect size—are used to compare the groups, but they are on different metrics and are estimated using different statistical models.

[17] As described earlier, we chose $50,000 or less because it approximates the income caps for some Big Lift preschool programs, such as Head Start and CSPP, and the large majority of Big Lift preschoolers came from families that fell into this income category.

[18] Indeed, the coefficients from the regression models and the sizes of the effects on the lower-income sample were very similar to those from the full sample. Specifically, lower-income Big Lift preschoolers scored 7.3 points higher on the Brigance and were 20.6 percentage points more likely to be kindergarten-ready than similar lower-income peers who did not attend preschool. In addition, lower-income Big Lift preschoolers scored 2.7 points lower on the Brigance and were 6.6 percentage points less likely to be kindergarten-ready than similar lower-income peers who attended other community preschools.

[19] There are some statistically significant differences on the key demographic characteristics among the three kindergarten classes included in the sample. See the Technical Appendix for a complete presentation of the demographic comparisons.

[20] Note that approximately 15 percent of the pooled kindergarten class sample ($n = 1,015$) were missing data on the reading frequency outcome. We used a Pearson's chi-squared test to compare the children who did and did not have outcome data on the key demographic characteristics measured at kindergarten entry. We found statistically significant differences between the two groups on several demographic characteristics, such as parent education and family income, suggesting that the children without reading data were more socially disadvantaged than children who did have data on these outcomes. These comparisons indicate that our results might not be generalizable to the entire Big Lift population, and, more specifically, to the most disadvantaged families.

[21] See the Technical Appendix for the full set of results for the 2018 K class. The 2017 K class results are reported in Gomez et al., 2018.

[22] However, it is likely that some children in the 2016 K class who attended a Big Lift preschool in the 2015–2016 school year also attended that same center in 2014–2015 as three-year-olds (prior to Big Lift funding). Although these children were able to receive only one year of Big Lift–funded services, some might have had two years of preschool education.

[23] We did, however, conduct a sensitivity analysis excluding the children who attended Big Lift preschool only as three-year-olds. The results from the models with a sample that includes children who attended one year of Big Lift preschool only as four-year-olds were nearly identical to those fit on the full sample. This result provides some evidence to suggest that the inclusion of children who only attended Big Lift preschools as three-year-olds does not change the results from the full sample. So, if there are differences between attending one year of preschool at age three versus age four, our results do not appear to be biased by such a difference.

[24] Our analyses showed that children, on average, who attended other community preschools also scored higher than children who did not go to preschool, indicating that the preschool advantage is not specific to Big Lift preschool.

[25] See Gomez et al., 2018, for a more thorough review of the literature on the persistence of preschool effects.

[26] This pooled sample ($n = 3,394$) represents 80 percent of the children in the 2016 and 2017 K classes analyzed in the kindergarten readiness comparisons. Children were excluded because they were missing F&P scores from the end of kindergarten and/or the start of first grade. As a result, there was a 20 percent attrition rate in the sample. We conducted Pearson's chi-squared tests (for the categorical variables) and OLS regression (for the continuous variables) to compare the 803 children dropped from the analyses with those included in the pooled sample on the key demographic characteristics measured at kindergarten entry. The children excluded from the analyses appear to be more socioeconomically disadvantaged than their peers who had data for all time points. Specifically, children dropped from the analyses had statistically significantly lower Brigance scores at K entry, had parents with lower levels of education, and came from lower-income homes. This suggests that our follow-up sample is relatively more disadvantaged and that our findings might not be generalizable to all children in the Big Lift districts. However, we did not observe differential attrition by the three preschool groups of interest. Therefore, there is no evidence to suggest that our comparisons of the preschool groups are biased.

[27] The F&P has two different reading level scores: independent and instructional. The *independent* level is the one at which a child can read without support; the *instructional* level indicates an ability to read with appropriate scaffolding. The publishers issue grade-level benchmark standards only for the instructional reading level. We have only the independent reading level data for analysis. Based on the publisher's estimated relationship between the instructional and independent reading levels, level C is an estimated but not validated benchmark for end-of-kindergarten independent reading level.

[28] As with the Brigance comparisons, *lower-income* is defined as families with an annual income of $50,000 or less.

[29] As noted in the text, the reader should keep in mind that 842 children (or nearly one-quarter of the sample) were tested in November or December, well into their first-grade year. The children who were tested later had higher average scores and thus raise the overall sample average. The estimated expected reading level for November and December is higher than a C—approximately an E. Therefore, the sample average reading level does not give a truly accurate picture of the percentage of children reading on grade level in the early months of first grade. We do not account for testing dates here, but we do account for the differences in testing dates in our comparative models (see the Technical Appendix for details).

[30] Among the lower-income subgroup, controlling for key demographic characteristics, there was a 0.3-level difference between the F&P scores of Big Lift preschoolers and those of children who did not go to preschool, in favor of Big Lift preschoolers, that was significant at the $p < 0.10$ alpha level.

[31] These were statistically significant differences based on a Pearson chi-squared test at the $p < 0.05$ alpha level.

[32] The results we present for research question 1 (using the Brigance as an outcome) are for a pooled sample of three kindergarten classes (2016, 2017, and 2018). However, we also ran our final research question 1 models on a pooled sample of the 2016 and 2017 K classes (mirroring the sample here for research question 2). The pattern of results and the coefficients of interest were very similar for the 2016 and 2017 K sample and for the sample with the pooled three kindergarten classes.

[33] At the end of kindergarten and the end of first grade, the coefficients estimating the difference between Big Lift preschool and non–Big Lift preschool were statistically significant at the $p < 0.05$ level. At the start of first and second grades, the coefficients were statistically significant at the $p < 0.10$ level.

[34] As described earlier in the report, children who attended Big Lift preschool were eligible for BLIS and given priority during enrollment. However, children who did not attend Big Lift preschool also were able to participate in BLIS.

[35] See Gomez et al., 2018, for similar analyses that include a sample of the 2016 K class only.

[36] The pooled rising first-grade BLIS sample excludes 275 children from the 2016 K class with first-grade testing dates from late fall (November or December). Assessment scores from November and December reflect three to four months of schooling, and, likely, learning that took place after the end of summer. Thus, it is not appropriate to use these scores to determine the extent to which children's scores at the start of the school year varied. See Gomez et al., 2018, for a more detailed discussion of this analytic choice.

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About This Report

The Big Lift™ (Big Lift) is a preschool–third-grade collective impact initiative in San Mateo County, California. The initiative is a partnership of the County of San Mateo, San Mateo County Office of Education, and the Silicon Valley Community Foundation. Launched in 2012, the initiative aims to boost children's reading proficiency by third grade through four coordinated strategies, called pillars: (1) High-Quality Preschool; (2) Summer Learning; (3) Attendance; and (4) Family Engagement. To date, the initiative involves seven school districts in San Mateo County that began implementing Big Lift services in the 2015–2016 or the 2016–2017 school year.

The RAND Corporation is conducting a multiphase evaluation of the initiative, including an implementation study of the four pillars that underlie Big Lift—*The Big Lift Implementation Study: Final Report*—and a series of annual descriptive analyses focused on the outcomes of children who received Big Lift services. This report is the third in the series of outcome studies. The first two reports—*Big Lift Participation and School Entry Indicators: Findings for the 2016–2017 Kindergarten Class* and *The Big Lift Descriptive Analyses: Kindergarten Readiness and Elementary School Reading Outcomes for the 2016–2017 and 2017–2018 Kindergarten Classes*—focused on the early education and summer learning experiences of the 2016–2017 and 2017–2018 kindergarten classes. In this report, we continue to follow these children through elementary school and add data for a new class of children, the 2018–2019 kindergarten class. We also focus on pooling data across kindergarten classes to understand how Big Lift children compare with their peers among all children eligible for services to date. The report should be of interest to Big Lift stakeholders, including San Mateo County policymakers, educators, parents, and community members. Practitioners, policymakers, advocates, and researchers in other parts of the United States might find the information on this initiative useful for work related to the planning, implementation, or evaluation of other initiatives extending from early childhood through third grade.

This study was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. This study was commissioned by Big Lift with generous funding from the County of San Mateo.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to cgomez@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.