



Working Paper:

Do Parents Know “High Quality” Preschool When They See It?

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High quality early childhood education (ECE) programs can lead to substantial benefits for children, however many children are not attending programs of sufficient quality to yield meaningful developmental gains. To address this problem, states have increasingly turned to Quality Rating and Improvement Systems (QRIS), early childhood accountability systems that aim to improve ECE quality through incentives, supports, and information campaigns. Such informational interventions hinge on the assumption that parents are currently unable to assess ECE quality. This study examines the validity of this assumption, which is largely untested to date, using data from a sample of low-income families with four-year-olds attending publicly-funded ECE programs. We examine whether parents’ evaluation of their child’s program is explained by an extensive set of quality measures including: observational measures of the quality of classroom instruction; measures of children’s learning gains; measures of structural quality; and measures of program convenience. We find that parents’ evaluations of their program were not systematically related with any of the measures of quality, corroborating this key assumption of QRIS, and suggest that there may be a role for informational interventions in ECE markets.

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DO PARENTS KNOW “HIGH QUALITY” PRESCHOOL WHEN THEY SEE IT?

Daphna Bassok, Anna J. Markowitz, Daniel Player, & Michelle Zagardo

High quality early childhood programs can lead to important short and long-term benefits for children (Barnett, Jung, Youn, & Frede, 2013; Campbell et al., 2012; Gormley, Gayer, Phillips, & Dawson, 2005; Heckman, 2008). Unfortunately, many children attend low to mediocre quality early childhood (ECE) programs which are unlikely to yield the sizable benefits observed in the highest quality programs and touted by early childhood advocates (Barnett et al., 2010; Bassok & Galdo, 2016; Burchinal, Vandergrift, Pianta, & Mashburn, 2010; Dowsett, Huston, Imes, & Gennetian, 2008). Over the past two decades there have been major efforts to improve the quality of early childhood programs through public investments as well as increased regulations (Magnuson & Shager, 2010). More recently, Quality Rating and Improvement Systems (QRIS), which are early childhood accountability systems that aim to improve early childhood program quality through incentives, supports, and information campaigns, have emerged as a new approach to quality improvement. There are currently 40 QRIS in the country with several more in planning and pilot phases.

One goal of QRIS is to provide parents with clear information about the quality of local ECE programs. QRIS rate and publicize the quality of participating programs (Zellman & Perlman, 2008; Zellman, Perlman, Le, & Setodji, 2008), and typically include measures of structural quality such as class size and teacher experience and education as well as classroom observation tools. The QRIS theory of action posits that if parents have access to easy-to-understand information about the quality of available child care programs they will select higher quality options, increase demand for high quality care, improve the child care supply and ultimately improve children’s developmental trajectories (Zellman & Perlman, 2008; Zellman, Perlman, Le, & Setodji, 2008). This theory relies heavily on the assumption that children are in low quality centers because parents cannot accurately assess the quality of their early care and education options.

The goal of the current paper is to examine whether this assumption, largely untested to date, holds. Using new data from a sample of low-income families whose children attend publicly-funded ECE programs in Louisiana (including child care, Head Start and pre-kindergarten), we examine to what extent parents’ satisfaction with their child’s ECE program is related to actual program features. Specifically, we examine whether parents’ satisfaction with their child’s program is explained by an extensive set of quality measures including: (1) observational measures of the quality

of classroom instruction, (2) measures of structural quality such as teachers' education levels, (3) measures of children's learning gains, and (4) measures of program convenience (e.g. hours of operation).

We find that parents' overall ratings of satisfaction with their programs were not systematically related with *any* of the above measures of quality. We do find some suggestive evidence that satisfaction with specific features of ECE programs (e.g. convenience) is related to direct measures of that quality feature (e.g. length of day). However, these links were not consistent and in general, parents' assessments of specific quality measures were largely unrelated with any of the true measures of quality. Our results corroborate a key assumption of QRIS, that parents are unable to accurately assess program quality, and in doing so suggest that there may be a role for informational interventions in ECE markets.

Information Disparities in Early Care and Education Markets

There is substantial evidence that information interventions are effective across a variety of consumer settings, including health care (Dafny & Dranove, 2008; Jin & Sorenson, 2006; Pope, 2009), restaurants (Jin & Leslie, 2003; Wong, McKelvey, Ito, Schiff, Jacobson, & Kass, 2015), and the K-12 sector (Friesen, Javdani, Smith, & Woodcock, 2012; Koning & van der Wiel, 2013; Hastings, van Weelden, & Weinstein, 2007), in terms of both changes in consumers' choices and quality improvements in the rated organizations. In the K-12 sector, experimental evidence demonstrates that parents shift their school choices in response to easy-to-understand school quality information (Hastings & Weinstein, 2008), and non-experimental evidence that the publication of school report cards led students to leave schools that received worse evaluations (e.g. Friesen et al., 2002; Hanushek, Kain, Rivkin, & Branch, 2007; Koning & van der Wiel, 2013).

To date, however, there has been no research that directly assesses the impact of information on consumer decision making within the ECE sector. The K-12 studies suggest a promising potential role for information interventions in the early childhood sector. However, the market for ECE differs substantially from the K-12 setting. Relative to the K-12 sector, there are more meaningful differences in cost (e.g. between free Head Start and pre-kindergarten programs and private child care centers that generally require a fee, even when subsidized), available transportation, hours of operation and other logistical factors in ECE that may play a large role in parents' choices (Emlen, 2010).

Parents do report that they value high quality and developmentally engaging ECE programs (Barbarin et al., 2006; Cryer & Burchinal, 1997; Chaudry et al., 2011; Meyers & Jordan, 2006; Rose & Elicker, 2008; Shlay, 2010). However, existing research suggests that parents' actual choices—especially among low-income families—may be driven less by quality and more by practical concerns around affordability, location, and convenience (Chaudry et al., 2011). If the programs rated as high quality fail to meet families' practical needs, providing quality information through QRIS may not lead to the expected changes in parental choice.

With few exceptions (e.g. Starr et al., 2012; Tout et al., 2011), much of the research on QRIS does not focus on the role of quality information in informing parents' decision making and instead focuses on measuring the association between QRIS star ratings and observed quality or child outcomes (Buettner & Andrews, 2009; Goffin & Barnett, 2015). Moreover, the existing research on parents' evaluations of quality is dated, drawn from ECE markets prior to the rise of public pre-kindergarten (e.g. Cryer & Burchinal, 1997; Cryer et al., 2002; Morris, 1999). Thus the present study aims to provide comprehensive new information about an underlying assumption of the QRIS logic model by identifying whether parents in the current ECE market effectively evaluate quality, defined as observed process and structural quality, children's learning gains, and observed convenience of the care setting, as indicated by provision of services, hours of operation, provision of sick care, and other convenience features.

Parental Evaluation of ECE Quality

Parents rate their own child's ECE program highly (Helburn & Bergmann, 2002; Meyers & Jordan, 2006). For example, a nationally representative poll of 1,120 parents conducted in the summer of 2016 reported that 88% of parents rate their child's program as "very good" or "excellent" (National Public Radio, 2016). Similarly, data from a representative, statewide survey of families using childcare in Minnesota revealed that 95% of parents would "always" (86%) or "usually" (9%) choose the same program again (Chase & Valorose, 2010). This pattern persists among low-income samples, for whom ECE program quality is, on average, lower. For example, in a sample of low-income Black parents, Shlay, Tran, Weinraub, and Harmon (2005) report that 94% of parents are either somewhat satisfied (42%) or very satisfied (52%) with their children's ECE program. Similarly Raikes, Torquati, Wang, and Shjesgtad (2012) reported that 73.6% of their sample of subsidy receiving mothers rated the overall quality of their child's program as perfect or excellent; a finding echoed by Van Horn, Ramey, Mulvihill, and Newell (2001), who reported that nearly all

the mothers in their sample of subsidy recipients reported being highly satisfied with their current ECE program.

The high levels of satisfaction are consistent with the K-12 literature, which also shows parents rate their children's schools quite highly; 70% of parents rate their child's schools as a grade "B" or higher (Education Next, 2016). However, parents' high ratings of child care and preschool settings are incongruent with the low levels of quality in many early childhood programs. For example Burchinal and colleagues (2010) reported that 87% of publicly funded preschool classrooms have levels of instructional support that are too low to promote school readiness.

Several studies have examined the apparent misalignment in parents' assessments of quality more directly by comparing the ratings of parents and trained observers on identical scales. These types of studies again indicate that parents rate the quality of their child's ECE program more highly than the trained observers (Barros & Leal, 2015; Grammatikopoulos, Gregoriadis, Tsigilis, & Zachopoulou, 2014; Helburn & Howes, 1996). For example, Cryer and Burchinal (1997) demonstrated that when parents and trained observers both use the Early Childhood Environment Rating Scale (ECERS, Harms, Clifford, & Cryer, 1998), parents rated program quality as on average equal to 6.07 (out of 7), whereas the observers rated the same programs as 3.47. Similarly Cryer et al. (2002) report that parents using the ECERS on average rated all features of their programs between 5.24 and 6.57 on the 7 point scales, substantially higher than the trained observers.

Parents' high and systematically inflated ratings of quality are often seen as evidence of their inability to discern between low and high quality care programs. Theoretical and empirical work suggests that ECE markets are characterized by imperfect information (Blau, 2001; Mocan, 2007; Morris, 1999; Walker, 1991). Most parents do not spend enough time in an ECE program to accurately evaluate the program's quality, and their young children are generally unreliable reporters of program quality. Instead, parents rely primarily on recommendations from family and friends, and at times, on program features that may be easy to discern but are weak indicators of quality (Forry, Isner, Daneri, & Tout, 2014; Layzer, Goodson, & Brown-Lyons, 2007; Mocan, 2007; Meyers & Jordan, 2006). This asymmetry of information may result in adverse selection in the ECE market, and the provision of lower quality early care and education than is optimal (Mocan, 2007; Morris, 1999; Walker, 1991).

At the same time, the fact that parents systematically rate their child's ECE program highly does not, on its own, imply that parents are poor assessors of program quality. One possibility is that parents *are* aware of program quality, and that their ratings are inflated but accurate reflections of

program quality. The evidence on this is mixed. Several studies have shown that parent ratings are only modestly correlated with those of outside raters (Cryer, Tietze, & Wessels, 2002; Torquati et al., 2011). For example Barros and Leal (2015) report that parents' global quality ratings were correlated 0.25 with outside observers. Cryer et al. (2002) report that parents' ECERS ratings were correlated 0.17 with the ratings of experts.

Using the same data, however, Mocan (2007) demonstrated that although parents substantially overestimate quality, after accounting for this systematic score inflation parents' ratings do parallel those of trained observers; that is, for 70% of the estimated relationships between parent and observer ratings, a null hypothesis that $r = 1.00$ could not be rejected after scaling for overestimation. Similarly, Araujo, Carneiro, Cruz-Aguayo, and Schady (2016) report that Ecuadorian parents' ratings of kindergarten teachers are correlated with both the average value added score of the teacher's classroom and the teacher's score on the Classroom Assessment Scoring System (CLASS, Pianta, La Paro, & Hamre, 2008), a widely used tool for measuring the quality of teacher-child interactions. For example Araujo and colleagues (2016) find that parents are 15 percentage points more likely to classify a teacher who produces one standard deviation higher test scores as "very good" as opposed to "good" or less. Similarly, in the K-12 sector, Chingos, Henderson and West (2012) find that parents' assessments of school quality are strongly related to objective measures (test scores) of true performance. Taken together, these findings suggest that in some contexts, parents may be able to judge quality, but that their ratings may not map precisely onto tools currently used by researchers.

Another possibility is that parents' high ratings of their child's program may be an artifact of survey design. Single item satisfaction measures—in which parents provide an overall evaluation of the program—are used in the majority of surveys assessing parent satisfaction. However, these aggregated assessments of quality may not be capturing parents' assessments of "quality" as intended by researchers. Parents may value aspects of the program that differ from the quality measures typically considered by researchers. A parent may, for example, rate a program highly because it is close to their workplace, offers long hours, and provides two meals a day. This type of "functional quality" is distinct from the quality that is typically measured by researchers or included in QRIS systems. Parents may provide a more accurate rating of satisfaction if asked to rate specific features of the program, rather than overall satisfaction.

Finally, even if parents are *aware* of quality problems with their program, their sense of guilt, shame or anxiety around leaving their young child in a low-quality program may keep them from

reporting low levels of quality (Lamb & Ahnert, 2006). That is, parents may be hesitant to report that aspects of the program are unsatisfactory or low quality; thus, there may be more variation and/or accuracy in response to items framed in a way that does not require parents to explicitly denigrate the program where they leave their child.

Limitations of the Existing Literature for QRIS Applications

The informational component of QRIS is predicated on the idea that parents are not able to adequately evaluate the quality of their ECE options. A large number of studies have shown that most parents report they are quite satisfied with their child's ECE program. This high level of satisfaction provides some indirect support for the notion that parents are struggling to distinguish between higher and lower quality options. However, the existing research on parents' ability to accurately assess care quality is limited in a number of important ways.

Most existing studies that directly compare parents' evaluations of quality to observed quality are outdated (conducted prior to the rise of publicly funded pre-kindergarten) and under-represent low-income families (Cryer & Burchinal, 1997; Cryer et al., 2002; Mocan, 2007), or were conducted overseas (e.g. Araujo et al., 2016; Barros & Leal, 2015; Grammatikopoulos et al., 2014). There are no studies that reflect the current early childhood landscape, and particularly the diverse set of public and private preschool options.

Additionally, to date, nearly every study that directly compares parent evaluations with trained observers uses the Environmental Rating Scales. These scales represent one widely used measure of ECE quality. However, a number of recent studies have raised questions about the Environmental Rating Scales as a measure of ECE quality (Gordon et al., 2013; Hofer, 2010; Layzer & Goodson, 2006; Perlman, Zellman, & Le, 2004). Even assuming that the ECER scales accurately capture one aspect of the quality of the ECE environment, they may not measure the aspects of quality that are most salient in the decision-making of families, particularly low-income families. Research on the preferences of low-income families suggest that parents evaluate quality, convenience, and cost when making child care decisions, and that low-income families in particular are constrained by cost and convenience considerations (Forry et al., 2013; Forry et al., 2014; Grogan, 2012; Kim & Fram, 2009; Peyton et al., 2001; Rose & Elicker, 2008; Van Horn et al., 2001). No studies we are aware of have examined whether parents satisfaction with their child's ECE is related to these measures of "practical quality," however. If parents' evaluations of program quality are tightly linked to objective measures of cost and convenience, it may be that parents are already

identifying and using the features of quality that are most relevant for their choices. If this is the case, informational interventions such as QRIS are not likely to change parents' ECE decisions.

Present Study

This study improves on the existing literature in several ways. First, we leverage a recent sample of providers from Louisiana during the 2014-2015 academic year who served primarily low-income families. Thus our sample includes the full scope of the diverse ECE landscape, including publicly funded programs such as Head Start and pre-k, as well as private pre-k and child care settings.

Second, we consider more diverse measures of program quality than previously used. We include both measures typically included in QRIS, such as measures of structural quality (e.g. teacher education and experience) and an observational measure of teacher-child interactions (CLASS), and measures not typically included in QRIS, such as child outcomes (directly-assessed measures of children's learning gains throughout the preschool year) and aspects of convenience (e.g. hours, sick care) and cost (director report of whether families pay for care).

Finally, rather than focusing solely on aggregate measures of satisfaction (e.g. overall, how happy are you with the quality of your child's care), we consider three types of satisfaction measures: (1) overall satisfaction, (2) satisfaction with specific features of the program (e.g. cleanliness, hours, warmth of teachers), and (3) items asking parents to choose their "most liked" program features. By using these varied approaches we are able to assess if more specific items, or items that allow parents to reveal satisfaction with one feature without criticizing another, provide a different impression of parents' ability to discern program quality.

Method

Data and Sample

Data were collected during the 2014-15 school year as part of a larger study examining efforts to improve quality and reduce fragmentation in Louisiana's early childhood education system. Our research team conducted fall and spring parent surveys, center director surveys, direct assessments of children's literacy, math and executive function skills in the fall and spring, and observations of the care setting using the Classroom Assessment Scoring System (CLASS, Pianta, La Paro, & Hamre, 2008, see below for more information) throughout the year.

The five Louisiana parishes included in the study were selected from 13 parishes that were part of a “pilot year” for a state early childhood reform, and were chosen to maximize regional diversity and include both urban and rural communities. Within parishes, all ECE programs were eligible if they (1) were participating in the state pilot (which included all pre-kindergarten and Head Start programs and a portion of child care programs that accepted subsidies) ; (2) included classrooms that primarily served typically-developing 4-year-old children (e.g., self-contained and reverse mainstream classrooms were excluded). We selected 90 programs across the five parishes, with probability of selection in each parish proportional to the total number of programs in that parish relative to the total number of programs across all five parishes. Within parishes, we randomly selected a stratified sample of child care centers, Head Start programs, pre-kindergarten programs and Nonpublic Schools Early Childhood Development programs (NSECD) which are non-public ECE settings that accept state funding for low-income children.¹ Within each program, all teachers of classrooms serving primarily typically developing four-year-olds were randomly ordered and the first teacher from each program was contacted. Once a teacher agreed to participate, all parents and children from that classroom were recruited to respond to surveys and for direct child assessments. Across the survey data, response rates were moderate to high. The director survey response rate was 94%; the teacher survey response rate was 98.8% (just one teacher missing); and parent survey response rates were 78% in the fall, and 54% in the spring.

The sample for this study was drawn from the 906 parents who responded to the spring survey, which focused on measuring parents’ assessments of the quality of their program.² In order to explore patterns within a “fixed” sample of parents, we restricted our analysis to parents whose children were in classrooms with valid information on *all* quality measures. From these parents, two samples were constructed. The first was an “overall satisfaction sample” ($N= 636$) that included parents who responded to both items assessing their *overall* satisfaction with their child’s program

¹ Ten programs that were randomly selected declined to participate, and were replaced with the next randomly-selected program within parish and type. Six teachers declined to participate or were later found to be ineligible, in these cases the next teacher on the list was contacted.

² Although we cannot assess how the sample respondents compared to the full sample of classroom parents (since we have no family data about non-respondants), t-tests comparing parents who responded in the fall and spring suggested few differences. There were no differences in parent education or child gender, however the spring sample had a larger proportion of parents with incomes under \$15,000, and a smaller proportion of missing income information than the fall.

(see below) as well as all child- and family-level covariates. The second sample included all parents who rated *all* center features and also indicated which two center features they liked most ($N= 566$).³

Families in the study were predominantly low-income; 57 percent reported annual income less than \$25,000, and most parents (85 percent) did not have a bachelor's degree (see Table 1).

About two thirds of the children in the sample were Black.

Measures

Parents' overall satisfaction and evaluation of quality. Information on parents' evaluation of their ECE program were derived from the spring parent survey. Parental satisfaction was assessed using 15 items across three types of questions (see Table 2).

The first two of these items reflect parents' *overall* evaluation of center quality. In the spring, parents were asked “overall, how satisfied are you with the child care/preschool program you selected for your child,” and “how likely would you be to choose this child care/preschool program if you had to do it again?” These items were scored on a four-point Likert scale ranging from “not satisfied”/“not likely” to “very satisfied”/“very likely.” Both items were dichotomized such that a 1 indicates very satisfied or very likely to choose the program again, and 0 indicates all other responses.⁴

Second, parents evaluated seven specific features of the care setting: opportunities to learn academic skills, opportunities to learn social skills, warm/affectionate caregivers; a clean and safe environment; convenient hours; convenient location; and affordability. Parents were asked how much they agree that their current program provides each feature of care, scored on a four-point Likert scale ranging from “strongly disagree” to “strongly agree.” Sample items include “my child's main caregiver/teacher is warm and affectionate” and “this child care/preschool program is affordable for my family” (see Appendix A for a full list of items). Items were recoded into a set of dummy variables coded 1 if parents strongly agreed with the statement, 0 otherwise.

Finally, parents were asked to select the *two* features of their program that they liked the most. Parents were asked to choose which of the following seven options were in their “top two”

³ We conducted specification checks to assess whether results changed (1) if we used listwise deletion and allowed the sample size to vary depending on quality measure and (2) if we restricted our sample even further to those parents who had answered every satisfaction items. Those results, available upon request, suggest little sensitivity across sample restrictions.

⁴ For all of the measures of parental satisfaction rating on four-point Likert scales—the overall satisfaction and parental evaluation of specific setting features—just three to five percent of parents chose either of the two bottom categories. Because over 90% of parents selected either of the top two responses (e.g. agree or strongly agree), the items were coded dichotomously.

favorites: (a) learning, (b) teacher/child interactions, (c) center environment, (d) parental communication with care giver/teacher, (e) convenient location and hours, (f) affordability, and (g) “other.” These questions were recoded into a series of 6 non-mutually exclusive dummy variables in which 1 indicates the feature was one parents liked the most, 0 otherwise (see Appendix A for specific items).

Because these items were all drawn from a survey administered in the spring of the child’s pre-school year, the scores reflect parents’ summative assessment after observing their child’s experience in the classroom for a year, and likely overstate what parents knew when making their initial ECE selection.

Observed program quality. Quality was assessed using observational assessments of quality, average classroom value added learning gains, and a variety of program features (see bottom panel of Table 1).

Observational assessments. On average, classrooms were observed 4 times for 40 minutes per visit over the course of the school year by trained observers using the Classroom Assessment Scoring System (CLASS, Pianta et al., 2008), a validated classroom observation tool that assesses teacher-child interactions. The CLASS system is widely used, for example 18 states use CLASS as part of their QRIS systems, and Head Start uses CLASS as part of its professional development and quality monitoring. Previous research demonstrates that teacher-child interactions can be organized into three broad domains: instructional support, emotional support, and classroom organization (Hamre et al., 2013). Instructional support includes concept development, quality of feedback and language modeling dimensions; emotional support includes positive climate, negative climate, teacher sensitivity, and regard for student perspectives dimensions; and classroom organization includes behavior management, productivity, and instructional learning formats dimensions. These dimensions are each scored on a seven-point scale, and averaged to create domain scores. This study considered both the overall CLASS score, and the 3 domains as measures of observed quality.

Average classroom value-added learning gains. In each study classroom, approximately 12 children were selected at random to be directly assessed on a series of widely-used measures of math, literacy, and executive function by a trained researcher. Assessments occurred in the fall and spring of the preschool year. We generated classroom-level value-added models by averaging the child-level residuals from regressions of the form:

$$\text{Spring Assessment}_i = \beta_0 + \beta_1 \text{Fall Assessment}_i + \epsilon_i$$

Children's math skills were assessed using the applied problems subscale of the Woodcock Johnson (Woodcock, McGrew, Mather, & Schrank, 2001); literacy was assessed using the Peabody Picture Vocabulary Test (PPVT, Dunn & Dunn, 1997), the Test of Preschool Early Literacy (TOPEL, Lonigan, Wagner, Torgesen, & Rashotte, 2007) phonological awareness test, and the Woodcock Johnson picture vocabulary test. Executive function was assessed using the Head Toes Knees Shoulders task (HTKS, Cameron Pointz et al., 2009; McClelland et al., 2007) and the pencil tap test (Blair, 2002; Diamond & Taylor, 1996). HTKS is a task that asks children to inhibit a dominant response (touching their head or toes when asked by an adult) for a nondominant response (touching the opposite—head or toes—of what had been previously instructed), and thus is linked to inhibitory control, working memory, and cognitive flexibility EF domains (McClelland et al., 2014). The pencil tap task asks children to respond to various pencil tap sequences, varying the sequence to require children to use both working memory and cognitive flexibility skills.

Classroom and program features. Information on the structural and convenience features of the child's program were provided through teacher and director surveys.

Structural features. Measures of structural quality included teacher report of their years of experience teaching children younger than kindergarten-aged; teacher's self-reported highest level of education (less than a BA, more than a BA, with BA omitted), and teacher report of enrollment in the classroom on the first day of school.

Convenience features. Convenience features were drawn largely from the director survey and included: a continuous measure of the average length of the school day across all weekdays; indicators for whether the program provides summer care, transportation, or sick care; an indicator for whether the program has regular opportunities for parental involvement (defined as more than four opportunities); a continuous measure of the number of services that the program provides for children (i.e. health screenings, developmental assessments, therapeutic services, counseling services, and social services), and director report on whether families need to pay to attend the program.

Covariates. We estimated models both with and without demographic covariates (see Table 3 and Appendix B). These covariates were included to account for child and family characteristics that may be correlated with both program quality and parent evaluation. Covariates included child age, gender, and race, as well as parent education (coded as a four-level categorical variable: less than a high school education, high school education, some college, with bachelor's degree or more as the omitted category), and a 7-category measure of family income.

Analytic Strategy and Hypotheses

To examine the relationship between parents' evaluation of their ECE program and the observed quality of these programs, we first ran linear probability models (LPM) in which we regressed each of the 15 parental satisfaction measures—the two measures of overall satisfaction, the 7 specific parental evaluation items, and the 6 “most liked” items—on each observable program characteristic individually. These analyses allow us to explore whether specific observed program features are more tightly linked with parental satisfaction and evaluations than others. In particular, we hypothesize that parent evaluations of the specific aspects of ECE quality and the “most liked” items will be more tightly linked with the corresponding measures of quality. For example, we expect parental evaluations of learning at the program to be correlated with value added learning gains, teacher education and experience, and the measure of CLASS instructional support; we expect evaluations of warmth to be correlated with CLASS and teacher education and experience; we expect parental evaluations of convenience to be associated with hours of operation, provision of sick care and summer care, and transportation; and we expect evaluations of affordability to be linked to number of enrolled children, services provided, and whether some families have to pay for the center.

We also ran models in which we regressed each evaluation measure on the full set of program features to explore how much of the variation is explained by the full set of quality measures. If a significant proportion of the variance in any of our measures of satisfaction is predicted by the observed program features, this would provide evidence that parents do use program features in their evaluation of their child's ECE program. All models were run with and without controls for child and family characteristics, and all standard errors were clustered by program. Results were not sensitive to the use of LPM as compared to logit models.

Results

Descriptive Statistics

Table 1 provides descriptive information on the ECE programs in the sample. Programs have, on average, moderate CLASS scores, with low levels of instructional support, consistent with national CLASS data (Burchinal et al., 2010). The modal teacher in these data has a Bachelor's degree, and the mean number of years of experience teaching children younger than kindergarten was 11.27 years (though 45% of teachers had 5 or less years of experience). On average programs operated for 8 hours a day, and all children were in programs that offered services for at least 7

hours a day. Most of the sample attended a free center (83%). Because the value added scores are the average residuals of the regression, the average value added is approximately zero by design.

Parental Satisfaction

Table 2 provides descriptive information on parental satisfaction with their ECE program across three sets of measures. Overall levels of parent satisfaction are high, in concordance with previous literature. Nearly 70% of parents were “very satisfied” with their program, and report being “very likely” to choose their current program again. There is somewhat more variability in parents’ evaluations of specific program features, though ratings remain high. For example, roughly 75% of parents “strongly agree” with individual statements that their program supports academic (79%) and social (75%) development, has a warm and affectionate caregiver (75%), offers a clean, safe environment (73%), and is affordable (74%). A somewhat lower percentage strongly agrees that their program has a convenient location (69%) or that it offers convenient hours (63%).

There is more substantial variation in parental satisfaction when measured with the “most liked” items. For example, while 79% of the sample reported that “helping the child learn” was one of their two favorite program features, just 44% reported that teacher-child interactions were among their favorite features, 12% selected program environment, 23% selected convenience, and just 6% selected affordability.

Associations between Program Features and Overall Satisfaction

Table 3 presents the unadjusted (model 1) and covariate-adjusted (model 2) relationships between parents’ overall satisfaction with their program and individual measures of program quality. These models demonstrate no consistent relationship between any program features and parents’ overall satisfaction with their program; moreover, findings are nearly identical across model 1 and model 2 suggesting that the inclusion of child and family covariates does not change associations. Just two coefficients (of 64) are statistically significant at conventional levels: a negative relationship between transportation provision and parents reporting being very satisfied (in the controlled model), and a positive relationship between attending a program in which some families pay and parents reporting being very satisfied, again in the controlled model.

The bottom panel of Table 3 shows the adjusted R^2 values from the saturated models in which we regress the overall satisfaction on *all* of the quality measures simultaneously to assess the proportion of the total variance in parental satisfaction explained by the full set of quality measures.

The adjusted R^2 , are quite low across all four models— just 3% of the variation in parental satisfaction was explained by our measures of program features, and this only rises to about 5% once we add in demographic covariates.

Associations between Program Features and Parent Ratings of Individual Program Features

Table 4 presents the unadjusted relationship between individual measures of program quality and parent ratings of *specific* program features as well as adjusted R^2 values from saturated models that include all of the individual quality measures simultaneously. Covariate-adjusted models are presented in Appendix B, Table B1 and are not substantively different from the unadjusted models.

Table 4 again reveals limited associations between observed program features and parental ratings of specific program features. Only 6 of 112 (~5%) measures of program quality were significantly related to parent ratings of specific aspects of quality, and in most cases those significant patterns did not align with hypothesized relationships. None of the quality measures—including the value-added measures of direct assessments—were associated with parents' satisfaction with their child's learning at the center. Only an indicator for whether the program provided summer care was significantly (though negatively) related to parents' assessments of the teachers' warmth. Programs that provided transportation were rated as somewhat less “clean and safe” and “convenient.” Parental ratings of affordability were positively associated with the number of children in the classroom, and negatively associated with attending a program that was not free.

Though Table 4 highlights the individual relationships between quality measures and parental ratings of quality, simultaneously accounting for *all* quality measures explained very little of the variation—just two to six percent—in any of the measures of parent satisfaction (see bottom row for relevant R-squared).

Although we explored relationships between all observed program features and all parental ratings, as discussed above, we did not expect associations among all variables. Instead we expected that parent evaluations of specific aspects of ECE quality would be more tightly linked with the corresponding measures of quality. Figure 1 presents a visual representation of the relationships we hypothesized would be stronger based on previous research and theory overlaid with the findings from the present study. As indicated by the highlighted cells, just two of the hypothesized relationships were observed in the present data, both of which linked classroom features to affordability. Specifically, number of children in the classroom was positively correlated with

affordability, and the dichotomous indicator that some families at the program had to pay for care was negatively correlated with affordability.

Finally, we also asked parents to indicate which two features of their programs they liked the most, in order to see whether asking parents to identify favored features (without having to explicitly denigrate any others) provided additional insight into parents' evaluations. Table 5 presents the unadjusted relationship between individual measures of program features and parents' selection of most liked program features. Appendix Table B2 presents these models with the addition of covariates; findings do not substantively differ. There were 11 statistically significant coefficients across 96 estimates, somewhat more than expected by chance. However, as above, these observed measures of quality predicted very little of the variation—just three to five percent—in any of the measures of parent satisfaction.

Figure 2 summarizes the expected and observed associations between quality measures and child outcomes. As indicated by the highlighted cells, three of the hypothesized relationships were actually observed in the present data. Parents were more likely to list learning as one of their two favorite features in classrooms where teachers held more formal education. They were also more likely to list convenience as one of their two favorite features in programs that provided longer hours. Finally, they were *less* likely to choose the learning environment as a favorite in classrooms with greater numbers of children.

However, many hypothesized relationships were not supported by the data, and some relationships that were not hypothesized emerged. Some of the non-hypothesized associations do seem plausible, specifically those related to affordability. For example, though not hypothesized, the provision of summer care and length of day may be positively associated with affordability because these features prevent parents from having to purchase additional care. Similarly, CLASS scores and teacher education may be negatively associated with affordability because these are features of higher quality, and therefore more expensive, programs. Thus, though limited, there were modest correlations between program features and parents' most liked program features. Notably, however, this correlation clustered around easy to observe features (e.g. affordability, convenience) rather than more difficult to observe features (e.g. quality of learning or interactions).

Discussion

In the past decade, states have increasingly turned to informational campaigns as a strategy to increase the quality of early care and education (ECE) programs by leveraging parent demand.

Indeed, between 2004 and 2014 the number of Quality Rating and Improvement Systems (QRIS) in the United States has quadrupled, and the 2014 reauthorization of the Child Care and Development Block Grant requires states to improve access to child care information for parents. In order for informational interventions to be successful, however, it must be the case that parents are unable to assess the quality of their ECE options. If parents are currently assessing ECE quality accurately, then providing this information is unlikely to shift demand. The present study tested the assumption that parents cannot judge ECE quality by examining whether parents' evaluations of their child's ECE program is predicted by observed features of quality.

We improved upon previous work in several ways. First we focused on a recent sample of low-income families in a diverse set of publicly-funded ECE programs. Second, we examined a more extensive set of measures of both observed quality and parental evaluation, including a measure that limits parents' ability to inflate their ECE ratings. Notably we included parental ratings of cost and convenience, dimensions of quality absent from previous research but important for parents' decision making (Forry et al., 2013; 2014; Grogan, 2012; Kim & Fram, 2009; Rose & Elicker, 2008). We also included program features included in many QRIS policies, such as opportunities for parent involvement, teacher education, number of children in the classroom, and observed measures of process quality, as well as measures of children's value-added across several developmental domains.

Consistent with the previous literature, parents showed high levels of overall satisfaction with their ECE program (Helburn & Bergmann, 2002; Meyers & Jordan, 2006; NPR, 2016; Shlay et al, 2005; Raikes et al., 2012; Van Horn et al., 2001): nearly 70% reported that they were "very satisfied" with their program, and that they would be "very likely" to choose their program again. Parents do not rate all aspects of care similarly, however. Items asking parents to evaluate specific program features or asking parents to identify their "most liked" program features uncovered more heterogeneity than has been evident in studies that focused on more aggregated, overall measures. For instance, fewer parents, on average, report higher levels of satisfaction with their children's learning than with the convenience of the programs' hours of operation. Moreover, though nearly 80% of parents selected learning as one of their "most liked" features, just 44% selected teacher warmth and only 12% selected program environment, two program features hypothesized to be key contributors to student learning. Thus the present study suggests that there is some variability in parents' evaluations of program features, particularly when they are given diverse ways to express their preferences.

Nonetheless, parents' satisfaction with and evaluation of their ECE program were not systematically related with an extensive set of quality measures. Our study thus builds on previous research (Cryer et al., 2002; Helburn & Howes, 1996; Mocan, 2007), which also demonstrated weak correspondence between observed quality and parental assessments, but did not account for the aspects of "quality" that may be most salient for low-income parents (e.g. cost and convenience). Our 15 observed measures of program quality—including CLASS scores, children's learning gains, teacher education, and program convenience factors—predicted less than 5% of the variance in overall parental satisfaction, and were inconsistently linked to parents' program evaluations. In uncontrolled models, none of the measures of center quality were associated with parental satisfaction or their willingness to choose their program again. Similarly, in uncontrolled models predicting specific parental evaluations (e.g. satisfaction with the program's convenience or its contribution to children's academic skills), fewer than 5% of coefficients were statistically significant, a finding equivalent to what would be expected due to chance. Further, statistically significant relationships generally did not correspond with hypothesized relationships.

A somewhat stronger pattern of significance emerged in models predicting parents' selection of a program feature as "most liked." These items are unique to this study, and were designed to provide parents with the opportunity to express a preference for one feature over another without having to denigrate other program features. In these models there is some indication, though limited, that parents use easily observed program features, such as hours of operation, number of children, and teacher education in evaluating their program (see Figure 2). These findings suggest that future research should continue to develop innovative ways to elicit parental evaluations, and to measure program features related to cost and convenience in order to understand better parents' evaluation of quality and ECE choices.

Given parents' inability to accurately assess quality, informational interventions may be effective in shaping ECE markets, as they have been in the K-12 sector (Friesen et al., 2002; Hanushek, Kain, Rivkin, & Branch, 2007; Hastings & Weinstein, 2008; Koning & van der Wiel, 2013). Notably, however, the ECE sector is more fragmented and difficult for parents to navigate. ECE settings vary along more dimensions than K-12 settings (e.g. cost, hours), and are divided into a variety of subsectors with various eligibility rules and requirements (e.g. Head Start, subsidized child care, state-funded pre-kindergarten).

On one hand, the complexity of the ECE choice along with parents' inability to assess quality suggests that there may be a particularly large role for informational interventions like the

rapidly expanding QRIS. Indeed, previous research suggests parents would be willing to use QRIS information in their care choices (Chase & Valorose, 2010; Elicker, Langill, Ruprecht, Lewsader & Anderson, 2011; Starr et al., 2012; Tout, Isner, & Zaslow, 2011). For example, Chase and Valorose report that 88% of their sample of Minnesota parents would find a QRIS very helpful (53%) or somewhat helpful (35%), a proportion that was higher among low income parents (61% say very helpful as compared to 45%).

On the other hand, data from Indiana and Kentucky suggests that parents are unaware of existing QRIS (Elicker et al., 2011; Starr et al., 2012), and use QRIS at low levels, suggesting that effective informational interventions must also focus on parent outreach and the provision of specific, relevant information. Further, informational interventions are only effective to the extent that parents actually have a choice to make. That is, for information interventions to succeed it must be the case that a variety of programs—that meet parents needs with respect to affordability and convenience but vary with respect to quality—exist. If children are in low-quality care because of lack of access to high-quality care (either due to lack of slots or affordability), informational interventions are unlikely to be effective.

For families who *do* have access to ECE choices, informational interventions like QRIS may be helpful because they make comparison shopping easier for parents who may have little time to visit several ECE programs. Previous research suggests that parents engage in little to no searching for ECE programs. For example Anderson and colleagues (2005) report that 75% of their sample of subsidy-receiving parents considered just one program. Layzer, Goodson, and Brown-Lyons (2007) report that 41% of parents make their ECE decision in one day, findings echoed by Forry and colleagues (2014). Providing parents with easy to understand information about local ECE options may give parents the ability to more easily compare different programs, including those they may not have heard of from their friends or family, and make different ECE decisions. Indeed, a key feature of Hastings and Weinstein's effective (2008) information intervention in North Carolina public schools was the provision of tailored information about local school choices, again suggesting that parent outreach and more tailored information may be crucial for ECE informational interventions.

Limitations

Our study offers compelling evidence that parents struggle to assess ECE program quality. However, several aspects of the study design limit its external and internal validity. First, although using a recent, low-income sample of preschool parents is a strength of the study, the small number

of parents paying for care—just 17% of parents in the sample attended a program where some parents pay for care—limits the generalizability of the study. The data we leveraged are from a broader study focused on four-year-old children in Louisiana. Because in Louisiana most four-year-olds in publicly-funded care are in Head Start or public pre-kindergarten, we have relatively few children in subsidized child care centers. Head Start and public pre-kindergarten are not only free for parents but are also more highly regulated, which may limit the variation in quality in the sample more generally. A sample that includes more subsidy recipients, and more parents of infants and toddlers, may provide more variability and thus may yield stronger associations between program features and parents' evaluations. Given the importance of cost in parents' care decisions and the variability in quality among subsidy-receiving programs, this sample limitation should be addressed in future research.

Second, like earlier studies, our analysis relies on parental reports of their satisfaction with care. There are various reasons why parents' true assessments of program quality may differ from what they choose to report in a survey. For instance, it may be that parents are acutely aware that their child's ECE program is mediocre or poor, but rate all care settings highly to relieve their own anxiety or to give what they perceive as the socially desirable response (Lamb & Ahnert, 2006). In ongoing work we are therefore examining whether parents' actions (e.g. their rankings of programs during a program enrollment period) are related to program quality in ways that differ from those seen when using parental reports of quality.

Finally, it may be that there are characteristics of parents that are correlated with both the quality of the ECE program chosen and parents' tendency to rate programs either favorably or unfavorably. These unmeasured characteristics could bias the analysis. In particular, if parents who tend to evaluate ECE programs unfavorably on average sort into higher quality programs and parents who tend to evaluate ECE programs favorably on average sort into lower quality programs, then the present study would understate parents' ability to assess ECE quality. Appendices A1 and A2 suggest that findings changed little from controlled to uncontrolled models, suggesting that findings were not sensitive to accounting for family characteristics, but do not fully address the possibility of unmeasured confounding variables.

Conclusions

The present study provides support for the hypothesis that low-income parents struggle to accurately assess the quality of early care and education programs, suggesting that informational

interventions *may* be an effective way to shape parental decision-making and improve overall ECE quality. As policymakers continue to pursue QRIS and other informational strategies for impacting ECE markets, it is important that research continues to evaluate the underlying logic models in order to ensure that policies are effectively responding to the needs of parents of young children. For instance, in Louisiana, where the current study takes place, each parish is now required to provide “single point of entry” systems where parents can quickly learn about the quality and availability of slots in *all* publicly-funded care options in their community. This type of reform provides a unique opportunity to learn about the role of information in shaping parental choice and child outcomes.

Future research should continue to probe the relationship between parents’ preferences, choices, and evaluations using diverse measures of quality and methods of identifying parent evaluations. In particular, experimental research exploring the impact of providing parents with information is a crucial direction for future research, as is continued exploration of the role of ECE supply in shaping parents’ decisions.

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Table 1. Descriptive statistics, program features and child and family demographics.

	<i>Mean</i>	<i>SD</i>	<i>N</i>
<i>Parental Education</i>			
Less than HS	0.13		636
HS graduate	0.31		636
Some college	0.41		636
BA or more	0.15		636
Female child	0.47		636
Child age (years)	4.36	0.38	636
<i>Child Race</i>			
White	0.23		636
Black	0.66		636
Hispanic	0.05		636
Other race	0.06		636
<i>Family Income</i>			
Less than \$15,000	0.40		636
\$15,001-\$25,000	0.17		636
\$25,001-\$35,000	0.10		636
\$35,001-\$45,000	0.05		636
\$45,001-\$65,000	0.06		636
More than \$65,000	0.06		636
Missing income data	0.17		636
<i>Observed Program Features</i>			
Average CLASS score	4.82	0.57	636
CLASS classroom organization score	5.47	0.68	636
CLASS emotional support score	5.76	0.55	636
CLASS instructional support score	2.92	0.79	636
Teacher has less than a BA	0.07		636
Teacher has a BA	0.61		636
Teacher has more than a BA	0.32		636
Teacher experience (grades below kindergarten)	11.27	9.84	636
Number of children in the classroom	18.56	2.15	636
Overall value added learning gains	-0.09	0.92	636
Hours of operation (Monday through Friday)	8.05	1.36	636
Provides summer care	0.26		636
Provides transportation	0.60		636
Provides sick care	0.33		636
Number of social services provided	2.78	1.45	636
Some families in this program pay for care	0.17		636
Provides 4+ opportunities for parent involvement	0.79		636
<i>Care Type</i>			
Head Start	0.27		636

Pre-k	0.54	636
Child care	0.07	636
NSECD	0.11	636

Note. N represents sample based on parent response to the overall satisfaction items and covariates items (sample used in Table 3). CLASS scores are collected using the Classroom Assessment Scoring System, a widely-used, validated classroom observation tool that assesses the quality of teacher-child interactions on a 1-7 scale.

Table 2. Descriptive statistics, parental rating of ECE program.

	<i>Mean</i>	<i>N</i>
<i>Overall Satisfaction</i>		
Parents would choose program again	0.69	636
Parent is very satisfied with program	0.69	636
<i>Parent Agreement that Current Program...</i>		
Teaches academic skills	0.79	627
Child is learning social skills	0.75	626
Main teacher is warm and affectionate	0.75	617
Offers and clean, safe environment	0.73	627
Has convenient hours	0.63	595
Has a convenient location	0.69	624
Is affordable for your family	0.74	623
<i>Parents' Top Two Favorite Program Features</i>		
Helping the child learn	0.79	633
Teacher/child interactions	0.44	577
Center environment	0.12	577
Parent/teacher communication	0.33	577
Convenient location and hours	0.23	577
Affordability	0.06	577

Note. N represents sample based on parent response to overall satisfaction items and covariates.

Table 3. Associations between program features and overall satisfaction.

	Very Satisfied		Choose Program Again	
	Model 1	Model 2	Model 1	Model 2
Average CLASS score	0.05 (0.04)	0.06 (0.04)	0.00 (0.04)	0.01 (0.04)
CLASS classroom organization	0.02 (0.03)	0.02 (0.04)	0.01 (0.03)	0.01 (0.03)
CLASS emotional support	0.04 (0.04)	0.05 (0.04)	0.01 (0.04)	0.01 (0.03)
CLASS instructional support	0.05 (0.03)	+ 0.05 (0.03)	+ -0.01 (0.03)	0.00 (0.03)
Teacher has less than BA	-0.02 (0.09)	-0.02 (0.08)	0.00 (0.10)	0.01 (0.10)
Teacher has more than BA	0.03 (0.05)	0.04 (0.05)	0.07 (0.05)	0.07 (0.04)
Teacher experience (grades below K)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Number of children	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Overall value added learning gains	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)
Hours of operation (M-F)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.01)
Provides summer care	0.07 (0.04)	0.06 (0.04)	0.05 (0.05)	0.06 (0.04)
Provides transportation	-0.09 (0.05)	+ -0.10 (0.04)	* -0.05 (0.05)	-0.06 (0.04)
Provides sick care	-0.06 (0.05)	-0.05 (0.05)	-0.08 (0.05)	-0.06 (0.05)
Number of services provided	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.02)	0.00 (0.02)
Some families pay for care	0.09 (0.06)	+ 0.11 (0.06)	* 0.04 (0.06)	0.05 (0.05)
Provides 4+ opp for parent involve	0.04 (0.05)	0.05 (0.05)	0.03 (0.06)	0.05 (0.05)
N	636	636	636	636
R-squared from saturated model	0.03	0.04	0.03	0.05

Note. $N= 636$. Rows represent the individual association between one program feature and parent satisfaction from a separate regression. Clustered standard errors are presented in parentheses. Model 1 includes program features only; Model 2 also includes family income, parent education, and child

age, race, and gender. The R-squared term reflects the proportion of variance accounted for if all program features are included in a single regression. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table 4. Associations between program features and parent evaluations of specific program features.

	Parent Evaluations						
	Academic Skills	Social Skills	Warm Teachers	Clean and Safe	Conv't Hours	Conv't Locate	Program is Affordable
Average CLASS score	0.02 (0.03)	0.00 (0.03)	-0.01 (0.03)	-0.01 (0.04)	-0.01 (0.04)	-0.02 (0.04)	-0.05 (0.03)
CLASS classroom organization	0.02 (0.03)	0.00 (0.02)	-0.01 (0.02)	0.00 (0.03)	-0.01 (0.03)	0.01 (0.03)	-0.01 (0.03)
CLASS emotional support	0.02 (0.03)	0.00 (0.03)	-0.01 (0.04)	-0.01 (0.03)	0.00 (0.03)	-0.01 (0.04)	-0.04 (0.03)
CLASS instructional support	0.00 (0.03)	0.00 (0.02)	-0.01 (0.03)	-0.01 (0.03)	0.00 (0.03)	-0.04 (0.03)	-0.05 + (0.03)
Teacher has less than BA	-0.03 (0.07)	-0.01 (0.05)	0.04 (0.05)	-0.09 (0.08)	-0.07 (0.08)	-0.12 (0.10)	0.07 (0.10)
Teacher has more than BA	0.03 (0.05)	-0.01 (0.05)	0.07 (0.05)	-0.01 (0.04)	-0.04 (0.05)	0.04 (0.05)	-0.05 (0.05)
Teacher experience (grades < K)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Number of children	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.02 * (0.01)
Overall value added learning gains	0.01 (0.02)	0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)	0.01 (0.02)	0.00 (0.02)	0.01 (0.02)
Hours of operation (M-F)	0.01 (0.01)	-0.02 (0.02)	-0.02 (0.01)	0.00 (0.01)	0.02 (0.02)	0.00 (0.02)	-0.03 + (0.02)
Provides summer care	-0.01 (0.04)	-0.04 (0.05)	-0.09 * (0.04)	0.01 (0.04)	0.06 (0.04)	-0.02 (0.05)	-0.06 (0.06)
Provides transportation	-0.05 (0.04)	-0.02 (0.04)	-0.02 (0.04)	-0.09 * (0.04)	-0.13 ** (0.04)	-0.01 (0.05)	-0.02 (0.04)
Provides sick care	0.01 (0.04)	-0.01 (0.04)	-0.04 (0.04)	-0.10 * (0.04)	-0.03 (0.04)	-0.06 (0.04)	-0.06 (0.05)

Number of services provided	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)	-0.01 (0.01)	-0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Some families pay for care	-0.04 (0.05)	-0.02 (0.06)	-0.05 (0.07)	0.02 (0.05)	0.04 (0.05)	0.04 (0.07)	-0.11 * (0.05)
Provides 4+ opp for parent involve	0.03 (0.05)	0.08 + (0.05)	0.01 (0.04)	-0.02 (0.05)	0.04 (0.05)	-0.06 (0.06)	0.06 (0.05)
R-squared from saturated model	0.03	0.02	0.04	0.02	0.02	0.04	0.06

Note. $N= 566$. Rows represent the individual association between one program feature and parent evaluations of quality. Clustered standard errors are presented in parentheses. The R-squared term reflects the proportion of variance accounted for if all program features are included in a single regression. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

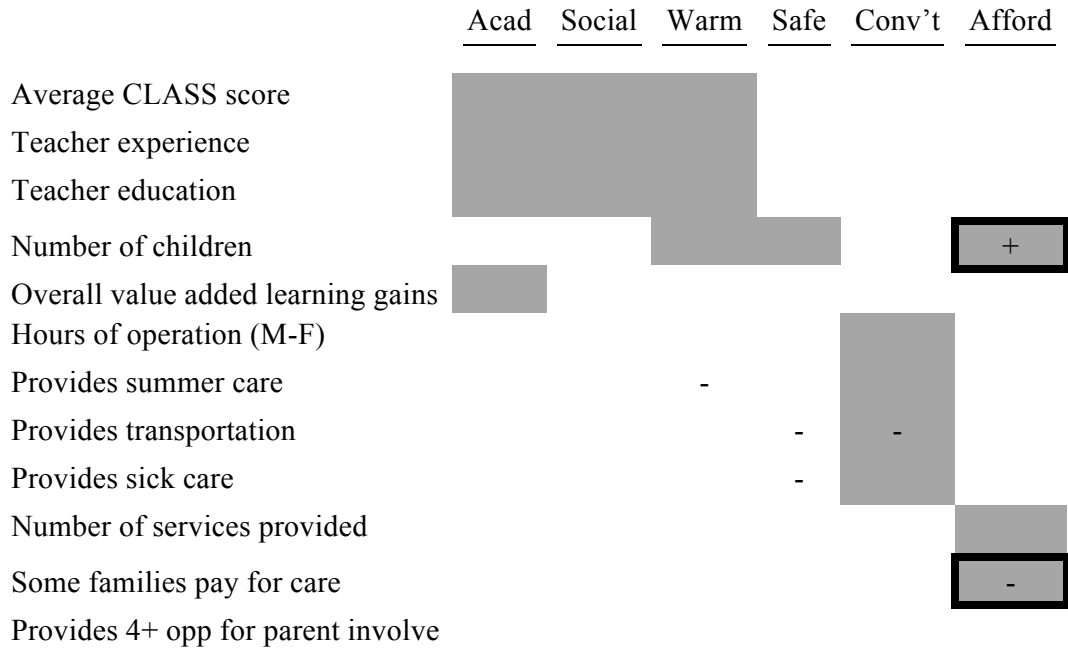
Table 5. Associations between individual program features and parents' choice of most liked program features.

	Parents' Most Liked Features						
	<u>Learning</u>	<u>Teach Int.</u>	<u>Communicate</u>	<u>Environment</u>	<u>Convenience</u>	<u>Affordable</u>	
Average CLASS score	0.02 (0.03)	0.06 (0.05)	-0.01 (0.05)	0.01 (0.03)	-0.07 (0.04)	+	-0.02 (0.02)
CLASS classroom organization	0.02 (0.02)	0.06 (0.04)	+ -0.03 (0.03)	0.00 (0.02)	-0.05 (0.03)	+	-0.02 (0.02)
CLASS emotional support	0.02 (0.03)	0.06 (0.05)	-0.03 (0.04)	0.01 (0.03)	-0.07 (0.04)		-0.01 (0.02)
CLASS instructional support	0.01 (0.02)	0.02 (0.04)	0.02 (0.04)	0.00 (0.02)	-0.04 (0.03)		-0.02 (0.01)
Teacher has less than BA	0.04 (0.08)	-0.06 (0.08)	-0.03 (0.04)	-0.05 (0.06)	0.06 (0.06)		0.08 (0.03)
Teacher has more than BA	0.07 (0.03)	* 0.09 (0.06)	-0.08 (0.05)	+ -0.03 (0.03)	0.01 (0.05)		-0.05 (0.02)
Teacher experience (grades < K)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)		0.00 (0.00)
Number of children	0.00 (0.01)	0.01 (0.01)	0.02 (0.01)	+ -0.02 (0.01)	**	-0.01 (0.01)	0.00 (0.00)
Overall value added learning gains	0.02 (0.02)	0.01 (0.03)	-0.03 (0.03)	0.02 (0.02)	-0.02 (0.01)		0.01 (0.01)
Hours of operation (M-F)	-0.01 (0.02)	-0.03 (0.02)	+ 0.00 (0.01)	0.00 (0.01)	0.03 (0.01)	**	0.02 (0.01)
Provides summer care	-0.01 (0.05)	-0.12 (0.06)	* 0.01 (0.05)	0.01 (0.03)	0.01 (0.04)		0.08 (0.02)
Provides transportation	0.02 (0.04)	0.08 (0.06)	-0.08 (0.04)	+ 0.00 (0.03)	0.03 (0.04)		-0.04 (0.02)
Provides sick care	0.09 (0.03)	** -0.16 (0.06)	** 0.00 (0.05)	0.00 (0.03)	0.01 (0.04)	+	0.00 (0.02)
Number of services provided	0.022	0.01	0.01	-0.01	-0.01		-0.01

	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)
Some families pay for care	-0.01	-0.10	-0.02	0.04	-0.01	0.05
	(0.04)	(0.07)	(0.07)	(0.04)	(0.05)	(0.03)
Provides 4+ opp for parent involve	0.06	-0.05	-0.05	-0.02	0.01	0.03
	(0.04)	(0.06)	(0.06)	(0.03)	(0.05)	(0.02)
R-squared from saturated model	0.03	0.05	0.04	0.04	0.04	0.05

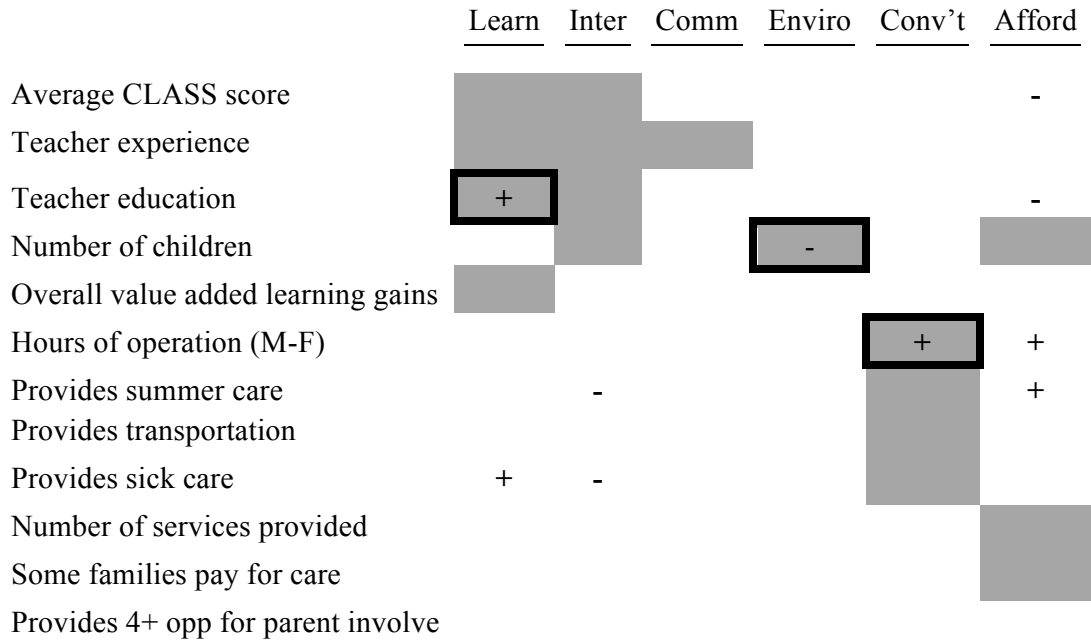
Note. $N= 566$. Rows represent the individual association between one program feature and parents' selection of most liked program features. Clustered standard errors are presented in parentheses. The R-squared term reflects the proportion of variance accounted for if all program features are included in a single regression. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Figure 1. Hypothesized and observed relationships between program features and parental evaluations of program features.



Note. Parental evaluations are represented by the columns, observed features are listed in the rows. The shaded boxes represents the relationships we hypothesized might be observed in the data; the +/- signs indicate observed relationships and their direction (positive or negative). The highlighted cells represent statistically significant relationships that correspond to our hypotheses.

Figure 2. Hypothesized and observed relationships between program features and parents' 3 most liked program features.



Note. Parental evaluations are represented by the columns, program features are listed in the rows. The shaded boxes represents the relationships we hypothesized might be observed in the data; the +/- signs indicate observed relationships and their direction (positive or negative). The highlighted cells represent statistically significant relationships that correspond to our hypotheses.

Appendix A.

Parental Evaluation of the Care Setting Items:

Think about your child's CURRENT child care/ preschool program. Please rate how much you agree with each statement.

- a) My child is learning academic skills that will help them in school at this child care/ preschool program (for example, learning letters and numbers).
- b) My child is learning social skills like sharing and following directions at this child care/ preschool program.
- c) My child's main caregiver/teacher is warm and affectionate.
- d) This child care/ preschool program offers a clean and safe environment.
- e) This child care/ preschool program offers convenient hours (full-day program, before/after care, summer programming).
- f) This child care/ preschool program is in a convenient location (close to home, work, or public transportation).
- g) This child care/ preschool program is affordable for my family.

Response categories: strongly disagree, disagree, agree, strongly agree, or don't know.

Parents' Selection of Two "Most Liked" Items

Please choose the TWO things you LIKE MOST about your child's child care/ preschool program.

- a) That it is helping my child learn (for example, my child is learning social skills and academic school skills).
- b) The way my child's caregiver/ teacher interacts with my child (for example, my child's main caregiver/teacher is warm and affectionate).
- c) The way my child's caregiver teacher communicates with me about my child (for example, the way the caregiver/teacher talks to me about my child's progress).
- d) The environment at my child's child care/ preschool program (for example, it is inviting with plenty of books and toys for my child).
- e) That it is convenient (for example, it is in a convenient location and has convenient hours).
- f) That the cost is affordable for my family.
- g) Other, please specify.

Appendix B.

Table B1. Correlations between program features and parental evaluations, with covariates.

	Parent Evaluations							
	Academic Skills	Social Skills	Warm Teachers	Clean and Safe	Conv't Hours	Conv't Locate	Program is Affordable	
Average CLASS score	0.01 (0.03)	0.00 (0.03)	-0.01 (0.03)	-0.01 (0.04)	-0.02 (0.04)	-0.05 (0.05)	-0.07 (0.04)	+
CLASS classroom organization	0.02 (0.03)	0.01 (0.03)	-0.02 (0.03)	0.00 (0.03)	-0.01 (0.03)	-0.01 (0.04)	-0.01 (0.03)	
CLASS emotional support	0.01 (0.03)	0.01 (0.03)	-0.01 (0.04)	-0.02 (0.03)	-0.03 (0.04)	-0.04 (0.05)	-0.05 (0.04)	
CLASS instructional support	-0.01 (0.03)	-0.01 (0.02)	0.00 (0.02)	-0.01 (0.03)	-0.01 (0.03)	-0.05 (0.03)	-0.07 (0.03)	**
Teacher has less than BA	-0.03 (0.10)	0.03 (0.07)	0.07 (0.07)	-0.08 (0.10)	-0.09 (0.10)	-0.11 (0.13)	0.09 (0.11)	
Teacher has more than BA	0.08 (0.04)	0.01 (0.04)	0.09 (0.04)	0.02 (0.04)	-0.01 (0.05)	0.05 (0.05)	-0.01 (0.05)	+
Teacher experience (grades < K)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	
Number of children	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.02 (0.01)	*
Overall value added learning gains	0.02 (0.02)	0.01 (0.02)	-0.01 (0.02)	-0.00 (0.02)	0.00 (0.02)	-0.00 (0.02)	0.02 (0.02)	
Hours of operation (M-F)	0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.02)	0.02 (0.01)	0.00 (0.02)	-0.03 (0.02)	+
Provides summer care	-0.03 (0.04)	-0.03 (0.04)	-0.07 (0.05)	0.01 (0.04)	0.06 (0.04)	-0.02 (0.06)	-0.07 (0.05)	
Provides transportation	-0.04 (0.04)	-0.03 (0.04)	-0.04 (0.04)	-0.09 (0.04)	-0.12 (0.04)	-0.01 (0.05)	0.00 (0.05)	**

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Provides sick care	0.00 (0.04)	-0.01 (0.04)	-0.03 (0.04)	-0.09 * (0.04)	-0.06 (0.04)	-0.06 (0.04)	-0.09 + (0.05)
Number of services provided	0.01 (0.01)	0.01 (0.02)	0.02 (0.02)	-0.01 (0.01)	-0.02 (0.01)	0.01 (0.02)	0.00 (0.01)
Some families pay for care	-0.01 (0.05)	0.01 (0.05)	-0.02 (0.06)	0.05 (0.05)	0.06 (0.05)	0.06 (0.07)	-0.09 (0.06)
Provides 4+ opp for parent involve	0.02 (0.05)	0.08 * (0.04)	-0.01 (0.04)	-0.04 (0.05)	0.01 (0.05)	-0.08 (0.05)	0.03 (0.05)
R-squared from saturated model	0.07	0.05	0.07	0.06	0.07	0.07	0.10

Note. $N= 520$. Rows represent the individual association between one program feature and parent evaluations of quality. Clustered standard errors are presented in parentheses. Models include the following covariates: parent education, family income, child age, race, and gender. The R-squared term reflects the proportion of variance accounted for if all program features are included in a single regression. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.

Table B2. Correlations between program features and parents' choice of most liked program features, with covariates.

	Parents' Most Liked Features						
	Learning	Teach Int.	Communicate	Environment	Convenience	Affordable	
Average CLASS score	0.02 (0.03)	0.03 (0.06)	-0.02 (0.06)	0.02 (0.02)	-0.04 (0.04)	-0.03 (0.02)	
CLASS classroom organization	0.02 (0.03)	0.04 (0.04)	-0.03 (0.04)	0.01 (0.02)	-0.03 (0.03)	-0.02 (0.02)	
CLASS emotional support	0.02 (0.04)	0.04 (0.05)	-0.05 (0.05)	0.02 (0.02)	-0.04 (0.04)	-0.01 (0.02)	
CLASS instructional support	0.00 (0.02)	0.00 (0.04)	0.02 (0.04)	0.01 (0.02)	-0.02 (0.03)	-0.03 (0.01)	*
Teacher has less than BA	0.06 (0.11)	0.05 (0.08)	-0.08 (0.05)	-0.07 (0.05)	-0.01 (0.07)	0.07 (0.04)	+
Teacher has more than BA	0.09 (0.04)	* 0.10 (0.06)	+ -0.06 (0.05)	-0.04 (0.03)	-0.01 (0.04)	-0.06 (0.02)	***
Teacher experience (grades < K)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	
Number of children	-0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	+ -0.01 (0.01)	0.00 (0.01)	0.00 (0.00)	
Overall value added learning gains	0.03 (0.02)	-0.02 (0.03)	-0.04 (0.03)	0.02 (0.02)	-0.01 (0.01)	0.01 (0.01)	
Hours of operation (M-F)	-0.02 (0.02)	-0.01 (0.02)	-0.01 (0.01)	0.00 (0.01)	0.03 (0.01)	* 0.03 (0.01)	*
Provides summer care	-0.04 (0.05)	-0.09 (0.06)	-0.02 (0.05)	0.02 (0.03)	0.06 (0.04)	0.10 (0.03)	***
Provides transportation	0.05 (0.04)	0.06 (0.06)	-0.07 (0.05)	-0.01 (0.03)	0.04 (0.04)	-0.05 (0.03)	*
Provides sick care	0.11 (0.03)	*** -0.15 (0.05)	** -0.02 (0.04)	0.01 (0.03)	0.07 (0.04)	+ -0.01 (0.02)	
Number of services provided	0.01	0.01	0.02	* -0.01	* 40 -0.01	-0.01	+

Can Parents Assess Preschool Quality?

	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Some families pay for care	0.00	-0.12 +	0.03	0.04	-0.04	0.03
	(0.04)	(0.07)	(0.07)	(0.03)	(0.04)	(0.03)
Provides 4+ opp for parent involve	0.03	-0.05	-0.03	-0.02	0.00	0.03
	(0.04)	(0.06)	(0.05)	(0.03)	(0.04)	(0.02)
R-squared from saturated model	0.11	0.10	0.08	0.08	0.06	0.08

Note. $N= 520$. Rows represent the individual association between one program features and parents' selection of most liked program features. Clustered standard errors are presented in parentheses. Models include the following covariates: parent education, family income, child age, race, and gender. The R-squared term reflects the proportion of variance accounted for if all program features are included in a single regression. + $p < 0.10$, * $p < 0.05$, ** $p < 0.01$.