

# Maternal Education and Early Child Development: The Roles of Parental Support for Learning, Learning Materials, and Father Characteristics\*

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## Abstract

This paper explores the intergenerational effects of maternal education on the developmental outcomes of children aged 24 to 59 months in Turkey. We utilize the 1997 education reform in Turkey, which extended compulsory schooling from five to eight years, as a source of exogenous variation in maternal education. We draw upon data from the 2018 Turkey Demographic and Health Survey, which features a comprehensive module on early childhood development. Our analysis reveals a significant increase in maternal educational attainment and corresponding enhancements in children’s readiness to learn. Unlike previous studies that focus on assessing cognitive skills at later stages, our findings highlight the impact of maternal education on readiness to learn from a very young age. Exploring the underlying mechanisms, we find that there is a notable expansion in the number and variety of activities parents, especially fathers, engage in with their children. Additionally, there is a greater presence of learning materials, such as books, in home settings. In a further examination of parental outcomes, we find evidence pointing to narrower educational and age disparities between partners, implying an increase in women’s bargaining power—aligned with the increased engagement of fathers with their children.

***JEL classifications:*** I26, J13, J24

***Keywords:*** maternal education, early child development, parental involvement, learning materials, cognitive skills

# 1 Introduction

It is well-documented that intergenerational correlations of education and income are large, and family characteristics significantly determine lifetime inequalities in human capital, income, and utility (Huggett et al., 2011; Black and Devereux, 2011; Chetty et al., 2014). Parenting skills and parental investments in time and material resources are the primary environmental factors in early childhood that can affect child development (Francesconi and Heckman, 2016).<sup>1</sup> Differences in outcomes that arise during early childhood, particularly in cognitive development, persist, and later remedial interventions are costly and have limited effects (Thompson and Nelson, 2001; Cunha and Heckman, 2008; Heckman and Mosso, 2014). These findings have led to the conclusion that skill formation is a dynamic process, with long-term returns being greater from investments in the early years, though pay-offs also take a considerable time to materialize (Heckman and Carneiro, 2003; Todd and Wolpin, 2003; Cunha et al., 2006; Agostinelli and Wiswall, 2016).

In this paper, we aim to measure the causal effect of maternal schooling on early childhood developmental outcomes and to identify the potential mechanisms at play. The observed correlation between educational achievements across generations may arise from nature, i.e., genetic transmission from parents to children. Several studies using primarily twins to study the role of genetic factors in income heritability conclude that these factors explain approximately 30–40% of income variation (e.g., Branigan et al. (2013); Hyytinen et al. (2019)). Parental education may also affect genetic factors transmitted to the next generation through mechanisms such as assortative mating in the marriage market. However, a more direct causal effect of parental education emerges through nurture. Cunha and Heckman (2007) conceptualize children’s skill formation as a process determined by self-productivity, investments made in them, and other environmental factors, including parenting skills. The latter two factors can plausibly be influenced causally by parental education. Increased earnings or shifts in parental preferences can lead to greater material investments in children’s skill formation, such as books, toys, and early childhood education services. Parental time investments, such as playing and engaging in other activities that

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<sup>1</sup>For example, Cameron and Heckman (2001) and Yeung and Pfeiffer (2009) show that differences in parental socioeconomic status and the early childhood family environment account for a large share of the black-white test score gap. In a different line of research, studies by Milne et al. (1986), Bertrand and Pan (2013), Kalil and Mayer (2016), and Autor et al. (2019) analyze why children, particularly boys, from single-parent families have lower academic achievement.

contribute to children’s skill formation, might also be affected. Even if material or time investments do not quantifiably increase, an enhancement in parenting skills attributable to education could improve the quality of these investments through more subtle means, such as the choice of toys or the vocabulary used during playtime. Depending on the channel through which parental education impacts early childhood development, potential policy interventions may range from cash transfers or free childcare services to parenting counseling or at-home interventions.

We use data from the 2018 wave of the Turkey Demographic and Health Survey (TDHS), which includes a detailed module on early childhood development. Our data is parent-centric and includes a rich set of outcomes, including detailed information on household members’ activities with children, the family environment during early childhood, and child development indicators. This allows us to pinpoint the potential mechanisms of the impact on childhood development starting from when children are 24 months old. To identify the causal effects of maternal schooling on early childhood outcomes, we use a major compulsory schooling reform that raised years of compulsory schooling from 5 (primary school) to 8 (middle school) in Turkey within a regression discontinuity design (RDD). The reform affected a significant proportion of the population in Turkey as the enrolment at the secondary school level (grades 6–8) was 52.8% during the 1996–97 school year, the year before the law changed.<sup>2</sup> In the estimation of RDD, we use both parametric and nonparametric approaches.

We study several child development indicators, including literacy-numeracy, readiness to learn, physical development, and social-emotional development of 36- to 59-month-old children in each household. (Since we examine several outcomes, we conduct a correction for multiple hypothesis testing in the estimation.) Among these indicators, readiness to learn and social-emotional development reflect general skills and behaviors that are strongly related to later life outcomes.<sup>3</sup> While the importance of these two pre-academic skills in later skill acquisition and avoiding later learning problems has long been recognized, the causal linkages from parental background and home environments to readiness to learn and social-emotional development have not received much attention.<sup>4</sup>

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<sup>2</sup>TUIK (Turkish Statistical Institute), Education Statistics.

<sup>3</sup>Measures of attention and school readiness are significantly correlated with later academic achievement (Jensen, 1969; Duncan et al., 2007; Ricciardi et al., 2021). See also Grantham-McGregor et al. (2007), Heckman (2007), Hoover-Dempsey et al. (2005), Moffitt et al. (2011).

<sup>4</sup>Previous research found that home environmental factors and parental income and education are associated with readiness to learn among children in kindergarten and early school years. Home environmental factors discussed by the literature on child development and psychology include the degree of cognitive stimu-

We find that the reform increases the probability of completing middle school by 14 to 20 percentage points among the sample of mothers with young children in the TDHS survey. The results show that children of mothers in treated cohorts (mothers who are subject to the extended compulsory schooling years) have significantly higher readiness to learn. Moreover, in families with above-average socio-economic conditions, we observe a stronger first-stage impact on women’s middle school completion and a larger and more precisely estimated effect on their children’s readiness to learn. In addition, the coefficients regarding the effect of the mother’s exposure to the reform on her children’s social-emotional development and early childhood development index (ECDI) are large and positive but statistically insignificant (given our modest sample size).<sup>5</sup> However, we find no evidence of an effect on literacy and numeracy or physical development. We also show that the reform does not change the composition of our sample of mothers with young children.

We investigate several potential mechanisms that may explain the rise in the readiness to learn. For this purpose, we define treated households as those in which mothers are exposed to the compulsory school reform. We first study whether there is a change in parental involvement with children, using a detailed list of activities that household members engage in with children. The results show that parents in treated households—particularly fathers—engage in more activities with their children. In addition, we find that the new activities the father is involved in are not those already done by the mother, implying an increase in the variety of activities parents engage in. Furthermore, we find that the increase in the number of parental activities does not come at the expense of the other family members being involved with children. When we explore the specific activities, we find that fathers become more likely to play with their children and take them outside and mothers are more likely to read to their children. In addition, suggestive evidence exists that fathers are more likely to sing songs with their children and mothers are more likely to play with them. Overall, these results show that parental time investment into children’s skill formation rises through an increase in both the extent and variety of parental activities with children, particularly in paternal activities.

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lation at home and the nature of parent-child interactions (Pettit et al., 1997; Connell and Prinz, 2002). This literature suggests that lower income and education among parents may account for differences in readiness to learn since such parents display less nurturing parenting styles (Pettit et al., 1997; Nord, 1999).

<sup>5</sup>The Early Childhood Development Index (ECDI), a commonly used measure of early child development, demonstrates the percentage of children who show adequate development in at least three of the four development domains (numeracy/literacy, readiness to learn, physical, social-emotional).

The second mechanism we study is whether parents in treated households increase the material investments for child development, such as the availability of toys and books. We find evidence for an increase in the probability that treated households have a children’s book. In contrast, there is no evidence of an effect on the number of books or the availability of toys.

A striking finding of this paper regarding parental inputs is the rise in fathers’ involvement with children. To better understand this, we explore the characteristics of fathers and marital match. First, we find suggestive evidence that women exposed to the reform have more-educated husbands. This could result from assortative mating and the direct effect of the compulsory schooling reform on men’s educational distribution, which we cannot distinguish. Second, a more educated woman could better facilitate her husband’s involvement with their children. This would be more likely if women’s bargaining power in marriage increases due to their reform exposure. To examine this, we measure the reform impact on the age and education gaps between partners. We find that the probability that mothers have educational attainment that is at least as high as that of fathers increases substantially. Moreover, suggestive evidence exists that the age gap decreases. These findings are consistent with a rise in women’s bargaining power.

Finally, we explore the effects on the probability of employment of mothers and fathers or the use of childcare services. However, we find no evidence of an effect on any of these outcomes. It is, therefore, possible to rule out a substantial increase in family income or investments through non-parental education as part of the mechanisms.<sup>6</sup>

In essence, our analysis of mechanisms at play indicates a significant rise in parental inputs in children’s human capital production function—which aligns with the increase in children’s readiness to learn, as well as the positive and large coefficients for social-emotional development and ECDI. However, it is important to note that even when parental inputs do not increase, we could still expect an improvement in child development indicators because the quality of existing inputs could increase due to the higher educational attainment of parents. An important and difficult channel to test is a potential increase in parenting skills and, therefore, the quality of time spent with children. This remains as another potential channel driving children’s development.

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<sup>6</sup>Consistent with our findings, analyzing the effect of the 1997 compulsory schooling reform, Aydemir and Kirdar (2017) find significant effects on women’s wages but much smaller effects on men’s wages. They also report a small effect on women’s employment and no effects on men’s employment.

The previous literature analyzing the causal link between a mother’s education and child outcomes ranges in interest from health and fertility to income and education (Currie and Moretti, 2003; Black et al., 2005; Oreopoulos, 2006; Chen and Li, 2009; Holmlund et al., 2011).<sup>7</sup> Our study is particularly related to empirical analyses of the relationship between mother education and child cognitive development or educational achievement. Our study makes several contributions to this literature.

First, unlike the majority of previous studies that focus on child development outcomes during schooling years (see, e.g., Andrabi et al. (2012), Carneiro et al. (2013), Cui et al. (2019)), our study explores early childhood outcomes prior to formal schooling. To the best of our knowledge, the evidence regarding the earliest age that the impact of a mother’s education on children’s cognitive outcomes is realized comes from the UK. Using the change in minimum school leaving age in the UK, Dickson et al. (2016) and Macmillan and Tominey (2022) find that the impact of mother schooling on children’s cognitive skills emerges at school entry age (about age 4).<sup>8</sup> Our finding about the positive impact of a mother’s schooling on children’s cognitive outcomes (readiness to learn) is novel because it is measured at an even earlier age (36–59 months). While the earlier literature (including those in the UK context) detects the effect of maternal education on cognitive outcomes, such as test scores, our finding detects the effect on readiness to learn, which can be interpreted as a soft skill necessary to develop cognitive abilities. Our results, therefore, highlight the importance of analyzing different types of early childhood abilities to understand potential drivers of the divergence in concurrent or later test scores. Even though we observe no effect on numerical or literacy skills,<sup>9</sup> the positive effect on readiness to learn fits well with the conceptualization by Cunha and Heckman (2007) of skill formation as a dynamic process where earlier advantages become persistent over the lifetime.

Second, our finding of an increase in both the extent and variety of paternal involvement

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<sup>7</sup>The causal effect of mothers’ education can be challenging to identify, as shown by Black et al. (2005). Using Norwegian data, the authors find a strong intergenerational correlation in education levels; however, they also report that this relationship becomes much weaker and survives only for mothers and sons once they use a regional education reform to instrument mothers’ education. Holmlund et al. (2011) find no causal link between mothers’ and children’s schooling in Sweden and argue that selection issues explain the observed correlation between the two variables. On the other hand, Oreopoulos (2006) find that mothers’ education reduces the probability of grade repetition during secondary school.

<sup>8</sup>These cognitive skills are based on teachers’ assessment of reading, writing, language, and mathematics skills.

<sup>9</sup>Children who are 36- to 59-month-old might be too young to observe an impact on numerical and literacy skills.

with children is novel in the literature. Some papers have also analyzed potential mechanisms that might drive the effects of mothers’ education on children’s development. For instance, Carneiro et al. (2013) find that more educated mothers have higher incomes, more educated spouses, and invest more in their children through books, trips, and special lessons. Andrabi et al. (2012) document that more education led Pakistani mothers to spend more time with their children. Macmillan and Tominey (2022) show that improved health behaviors during pregnancy and higher monetary investments at home measured in terms of toys are potential channels.<sup>10</sup> Our findings are different in the way that we find a substantial impact on paternal involvement with children. We uncover certain facts that could help us explain these findings, such as the suggested evidence on the rise in the educational attainment of fathers and the evidence on the narrowing age and education gap between spouses, suggesting a rise in women’s bargaining power.

Third, the school reform in our context affected lower levels of schooling distribution, raising compulsory school from 5 to 8 years in a context where school dropout after 5th grade was high, especially among girls. The estimated effects of the reform have thus high policy relevance, especially for low- and middle-income countries with low school attainment and for the design of policies that aim to improve intergenerational mobility.<sup>11</sup>

Fourth, from a methodological perspective, our study combines unusually rich data on early childhood development with a major source of exogenous variation in schooling—both of which are rare for low- and middle-income countries. We use a compulsory schooling law that (i) raised the duration by 3 years, (ii) was well-enforced for a low- and middle-income country, (iii) impacted a large fraction of the population due to high drop-out rate after compulsory schooling, and (iv) was not related to schooling and child development outcomes, as its timing was related to political events. We combine this fine setting with an RDD design with good internal validity properties (Lee and Lemieux, 2010). In contrast, most previous studies on this topic use geographical variation as the source of exogenous variation in schooling.<sup>12</sup> Moreover, we find quite consistent results with alternative estimation methods in RDD (parametric vs. nonparametric and alternative methods of calculating the optimal

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<sup>10</sup>However, unlike our findings, Macmillan and Tominey (2022) find no effects of time investments that include various activities such as reading to, singing or playing with children, and taking them out for walks.

<sup>11</sup>In comparison, the increase in education in the UK context (Dickson et al., 2016; Macmillan and Tominey, 2022) and the US context (Carneiro et al., 2013) are for higher schooling levels. In contrast, Andrabi et al. (2012) use variation in mothers’ schooling at an even lower level in Pakistan. Cui et al. (2019) use compulsory schooling laws in China that impact similar grade levels to our case.

<sup>12</sup>See, e.g., Andrabi et al. (2012), Carneiro et al. (2013), Cui et al. (2019).



bandwidth).

We must also acknowledge that while our findings suggest that rises in parental involvement with children and learning materials and changes in father characteristics lead to better child development in terms of readiness to learn and social-emotional development, these might not be the only channels. Parental education may affect child outcomes through higher parental investment before the child turns 24 months old and improved child health. Using the same reform, Usta (2020) provides evidence for greater pre and post-natal investment by mothers affected by the reform and an increase in the propensity of mothers to spend time with children at home and outside.<sup>13</sup> Several papers have previously analyzed the relationship between mothers' education and children's health outcomes over the life cycle, but the evidence for a causal effect is mixed (Desai and Alva, 1998; Chen and Li, 2009; Arendt et al., 2021). A similar picture emerges from studies focusing on the Turkish context; they find mixed results about the effect of maternal education on child health using the 1997 compulsory schooling reform (Güneş, 2015; Baltagi et al., 2019).

## 2 Background Information

Before the 1997 education reform, the school system in Turkey comprised 5 years of compulsory primary school, 3 years of noncompulsory middle school, and 3 years of high school education. Almost all schools in Turkey are co-educational. The 1997 Basic Education Reform Law (No. 4306) raised compulsory schooling from five to eight years by merging the first two education levels under the umbrella of basic education.

The extension of compulsory schooling had been discussed for a long time at the time of the policy; however, its actual timing was related to political developments. The secular government that had recently come to power seized the opportunity to curb (or delay) religious education by extending compulsory schooling.<sup>14</sup> As such, the timing of the reform did not coincide with better-than-average economic conditions, during which other health or schooling investments are generally more likely. Moreover, there was no concentrated policy

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<sup>13</sup>Her measures are two dummy variables about whether or not a mother spends time inside and outside the house.

<sup>14</sup>Before the policy, students could enroll in Quranic Studies after completing primary school. Hence, they would not be exposed to a secular co-educational system anymore. Also, before the policy, students could enroll in Imam-Hatip middle schools, which provided both religious and secular education. More precisely, they provided additional religious courses on top of the secular curriculum given in other schools. After the policy, students could enroll in Imam-Hatip schools only at the high school level.

effort to raise middle school attendance prior to the reform.

The law applied to all students who did not complete the 5th grade in the 1996–97 school year. A 4th grader in the 1996–1997 school year would have started primary school in September 1993, meaning that all cohorts starting primary school in the 1993-94 school year and afterward are treated. Children in Turkey start school in September of the year when they complete age six. In other words, the reform affected all children born in or after January 1987. However, some students may start either earlier or later than their designated year, implying imperfect compliance in the treatment status of the 1986 and 1987 cohorts.

The government invested substantially in improving the schooling infrastructure. The share of the Ministry of National Education (MONE) in the public investment budget, which was about 15% in 1996 and 1997, jumped to 37.3% in 1998 and remained at around 30% until 2000 (Kirdar et al., 2016). In urban areas, where the physical capacity was already high, MONE implemented policies to use the existing capacity more efficiently, such as introducing a double-shift system and expanding the number of classes in existing schools. However, the real bite of the policy came in the rural areas, where MONE utilized two key policies: bussing children to nearby schools and constructing boarding schools.<sup>15</sup> As a result of these policies of the MONE, the number of students in basic education (grades 1 to 8) increased from 9 to 10.5 million from the 1997-98 school year to the 2000-01 school year—implying a 15% increase—compared to a 1% decline in the preceding 3-year interval (Kirdar et al., 2018).

The education reform resulted in a substantial increase in children’s schooling. Drawing data from annual Turkish Household Labor Force Surveys from 2009 to 2017, Aydemir et al. (2022) estimate that the reform increased the fraction of individuals with a middle school or higher degree by about 17 percentage points among men and 21 percentage points among women. Using the 2008 and 2013 rounds of the TDHS, Kirdar et al. (2018) estimate that the reform increased girls’ schooling by about one year. There are several reasons for the large response in completed schooling. First, prior to the increase in compulsory schooling years, the drop-out rate after 5th grade was approximately 40%. Hence, there was significant room for improvement and a significant fraction of the population was affected.<sup>16</sup> Second, the

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<sup>15</sup>The number of students bussed to school increased from 127,683 in the 1996-97 school year to 621,986 in the 1999-2000 school year. In addition, the number of students in boarding schools at the basic education level rose from 34,465 in the 1996-97 school year to 281,609 in the 2001-2002 school year. According to Kirdar et al. (2016), these policies led to a substantial reduction in the urban-rural gap in the completed years of schooling by age 17 for both boys (0.5 years) and girls (0.7–0.8 years).

<sup>16</sup>Three years after the reform, the drop-out rate had fallen to less than 5%.

duration of the extension was long (3 years). Third, the policy had spillover effects on high school completion. Several studies show that the education reform increased not only the newly mandated middle school completion but also high school completion (Kirdar et al., 2016, 2018).<sup>17</sup>

Despite the rapid expansion of the schooling infrastructure, there is no indication of significant deterioration in quality. While the student-to-classroom ratio initially rose from 28.6 in the 1997-98 school year to 31.2 in the 1999-2000 school year, it declined back to 28.3 by the 2000-2001 school year as MONE’s investment materialized. Similarly, the student-to-teacher ratio remained constant at around 30 during the first years after the policy and dropped below 28 by the 2002-03 school year (Kirdar et al., 2016). Using TIMMS 1999 and 2007 international tests for grade 8 students, Aydemir and Kirdar (2017) find no deterioration in the performance of students affected by the reform.

### 3 Data

We use the 2018 Turkey Demographic and Health Survey (TDHS). Unlike the earlier rounds of TDHS, the 2018 round collects detailed information on early child development based on a module developed by UNICEF.<sup>18</sup> This module elicits information from parents about the development of their children and about conditions of the home environment that are likely to be determinants of a child’s development.

For each child aged 36–59 months, the 2018 TDHS asks the mother to report the status of her child in each of the 10 development indicators. These indicators include various measures to characterize whether the child is adequately developed in each of the following four domains: readiness to learn, literacy and numeracy, social-emotional development, and physical development. Literacy-numeracy measures among 3- and 4-year-olds are considered to be more likely to reflect social/cultural norms around early education than cognitive capacity, and physical development measures reflect severe developmental setbacks and children’s health status (McCoy et al., 2016). Readiness to learn refers to child’s self-regulating ability to learn (Greenberg and Abenavoli, 2017), and social-emotional development refers

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<sup>17</sup>According to MONE statistics, the number of high school students in urban areas rose from 2.27 to 2.88 million from the 2000-01 school year to the 2003-04 school year, implying a 27% increase compared to the 10.5% increase in the preceding 3-year interval.

<sup>18</sup>This module has been commonly used as a part of the Multiple Indicator Cluster Surveys (MICS) and the Demographic and Health Surveys (DHS) in many developing-country contexts.

to the ability to control aggressive behaviors, avoid distraction, and get along with peers.<sup>19</sup> In our empirical analysis, we explore whether and how mothers' exposure to the educational reform of interest affected child development in each of these four areas. In addition, we use the Early Childhood Development Index (ECDI), a commonly used measure of early child development, which takes the value of one when a child demonstrates adequate development in at least three of the four domains (and, hence, is considered developmentally on track) and zero otherwise.

For each child aged 24-59 months, the 2018 TDHS also elicits information about learning activities. We observe whether anyone older than 15 in the household conducts the following activities with the child in the last three days preceding the survey: 1) reading books or looking at picture books, 2) telling stories, 3) singing songs, 4) taking the kid outside of the home, 5) playing with the kid, and 6) spending time with the kid naming, counting, or drawing things. We also observe whether each activity is conducted by the mother, father, or any other adult. Using this information, we create several variables to understand whether the compulsory schooling reform affects the involvement of fathers and mothers in learning activities differently.

The TDHS provides several variables about the presence of learning materials and supervision, which we analyze as potential channels for early child development. We observe the number of children's books owned by a child and whether the child plays with store-bought items, homemade toys, or any other objects at home. As indicators of supervision, we observe the number of days in the last week the child is left alone longer than one hour at home, the number of days left with any other child under age 10, and whether the child is attending daycare or kindergarten.

The TDHS also provides a detailed set of demographic characteristics for mothers and

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<sup>19</sup>Development in readiness to learn is drawn upon a child's ability in the following two tasks: 1) following simple directions on how to do something correctly, and 2) when given something to do, being able to do it independently. A child with an affirmative answer to at least one of these two tasks is considered as developed in this domain. To measure development in literacy and numeracy, the survey asks whether the child can 1) identify or name at least ten letters of the alphabet, 2) read at least four simple, popular words, or 3) know the name and recognize the symbol of all numbers from 1 to 10. A child demonstrating ability in at least two of these three indicators is considered as developed in literacy-numeracy skills. The social-emotional development is measured based on the following three behaviors: 1) getting along well with other children, 2) not kicking, biting, or hitting other children or adults, and 3) not getting distracted easily. A child demonstrating adequate development in at least two of these three indicators is considered as developed in terms of social-emotional aspects. Finally, a child demonstrating adequate ability in at least one of the following two indicators is considered as physically developed: 1) picking up a small object with two fingers, like a stick or a rock from the ground, and 2) not being sometimes too sick to play.

children, which we use as control variables in our regression analysis. As mother characteristics, we control for the birth month, birth region, type of childhood residence, mother tongue, and education of grandmothers. As for child characteristics, we use dummies for the interaction of child sex and birth order as well as for child age (in 6-month intervals). Lastly, the data provide information about educational attainment, use of formal childcare services, employment status, and age of mothers and their partners. We analyze the effect of the educational reform on the middle school completion status and employment in the last 12 months of each parent, as well as on the gaps in age and schooling between spouses.

When defining our sample, we first restrict the data to the mothers born in the eight-year window around January 1987 (the cutoff date to be eligible for the extension of compulsory schooling). Then, we employ two main samples for our empirical analysis: i) women with 24- to 59-month-old children, these women’s last-born 24- to 59-month-old child, and this child’s father—called sample A—and ii) women with 36- to 59-month-old children, these women’s last-born 36- to 59-month-old child, and this child’s father—called sample B.<sup>20</sup> The use of two separate samples arises from the fact that while the information on early childhood development outcomes is for 36–59-month-old children, the other outcomes are for 24–59-month-olds. While we restrict the child samples to the youngest child in the analyzed age group of each woman,<sup>21</sup> we also use samples of all children in these age groups to check the robustness of our findings. We conduct certain analyses at the mother level (such as the policy impact on education), most at the child level (such as impacts on early childhood development indicators), and some at the father level (such as the reduced-form impacts on father outcomes).

### 3.1 Sample Statistics

Table 1 provides summary statistics; early childhood development outcomes are for sample A, and the remaining outcomes are for sample B. According to our indicators, a large fraction of children in the analyzed sample demonstrates adequate physical development (98.7%), readiness to learn (96.7%), and social-emotional development (73.9%), whereas only

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<sup>20</sup>Here, we assume that the mothers’ partners are fathers. In the sample, 97.8% of the women are married. Among the children of these married women with a partner, we cannot reach the father line number for only 3.98%. Out of the 3.98%, the survey explicitly states that the father is not in the household for 3.43%, and this information is missing for the remaining.

<sup>21</sup>We prefer the specification with the restriction to one child because it is more compatible with the assumption of independent observations in cross-sectional analysis.

13.7% satisfy the development criteria in literacy and numeracy.

Mothers conduct more activities with children than fathers (on average, 3.5 vs. 1.7 out of the six activities analyzed). Mothers are also much more likely to conduct at least four activities as a measure of adequate attention. The most common types of activities are taking the kid outside of the home or playing with the kid for both parents, and the gap between mothers and fathers is relatively smaller in these activities (in favor of mothers). On the other hand, compared to fathers, mothers are at least twice as likely to do other activities with children.

Table 1 shows that most of the children in the sample have access to learning materials. About half have at least three books at home, the majority have a toy of all kinds, and almost the entire sample has a shop-made toy (94.2%). Also, only 8.5% of the children are subject to inadequate care (i.e., either left alone or under the supervision of another kid). The fraction of children who attend daycare centers is also low (9.2%).

## 4 Methodology

Our identification method exploits the month-year of birth cutoff in women’s exposure to the reform within a regression discontinuity design. In estimating the reduced-form impacts of mothers’ exposure to the education reform, we use the following sharp RDD specification,

$$y_i = \beta_0 + \beta_1 T_i + I(T_i = 0)f(x_i) + I(T_i = 1)g(x_i) + Z_i\Gamma + u_i, \quad (1)$$

where  $y_i$  shows the outcome variable for person  $i$ . Depending on the outcome,  $i$  may refer to the mother, the father, or the child. The treatment variable,  $T$ , takes the value of one when the mother’s month-year of birth is after January 1987 and zero otherwise. The indicator function,  $I(\cdot)$ , is one when the statement inside the parentheses is true and zero otherwise. The functions  $f(\cdot)$  and  $g(\cdot)$  stand for the time trends in the outcome variable on the left- and right-hand side of the cutoff. The running variable,  $x$ , is the month-year of birth, which is normalized at the cutoff value. In equation (1),  $Z$  denotes the set of control variables and  $u$  stands for the error term; and  $\beta_1$  shows the reduced-form effect of the mother’s policy exposure on the outcome variable. We also measure the effect of mothers’ middle school completion status—the newly mandated schooling level with the education reform—using

fuzzy RDD (under certain caveats that we discuss shortly). The estimation of the fuzzy RDD is carried out using a 2SLS procedure as follows:

$$D_i = \alpha_0 + \alpha_1 T_i + I(T_i = 0)k(x_i) + I(T_i = 1)l(x_i) + Z_i\Delta + v_i, \quad (2)$$

$$y_i = \gamma_0 + \gamma_1 \hat{D}_i + I(T_i = 0)m(x_i) + I(T_i = 1)n(x_i) + Z_i\Theta + w_i. \quad (3)$$

Equation 2 illustrates the first stage, where the dummy variable for the status of (at least) middle school completion ( $D_i$ ) is regressed on the same set of variables as in equation (1). The second stage, given in equation (3), has the same structure as equation (1)—except that the predicted treatment status from equation (2),  $\hat{D}_i$ , replaces the assignment to the treatment ( $T$ ).

In all regressions, the control variables,  $Z$ , include the mother’s birth-month dummies, dummies for the mother’s childhood region of residence (at the 12 NUTS-1 level regions), dummies for the mother’s childhood type of location (province center, district center, sub-district or village), dummies for the mother’s mother tongue (Turkish, Kurdish, Arabic, and other), and dummies for grandmother schooling (no education, primary incomplete, primary completion, secondary complete, high school graduate, and college graduate). In addition, all regressions in which the dependent variable is defined for children also include dummies for 10 values of birth order and sex interactions (in which the birth order variable is capped above at five) and dummies for children’s age in months in 6-month brackets. For variables with missing observations, we use a missing dummy variable. We use the sample weights in the regressions and cluster the standard errors at the level of the mother’s month-year of birth, as suggested by Lee and Card (2008).<sup>22</sup> In addition, since we test several hypotheses, we calculate Romano and Wolf (2005a,b) step-down adjusted p-values robust to multiple hypothesis testing in robustness checks.

Hahn et al. (2001) show that, under certain assumptions, the fuzzy RDD identifies the LATE at the cutoff. Hence, the assumptions of the LATE theorem (Imbens and Angrist, 1994) apply to the fuzzy RDD as well. The key assumption here is the exclusion restriction

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<sup>22</sup>Lee and Card (2008) show that in an RDD with a discrete running variable, inference can be made by defining the difference between the expected value of the outcome variable and the predicted value from a given functional form as a specification error. Since this produces a common variance component across observations for a given value of the running variable, Lee and Card (2008) suggest using clustered standard errors for inference.

assumption—which requires that the treatment (the compulsory schooling policy) have no direct effect on the outcomes other than through its effect on women’s middle school completion, conditional on the covariates in the specification. However, the education policy could also affect women’s partners’ characteristics and, thereby, their children’s outcomes. Here, it is important to distinguish between the causes of changing partner characteristics. First, suppose that the distribution of men’s schooling does not change due to the education reform. However, the change in women’s schooling could still change the education and other characteristics of men they marry via assortative mating. This case does not challenge the validity of our 2SLS estimates; the change in father characteristics constitutes a channel in the observed early child development outcomes. However, the education reform could also change the distribution of men’s educational attainment.<sup>23</sup> Unlike the assortative mating channels, this case constitutes a potential failure of the exclusion restriction assumption in the 2SLS estimation of the impact of mother’s schooling—although this potential problem is not unique to our context and applies to most other studies aiming to estimate mother’s schooling via an instrument.

In the estimation, we use both parametric and nonparametric (local polynomial) approaches. In our parametric approach, we use several alternative bandwidths with split linear trends on each side of the cutoff, but we also check the robustness of our findings to the use of quadratic trends.<sup>24</sup> In particular, we start with an 8-year bandwidth on each side of the cutoff and gradually zoom in around the cutoff by narrowing the bandwidth incrementally one year at a time. Hence, we show the estimates for five different bandwidths from 8 years to 4 years on each side. With our narrowest bandwidth, we still have 96 clusters in our data. In the nonparametric approach, we follow the optimal bandwidth selection method of Calonico et al. (2017), but we also check the robustness using the Imbens and Kalyanaraman (2012) (IK) optimal bandwidths. We view the results of our local polynomial approach only as complementary evidence because the policy effect on women’s middle school completion is statistically insignificant (marginally) albeit large in magnitude in this approach.<sup>25</sup>

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<sup>23</sup>In fact, in their study about the effect of the compulsory schooling reform on intimate partner violence (IPV), Akyol and Kırdar (2022) find that the reform changes men’s schooling attainment.

<sup>24</sup>Gelman and Imbens (2019) suggest using low-order polynomials for trends in RDD.

<sup>25</sup>Lee and Lemieux (2010) argue that “[n]onparametric estimation does not represent a ‘solution’ to functional form issues raised by RD designs. It is, therefore, helpful to view it as a complement to—rather than a substitute for—parametric estimation.”



## 4.1 Checks of the Identification Assumption

This subsection investigates the fundamental identifying assumption in RDD that potential outcome distributions are smooth around the cutoff. Although this assumption is not directly testable, we conduct the tests commonly used in the literature to assess its plausibility: (i) continuity of the score density around the cutoff and (ii) absence of treatment effects on pre-treatment covariates.

First, we examine the continuity of the score density around the cutoff, which requires that households do not manipulate the running variable to be on one particular side of the cutoff. Such manipulation is unlikely in our context because the running variable (month-year of birth) is determined prior to learning about the policy. Nonetheless, we check potential manipulation more formally using the test developed by Cattaneo et al. (2018), which compares the density of observations on each side of the cutoff. The results in Online Appendix Figure A1 show that the null hypothesis of no difference in the density of treatment and control groups at the cutoff is not rejected at the actual cutoff value.<sup>26</sup>

Second, we check the absence of policy effects on the pre-treatment covariates. In the absence of sorting around the cutoff, we would expect no jump at the cutoff for the pre-treatment covariates. Online Appendix Table A1 gives the results for both sample A and sample B. Out of the 50 variables, the hypothesis of null policy effect fails for 8 with sample (A) and for 5 with sample (B) at the 10 percent statistical significance level. While the failure rate is slightly higher than the expected level with sample (A), it is at the expected level with sample (B). Overall, the estimates indicate no serious concerns about the assumption of the absence of a jump at the cutoff for the pre-treatment covariates.

## 5 Results

### 5.1 First Stage: Mothers' Schooling

We first examine the policy effect on mothers' middle school completion status. Figure 1 illustrates the change in the fraction of women with a middle school degree or higher education over the running variable for samples A and B. Here, we plot the residuals of the dependent variable after controlling for the covariates. As can be seen from the figure,

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<sup>26</sup>The p-value is 0.495 for sample A and 0.699 for sample B.

a significant jump exists at the cutoff for both samples. Panel (I) of Table 2 presents the corresponding estimates from the estimation of equation (1). Panel (I-A) shows that the policy increases middle school completion probability by 14 to 20 percentage points for the sample covering women with 24- to 59-month-old children. Similarly, in panel (I-B), in which the sample includes mothers with 36- to 59-month-old children, the policy increases middle school completion probability by 9 to 15 percentage points; however, in this panel, statistical significance exists at conventional levels for bandwidths of 6 to 8 years. Although the coefficients in panel (I-B) for 4-year and 5-year bandwidths are statistically insignificant, they are still sizable in magnitude and only somewhat smaller than those in other columns.<sup>27</sup>

Panel (II) of Table 2 shows the policy impact on mothers' schooling for the majority subsample by mother tongue: mothers whose mother tongue is Turkish. We conduct this analysis because the policy effect on mothers' middle school completion status is stronger for this group. Panel (II) demonstrates that the policy raises middle school completion probability by 19 to 22 percentage points for sample (A) and by 15 to 17 percentage points for sample (B). These effects are considerably larger than those in panel (I); moreover, they are more stable across the different bandwidths. Since the first-stage effects of the policy on middle school completion are stronger for the sample of mothers whose mother tongue is Turkish, we might also expect the estimated effects on early child development to be stronger for this group.

## 5.2 Potential Sample Selection

Our analysis is based on samples of women with children of certain ages. In particular, we use two samples: a) women with a child aged 24–59 months and b) women with a child aged 36–59 months. The education reform could change the composition of these groups of women by changing their fertility decisions. For instance, Kırdar et al. (2018) find that the reform changes the probability of ever giving birth by age 17 but not the likelihood of ever giving birth by any age after 17 (as the fertility hazard rates at ages below 17 are lower due to the policy, whereas those at ages 17-18 are higher). Hence, in this subsection, using the

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<sup>27</sup>The fact that the policy effect on schooling with narrower bandwidths is smaller aligns with the previous literature findings. Kırdar et al. (2018) note that imperfect compliance of the two birth cohorts right around the cutoff (the 1986 and 1987 birth cohorts) due to early and late school start age than the norm. This imperfect compliance results in smaller policy effects as the bandwidth narrows because the relative importance of the two imperfectly compliant birth cohorts rises in small bandwidths.

sample of all women in the 2018-THDS, we investigate whether the policy changes women’s likelihood of being included in our samples. Table 3 shows the results of our potential sample selection investigation for the two samples in Tables 2–4: i) full sample and ii) sample of women whose mother tongue is Turkish. For each sample, we check whether the policy affects the composition of women with a child aged 24–59 months (sample A) and the composition of women with a child aged 36–59 months (sample B). As can be seen from Table 3, the policy effect on being included in either sample (A) or sample (B) is positive across all bandwidths for both the full sample and the sample of women whose mother tongue is Turkish. However, none of the coefficients is statistically significant at conventional levels.<sup>28</sup>

### 5.3 Main Results: Early Child Development Outcomes

This section presents our core results on the reduced-form and the 2SLS estimates for child development indicators. Figure 2 shows the RDD graphs, including the 95 percent confidence intervals, for early child development indicators using the full sample. Panel (A) suggests a jump at the cutoff for the readiness to learn variable. Table 4 presents the reduced-form RDD estimates for early child development indicators for the full sample in panel (I) and for the sample of mothers whose mother tongue is Turkish in panel (II). Panel (I-A) demonstrates evidence of a positive impact of mothers’ policy exposure on children’s readiness to learn. For bandwidths ranging from 4 to 8 years on each side of the cutoff, the reform increases this learning indicator by 4.1 to 7.4 percentage points. This is statistically significant for bandwidths ranging from 5 to 8 years but marginally statistically insignificant with the 4-year bandwidth. The coefficient magnitudes are also lower for narrower bandwidths, which is consistent with the patterns of the policy impact on schooling in Table 2.

The positive impact of mothers’ policy exposure on children’s readiness to learn estimated for the full sample is even stronger for the sample of mothers whose mother tongue is Turkish, as shown in panel (II-A) of Table 4. For this sample, the reform increases children’s readiness to learn by 7.2 to 9.1 percentage points. Moreover, these effects are more precisely estimated. The level of statistical significance is at the 5 percent level for all bandwidths but one for which the statistical significance is at the 10 percent level. The stronger effects

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<sup>28</sup>Online Appendix Table B4 shows that the results are similar for the sample of mothers whose mothers have at least some education.

on children’s readiness to learn estimated for the sample of mothers whose mother tongue is Turkish is consistent with the stronger effect on their schooling attainment.

Table 5 presents the 2SLS estimates for early child development outcomes. Giving women at least a middle school degree increases their children’s readiness to learn by 20–30 percentage points (except for the widest bandwidth) for the full sample and 30–40 percentage points for the sample of women whose mother tongue is Turkish. These LATE estimates are overall less precise than the reduced form estimates. Nonetheless, panel (II-A) coefficients are statistically significant at the 10 percent level for the three wider bandwidths and marginally statistically significant for the two narrower bandwidths. The F-statistics in Table 5 indicate that the strength of our instrument is borderline, given the suggested threshold in the literature.

The reduced-form estimates in Table 4 and the 2SLS estimates in Table 5 demonstrate no evidence of an effect on children’s literacy and numeracy or their physical development. In addition, as shown in panel (I-D) of Table 4, the reduced-form impact on social-emotional development for the full sample is positive and large in magnitude. However, it is not statistically significant at conventional levels. Similarly, the 2SLS estimate in panel (I-D) of Table 5 for social-emotional development is positive and large but statistically insignificant. (Significant room exists for improvement of social-emotional development, as its mean value is 0.739.) Finally, as for social-emotional development, the positive reduced-form and 2SLS coefficients for the early childhood development index (ECDI) in the full sample are large but imprecisely estimated. With a larger sample size, it seems likely that these estimates would have been statistically significant at conventional levels.<sup>29</sup>

Online Appendix Table A2 examines the policy effect on mothers’ schooling and child development outcomes for another subgroup of mothers: those whose mothers have at least some education. The motivation for this analysis is also the stronger first-stage results. Table A2 shows that the percentage-point increase in the middle school completion rate is 20–30 percent higher for this subgroup than the full sample. In a parallel fashion, the readiness to learn rises by about 8 to 9 percent, which is higher than that for the full sample in Table 4. Moreover, the coefficients are quite stable across the alternative bandwidths. The estimates’ precision level is similar to those in Table 4 for the full sample (despite a smaller sample size). Table A2 also indicates that no evidence exists for a change in the sample composition

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<sup>29</sup>Examining the impact heterogeneity for all five development outcomes by the child’s gender, we find no notable differences between boys and girls.

of mothers due to the policy (as in Table 3).

In essence, in families with above-average socio-economic conditions (in which the mother’s mother tongue is Turkish and the grandmother has some education), we observe a stronger first-stage impact on middle school completion and a larger (and more precisely estimated in the sample of children whose mothers’ mother tongue is Turkish) effect on readiness to learn. In other words, the first-stage and reduced-form impacts are in tandem in terms of the magnitude of the estimates.

## 5.4 Understanding the Channels

This section explores the potential channels of the positive impact of women’s education on children’s readiness to learn. Here, we discuss the results for the full sample. The results for the sample of mothers whose mother tongue is Turkish and the sample of mothers whose mothers have at least some education, provided in Online Appendix B, are highly similar.

Women’s exposure to the policy and the resulting increase in school attainment could impact child development in two ways. First, it could alter the human capital production inputs—including parental involvement with children, learning materials at home, and the type of child supervision (the person(s) in charge). In addition, the household environment could change due to the impact of increased women’s education on mothers’ and fathers’ characteristics and marital matching. Second, even when no change occurs in these production inputs, women’s schooling attainment could increase the productivity of the existing inputs. Here, we essentially examine the first channel.

### 5.4.1 Channels via Parental Support for Learning (Parental Involvement)

First, we examine how mothers’ reform exposure changes parental support for learning. In particular, we examine how parental activities (such as reading books; telling stories; singing songs; taking children outside the home; playing with children; spending time with children; naming, counting, or drawing things with children) that promote learning and school readiness, as well as social-emotional development, change as a result of the mother’s reform exposure. This analysis is based on the sample of mothers with 24- to 59-month-old children as the questions on parental support are elicited for this sample. (We provide the corresponding results for the sample with 36- to 59-month-old children in the Robustness Checks Section.) Although the results on development indicators in the previous section

come from the sample of mothers with 36- to 59-month-old children, we prefer the larger sample primarily because parental involvement with children when they are 24- to 35-month-old would influence their development level at later months. Besides, it provides us with a large sample.

Figure 3 provides the RDD graphs for several indicators of parental involvement. Overall, jumps at the cutoff are more prominent for indicators of father involvement. For instance, a clear jump is visible in panel (B) for fathers' total number of activities. The point where the fitted line on the left-hand side of the cutoff lies at the cutoff is not covered by the 95% confidence interval on the right-hand side of the cutoff. The jumps at the cutoff for fathers engaging in four or more activities in panel (G) and in any activity in panel (I) are also large.

Table 6 shows the reduced-form estimates for outcomes regarding parental involvement with children. The number of total activities that fathers engage with their children increases. The statistical evidence for this finding holds for all bandwidths. Quantitatively, fathers engage in 0.5 to 0.6 more activities due to mothers' exposure to the compulsory schooling reform. This change amounts to about a 30 percent increase, given that fathers, on average, engage in 1.77 activities. The reduced-form effect on the number of activities mothers engage in is also positive and notable in magnitude (0.17 to 0.34); however, it is statistically insignificant at conventional levels. This might be expected as mothers already engage in, on average, twice as many activities as fathers do. In addition, the number of activities that either parent engages in also increases. This means that the additional activities that fathers engage in are not all the same activities that mothers already do with their children. (In this case, the number of activities that either parent is involved with their child would not change.) This finding also implies that the diversity of parents' activities with their children rises. This increase in the number of activities could come at the expense of the other family members being involved with children. However, Table 6 shows that the number of activities that all adults in the households engage in rises as much or more than that for parents. Moreover, the coefficients for non-parent adult household members are positive but statistically insignificant. These two facts indicate that the increase in the number of activities parents do with their children does not come at the expense of other family members' involvement with the child.

An indicator frequently used as a measure of adequate early stimulation and responsive

care is engaging in “four or more activities” with children. Table 6 shows that while mothers’ probability of involvement in four or more activities with the child increases, this is not statistically significant at conventional levels. In contrast, there is evidence of an increase in fathers’ likelihood of engaging in four or more activities with their children. In addition, Table 6 also shows that the policy increases fathers’ engagement with their children at the extensive margin. The probability that fathers conduct any activity with their children increases by 12 to 15 percentage points. Since the mean value of this variable is about 66 percent, the increase amounts to about a 20 percent increase.

Online Appendix Table C1 provides the corresponding 2SLS estimates regarding the impact of mothers’ middle school completion status on parental involvement with children. The results indicate that the mother’s completion of at least middle school raises the number of father activities with the child by about 2.4 (for which the mean is 1.8) and the number of different activities either the father or the mother engaged in by about 1 to 1.5 (for which the mean is 3.8).

In order to better understand fathers’ and mothers’ involvement with their children, we next examine the reduced-form effects on mothers’ and fathers’ involvement in six separate activities with children: reading books, telling stories, singing songs, taking children out, playing with children, and counting and drawing with children. Figure 4 illustrates the RDD graphs for these activities. We observe jumps at the cutoff for several activities, particularly for those conducted by fathers. These include mothers reading books, fathers reading books, fathers taking the child out, fathers playing with the child, and mothers playing with the child. The jump in the probability of fathers playing with their children is particularly visible. Table 7 shows the RDD estimates of the policy effect. As can be seen from the table, the policy increases the probability of mothers reading books to their children by 9 to 14.5 pp. (Statistical significance at conventional levels exists for 2 of the 5 bandwidths; the coefficients with the other 3 bandwidths are marginally statistically insignificant.) In addition, suggestive evidence exists that the policy raises the probability that mothers play with their children.<sup>30</sup>

The policy effects on fathers’ involvement in these activities are, on average, stronger. However, this is not the case for reading books. Although the policy effect on fathers reading books is positive and large in magnitude, particularly with narrow bandwidths, it

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<sup>30</sup>This is statistically significant for 2 of the 5 bandwidths; for the other 3 bandwidths, however, the coefficients are markedly smaller but not small in absolute magnitude.

is not as large as the effect for mothers reading books and is not statistically significant. In contrast, strong evidence exists that the policy effect increases the probability of fathers taking children outside the home and the probability of fathers playing with their children. The reform increases fathers' probability of taking children outside the home by 11.6 to 15.9 pp and fathers' probability of playing with their children by 12.5 to 19.4 pp. In addition, suggestive evidence exists that fathers become more likely to sing songs with their children. (Although this is statistically significant for one of the five bandwidths, the coefficients are large and quite consistent in magnitude across the bandwidths.) At the end of this section, we discuss the potential reasons for the larger increase in fathers' involvement with children than mothers' by examining the changes in fathers' characteristics and differences between mothers and fathers in education and age.<sup>31</sup>

#### 5.4.2 Channels via Learning Materials and Inadequate Supervision

This section explores whether changes in learning materials and supervision play a role in the estimated positive impact on readiness to learn. First, we examine the RDD graphs given in Figure 5. The first row of the figure on outcomes about the existence of books suggests an increase. The jump at the cutoff in Panel (C) plot about the existence of any books is particularly visible. In addition, panel (G) suggests a drop at the cutoff for inadequate supervision.

Table 7 shows that the reduced-form impacts regarding whether there are three or more books, ten or more books, and any books at home are positive across all bandwidths and large. However, the impacts on three or more books and ten or more books are statistically insignificant. In contrast, the estimated positive impact on having any books in the house is statistically significant for 7-year and 8-year bandwidths and large in magnitude across all specifications—as suggested by the RDD graph in panel (C) of Figure 5. In essence, there is suggestive evidence that women's exposure to the reform increases the presence of books in the household. Quantitatively, the 2SLS estimates in Online Appendix Table C3 show that women's completion of at least middle school increases the probability of having any books at home by about 25–40 pp.

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<sup>31</sup>Online Appendix Table C2 provides the 2SLS estimates of the impact of a mother's middle school completion status on parents' specific activities with their children. The results show that a mother's completion of at least middle school raises the probability of the mother reading to the child by about 40–60 pp and the probability of the father taking the child out by about 50–60 pp.



We also examine the impact on the presence of toys in the house, which might help children’s thinking, learning, and social interaction (Trawick-Smith et al., 2011). Table 8 shows that no evidence exists of an effect of women’s reform exposure on the presence of homemade toys or toys from a shop or toys as house objects. Finally, Table 7 illustrates the reduced-form impact on inadequate supervision of children. Inadequate supervision comprises leaving children alone or under the supervision of other young children, as this raises the probability of accidents, neglect, and abuse. The results indicate no evidence of an effect on inadequate supervision.

#### **5.4.3 Channels via Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age**

The schooling reform increases mothers’ schooling, which promotes their children’s early learning and school readiness. However, women’s exposure to the schooling reform could affect children’s outcomes also via changes in their husbands’ characteristics. In the context of intimate partner violence, Akyol and Kirdar (2022) find that the same schooling reform’s effects on intimate partner violence outcomes in Turkey partly result from the changing partner characteristics with the reform. Hence, we also look at the policy effect on several outcomes related to fathers’ and marital match characteristics. In addition, prior studies on the impact of the 1997 reform have shown that exposed cohorts’ labor market outcomes are affected (Aydemir and Kirdar, 2017). Moreover, an increase in employment could increase childcare use, which is well-established to affect early childhood development (Havnes and Mogstad, 2011; Felfe and Lalive, 2018).<sup>32</sup> Therefore, we also examine how parental labor market outcomes and formal childcare use change.

Figure 6 presents the RDD graphs for the father’s middle school completion status, the mother’s and father’s employment status in the last 12 months, the child’s enrollment in formal daycare, the age gap between parents, and the probability that the mother has an education level at least as high as that of the father. Panel (A) of Figure 6 suggests a strong jump at the cutoff in the probability of the father completing at least middle school. Panels (B) and (C) show no visible jumps in the employment status of either the mother or the father. In contrast, panel (E) shows a drop in the parental age gap, and panel (F) suggests

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<sup>32</sup>The literature on the effects of childcare on child development suggests that whether the effects are positive or negative is context-specific, and the quality of childcare and the parents’ socioeconomic background matter. See van Huizen and Plantenga (2018) for a review and discussion of the literature.

a jump in the probability of the mother having an education level as high as or higher than the father's.

As can be seen from the RDD estimates in Table 9, the husbands of women exposed to the policy are, on average, 4.6 to 7.5 pp more likely to have at least a middle school degree than the husbands of women not exposed to the policy; however, this is not statistically significant at conventional levels. We also examine the policy effect on the mother's employment status within the last year and the reduced-form effect on the father's employment status because such effects would mean that parents have less (or more) potential time to spend with their children. However, Table 8 shows no evidence of effects on mother or father employment. In addition, we explore whether women's exposure to the new policy changes the likelihood of using formal daycare for their children. As shown in Table 9, no evidence of such an effect exists, consistent with the lack of evidence for parental employment outcomes.

The results in Table 9 imply that we cannot rule out an impact on the father's schooling attainment. Although the statistical evidence is weak (given our modest sample size), the magnitude of the estimated impact is large. This impact is important because an increase in the father's schooling would be consistent with our findings regarding the rise in the father's support for the child's learning, as shown in Tables 6 and 7. However, even without more schooling for fathers, we might expect a more educated mother to facilitate other household members' contribution to children's care and education. For instance, a more educated mother might be more likely to remind her husband to spend more time with their children. Such a change would be more likely to occur if women's bargaining power in the household increases. Hence, we also examine the reduced-form impacts on the schooling and age gaps between mothers and fathers in Table 9.

The last two rows of Table 9 show the policy impact on two key determinants of women's bargaining power: the age gap and the schooling gap with their partners. The impact on the age gap is negative and large for all bandwidths but the narrowest one, indicating a narrowing of the age gap by 0.2 to 0.3 years. However, this impact is not statistically significant at conventional levels. The 2SLS estimates in Online Appendix Table C4 show that the mother's completion of at least middle school decreases the age gap by about 2 years. Although this is also imprecisely estimated, the coefficients for some bandwidths are marginally statistically insignificant. We also explore the impact on the probability of mothers having educational attainment as high as or higher than their husbands. In

fact, the impact on this incidence is positive and statistically significant; the probability of the mother having an education level at least as high as the father increases by 10 to 20 percentage points. These findings suggest that the education reform increases women’s bargaining power vis-à-vis their husbands, which would increase women’s ability to facilitate their husbands’ involvement with their children.<sup>33</sup>

## 5.5 Robustness Checks

### 5.5.1 Nonparametric Results

Here, we provide our nonparametric RDD results based on the CCFT and IK optimal bandwidths for all outcomes of interest. We provide nonparametric results only as a robustness check primarily because our first-stage estimates of the policy impact on mothers’ middle school completion status with the state-of-art CCFT approach are statistically insignificant (marginally with sample A) albeit large in magnitude. The lack of statistical significance primarily results from the fact that the CCFT approach typically chooses narrow bandwidths, and the optimal bandwidths for the middle school completion outcome are particularly narrow.<sup>34</sup>

Panel (A) of Table 3 presents the reduced-form nonparametric estimates for potential sample selection and our key outcomes of middle school completion and readiness to learn. The estimates about the policy effect on sample selection are positive but statistically insignificant, as are the parametric estimates. At the same time, the nonparametric coefficients are smaller in magnitude than the parametric estimates. Second, we examine the policy impact on mothers’ middle school attainment. The policy increases middle schooling completion by 11 pp for sample A and 9.7 pp for sample B. The bandwidths on the left and right-hand sides are 34 and 33 months with sample A and 33 and 43 months with sample B. It is perhaps unsurprising that the precision is low with these small samples. Nonetheless, the policy impacts on middle school completion with both samples are large in magnitude,

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<sup>33</sup>Wages are not observed in TDHS. But, using labor force surveys, Aydemir and Kirdar (2017) find significant effects of the compulsory school reform on women’s wages but much smaller effects on men’s wages in Turkey. This finding is also consistent with the increased bargaining power of women as women’s share of household income may increase due to the reform.

<sup>34</sup>Narrow bandwidths could be particularly problematic in our setting due to the imperfect compliance among the 1986 and 1987 birth cohorts (two year-of-birth cohorts immediately around the cutoff). Imperfect compliance of these birth cohorts generates much curvature around the cutoff; hence, it is likely to force a narrow bandwidth in the tradeoff between bias and precision.

albeit not as large as the parametric estimates in Table 2. Finally, panel (A) of Table 3 shows that mothers' exposure to the reform increases children's readiness to learn by 4.7 pp. This magnitude is similar to the parametric estimates with narrow bandwidths in Table 4. Also, as in parametric estimates, the coefficient for social-emotional development is positive and large but statistically insignificant.

Investigating the channels regarding parental involvement with children in Table 3, we see that nonparametric estimates indicate evidence of a positive effect of mothers' reform exposure on the number of total father activities, fathers engaging in four or more activities, fathers engaging in any activity, fathers taking out their children, and mothers reading books to their children—consistent with our parametric estimates. As in parametric estimates, the reduced form nonparametric estimates about the number of total mother activities and the incidence of mothers playing with their children are positive and large but statistically insignificant. However, unlike the parametric estimates, the reduced-form nonparametric estimates reveal statistical evidence of a positive impact on mothers' engagement in any activity, fathers reading books, fathers counting, drawing, and naming with their children, and the availability of homemade toys. Moreover, unlike the parametric estimates, the effect on the availability of ten or more books at home is positive and large but marginally statistically insignificant. Overall, the nonparametric estimates with the CCFT optimal bandwidths regarding parental involvement with children are highly consistent with the parametric estimates.

The nonparametric RDD estimates with the IK optimal bandwidths are provided in Online Appendix Table A3. Overall, the results are highly similar to those with the CCFT optimal bandwidths and the parametric approach. Compared to the CCFT optimal bandwidths, the effect on middle school completion is more precisely estimated, and the effect on readiness to learn is less precisely estimated, although statistical evidence also emerges for readiness to learn with 1.5 optimal bandwidths. In terms of channels, statistically significant positive impacts exist for the total number of father activities, total adult activities, father conducting four or more activities, and father conducting any activity. Regarding specific activities, evidence of a positive effect exists for the father reading books, the father taking out the child, the mother reading books, and the mother playing with the child. In addition, there is evidence of a rise in the probability of the mother having an education level that is at least as high as the father.

### 5.5.2 Multiple Hypotheses Testing

Since we test a family of hypotheses regarding the early child development indicators (Tables 4 and 5), as well as the potential mechanisms (Tables 6–9), we calculate Romano and Wolf (2005a,b) step-down adjusted p-values robust to multiple hypothesis testing. Table 11 shows the results of this multiple hypothesis testing for the full sample, using a bandwidth of 96 months on each side of the cutoff.<sup>35</sup> The statistical evidence for the reduced-form estimate for readiness to learn remains at the 5 percent level, and the evidence for the 2SLS estimate is at the 10 percent level. Regarding the mechanisms, the statistical evidence for total father activities and father engaging in any activity remains at the 5 percent level, and the evidence for father engaging in 4 or more activities is at the 10 percent level. Regarding detailed parental activities, statistical evidence exists for the father taking his child out (at the 10 percent level) and for the father playing with his child (at the 1 percent level). At the same time, the evidence for the rise in the incidence of any books and the increase in the probability of women having an education level equal to or higher than their husbands is weaker (p-value is 0.158). Online Appendix Table A4 provides the corresponding results for the sample of women whose mother tongue is Turkish. The patterns are quite similar; however, the statistical significance is overall lower.

### 5.5.3 Alternative Samples

Some mothers have more than one children who are 24- to 59-months-old in sample A or 36- to 59-months-old in sample B. In order to have one child for each mother, we restrict the sample to the last-born children of each mother in our main analysis. Here, we remove this restriction and allow the sample to include siblings. The reduced-form parametric RDD estimates with this larger sample are provided in Online Appendix Table A5 (for 8-year bandwidths on each cutoff side). Overall, the results are highly consistent with those in the main tables. The reduced-form impact on readiness to learn is smaller (4.5 pp compared to 7.4 pp in Table 3) but remains statistically significant at the 10 percent level. The evidence for the rise in parental involvement with children remains; the estimated coefficients for the total number of activities of mothers, fathers, and both parents are as large as those in Table 6. Moreover, the effects for fathers and both parents are statistically significant. The statistical evidence for the rise in the incidence of specific activities conducted by fathers

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<sup>35</sup>We use the Stata `rwolf2` command written by Clarke et al. (2020).

and mothers exists for fewer activities. Similarly, the statistical evidence on the impact of the existence of books at home is weaker.

Another alternative sample check we conduct regards the analysis of channels via parental support for learning and learning materials. The survey elicits these channels for 24- to 59-month-old children, and, accordingly, our main analysis covers this sample. However, our key outcome variables about early child development are for 36- to 59-month-old children. We kept the sample of 24- to 59-month-old children in our analysis of the channels primarily because parental support for learning and learning materials during 24–35 months would also affect development outcomes at later months. Nonetheless, here, we repeat our channels analysis with a sample comprising 36- to 59-month-old children only to keep the sample compositions in the analysis of development indicators and their channels the same.

Using the sample of 36- to 59-month-old children, Online Appendix Tables D1 to D4 replicate our main findings in Tables 6 to 9. Overall, the patterns of the results are similar. However, the coefficients are generally less precisely estimated, which is expected given the smaller sample size. In addition, the magnitudes of the coefficients indicating positive effects on parental support for learning also become somewhat smaller, although they remain large. In contrast, the magnitudes of the coefficients of learning materials and fathers' middle school completion status are similar.

#### **5.5.4 Alternative Specifications**

Our parametric RDD analysis started with 8-year bandwidths on each side of the cutoff and gradually zoomed in around the cutoff incrementally by one year at each step until we had 4-year bandwidths on each side. This analysis used linear polynomials on each side of the cutoff. Here, we assess our findings' robustness to using quadratic polynomials with the same set of bandwidths. We replicate our main results in Online Appendix Tables E1 to E7 using quadratic trends. Overall, the results are quite robust. As expected, with narrow bandwidths of 4 or 5 years on each side of the cutoff, the results are sometimes volatile with quadratic trends. However, evidence of a policy impact on women's middle school completion remains. The statistical evidence on early child development indicators becomes somewhat weaker. In contrast, the statistical evidence regarding the changes in parental involvement persists. So does the evidence suggesting a rise in women's bargaining power. Finally, the suggestive evidence about the rise in learning materials also remains.

Lastly, we check the robustness of our findings to the exclusion of control variables. In particular, we keep only the biological characteristics of children that are critical determinants of development, such as age, gender, and birth order, but drop all other socioeconomic factors. Using such a specification, we replicate our main estimates in Online Appendix Tables F1 to F6. The results change minimally. Essentially, all our main findings remain.

## 6 Conclusions

This paper examines the effect of maternal education on early childhood outcomes when children are between 24 to 59 months and explores the potential mechanisms through which maternal education may affect early childhood development. The empirical strategy exploits a major compulsory schooling reform in Turkey that raised the number of years of schooling from 5 to 8. The fact that the reform affected a large group and led to a substantial increase in their education level improves the generalizability of our results, especially for emerging economies where the average education level is low.

We find that the reform significantly increased mothers' schooling attainment and improved children's readiness to learn. Moreover, in families with above-average socio-economic conditions, the first-stage impact on women's middle school completion is stronger and the improvement in children's readiness to learn is larger and more precisely estimated. In addition, there is suggestive evidence of a positive impact on children's social-emotional development. We examine the potential channels using the unique feature of our data that provides detailed information on parental activities with children and a rich set of family environment characteristics during early childhood. The results show that parents, particularly fathers, spend more time with their children, and the variety of activities parents engage with their children rises. In terms of material investments, we find suggestive evidence of an increase in learning materials at home, such as books.

Our findings highlight the increasing paternal involvement with children in response to being married to more educated women as a potential channel to improve early childhood development. The higher paternal time investment may be driven by the increased bargaining power of women or a selection effect where more educated mothers match with fathers who are more prone to making such investments. In fact, exploring father outcomes, we find evidence of a reduction in the schooling gap between partners and suggestive evidence of a

reduction in the age gap, implying an increase in women's bargaining power. We also find suggestive evidence of a rise in fathers' schooling consistent with assortative mating.

Readiness to learn and socio-emotional development reflect general skills and behaviors strongly related to later life outcomes. Our results show that maternal education affects the formation of these pre-academic skills among children as young as 36 to 59 months. Thus, intergenerational correlation in skills and education outcomes begins with divergence in skill formation in the early years. Our findings highlight the role of parental involvement in explaining this divergence and point to policies such as counseling and at-home interventions to improve parenting skills as a potentially efficient way to improve skill formation and reduce skill gaps.



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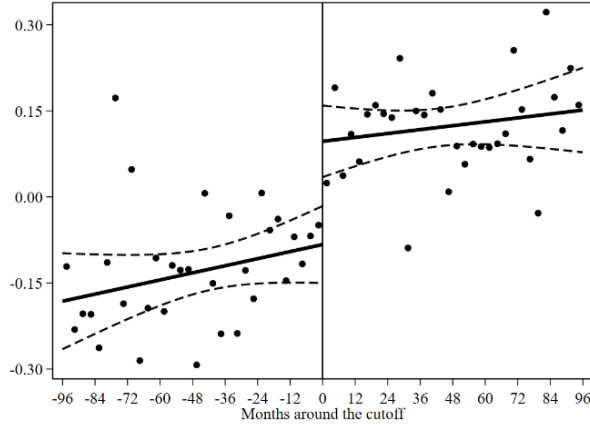
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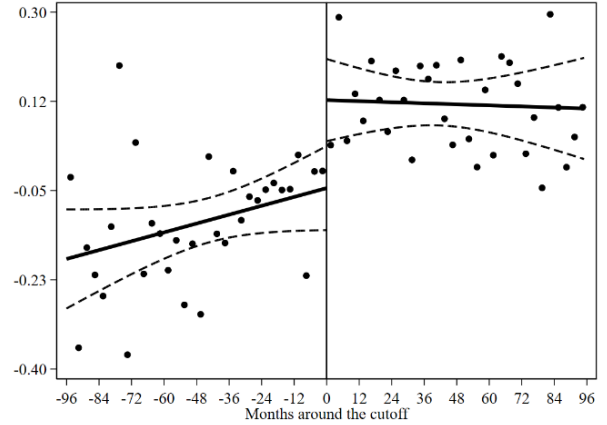
# Figures

**Figure 1. RDD Graphs for Middle School Completion**

(a) Sample A: Women with 24- to 59-month-old children

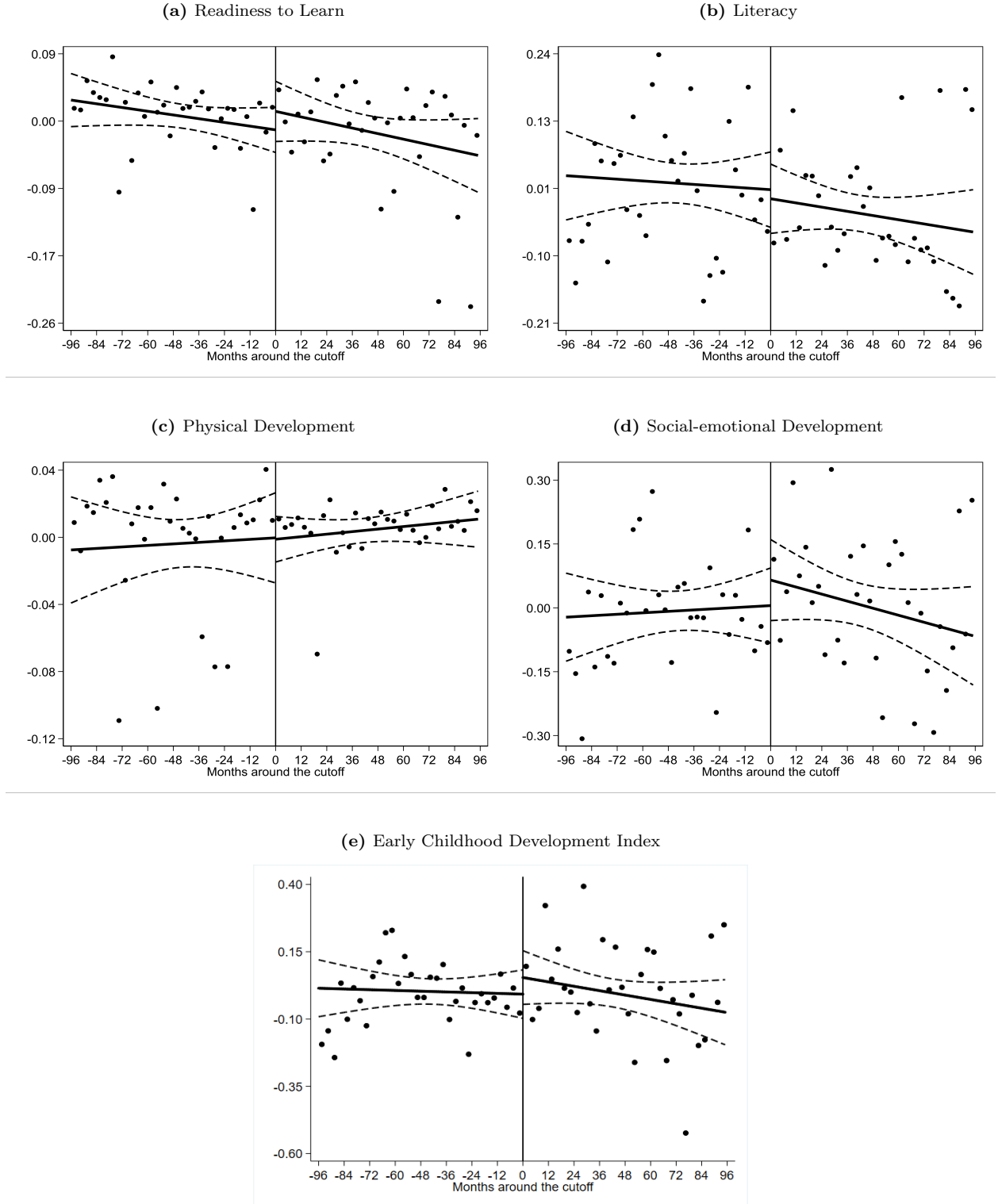


(b) Sample B: Women with 36- to 59-month-old children



*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women with at least one child aged 24-59 months in panel (A) and women with at least one child aged 36-59 months in panel (B). The cutoff point is January 1987, and the running variable is the month-year of birth. The plots present the residuals of women's middle school completion status after regressing it on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, and dummies for the grandmother's schooling levels. Linear time trends are fit on either side of the cutoff.

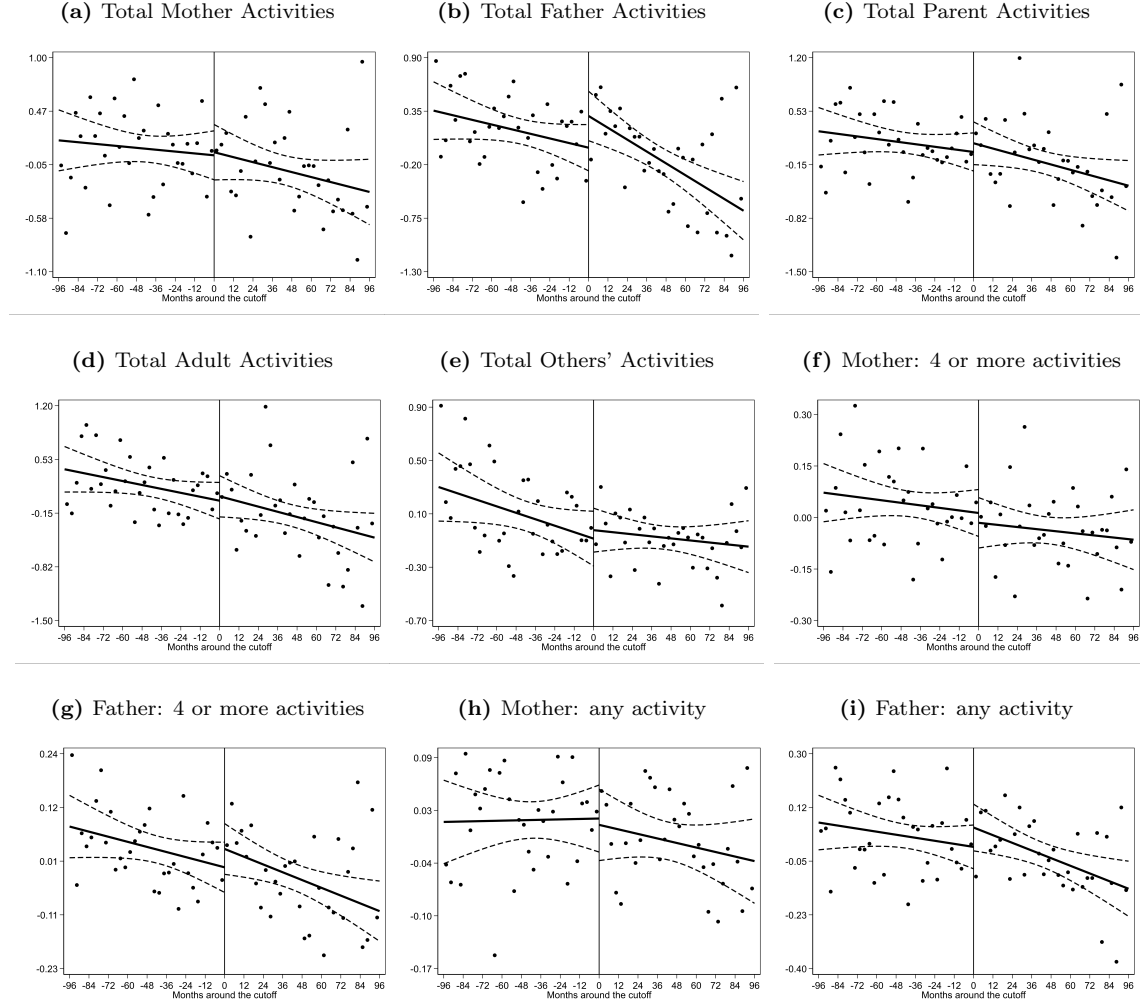
**Figure 2.** RDD Graphs for Early Child Development Indicators



*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The cutoff point is January 1987, and the running variable is the month-year of birth. The plots present the residuals of the specified variables after regressing it on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. Linear time trends are fit on either side of the cutoff, and 95% confidence intervals are displayed.

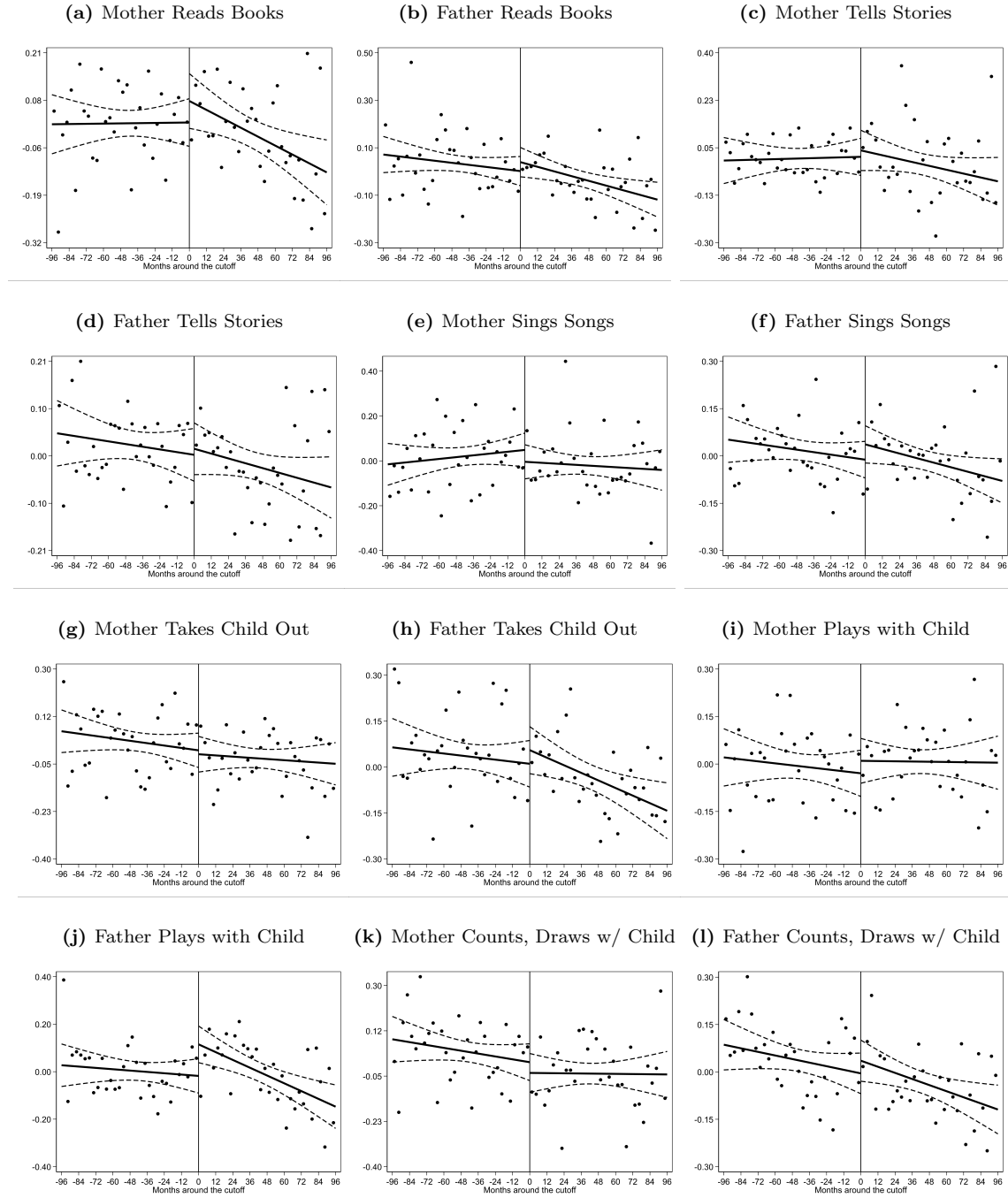


**Figure 3.** RDD Graphs for Parental Involvement with Children



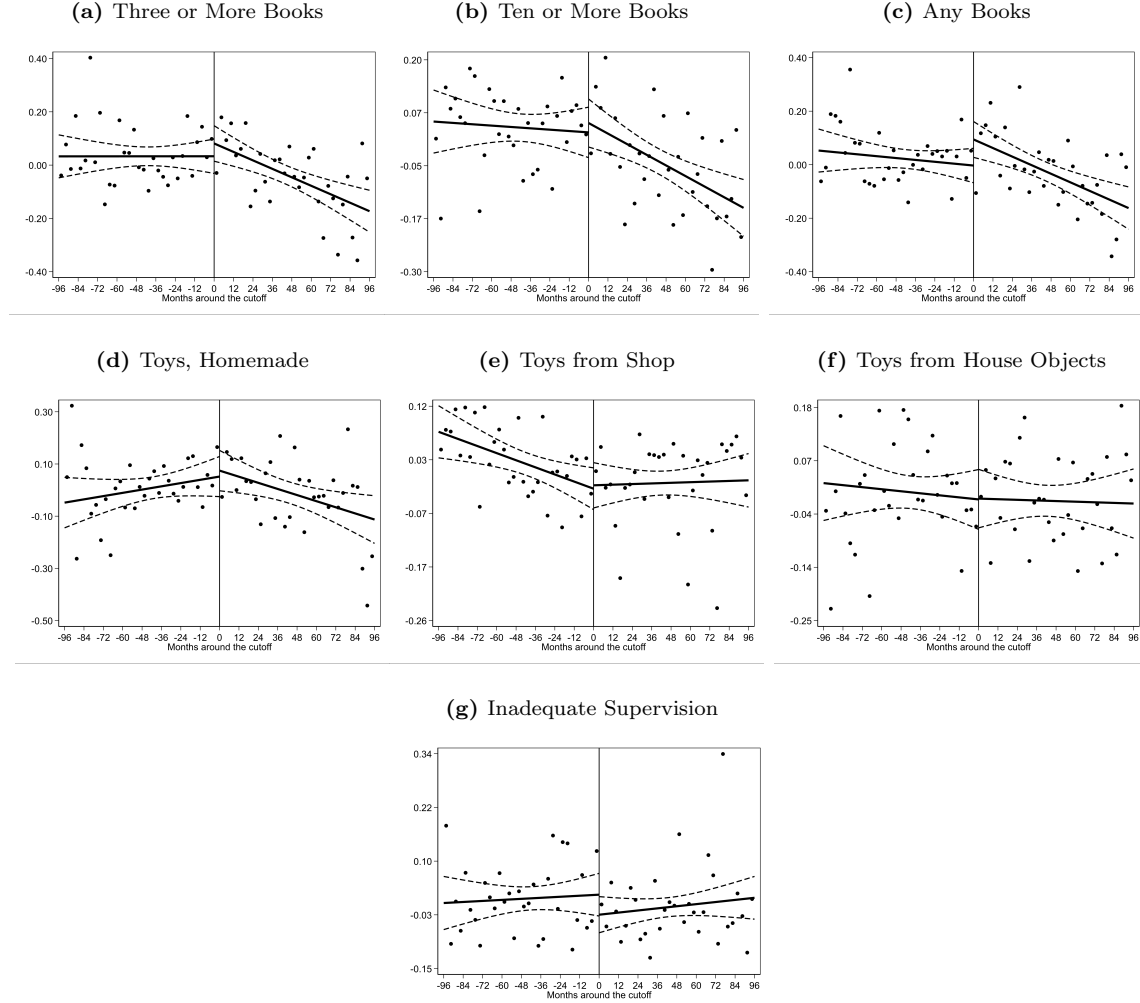
*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The cutoff point is January 1987, and the running variable is the month-year of birth. The plots the residuals of the specified variables after regressing it on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. Linear time trends are fit on either side of the cutoff, and 95% confidence intervals are displayed.

**Figure 4.** RDD Graphs for Specific Parental Activities with Children



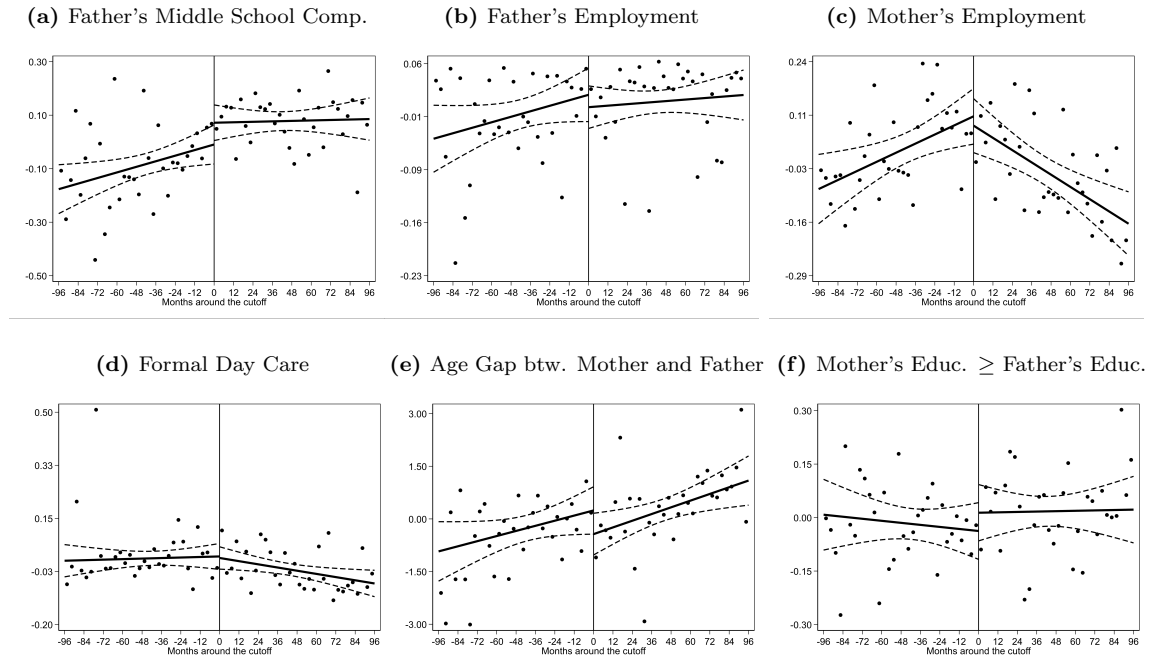
*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The cutoff point is January 1987, and the running variable is the month-year of birth. The plots the residuals of the specified variables after regressing them on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. Linear time trends are fit on either side of the cutoff, and 95% confidence intervals are displayed.

**Figure 5. RDD Graphs for Learning Materials and Inadequate Supervision**



*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The cutoff point is January 1987, and the running variable is the month-year of birth. The plots the residuals of the specified variables after regressing them on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. Linear time trends are fit on either side of the cutoff, and 95% confidence intervals are displayed.

**Figure 6.** RDD Graphs for Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age



*Notes:* The data come from the 2018 Turkish Demographic Health Survey. Employment refers to employment in the last 12 months. The sample includes women who have at least one child aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The cutoff point is January 1987, and the running variable is the month-year of birth. The plots the residuals of the specified variables after regressing them on the following set of control variables: birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. Linear time trends are fit on either side of the cutoff, and 95% confidence intervals are displayed.

# Tables

**Table 1.** Descriptive Statistics

<i>Child Development Indicators (36-59 months)</i>		Mean	<i>The number of activities conducted by</i>	Mean	S.D.
Readiness to learn		0.967	Mother	3.583	(1.901)
Literacy and numeracy		0.137	Father	1.770	(1.820)
Social-emotional development		0.739	Parents	3.824	(1.908)
Physical development		0.987	Adults in the household	4.268	(1.732)
Early childhood development		0.727	Non-parents in the household	0.644	(1.177)
<i>Ownership of Learning Materials and Supervision</i>			<i>Activity Status of Parents</i>	<i>Mother</i>	<i>Father</i>
Three or more books	0.474		Mean	Mean	
Ten or more books	0.264		Any activity conducted	0.926	0.656
Any book	0.596		At least four activities conducted	0.551	0.188
Home-made toys	0.652		Reading books or looking at picture books	0.457	0.232
Toys from shop	0.942		Telling stories	0.434	0.198
Toys from house objects	0.843		Singing songs	0.637	0.176
Inadequate care	0.085		Taking the kid outside of home	0.825	0.465
Day care	0.092		Playing with the kid	0.689	0.456
			Naming, counting, or drawing things	0.605	0.275
<i>Parental Education and Employment</i>			<i>Differences in Spousal Characteristics</i>	Mean	S.D.
Mother graduated from middle school	0.595		Age gap (father - mother)	4.267	(3.854)
Mother employed in the last 12 months	0.273		Mother has same or more education	0.554	(0.497)
Father graduated from middle school	0.688				
Father employed in the last 12 months	0.968				

*Notes:* The 2018 Turkey Demographic and Health Survey. The sample includes the children of mothers born in the eight-year window around January 1987 (the cutoff date to be eligible for the extension of compulsory schooling). Also, for each mother, our sample is restricted to her youngest child in the specific age group. The statistics display the mean of the specified outcome, while the standard deviations for the number of activities are reported in the parenthesis. While the statistics for early child development are for 36–59-month-old kids (N=606), the other statistics are for those aged 24–59-month-olds (N=966). The number of observations is slightly smaller for some outcomes because of missing data.

**Table 2.** Policy Effect on Mothers' Middle School Completion Status

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>I) Full Sample</b>					
<b>A) Sample A (Women with 24- to 59-month-old children)</b>					
Policy	0.190*** [0.055]	0.199*** [0.057]	0.187*** [0.062]	0.168** [0.066]	0.139* [0.072]
Observations	966	901	811	693	578
<b>B) Sample B (Women with 36- to 59-month-old children)</b>					
Policy	0.152** [0.069]	0.150** [0.073]	0.133* [0.075]	0.092 [0.080]	0.109 [0.090]
Observations	614	576	523	436	367
<b>II) Sample of Mothers whose Mother-Tongue is Turkish</b>					
<b>A) Sample A (Women with 24- to 59-month-old children)</b>					
Policy	0.210*** [0.062]	0.216*** [0.064]	0.226*** [0.068]	0.220*** [0.077]	0.193** [0.086]
Observations	681	636	576	503	420
<b>B) Sample B (Women with 36- to 59-month-old children)</b>					
Policy	0.155* [0.086]	0.162* [0.091]	0.175* [0.093]	0.152 [0.103]	0.164 [0.117]
Observations	441	411	377	319	269

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 months or 36-59 months, as shown in each panel. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, and dummies for the grandmother's schooling levels. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 3.** Potential Sample Selection

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>I) Full Sample</b>					
<i>A) Having at least one kid aged between 24-59 months</i>					
Policy	0.030 [0.036]	0.045 [0.039]	0.050 [0.042]	0.049 [0.045]	0.031 [0.048]
No. Obs.	3,498	3,099	2,649	2,188	1,752
<i>B) Having at least one kid aged between 36-59 months</i>					
Policy	0.020 [0.027]	0.041 [0.029]	0.040 [0.032]	0.038 [0.033]	0.038 [0.035]
No. Obs.	3,498	3,099	2,649	2,188	1,752
<b>II) Sample of Mothers whose Mother-Tongue is Turkish</b>					
<i>A) Having at least one kid aged between 24-59 months</i>					
Policy	0.040 [0.041]	0.054 [0.045]	0.062 [0.049]	0.059 [0.054]	0.048 [0.060]
No. Obs.	2,644	2,343	2,016	1,680	1,339
<i>B) Having at least one kid aged between 36-59 months</i>					
Policy	0.020 [0.031]	0.045 [0.033]	0.043 [0.036]	0.044 [0.038]	0.050 [0.042]
No. Obs.	2,644	2,343	2,016	1,680	1,339

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 or 36-59 months, as shown in each panel. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, and dummies for the grandmother's schooling levels. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 4.** Reduced-Form Effects on Early Child Development Indicators

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>I) Full Sample</b>					
<b>A) Readiness to Learn</b>					
Mother's Policy Exposure	0.074**	0.057*	0.058*	0.051*	0.041
	[0.031]	[0.029]	[0.033]	[0.031]	[0.031]
Observations	606	568	515	429	362
<b>B) Literacy and Numeracy</b>					
Mother's Policy Exposure	-0.049	-0.016	0.003	0.012	-0.047
	[0.066]	[0.068]	[0.075]	[0.085]	[0.093]
Observations	594	558	506	421	354
<b>C) Physical Development</b>					
Mother's Policy Exposure	-0.003	-0.002	-0.016	-0.012	-0.024
	[0.020]	[0.019]	[0.020]	[0.020]	[0.023]
Observations	604	566	513	428	362
<b>D) Social-emotional Development</b>					
Mother's Policy Exposure	0.034	0.074	0.067	0.088	0.077
	[0.088]	[0.091]	[0.094]	[0.101]	[0.115]
Observations	590	553	501	416	349
<b>E) Early Childhood Development Index</b>					
Mother's Policy Exposure	0.055	0.081	0.074	0.064	0.036
	[0.083]	[0.088]	[0.090]	[0.093]	[0.108]
Observations	575	540	489	406	342
<b>II) Sample of Mothers whose Mother-Tongue is Turkish</b>					
<b>A) Readiness to Learn</b>					
Mother's Policy Exposure	0.091**	0.077**	0.085**	0.072*	0.078**
	[0.035]	[0.034]	[0.038]	[0.037]	[0.038]
Observations	437	407	373	316	267
<b>B) Literacy and Numeracy</b>					
Mother's Policy Exposure	-0.069	-0.037	-0.020	-0.040	-0.103
	[0.088]	[0.090]	[0.102]	[0.113]	[0.126]
Observations	429	401	367	311	261
<b>C) Physical Development</b>					
Mother's Policy Exposure	-0.022	-0.020	-0.029	-0.028	-0.040
	[0.021]	[0.021]	[0.025]	[0.024]	[0.029]
Observations	436	406	372	316	267
<b>D) Social-emotional Development</b>					
Mother's Policy Exposure	0.036	0.059	0.038	0.024	0.025
	[0.098]	[0.102]	[0.105]	[0.114]	[0.121]
Observations	427	398	365	309	260
<b>E) Early Childhood Development Index</b>					
Mother's Policy Exposure	0.066	0.082	0.064	0.011	0.010
	[0.094]	[0.100]	[0.101]	[0.108]	[0.117]
Observations	416	389	356	302	255

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the mother's policy exposure dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the reduced form specifications also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.



**Table 5.** 2SLS Estimates for Early Child Development Indicators

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>I) Full Sample</b>					
<b>A) Readiness to Learn</b>					
Mother's Middle School Completion Status	0.374*	0.281	0.265	0.292	0.200
	[0.198]	[0.174]	[0.176]	[0.220]	[0.171]
Observations	606	568	515	429	362
F-stat	11.64	11.45	12.09	6.713	7.108
<b>B) Literacy and Numeracy</b>					
Mother's Middle School Completion Status	-0.230	-0.070	0.014	0.062	-0.200
	[0.299]	[0.293]	[0.305]	[0.414]	[0.360]
Observations	594	558	506	421	354
F-stat	13.68	13.91	15.20	8.934	10.34
<b>C) Physical Development</b>					
Mother's Middle School Completion Status	-0.013	-0.011	-0.073	-0.072	-0.114
	[0.095]	[0.088]	[0.088]	[0.110]	[0.104]
Observations	604	566	513	428	362
F-stat	11.82	11.47	11.90	6.228	7.108
<b>D) Social-emotional Development</b>					
Mother's Middle School Completion Status	0.164	0.338	0.294	0.479	0.352
	[0.400]	[0.393]	[0.391]	[0.544]	[0.499]
Observations	590	553	501	416	349
F-stat	12.78	12.85	13.16	6.998	7.785
<b>E) Early Childhood Development Index</b>					
Mother's Middle School Completion Status	0.242	0.341	0.295	0.321	0.146
	[0.345]	[0.343]	[0.338]	[0.437]	[0.399]
Observations	575	540	489	406	342
F-stat	15.43	15.95	16.57	9.242	11.45
<b>II) Mothers' Mother-Tongue is Turkish</b>					
<b>A) Readiness to Learn</b>					
Mother's Middle School Completion Status	0.436*	0.355*	0.347*	0.302	0.299
	[0.241]	[0.210]	[0.204]	[0.199]	[0.197]
Observations	437	407	373	316	267
F-stat	7.46	7.51	8.46	6.96	6.00
<b>B) Literacy and Numeracy</b>					
Mother's Middle School Completion Status	-0.308	-0.153	-0.075	-0.143	-0.342
	[0.367]	[0.354]	[0.349]	[0.368]	[0.374]
Observations	429	401	367	311	261
F-stat	8.79	9.25	10.80	10.00	8.56
<b>C) Physical Development</b>					
Mother's Middle School Completion Status	-0.106	-0.091	-0.115	-0.115	-0.152
	[0.096]	[0.088]	[0.097]	[0.095]	[0.109]
Observations	436	406	372	316	267
F-stat	7.75	7.73	8.90	7.02	6.00
<b>D) Social-emotional Development</b>					
Mother's Middle School Completion Status	0.171	0.262	0.15	0.095	0.088
	[0.434]	[0.411]	[0.382]	[0.409]	[0.387]
Observations	427	398	365	309	260
F-stat	7.66	8.20	9.34	7.80	7.07
<b>E) Early Childhood Development Index</b>					
Mother's Middle School Completion Status	0.283	0.324	0.221	0.037	0.032
	[0.371]	[0.354]	[0.321]	[0.334]	[0.322]
Observations	416	389	356	302	255
F-stat	9.37	10.35	12.45	11.21	10.17

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate 2SLS regression using the sample defined according to the bandwidths specified in the column headings. In the regressions, the mother's middle school completion status is instrumented by the mother's policy exposure status. The regressions include split linear time trends on either side of the cutoff where the running variable is the month-year of birth. The specification also includes birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 6.** Reduced-Form Effects on Parental Activities with Children, Full Sample

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Total Mother Activities</b>					
Mother's Policy Exposure	0.170 [0.202]	0.277 [0.209]	0.336 [0.230]	0.323 [0.240]	0.171 [0.271]
No Obs.	966	901	811	693	578
<b>Total Father Activities</b>					
Mother's Policy Exposure	0.566*** [0.202]	0.607*** [0.220]	0.633*** [0.228]	0.581** [0.244]	0.495* [0.259]
No Obs.	966	901	811	693	578
<b>Total Parent Activities</b>					
Mother's Policy Exposure	0.263 [0.190]	0.389* [0.199]	0.418* [0.220]	0.377* [0.224]	0.149 [0.254]
No Obs.	966	901	811	693	578
<b>Total Adult Activities</b>					
Mother's Policy Exposure	0.291 [0.192]	0.445** [0.195]	0.441** [0.215]	0.394* [0.221]	0.310 [0.248]
No Obs.	966	901	811	693	578
<b>Total Others' Activities</b>					
Mother's Policy Exposure	0.177 [0.134]	0.216 [0.140]	0.153 [0.151]	0.150 [0.161]	0.297 [0.183]
No Obs.	966	901	811	693	578
<b>Mother: 4 or more activities</b>					
Mother's Policy Exposure	-0.026 [0.060]	-0.004 [0.065]	0.019 [0.071]	0.038 [0.072]	0.017 [0.081]
No Obs.	951	887	799	683	569
<b>Father: 4 or more activities</b>					
Mother's Policy Exposure	0.088** [0.043]	0.081* [0.045]	0.092* [0.047]	0.065 [0.050]	0.024 [0.051]
No Obs.	951	887	799	683	569
<b>Mother: Any activity</b>					
Mother's Policy Exposure	0.024 [0.034]	0.041 [0.034]	0.037 [0.036]	0.025 [0.037]	0.023 [0.041]
No Obs.	966	901	811	693	578
<b>Father: Any activity</b>					
Mother's Policy Exposure	0.125** [0.052]	0.151*** [0.054]	0.136** [0.055]	0.123** [0.061]	0.141** [0.061]
No Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 7.** Reduced-Form Effects on Specific Parental Activities with Children, Full Sample

	<i>Bandwidth (years) around the cutoff</i>					<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4	8	7	6	5	4
	<b>Father Reads Books</b>					<b>Mother Reads Books</b>				
Mother's Policy Exposure	0.035	0.025	0.050	0.080	0.070	0.089	0.101*	0.102	0.145**	0.133
No Obs.	[0.056] 951	[0.059] 887	[0.063] 799	[0.067] 683	[0.073] 569	[0.058] 951	[0.060] 887	[0.063] 799	[0.071] 683	[0.080] 569
	<b>Father Tells Stories</b>					<b>Mother Tells Stories</b>				
Mother's Policy Exposure	0.016	0.015	0.011	0.021	0.005	0.023	0.019	0.036	0.064	0.047
No Obs.	[0.056] 951	[0.060] 887	[0.066] 799	[0.072] 683	[0.078] 569	[0.061] 951	[0.066] 887	[0.069] 799	[0.075] 683	[0.081] 569
	<b>Father Sings Songs</b>					<b>Mother Sings Songs</b>				
Mother's Policy Exposure	0.083	0.089	0.101*	0.072	0.073	-0.038	-0.020	-0.003	-0.031	-0.045
No Obs.	[0.055] 951	[0.058] 887	[0.061] 799	[0.066] 683	[0.070] 569	[0.062] 951	[0.066] 887	[0.072] 799	[0.073] 683	[0.076] 569
	<b>Father Takes Child Out</b>					<b>Mother Takes Child Out</b>				
Mother's Policy Exposure	0.124**	0.116*	0.140**	0.147**	0.159**	0.002	-0.001	-0.010	-0.024	-0.022
No Obs.	[0.059] 951	[0.062] 887	[0.064] 799	[0.071] 683	[0.072] 569	[0.052] 951	[0.050] 887	[0.056] 799	[0.060] 683	[0.063] 569
	<b>Father Plays with Child</b>					<b>Mother Plays with Child</b>				
Mother's Policy Exposure	0.194***	0.192***	0.186***	0.151**	0.125*	0.054	0.039	0.100*	0.115*	0.061
No Obs.	[0.053] 951	[0.055] 887	[0.059] 799	[0.065] 683	[0.068] 569	[0.056] 951	[0.059] 887	[0.057] 799	[0.060] 683	[0.066] 569
	<b>Father Counts, Draws with Child</b>					<b>Mother Counts, Draws with Child</b>				
Mother's Policy Exposure	0.076	0.093	0.069	0.048	-0.004	-0.015	0.020	0.003	-0.051	-0.102
No Obs.	[0.061] 951	[0.066] 887	[0.068] 799	[0.075] 683	[0.081] 569	[0.065] 951	[0.067] 887	[0.074] 799	[0.080] 683	[0.086] 569

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 8.** Reduced-Form Effects on Learning Materials and Inadequate Supervision, Full Sample

	<i>Bandwidth (years) around the cutoff</i>				
	<i>8</i>	<i>7</i>	<i>6</i>	<i>5</i>	<i>4</i>
<b>Three or More Books</b>					
Mother's Policy Exposure	0.056 [0.048]	0.064 [0.051]	0.060 [0.053]	0.050 [0.057]	0.024 [0.061]
No. Obs.	965	901	811	693	578
<b>Ten or More Books</b>					
Mother's Policy Exposure	0.054 [0.050]	0.055 [0.052]	0.044 [0.056]	0.037 [0.061]	0.019 [0.068]
No. Obs.	965	901	811	693	578
<b>Any Books</b>					
Mother's Policy Exposure	0.098* [0.051]	0.111** [0.053]	0.076 [0.056]	0.065 [0.061]	0.047 [0.067]
No. Obs.	965	901	811	693	578
<b>Toys, Homemade</b>					
Mother's Policy Exposure	-0.002 [0.057]	-0.031 [0.060]	-0.002 [0.063]	0.021 [0.065]	0.080 [0.069]
No. Obs.	954	892	803	685	573
<b>Toys from Shop</b>					
Mother's Policy Exposure	0.009 [0.027]	0.020 [0.029]	0.006 [0.032]	-0.000 [0.036]	-0.021 [0.039]
No. Obs.	965	901	811	693	578
<b>Toys from House Objects</b>					
Mother's Policy Exposure	-0.024 [0.053]	-0.015 [0.055]	0.006 [0.057]	0.033 [0.064]	0.051 [0.073]
No. Obs.	965	901	811	693	578
<b>Inadequate Supervision</b>					
Mother's Policy Exposure	0.016 [0.036]	0.008 [0.039]	0.016 [0.043]	0.031 [0.049]	0.032 [0.052]
No. Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 9.** Reduced-Form Effects on Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age (Full Sample)

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Partner's Middle School Completion</b>					
Mother's Policy Exposure	0.072	0.061	0.046	0.075	0.062
	[0.059]	[0.062]	[0.067]	[0.072]	[0.078]
No. Obs.	946	882	796	680	567
<b>Partner's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	-0.014	-0.022	-0.029	-0.039	-0.039
	[0.022]	[0.022]	[0.024]	[0.026]	[0.026]
No. Obs.	942	880	791	677	563
<b>Mother's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	0.001	0.004	-0.012	-0.008	-0.001
	[0.059]	[0.062]	[0.064]	[0.070]	[0.079]
No. Obs.	966	901	811	693	578
<b>Formal Day Care</b>					
Mother's Policy Exposure	-0.016	-0.017	-0.031	-0.018	-0.025
	[0.041]	[0.043]	[0.045]	[0.047]	[0.052]
No. Obs.	964	900	810	692	577
<b>Age Gap between Mother and Father</b>					
Mother's Policy Exposure	-0.361	-0.219	-0.192	-0.234	0.111
	[0.486]	[0.495]	[0.514]	[0.515]	[0.525]
No. Obs.	943	881	792	679	565
<b>Mother's Education <math>\geq</math> Father's Education</b>					
Mother's Policy Exposure	0.114*	0.142**	0.159**	0.146*	0.172**
	[0.064]	[0.067]	[0.069]	[0.078]	[0.079]
No. Obs.	963	898	808	691	577

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 months. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth and dummies for the grandmother's schooling levels. For the Formal Day Care variable, dummies for birth order and gender interaction and dummies for six-month intervals of the child's age are also included. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 10.** Nonparametric Reduced Form Estimates, CCFT Optimal Bandwidths (Full Sample)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Robust Es- timate	S.E.	No Obs.	BW loc. poly. left of cutoff	BW loc. poly. right of cutoff	BW bias left of cut- off	BW bias left of cut- off
A) Main Outcomes							
Selection 1 (has 24-59-month-old child)	0.026	(0.047)	7,260	85.73	78.75	116.8	128.8
Selection 2 (has 36-59-month-old child)	0.026	(0.030)	7,260	57.21	55.12	90.11	100.2
Middle School Completion 1 (sample A)	0.110	(0.084)	1,179	34.00	33.44	62.39	50.44
Middle School Completion 2 (sample B)	0.097	(0.102)	750	32.96	42.64	68.16	63.24
Readiness to Learn	0.047*	(0.028)	737	41.94	25.14	70.89	35.32
Social-emotional Development	0.122	(0.104)	719	35.81	39.21	57.94	66.27
Early Childhood Development Index	0.062	(0.096)	702	45.47	35.64	86.63	53.94
B) Parental Involvement							
Total mother activities	0.378	(0.350)	1,179	36.37	33.62	68.48	53.99
Total father activities	0.559**	(0.233)	1,179	43.94	44.64	83.48	74.46
Total parent activities	0.405	(0.325)	1,179	33.36	29.80	66.48	50.01
Total adult activities	0.391	(0.322)	1,179	28.36	36.67	53.98	61.12
Total others' activities	0.266	(0.177)	1,179	29.11	36.59	58.93	56.26
Mother four or more activities	0.032	(0.107)	1,163	37.87	40.22	72.40	68.74
Father four or more activities	0.130***	(0.049)	1,163	36.36	35.39	57.82	76.78
Mother any activity	0.137***	(0.035)	1,179	44.67	19.41	77.41	35.86
Father any activity	0.196***	(0.061)	1,179	32.07	37.25	59.96	56.13
C) Details of Parental Involvement							
Father read books	0.146**	(0.064)	1,163	40.89	34.73	72.37	55.31
Father told stories	0.007	(0.077)	1,163	47.13	51.04	78.81	84.68
Father sang songs with child	0.009	(0.064)	1,163	47.36	27.95	91.09	45.28
Father took out	0.256***	(0.069)	1,163	23.40	43.39	71.30	49.45
Father played with child	0.059	(0.069)	1,163	34.34	37.28	67.90	60.03
Father counted, drew with child	0.206**	(0.103)	1,163	29.99	26.36	56.90	47.21
Mother read books	0.246***	(0.079)	1,163	31.98	40.71	59.54	73.74
Mother told stories	0.080	(0.089)	1,163	43.75	31.06	83.37	50.47
Mother sang songs with child	-0.251***	(0.082)	1,163	28.67	35.98	63.92	63.21
Mother took out	0.056	(0.076)	1,163	37.76	26.70	67.89	42.36
Mother played with child	0.102	(0.073)	1,163	35.70	36.05	55.60	58.71
Mother counted, drew with child	-0.044	(0.123)	1,163	32.05	38.53	60.54	66.14
D) Learning Materials and Inadequate Supervision							
Three or more books	-0.028	(0.074)	1,178	28.77	30.76	61.98	51.77
Ten or more books	0.104	(0.070)	1,178	39.76	48.75	81.00	70.87
Any books	0.038	(0.073)	1,178	42.76	44.96	82.67	76.09
Homemade toys	0.187***	(0.066)	1,164	32.44	30.64	60.15	51.75
Toys from store	-0.023	(0.039)	1,177	26.04	25.68	48.28	48.45
House objects as toys	-0.050	(0.073)	1,177	33.72	26.33	41.45	55.43
Inadequate care	0.080	(0.061)	1,179	31.33	32.30	67.46	52.26
E) Father Schooling, Mother and Father Employment, Formal Daycare Use, and Mother-Father Gaps in Schooling and Age							
Father's middle school graduation	-0.012	(0.082)	1,154	42.00	42.30	90.39	70.84
Father employed (last 12 months)	-0.035*	(0.019)	1,151	35.77	23.05	39.91	71.23
Mother employed (last 12 months)	0.100	(0.084)	1,179	24.60	30.59	50.82	51.97
Formal day care	0.044	(0.058)	1,174	26.77	41.48	68.29	52.38
Age Gap between Mother and Father	0.252	(0.673)	1,152	37.06	37.17	65.05	56.85
Mother's Educ. $\geq$ Father's Educ.	0.136	(0.089)	1,175	28.87	32.24	51.23	60.27

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 or 36-59 months, as shown in each panel. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, and dummies for the grandmother's schooling levels. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table 11.** Results of Romano-Wolf Multiple Hypotheses Tests (p-values), Full Sample

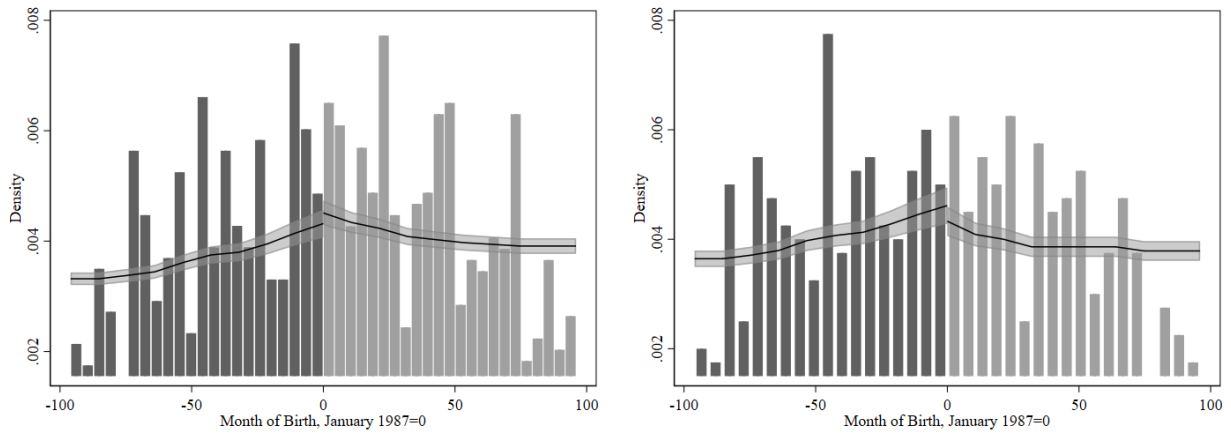
<b>Table 4: Child Development Indicators, Reduced Form</b>	
Readiness to Learn	0.020
Literacy and Numeracy	0.852
Physical Development	0.901
Social-emotional Development	0.901
ECD Index	0.852
<b>Table 5: Child Development Indicators, 2SLS</b>	
Readiness to Learn	0.089
Literacy and Numeracy	0.852
Physical Development	0.911
Social-emotional Development	0.911
ECD Index	0.852
<b>Table 6: Parental Involvement</b>	
Total Mother Activities	0.584
Total Father Activities	0.010
Total Parent Activities	0.178
Total Adult Activities	0.238
Total Others' Activities	0.238
Mother: 4 or more activities	0.663
Father: 4 or more activities	0.069
Mother: Any activity	0.654
Father: Any activity	0.020
<b>Table 7: Specific Parental Activities with Children</b>	
Father Reads Books	0.941
Father Tells Stories	0.990
Father Sings Songs	0.376
Father Takes Child out	0.059
Father Plays with Child	0.010
Father Counts, Draws with Child	0.564
Mother Reads Books	0.376
Mother Tells Stories	0.990
Mother Sings Songs	0.941
Mother Takes Child out	0.990
Mother Plays with Child	0.812
Mother Counts, Draws with Child	0.990
<b>Table 8: Learning Materials</b>	
Three or More Books	0.703
Ten or More Books	0.673
Any Books	0.158
Toys, Homemade	0.990
Toys from Shop	0.980
Toys from House Objects	0.980
Inadequate Supervision	0.980
<b>Table 9</b>	
Partner's Middle School Completion	0.990
Partner's Employment in the Last 12 Months	0.495
Mother's Employment in the Last 12 Months	0.812
Formal Day Care	0.812
Age Gap between Mother and Father	0.812
Mother's Education Equal to or Higher than Father's Education	0.158

*Notes:* This table shows the p-values for Romano-Wolf multiple hypothesis testing for Tables 3 to 8 in the main text. The data come from the 2018 Turkish Demographic Health Survey. The samples and specifications are as defined in Tables 3 to 8. The bandwidth is 96 months on each side of the cutoff, the widest bandwidth used in the tables. The number of bootstrap replications is 100.

## Online Appendix A

**Figure A1.** Estimated Density of the Running Variable and the Cattaneo-Jansson-Ma Tests

(a) Mothers with at least one kid aged between 24-59 months (b) Mothers with at least one kid aged between 36-59 months



Notes: Test results Figure A:  $T=0.6824$ , p-value: 0.4950. Test results Figure B:  $T=-0.3864$ , p-value: 0.6992



**Table A1.** Check of Discontinuity at the Cutoff for Other Covariates

Bandwidth = 96				
	A) 24-59-month-olds		B) 36-59-month-olds	
	RD Effect	p-value	RD Effect	p-value
Mother Tongue: Turkish	0.020	0.743	-0.029	0.685
Mother Tongue: Kurdish	-0.005	0.928	0.011	0.875
Mother Tongue: Arabic	0.029	0.105	0.026	0.314
Mother Tongue: Other	-0.044	0.062	-0.008	0.750
Childhood Region: Village	0.107	0.075	0.090	0.276
Childhood Region: District	0.055	0.274	0.048	0.566
Childhood Region: Province	-0.151	0.012	-0.148	0.045
Istanbul Region (TR1)	-0.022	0.600	-0.018	0.753
West Marmara Region (TR2)	-0.030	0.137	-0.015	0.578
Aegean Region (TR3)	-0.045	0.422	-0.084	0.170
East Marmara Region (TR4)	-0.022	0.528	-0.003	0.951
West Anatolia Region (TR5)	0.004	0.911	-0.034	0.434
Mediterranean Region (TR6)	0.032	0.341	0.024	0.638
Central Anatolia Region (TR7)	0.024	0.471	-0.017	0.696
West Black Sea Region (TR8)	0.078	0.028	0.116	0.017
East Black Sea Region (TR9)	0.044	0.068	0.035	0.232
Northeast Anatolia Region (TRA)	0.008	0.820	0.038	0.368
Central East Anatolia Region (TRB)	-0.016	0.670	-0.024	0.642
Southeast Anatolia Region (TRC)	-0.045	0.341	-0.027	0.688
Region Missing	-0.012	0.431	0.010	0.537
Grandma Educ: No Educ	0.001	0.989	0.013	0.875
Grandma Educ: Prim. Incomplete	-0.037	0.330	-0.049	0.394
Grandma Educ: Prim. Complete	0.134	0.032	0.123	0.185
Grandma Educ: Secondary Complete	-0.035	0.168	-0.010	0.702
Grandma Educ: High School Complete	-0.037	0.178	-0.077	0.016
Grandma Educ: University	-0.031	0.269	-0.004	0.870
Grandma Educ: Missing	0.004	0.769	0.005	0.841
Mother Birth Month: January	0.096	0.340	0.152	0.184
Mother Birth Month: February	0.041	0.672	0.049	0.600
Mother Birth Month: March	0.005	0.955	0.015	0.886
Mother Birth Month: April	0.012	0.870	0.037	0.664
Mother Birth Month: May	0.038	0.670	0.007	0.945
Mother Birth Month: June	-0.019	0.834	-0.086	0.292
Mother Birth Month: July	0.004	0.951	-0.065	0.404
Mother Birth Month: August	-0.044	0.664	-0.022	0.831
Mother Birth Month: September	0.027	0.766	0.020	0.831
Mother Birth Month: October	-0.060	0.499	-0.041	0.602
Mother Birth Month: November	-0.033	0.647	-0.054	0.500
Mother Birth Month: December	-0.068	0.350	-0.013	0.833
Age of the Kid (in months)	0.419	0.773	-0.179	0.894
Boy, First Kid	-0.065	0.137	-0.067	0.242
Boy, Second Kid	-0.074	0.167	-0.065	0.407
Boy, Third Kid	0.101	0.015	0.105	0.083
Boy, Forth Kid	0.072	0.023	0.075	0.096
Boy, Fifth Kid	0.017	0.399	-0.003	0.880
Girl, First Kid	-0.019	0.713	-0.042	0.485
Girl, Second Kid	-0.028	0.563	-0.061	0.273
Girl, Third Kid	0.001	0.978	0.021	0.698
Girl, Forth Kid	-0.009	0.766	0.028	0.215
Girl, Fifth Kid	0.005	0.757	0.008	0.700

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 months in panel (A) and 36-59 months in panel (B). The estimates in each column come from a separate regression using the sample defined for 8-year bandwidths. In addition to the policy dummy, the regressions include split linear time trends on either side of the cutoff, where the running variable is the month-year of birth. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table A2.** Policy Effect on Mothers' Schooling, Potential Sample Selection, and Child Development Indicators for the Sample of Mothers whose Mothers have at least Some Education

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
A) Middle School Completion for Women with 24- to 59-month-old Children	0.224***	0.245***	0.241***	0.242***	0.213**
No Obs.	[0.067] 516	[0.070] 480	[0.075] 429	[0.083] 374	[0.101] 313
B) Middle School Completion for Women with 36- to 59-month-old Children	0.167*	0.210**	0.202**	0.178*	0.197
No Obs.	[0.089] 335	[0.095] 312	[0.097] 286	[0.107] 245	[0.129] 209
C) Selection 1: Having at least one kid aged between 24-59 months	0.031	0.054	0.036	0.047	0.037
No. Obs.	[0.043] 1,931	[0.047] 1,714	[0.051] 1,490	[0.054] 1,252	[0.058] 988
D) Selection 2: Having at least one kid aged between 36-59 months	0.022	0.054	0.028	0.046	0.051
No. Obs.	[0.036] 1,931	[0.039] 1,714	[0.043] 1,490	[0.046] 1,252	[0.049] 988
E) Readiness to Learn	0.089**	0.069*	0.096*	0.089	0.088
No Obs.	[0.044] 332	[0.041] 309	[0.049] 283	[0.058] 242	[0.062] 207
F) Literacy and Numeracy	-0.046	-0.005	0.037	0.086	-0.008
No Obs.	[0.097] 327	[0.102] 305	[0.116] 279	[0.128] 238	[0.147] 202
G) Physical Development	-0.021	-0.017	-0.019	-0.039	-0.052
No Obs.	[0.022] 331	[0.022] 308	[0.025] 282	[0.028] 242	[0.032] 207
H) Social-emotional Development	0.064	0.086	0.039	0.074	0.074
No Obs.	[0.118] 321	[0.119] 299	[0.125] 274	[0.140] 234	[0.157] 199
I) Early Childhood Development Index	0.083	0.089	0.053	0.038	0.049
No Obs.	[0.115] 313	[0.120] 292	[0.127] 267	[0.143] 228	[0.160] 195

Notes: The data come from the 2018 Turkish Demographic Health Survey. The sample is restricted to children whose grandmothers have some education (as opposed to having no education). The samples in panels (A) and (C) include women who have at least one child aged 24-59 months, and the samples in panels (B) and (D) cover women who have at least one child aged 36-59 months. The sample in panels (E) to (I) includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the mother's policy exposure dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the reduced form specifications also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-month intervals of the child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table A3.** Nonparametric Reduced Form Estimates, IK Optimal Bandwidths

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	BW	S.E.	0.5 BW	S.E.	1.5 BW	S.E.	No Obs.	BW
A) Main Outcomes								
Selection 1 (has 24-59-month-old child)	0.048	(0.032)	0.031	(0.041)	0.046*	(0.026)	7,260	144.1
Selection 2 (has 36-59-month-old child)	0.028	(0.023)	0.033	(0.029)	0.008	(0.019)	7,260	151.4
Middle School Completion 1 (sample A)	0.171***	(0.060)	0.111	(0.076)	0.192***	(0.053)	1,179	86.31
Middle School Completion 2 (sample B)	0.101	(0.093)	0.077	(0.153)	0.093	(0.080)	750	41.43
Readiness to Learn	0.044	(0.029)	0.060	(0.074)	0.051*	(0.028)	737	50.79
Social-emotional Development	0.061	(0.085)	0.082	(0.101)	0.048	(0.077)	719	105.6
Early Childhood Development Index	0.069	(0.083)	0.033	(0.104)	0.049	(0.074)	702	89.72
B) Parental Involvement								
Total mother activities	0.262	(0.219)	0.313	(0.286)	0.245	(0.191)	1,179	76.48
Total father activities	0.547**	(0.234)	0.732**	(0.301)	0.591***	(0.218)	1,179	47.27
Total parent activities	0.278	(0.220)	0.377	(0.308)	0.336*	(0.191)	1,179	64.00
Total adult activities	0.392**	(0.190)	0.301	(0.238)	0.277	(0.169)	1,179	97.54
Total others' activities	0.262	(0.172)	0.165	(0.244)	0.226	(0.145)	1,179	52.84
Mother four or more activities	0.037	(0.073)	0.017	(0.094)	0.014	(0.064)	1,163	57.08
Father four or more activities	0.077*	(0.043)	0.138**	(0.063)	0.083**	(0.040)	1,163	66.52
Mother any activity	0.047	(0.040)	0.054	(0.065)	0.020	(0.035)	1,179	44.03
Father any activity	0.135**	(0.058)	0.193**	(0.089)	0.135**	(0.053)	1,179	44.60
C) Details of Parental Involvement								
Father read books	0.115*	(0.065)	0.166*	(0.096)	0.091	(0.060)	1,163	45.64
Father told stories	0.017	(0.070)	-0.002	(0.088)	0.017	(0.063)	1,163	53.37
Father sang songs with child	0.062	(0.060)	0.018	(0.077)	0.088	(0.057)	1,163	51.56
Father took out	0.156***	(0.058)	0.200***	(0.068)	0.135**	(0.054)	1,163	72.11
Father played with child	0.083	(0.085)	0.173	(0.155)	0.084	(0.064)	1,163	33.94
Father counted, drew with child	0.065	(0.067)	0.075	(0.089)	0.065	(0.055)	1,163	85.22
Mother read books	0.128**	(0.061)	0.188**	(0.075)	0.106*	(0.055)	1,163	77.38
Mother told stories	0.031	(0.066)	0.050	(0.083)	0.054	(0.057)	1,163	83.02
Mother sang songs with child	-0.139*	(0.077)	-0.262**	(0.110)	-0.056	(0.067)	1,163	41.75
Mother took out	-0.027	(0.059)	0.020	(0.078)	-0.014	(0.051)	1,163	61.15
Mother played with child	0.093*	(0.053)	0.095	(0.061)	0.078	(0.050)	1,163	78.08
Mother counted, drew with child	-0.063	(0.092)	-0.003	(0.133)	-0.040	(0.076)	1,163	48.95
D) Learning Materials and Inadequate Supervision								
Three or more books	0.043	(0.051)	0.011	(0.080)	0.053	(0.045)	1,178	75.78
Ten or more books	0.045	(0.054)	0.113	(0.069)	0.054	(0.048)	1,178	78.58
Any books	0.059	(0.059)	0.034	(0.086)	0.085*	(0.050)	1,178	78.07
Homemade toys	0.030	(0.056)	0.142**	(0.063)	0.010	(0.053)	1,164	79.31
Toys from store	0.004	(0.030)	-0.033	(0.033)	-0.002	(0.026)	1,177	98.41
House objects as toys	0.003	(0.072)	-0.050	(0.108)	0.008	(0.059)	1,177	52.82
Inadequate care	0.046	(0.052)	0.047	(0.059)	0.031	(0.047)	1,179	39.30
E) Father Schooling, Mother and Father Employment, Formal Daycare Use, and Mother-Father Gaps in Schooling and Age								
Partner's middle school graduation	0.030	(0.079)	0.036	(0.109)	0.048	(0.066)	1,154	50.18
Partner employed (last 12 months)	-0.020	(0.020)	-0.038*	(0.021)	-0.005	(0.020)	1,151	111.90
Mother employed (last 12 months)	0.005	(0.071)	0.076	(0.087)	0.003	(0.061)	1,179	59.43
Formal day care	-0.008	(0.053)	0.061	(0.078)	-0.018	(0.045)	1,174	47.76
Age Gap between Mother and Father	0.061	(0.468)	0.132	(0.706)	-0.123	(0.443)	1,152	52.46
Mother's Educ. $\geq$ Father's Educ.	0.159**	(0.072)	0.113	(0.091)	0.151**	(0.066)	1,175	54.06

Notes: The data come from the 2018 Turkish Demographic Health Survey. The sample includes women with children aged 36-59 months for the following outcomes: selection 2, middle school completion 2, and readiness to learn. For all other outcomes, the sample includes women with children aged 24-59 months. If a woman has more than one child in this age group, only the last born is taken; hence, one child corresponds to each woman. We use IK optimal bandwidths given in columns (9). Covariates and sample weights are used in the regressions. Covariates include birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The covariates in optimal bandwidth selection for the mother's middle school completion, selection, father characteristics, and marriage characteristics do not include dummies for birth order and gender interaction and dummies for six-month intervals of the child's age. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table A4.** Results of Romano-Wolf Multiple Hypotheses Tests (p-values) for the Sample of Mothers whose Mother Tongue is Turkish

<b>Table 3: Child Development Indicators, Reduced Form</b>	
Readiness to Learn	0.125
Literacy and Numeracy	0.604
Physical Development	0.604
Social-emotional Development	0.698
ECD Index	0.604
<b>Table 4: Child Development Indicators, 2SLS</b>	
Readiness to Learn	0.316
Literacy and Numeracy	0.579
Physical Development	0.547
Social-emotional Development	0.653
ECD Index	0.579
<b>Table 5: Parental Involvement</b>	
Total Mother Activities	0.713
Total Father Activities	0.059
Total Parent Activities	0.713
Total Adult Activities	0.713
Total Others' Activities	0.287
Mother: 4 or more activities	0.713
Father: 4 or more activities	0.228
Mother: Any activity	0.713
Father: Any activity	0.168
<b>Table 6: Specific Parental Activities with Children</b>	
Father Reads Books	0.960
Father Tells Stories	0.960
Father Sings Songs	0.713
Father Takes Child out	0.208
Father Plays with Child	0.040
Father Counts, Draws with Child	0.733
Mother Reads Books	0.960
Mother Tells Stories	0.960
Mother Sings Songs	0.960
Mother Takes Child out	0.842
Mother Plays with Child	0.703
Mother Counts, Draws with Child	0.960
<b>Table 7: Learning Materials</b>	
Three or More Books	0.723
Ten or More Books	0.891
Any Books	0.535
Toys, Homemade	0.723
Toys from Shop	0.436
Toys from House Objects	0.891
Inadequate Supervision	0.891
<b>Table 8</b>	
Partner's Middle School Completion	0.574
Partner's Employment in the Last 12 Months	0.782
Mother's Employment in the Last 12 Months	0.911
Formal Day Care	0.881
Age Gap between Mother and Father	0.287
Mother's Education Equal to or Higher than Father's Education	0.059

*Notes:* This table shows the p-values for Romano-Wolf multiple hypothesis testing for Tables 3 to 8 in the main text. The data come from the 2018 Turkish Demographic Health Survey. The samples and specifications are as defined in Tables 3 to 8. The bandwidth is 96 months on each side of the cutoff, the widest bandwidth used in the tables. The number of bootstrap replications is 100.

**Table A5.** Reduced-Form Estimates without a Restriction to Last-Born Children

	Coef.	S.E.	No Obs.
A) Main Outcomes			
Readiness to Learn	0.045*	[0.023]	927
Literacy and Numeracy	-0.029	[0.053]	911
Physical Development	-0.013	[0.018]	925
Social-emotional Development	0.005	[0.073]	903
Early Childhood Development Index	0.019	[0.068]	880
B) Parental Involvement			
Total mother activities	0.316	[0.197]	1,359
Total father activities	0.415**	[0.184]	1,359
Total parent activities	0.338*	[0.194]	1,359
Total adult activities	0.287	[0.195]	1,359
Total others' activities	0.024	[0.136]	1,359
Mother four or more activities	0.020	[0.052]	1,340
Father four or more activities	0.048	[0.040]	1,340
Mother any activity	0.034	[0.034]	1,359
Father any activity	0.070	[0.049]	1,359
C) Details of Parental Involvement			
Father read books	0.003	[0.046]	1,340
Father told stories	0.002	[0.050]	1,340
Father sang songs with child	0.078*	[0.046]	1,340
Father took out	0.070	[0.056]	1,340
Father played with child	0.151***	[0.055]	1,340
Father counted, drew with child	0.082	[0.055]	1,340
Mother read books	0.058	[0.051]	1,340
Mother told stories	0.029	[0.060]	1,340
Mother sang songs with child	0.028	[0.053]	1,340
Mother took out	0.019	[0.046]	1,340
Mother played with child	0.086	[0.054]	1,340
Mother counted, drew with child	0.063	[0.062]	1,340
D) Learning Materials and Inadequate Supervision			
Three or more books	0.032	[0.044]	1,358
Ten or more books	0.055	[0.048]	1,358
Any books	0.032	[0.049]	1,358
Homemade toys	0.031	[0.058]	1,346
Toys from store	0.004	[0.032]	1,357
House objects as toys	-0.016	[0.050]	1,357
Inadequate care	0.006	[0.029]	1,359

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months in panel (A) and children aged 24-59 months in all other panels. The estimates in each column come from a separate regression using 8-year bandwidths around the cutoff. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

## Online Appendix B - Channels by Family Characteristics

**Table B1.** Reduced-Form Effects on Parental Activities with Children by Family Characteristics

	Sample (1): Mothers' Mother-Tongue is Turkish					Sample (2): Grandmother has some education				
	Bandwidth (years) on each side of the cutoff					Bandwidth (years) on each side of the cutoff				
	8	7	6	5	4	8	7	6	5	4
Total Mother Activities										
Mother's Policy Exposure	0.140	0.263	0.349	0.302	0.178	0.249	0.264	0.347	0.306	0.164
No Obs.	[0.240] 681	[0.252] 636	[0.274] 576	[0.298] 503	[0.333] 420	[0.284] 516	[0.302] 480	[0.323] 429	[0.349] 374	[0.375] 313
Total Father Activities										
Mother's Policy Exposure	0.577**	0.619**	0.735**	0.636*	0.463	0.659*	0.682*	0.843**	0.777*	0.502
No Obs.	[0.277] 681	[0.297] 636	[0.316] 576	[0.331] 503	[0.357] 420	[0.351] 516	[0.378] 480	[0.410] 429	[0.448] 374	[0.503] 313
Total Parent Activities										
Mother's Policy Exposure	0.156	0.305	0.368	0.349	0.157	0.398	0.441	0.516*	0.529	0.315
No Obs.	[0.229] 681	[0.242] 636	[0.262] 576	[0.278] 503	[0.313] 420	[0.262] 516	[0.283] 480	[0.310] 429	[0.327] 374	[0.370] 313
Total Adult Activities										
Mother's Policy Exposure	0.183	0.398*	0.369	0.417	0.361	0.448*	0.551**	0.574*	0.647**	0.543
No Obs.	[0.234] 681	[0.239] 636	[0.258] 576	[0.277] 503	[0.306] 420	[0.257] 516	[0.272] 480	[0.297] 429	[0.312] 374	[0.343] 313
Total Others' Activities										
Mother's Policy Exposure	0.202	0.272*	0.138	0.220	0.317	0.238	0.327	0.253	0.295	0.401
No Obs.	[0.153] 681	[0.160] 636	[0.174] 576	[0.187] 503	[0.213] 420	[0.190] 516	[0.205] 480	[0.220] 429	[0.230] 374	[0.284] 313
Mother: 4 or more activities										
Mother's Policy Exposure	-0.033	-0.01	0.033	0.027	0.01	0.001	0.022	0.062	0.075	0.012
No Obs.	[0.069] 670	[0.075] 626	[0.082] 567	[0.088] 495	[0.097] 413	[0.079] 508	[0.084] 472	[0.093] 422	[0.102] 368	[0.110] 308
Father: 4 or more activities										
Mother's Policy Exposure	0.091	0.083	0.112*	0.090	0.036	0.105	0.093	0.123	0.100	0.007
No Obs.	[0.057] 670	[0.059] 626	[0.063] 567	[0.064] 495	[0.071] 413	[0.078] 508	[0.081] 472	[0.088] 422	[0.094] 368	[0.108] 308
Mother: Any activity										
Mother's Policy Exposure	0.029	0.058	0.050	0.042	0.044	0.020	0.023	0.016	0.009	0.049
No Obs.	[0.038] 681	[0.037] 636	[0.037] 576	[0.042] 503	[0.044] 420	[0.038] 516	[0.039] 480	[0.037] 429	[0.042] 374	[0.046] 313
Father: Any activity										
Mother's Policy Exposure	0.108*	0.122*	0.121*	0.123	0.108	0.114	0.131*	0.108	0.129	0.129
No Obs.	[0.062] 681	[0.067] 636	[0.071] 576	[0.079] 503	[0.083] 420	[0.072] 516	[0.077] 480	[0.084] 429	[0.094] 374	[0.106] 313

Notes: The data come from the 2018 Turkish Demographic Health Survey. Sample (1) is restricted to 24-59-month-old children whose mothers' mother tongue is Turkish, and sample (2) is restricted to children whose grandmothers have some education (as opposed to having no education). Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-month intervals of the child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table B2.** Reduced-Form Effects on Learning Materials and Inadequate Supervision by Family Characteristics

	Sample (1): Mothers' Mother-Tongue is Turkish					Sample (2): Grandmother has some education				
	Bandwidth (years) on each side of the cutoff					Bandwidth (years) on each side of the cutoff				
	8	7	6	5	4	8	7	6	5	4
Three or More Books										
Mother's Policy Exposure	0.036	0.043	0.032	0.035	0.013	0.098	0.101	0.109	0.135	0.057
No. Obs.	[0.063] 680	[0.067] 636	[0.068] 576	[0.075] 503	[0.076] 420	[0.068] 516	[0.073] 480	[0.078] 429	[0.085] 374	[0.091] 313
Ten or More Books										
Mother's Policy Exposure	0.063	0.066	0.06	0.063	0.037	0.072	0.076	0.067	0.078	0.024
No. Obs.	[0.065] 680	[0.068] 636	[0.072] 576	[0.076] 503	[0.082] 420	[0.072] 516	[0.076] 480	[0.082] 429	[0.088] 374	[0.103] 313
Any Books										
Mother's Policy Exposure	0.074	0.081	0.03	0.049	0.042	0.111*	0.110	0.069	0.098	0.051
No. Obs.	[0.062] 680	[0.064] 636	[0.066] 576	[0.072] 503	[0.079] 420	[0.066] 516	[0.069] 480	[0.071] 429	[0.076] 374	[0.081] 313
Toys, Homemade										
Mother's Policy Exposure	-0.065	-0.097	-0.072	-0.048	-0.002	-0.048	-0.085	-0.067	-0.021	-0.037
No. Obs.	[0.071] 670	[0.074] 628	[0.076] 569	[0.080] 496	[0.084] 416	[0.079] 506	[0.080] 472	[0.088] 422	[0.091] 367	[0.095] 309
Toys from Shop										
Mother's Policy Exposure	0.038	0.049*	0.03	0.044	0.034	0.025	0.036	0.022	0.021	0.021
No. Obs.	[0.028] 680	[0.030] 636	[0.032] 576	[0.037] 503	[0.037] 420	[0.029] 516	[0.032] 480	[0.034] 429	[0.043] 374	[0.042] 313
Toys from House Objects										
Mother's Policy Exposure	-0.03	-0.017	0.004	0.03	0.075	-0.051	-0.041	0.009	0.021	0.119
No. Obs.	[0.057] 680	[0.058] 636	[0.061] 576	[0.070] 503	[0.076] 420	[0.064] 516	[0.064] 480	[0.074] 429	[0.088] 374	[0.089] 313
Inadequate Supervision										
Mother's Policy Exposure	0.02	0.011	0.009	0.028	0.032	-0.002	0.007	0.012	0.038	0.026
No. Obs.	[0.037] 681	[0.037] 636	[0.043] 576	[0.052] 503	[0.055] 420	[0.039] 516	[0.041] 480	[0.049] 429	[0.059] 374	[0.070] 313

Notes: The data come from the 2018 Turkish Demographic Health Survey. Sample (1) is restricted to 24-59-month-old children whose mothers' mother tongue is Turkish, and sample (2) is restricted to children whose grandmothers have some education (as opposed to having no education). Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction, and dummies for six-month intervals of the child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.



**Table B3.** Reduced-Form Effects on Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age by Family Characteristics

	Sample (1): Mothers' Mother-Tongue is Turkish					Sample (2): Grandmother has some education				
	Bandwidth (years) on each side of the cutoff					Bandwidth (years) on each side of the cutoff				
	8	7	6	5	4	8	7	6	5	4
Partner's Middle School Completion										
Mother's Policy Exposure	0.048	0.037	0.036	0.042	0.041	0.054	0.051	0.083	0.126	0.123
No. Obs.	[0.066] 679	[0.070] 634	[0.076] 575	[0.081] 502	[0.089] 419	[0.067] 513	[0.071] 477	[0.077] 427	[0.079] 372	[0.092] 311
Partner's Employment in the Last 12 Months										
Mother's Policy Exposure	0.003	-0.006	-0.005	-0.018	-0.004	-0.008	-0.017	-0.016	-0.031	-0.025
No. Obs.	[0.018] 663	[0.019] 620	[0.019] 561	[0.021] 492	[0.020] 410	[0.026] 502	[0.028] 467	[0.027] 417	[0.031] 366	[0.034] 306
Mother's Employment in the Last 12 Months										
Mother's Policy Exposure	-0.079	-0.075	-0.093	-0.090	-0.096	-0.031	-0.021	-0.053	0.002	-0.018
No. Obs.	[0.074] 681	[0.079] 636	[0.083] 576	[0.093] 503	[0.105] 420	[0.075] 516	[0.080] 480	[0.082] 429	[0.094] 374	[0.112] 313
Formal Day Care										
Mother's Policy Exposure	-0.019	-0.009	-0.023	-0.015	0.002	-0.018	-0.005	-0.002	-0.001	0.011
No. Obs.	[0.053] 680	[0.056] 636	[0.061] 576	[0.061] 503	[0.067] 420	[0.065] 515	[0.068] 480	[0.074] 429	[0.077] 374	[0.083] 313
Age Gap between Mother and Father										
Mother's Policy Exposure	-0.724	-0.755	-0.714	-0.716	-0.592	-1.107*	-0.897	-1.143*	-1.379**	-1.020
No. Obs.	[0.501] 665	[0.526] 622	[0.570] 563	[0.567] 494	[0.613] 412	[0.592] 504	[0.617] 469	[0.626] 419	[0.606] 368	[0.660] 308
Mother's Education Level $\geq$ Father's Education Level										
Mother's Policy Exposure	0.146**	0.174**	0.219***	0.200**	0.206**	0.109	0.123	0.105	0.101	0.106
No. Obs.	[0.068] 681	[0.071] 636	[0.073] 576	[0.080] 503	[0.087] 420	[0.078] 515	[0.083] 479	[0.084] 428	[0.096] 373	[0.111] 312

Note: The data come from the 2018 Turkish Demographic Health Survey. Sample (1) is restricted to women who have at least one child aged 24-59 months and whose mother tongue is Turkish, and sample (2) is restricted to women who have at least one child aged 24-59 months and whose mothers have some education (as opposed to having no education). The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth and dummies for the grandmother's schooling levels. For the Formal Day Care variable, dummies for birth order and gender interaction and dummies for six-month intervals of the child's age are also included. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

## Online Appendix C - Remaining 2SLS Estimates

**Table C1.** 2SLS Estimates for Specific Parental Activities with Children

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Total Mother Activities</b>					
Mother's Middle School Completion Status	0.721 [0.836]	1.124 [0.854]	1.299 [0.902]	1.328 [0.992]	0.796 [1.218]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Total Father Activities</b>					
Mother's Middle School Completion Status	2.399*** [0.871]	2.469*** [0.915]	2.445*** [0.892]	2.390** [0.996]	2.309* [1.238]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Total Parent Activities</b>					
Mother's Middle School Completion Status	1.116 [0.791]	1.580* [0.828]	1.617* [0.867]	1.551* [0.927]	0.695 [1.127]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Total Adult Activities</b>					
Mother's Middle School Completion Status	1.233 [0.819]	1.810** [0.845]	1.703** [0.868]	1.619* [0.943]	1.445 [1.155]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Total Other's Activities</b>					
Mother's Middle School Completion Status	0.751 [0.580]	0.878 [0.580]	0.590 [0.575]	0.616 [0.645]	1.386 [0.874]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Mother: 4 or more activities</b>					
Mother's Middle School Completion Status	-0.110 [0.250]	-0.016 [0.257]	0.074 [0.273]	0.158 [0.289]	0.079 [0.357]
Observations	951	887	799	683	569
F-stat	27.05	27.78	27.66	21.05	12.97
<b>Father: 4 or more activities</b>					
Mother's Middle School Completion Status	0.374** [0.179]	0.333* [0.179]	0.363** [0.182]	0.269 [0.198]	0.114 [0.225]
Observations	951	887	799	683	569
F-stat	27.05	27.78	27.66	21.05	12.97
<b>Mother: Any activity</b>					
Mother's Middle School Completion Status	0.100 [0.144]	0.168 [0.142]	0.142 [0.141]	0.103 [0.153]	0.106 [0.194]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02
<b>Father: Any activity</b>					
Mother's Middle School Completion Status	0.531** [0.228]	0.612*** [0.235]	0.527** [0.221]	0.507** [0.252]	0.659** [0.319]
Observations	966	901	811	693	578
F-stat	27.40	28.36	28.96	21.10	13.02

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months in panel (A) and children aged 24-59 months in all other panels. The estimates in each column come from a separate regression using 8-year bandwidths around the cutoff. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table C2.** 2SLS Estimates for Specific Parental Activities with Children

	<i>Bandwith (years) around the cutoff</i>					<i>Bandwith (years) around the cutoff</i>				
	8	7	6	5	4	8	7	6	5	4
	<b>Father Reads Books</b>					<b>Mother Reads Books</b>				
Mother's Middle School Completion Status	0.151 [0.229]	0.105 [0.232]	0.199 [0.237]	0.332 [0.266]	0.327 [0.319]	0.380 [0.237]	0.417* [0.236]	0.403* [0.238]	0.599** [0.283]	0.619* [0.350]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97
	<b>Father Tells Stories</b>					<b>Mother Tells Stories</b>				
Mother's Middle School Completion Status	0.069 [0.233]	0.064 [0.238]	0.043 [0.251]	0.086 [0.287]	0.022 [0.347]	0.097 [0.252]	0.080 [0.261]	0.141 [0.263]	0.267 [0.300]	0.221 [0.362]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97
	<b>Father Sings Songs</b>					<b>Mother Sings Songs</b>				
Mother's Middle School Completion Status	0.353 [0.234]	0.367 [0.239]	0.400* [0.240]	0.296 [0.265]	0.339 [0.315]	-0.163 [0.257]	-0.083 [0.263]	-0.010 [0.274]	-0.128 [0.290]	-0.208 [0.344]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97
	<b>Father Takes Child Out</b>					<b>Mother Takes Child Out</b>				
Mother's Middle School Completion Status	0.528** [0.248]	0.477* [0.250]	0.553** [0.246]	0.611** [0.293]	0.740** [0.364]	0.009 [0.214]	-0.003 [0.201]	-0.039 [0.210]	-0.099 [0.231]	-0.101 [0.268]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97
VARIABLES	<b>Father Plays with Child</b>					<b>Mother Plays with Child</b>				
Mother's Middle School Completion Status	0.826*** [0.250]	0.790*** [0.256]	0.734*** [0.250]	0.625** [0.264]	0.581* [0.312]	0.232 [0.227]	0.161 [0.232]	0.395* [0.222]	0.478* [0.250]	0.285 [0.296]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97
	<b>Father Counts, Draws with Child</b>					<b>Mother Counts, Draws with Child</b>				
Mother's Middle School Completion Status	0.322 [0.250]	0.384 [0.264]	0.274 [0.259]	0.200 [0.293]	-0.019 [0.360]	-0.065 [0.269]	0.081 [0.268]	0.011 [0.283]	-0.211 [0.320]	-0.476 [0.405]
Observations	951	887	799	683	569	951	887	799	683	569
F-Stat	27.05	27.78	27.66	21.05	12.97	27.05	27.78	27.66	21.05	12.97

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. The mother's middle school completion status is instrumented by the mother's policy exposure status. The control variables include split linear time trends on either side of the cutoff where the running variable is month-year of birth, birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table C3.** 2SLS Estimates for Learning Materials and Inadequate Supervision

	<i>Bandwith (years) around the cutoff</i>				
	8	7	6	5	4
<b>Three or More Books</b>					
Mother's Middle School	0.236	0.259	0.233	0.204	0.112
Completion Status	[0.194]	[0.200]	[0.198]	[0.226]	[0.267]
Observations	965	901	811	693	578
F-Stat	27.91	28.36	28.96	21.10	13.02
<b>Ten or More Books</b>					
Mother's Middle School	0.227	0.222	0.170	0.153	0.088
Completion Status	[0.208]	[0.208]	[0.207]	[0.239]	[0.297]
Observations	965	901	811	693	578
F-Stat	27.91	28.36	28.96	21.10	13.02
<b>Any Books</b>					
Mother's Middle School	0.413*	0.451**	0.295	0.266	0.220
Completion Status	[0.215]	[0.220]	[0.207]	[0.240]	[0.292]
Observations	965	901	811	693	578
F-Stat	27.91	28.36	28.96	21.10	13.02
<b>Toys, Homemade</b>					
Mother's Middle School	-0.009	-0.123	-0.007	0.083	0.364
Completion Status	[0.234]	[0.233]	[0.227]	[0.239]	[0.295]
Observations	954	892	803	685	573
F-Stat	26.87	28.11	29.86	22.45	13.16
<b>Toys from Shop</b>					
Mother's Middle School	0.038	0.080	0.024	-0.001	-0.100
Completion Status	[0.111]	[0.115]	[0.117]	[0.143]	[0.178]
Observations	965	901	811	693	578
F-Stat	27.91	28.36	28.96	21.10	13.02
<b>Toys from House Objects</b>					
Mother's Middle School	-0.101	-0.061	0.023	0.135	0.237
Completion Status	[0.217]	[0.216]	[0.214]	[0.252]	[0.324]
Observations	965	901	811	693	578
F-Stat	27.91	28.36	28.96	21.10	13.02
<b>Inadequate Supervision</b>					
Mother's Middle School	0.067	0.034	0.062	0.129	0.151
Completion Status	[0.147]	[0.153]	[0.161]	[0.194]	[0.230]
Observations	966	901	811	693	578
F-Stat	27.40	28.36	28.96	21.10	13.02

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. The mother's middle school completion status is instrumented by the mother's policy exposure status. The control variables include split linear time trends on either side of the cutoff where the running variable is month-year of birth, birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table C4.** 2SLS Estimates for Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Partner's Middle School Completion</b>					
Mother's Middle School Completion Status	0.354 [0.281]	0.280 [0.275]	0.232 [0.321]	0.418 [0.381]	0.402 [0.466]
Observations	946	882	796	680	567
F-Stat	13.58	14.28	10.33	7.500	4.584
<b>Partner's Employment in the Last 12 Months</b>					
Mother's Middle School Completion Status	-0.069 [0.111]	-0.108 [0.115]	-0.151 [0.144]	-0.233 [0.191]	-0.302 [0.278]
Observations	942	880	791	677	563
F-Stat	12.19	11.90	8.577	5.937	3.067
<b>Mother's Employment in the Last 12 Months</b>					
Mother's Middle School Completion Status	0.007 [0.301]	0.020 [0.302]	-0.065 [0.341]	-0.048 [0.409]	-0.007 [0.547]
Observations	966	901	811	693	578
F-Stat	11.79	12.03	9.033	6.480	3.688
<b>Formal Day Care</b>					
Mother's Middle School Completion Status	-0.070 [0.171]	-0.070 [0.173]	-0.119 [0.171]	-0.072 [0.189]	-0.117 [0.238]
Observations	964	900	810	692	577
F-Stat	26.91	28.35	28.94	21.09	13.01
<b>Age Gap between Mother and Father</b>					
Mother's Middle School Completion Status	-2.058 [1.874]	-1.599 [1.850]	-1.950 [1.796]	-2.800 [1.839]	-1.496 [2.083]
Observations	943	881	792	679	565
F-Stat	27.58	27.93	27.78	20.31	12.40
<b>Mother's Education Level <math>\geq</math> Father's Education Level</b>					
Mother's Middle School Completion Status	0.576** [0.262]	0.653** [0.270]	0.710*** [0.268]	0.697** [0.332]	0.879** [0.396]
Observations	963	898	808	691	577
F-Stat	27.48	28.38	28.91	20.97	13.03

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. The mother's middle school completion status is instrumented by the mother's policy exposure status. The control variables include split linear time trends on either side of the cutoff where the running variable is month-year of birth, birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

## Online Appendix D - Channels with a Sample of 36- to 59-month-old Children

**Table D1.** Reduced-Form Effects on Parental Activities with Children

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Total Mother Activities</b>					
Mother's Policy Exposure	0.129 [0.248]	0.240 [0.255]	0.328 [0.265]	0.369 [0.288]	0.186 [0.336]
No Obs.	614	576	523	436	367
<b>Total Father Activities</b>					
Mother's Policy Exposure	0.327 [0.241]	0.306 [0.264]	0.400 [0.263]	0.306 [0.298]	0.127 [0.352]
No Obs.	614	576	523	436	367
<b>Total Parent Activities</b>					
Mother's Policy Exposure	0.187 [0.225]	0.316 [0.234]	0.351 [0.245]	0.343 [0.266]	0.067 [0.306]
No Obs.	614	576	523	436	367
<b>Total Adult Activities</b>					
Mother's Policy Exposure	0.166 [0.231]	0.281 [0.237]	0.326 [0.252]	0.286 [0.271]	0.058 [0.290]
No Obs.	614	576	523	436	367
<b>Total Others' Activities</b>					
Mother's Policy Exposure	0.162 [0.164]	0.138 [0.176]	0.098 [0.188]	0.078 [0.177]	0.133 [0.201]
No Obs.	614	576	523	436	367
<b>Mother: 4 or more activities</b>					
Mother's Policy Exposure	0.023 [0.071]	0.059 [0.074]	0.100 [0.076]	0.140* [0.082]	0.130 [0.091]
No Obs.	614	576	523	436	367
<b>Father: 4 or more activities</b>					
Mother's Policy Exposure	0.089 [0.055]	0.083 [0.057]	0.110* [0.057]	0.069 [0.065]	0.031 [0.074]
No Obs.	614	576	523	436	367
<b>Mother: Any activity</b>					
Mother's Policy Exposure	-0.004 [0.046]	0.004 [0.047]	-0.018 [0.049]	-0.042 [0.053]	-0.071 [0.059]
No Obs.	614	576	523	436	367
<b>Father: Any activity</b>					
Mother's Policy Exposure	0.084 [0.073]	0.085 [0.075]	0.069 [0.082]	0.052 [0.093]	0.008 [0.102]
No Obs.	614	576	523	436	367

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.



**Table D2.** Reduced-Form Effects on Specific Parental Activities with Children

	<i>Bandwith (years) around the cutoff</i>					<i>Bandwith (years) around the cutoff</i>				
	8	7	6	5	4	8	7	6	5	4
	<b>Father Reads Books</b>					<b>Mother Reads Books</b>				
Mother's Policy Exposure	0.012	0.011	0.035	0.098	0.086	0.010	0.041	0.042	0.097	0.082
	[0.066]	[0.069]	[0.071]	[0.078]	[0.086]	[0.077]	[0.079]	[0.082]	[0.092]	[0.099]
Observations	614	576	523	436	367	614	576	523	436	367
	<b>Father Tells Stories</b>					<b>Mother Tells Stories</b>				
Mother's Policy Exposure	0.024	0.017	0.013	0.025	-0.010	0.059	0.064	0.085	0.172**	0.151*
	[0.058]	[0.059]	[0.062]	[0.070]	[0.081]	[0.071]	[0.075]	[0.076]	[0.078]	[0.089]
Observations	614	576	523	436	367	614	576	523	436	367
	<b>Father Sings Songs</b>					<b>Mother Sings Songs</b>				
Mother's Policy Exposure	-0.003	-0.007	0.022	-0.052	-0.075	-0.079	-0.043	0.001	0.002	-0.047
	[0.059]	[0.063]	[0.066]	[0.073]	[0.081]	[0.075]	[0.078]	[0.084]	[0.090]	[0.095]
Observations	614	576	523	436	367	614	576	523	436	367
	<b>Father Takes Child Out</b>					<b>Mother Takes Child Out</b>				
Mother's Policy Exposure	0.074	0.032	0.051	0.058	0.040	0.014	-0.003	-0.035	-0.063	-0.060
	[0.074]	[0.078]	[0.084]	[0.097]	[0.104]	[0.069]	[0.066]	[0.071]	[0.076]	[0.085]
Observations	614	576	523	436	367	614	576	523	436	367
	<b>Father Plays with Child</b>					<b>Mother Plays with Child</b>				
Mother's Policy Exposure	0.141**	0.133**	0.153**	0.089	0.036	0.066	0.066	0.144*	0.156*	0.094
	[0.060]	[0.065]	[0.070]	[0.081]	[0.088]	[0.074]	[0.077]	[0.073]	[0.081]	[0.097]
Observations	614	576	523	436	367	614	576	523	436	367
	<b>Father Counts, Draws with Child</b>					<b>Mother Counts, Draws with Child</b>				
Mother's Policy Exposure	0.080	0.119	0.127	0.089	0.049	0.059	0.114	0.090	0.005	-0.033
	[0.076]	[0.083]	[0.082]	[0.095]	[0.108]	[0.081]	[0.082]	[0.090]	[0.100]	[0.108]
Observations	614	576	523	436	367	614	576	523	436	367

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table D3.** Reduced-Form Effects on Learning Materials and Inadequate Supervision

<i>Bandwidth (years around the cutoff)</i>					
	8	7	6	5	4
<b>Three or More Books</b>					
Mother's Policy Exposure	0.084	0.114	0.134*	0.126	0.090
	[0.066]	[0.070]	[0.076]	[0.084]	[0.096]
No. Obs.	614	576	523	436	367
<b>Ten or More Books</b>					
Mother's Policy Exposure	0.083	0.081	0.112	0.109	0.089
	[0.080]	[0.082]	[0.088]	[0.097]	[0.110]
No. Obs.	614	576	523	436	367
<b>Any Books</b>					
Mother's Policy Exposure	0.070	0.108	0.070	0.048	0.036
	[0.067]	[0.070]	[0.074]	[0.084]	[0.093]
No. Obs.	614	576	523	436	367
<b>Toys, Homemade</b>					
Mother's Policy Exposure	-0.066	-0.080	-0.046	0.004	0.029
	[0.073]	[0.078]	[0.081]	[0.088]	[0.092]
No. Obs.	608	570	518	431	363
<b>Toys from Shop</b>					
Mother's Policy Exposure	-0.016	-0.013	-0.038	-0.047	-0.059
	[0.036]	[0.038]	[0.040]	[0.045]	[0.046]
No. Obs.	614	576	523	436	367
<b>Toys from House Objects</b>					
Mother's Policy Exposure	-0.073	-0.034	-0.040	0.030	0.063
	[0.073]	[0.077]	[0.077]	[0.086]	[0.098]
No. Obs.	614	576	523	436	367
<b>Inadequate Supervision</b>					
Mother's Policy Exposure	0.026	0.025	0.020	0.033	0.014
	[0.042]	[0.043]	[0.046]	[0.055]	[0.058]
No. Obs.	614	576	523	436	367

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table D4.** Reduced-Form Effects on Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Partner's Middle School Completion</b>					
Mother's Policy Exposure	0.050 [0.082]	0.058 [0.086]	0.047 [0.092]	0.043 [0.098]	0.069 [0.102]
No. Obs.	603	565	514	429	361
<b>Partner's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	-0.015 [0.029]	-0.021 [0.030]	-0.040 [0.033]	-0.059* [0.034]	-0.050 [0.034]
No. Obs.	594	558	506	423	355
<b>Mother's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	0.045 [0.079]	0.022 [0.082]	0.017 [0.084]	0.019 [0.087]	-0.017 [0.098]
No. Obs.	614	576	523	436	367
<b>Formal Day Care</b>					
Mother's Policy Exposure	-0.024 [0.056]	-0.032 [0.059]	-0.060 [0.059]	-0.025 [0.063]	-0.035 [0.067]
No. Obs.	612	575	522	435	366
<b>Age Gap between Mother and Father</b>					
Mother's Policy Exposure	0.185 [0.672]	0.231 [0.701]	0.247 [0.713]	0.428 [0.700]	1.089 [0.693]
No. Obs.	594	558	506	424	356
<b>Mother's Education Level <math>\geq</math> Father's Education Level</b>					
Mother's Policy Exposure	0.072 [0.088]	0.110 [0.091]	0.138 [0.094]	0.125 [0.104]	0.172 [0.111]
No. Obs.	611	573	520	434	366

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

# Online Appendix E - Parametric Results with Quadratic Trends

**Table E1.** Policy Effect on Mothers' Middle School Completion Status

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>A) Sample A (Women with 24- to 59-month-old children)</b>					
Policy	0.201** [0.080]	0.172** [0.082]	0.157* [0.090]	0.160* [0.096]	0.148 [0.107]
Observations	966	901	811	693	578
<b>B) Sample B (Women with 36- to 59-month-old children)</b>					
Policy	0.120 [0.098]	0.115 [0.099]	0.088 [0.105]	0.150 [0.118]	0.149 [0.128]
Observations	614	576	523	436	367

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grand-mother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table E2.** Reduced-Form and 2SLS Effects on Early Child Development Indicators

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>I) Reduced-Form Estimates</b>					
<b>A) Readiness to Learn</b>					
Mother's Policy Exposure	0.049 [0.040]	0.053 [0.039]	0.059 [0.040]	0.028 [0.040]	0.049 [0.037]
Observations	606	568	515	429	362
<b>B) Literacy and Numeracy</b>					
Mother's Policy Exposure	0.070 [0.101]	0.025 [0.106]	0.000 [0.115]	-0.088 [0.129]	-0.119 [0.136]
Observations	594	558	506	421	354
<b>C) Physical Development</b>					
Mother's Policy Exposure	-0.022 [0.020]	-0.028 [0.023]	-0.022 [0.026]	-0.049* [0.026]	-0.056 [0.034]
Observations	604	566	513	428	362
<b>D) Social-emotional Development</b>					
Mother's Policy Exposure	0.151 [0.117]	0.102 [0.117]	0.085 [0.123]	0.062 [0.129]	0.114 [0.140]
Observations	590	553	501	416	349
<b>E) Early Childhood Development</b>					
Mother's Policy Exposure	0.144 [0.111]	0.071 [0.112]	0.029 [0.115]	-0.013 [0.121]	0.014 [0.135]
Observations	575	540	489	406	342
<b>II) 2SLS Estimates</b>					
<b>A) Readiness to Learn</b>					
Mother's Middle School Completion Status	0.216 [0.210]	0.224 [0.204]	0.331 [0.325]	0.116 [0.185]	0.185 [0.180]
Observations	606	568	515	429	362
F-stat	6.565	7.183	3.286	4.882	6.007
<b>B) Literacy and Numeracy</b>					
Mother's Middle School Completion Status	0.268 [0.384]	0.092 [0.373]	0.001 [0.487]	-0.292 [0.392]	-0.365 [0.372]
Observations	594	558	506	421	354
F-stat	9.708	10.84	5.881	9.146	10.71
<b>C) Physical Development</b>					
Mother's Middle School Completion Status	-0.097 [0.090]	-0.118 [0.100]	-0.121 [0.151]	-0.195 [0.129]	-0.210 [0.153]
Observations	604	566	513	428	362
F-stat	6.415	7.068	3.331	5.417	6.007
<b>D) Social-emotional Development</b>					
Mother's Middle School Completion Status	0.592 [0.487]	0.405 [0.477]	0.449 [0.683]	0.249 [0.512]	0.397 [0.505]
Observations	590	553	501	416	349
F-stat	8.207	7.750	3.544	5.223	6.883
<b>E) Early Childhood Development</b>					
Mother's Middle School Completion Status	0.489 [0.385]	0.243 [0.374]	0.123 [0.461]	-0.039 [0.349]	0.040 [0.354]
Observations	575	540	489	406	342
F-stat	12.11	11.73	6.364	10.14	12.45

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table E3.** Reduced-Form Effects on Parental Activities with Children

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Total Mother Activities</b>					
Mother's Policy Exposure	0.499*	0.345	0.283	0.310	0.503
	[0.289]	[0.313]	[0.334]	[0.366]	[0.394]
No Obs.	966	901	811	693	578
<b>Total Father Activities</b>					
Mother's Policy Exposure	0.682**	0.594*	0.627*	0.546	0.334
	[0.281]	[0.303]	[0.340]	[0.376]	[0.409]
No Obs.	966	901	811	693	578
<b>Total Parent Activities</b>					
Mother's Policy Exposure	0.502*	0.272	0.192	0.172	0.374
	[0.266]	[0.283]	[0.304]	[0.337]	[0.357]
No Obs.	966	901	811	693	578
<b>Total Adult Activities</b>					
Mother's Policy Exposure	0.592**	0.341	0.323	0.297	0.378
	[0.267]	[0.280]	[0.296]	[0.316]	[0.365]
No Obs.	966	901	811	693	578
<b>Total Others' Activities</b>					
Mother's Policy Exposure	0.232	0.202	0.298	0.254	0.162
	[0.189]	[0.199]	[0.198]	[0.222]	[0.249]
No Obs.	966	901	811	693	578
<b>Mother: 4 or more activities</b>					
Mother's Policy Exposure	0.061	0.036	0.025	0.041	0.075
	[0.090]	[0.100]	[0.107]	[0.119]	[0.132]
No Obs.	951	887	799	683	569
<b>Father: 4 or more activities</b>					
Mother's Policy Exposure	0.098*	0.094	0.084	0.112	0.111
	[0.055]	[0.059]	[0.064]	[0.072]	[0.078]
No Obs.	951	887	799	683	569
<b>Mother: Any activity</b>					
Mother's Policy Exposure	0.056	0.028	0.019	0.043	0.100*
	[0.048]	[0.047]	[0.049]	[0.049]	[0.054]
No Obs.	966	901	811	693	578
<b>Father: Any activity</b>					
Mother's Policy Exposure	0.158**	0.112	0.168**	0.175*	0.086
	[0.070]	[0.075]	[0.078]	[0.093]	[0.089]
No Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split quadratic time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table E4.** Reduced-Form Effects on Specific Parental Activities with Children

		<i>Bandwidth (years) around the cutoff</i>					<i>Bandwidth (years) around the cutoff</i>				
		8	7	6	5	4	8	7	6	5	4
		<b>Father Reads Books</b>					<b>Mother Reads Books</b>				
Mother's Policy Exposure		0.093	0.121	0.127	0.094	0.102	0.180**	0.181**	0.208**	0.169	0.203*
No Obs.		[0.072] 951	[0.075] 887	[0.080] 799	[0.093] 683	[0.087] 569	[0.080] 951	[0.088] 887	[0.092] 799	[0.106] 683	[0.113] 569
		<b>Father Tells Stories</b>					<b>Mother Tells Stories</b>				
Mother's Policy Exposure		0.033	0.003	0.010	-0.008	-0.042	0.064	0.083	0.081	0.055	0.076
No Obs.		[0.090] 951	[0.097] 887	[0.108] 799	[0.118] 683	[0.128] 569	[0.088] 951	[0.094] 887	[0.101] 799	[0.105] 683	[0.112] 569
		<b>Father Sings Songs</b>					<b>Mother Sings Songs</b>				
Mother's Policy Exposure		0.095	0.076	0.031	0.028	-0.043	-0.009	-0.050	-0.096	-0.102	-0.135
No Obs.		[0.076] 951	[0.080] 887	[0.082] 799	[0.099] 683	[0.103] 569	[0.088] 951	[0.096] 887	[0.101] 799	[0.103] 683	[0.107] 569
		<b>Father Takes Child Out</b>					<b>Mother Takes Child Out</b>				
Mother's Policy Exposure		0.164**	0.196**	0.225***	0.247**	0.188*	-0.037	-0.039	-0.031	-0.009	0.084
No Obs.		[0.075] 951	[0.080] 887	[0.086] 799	[0.100] 683	[0.107] 569	[0.072] 951	[0.073] 887	[0.081] 799	[0.087] 683	[0.103] 569
		<b>Father Plays with Child</b>					<b>Mother Plays with Child</b>				
Mother's Policy Exposure		0.113	0.096	0.092	0.050	-0.069	0.125*	0.146*	0.090	0.053	0.079
No Obs.		[0.076] 951	[0.083] 887	[0.089] 799	[0.096] 683	[0.111] 569	[0.072] 951	[0.078] 887	[0.075] 799	[0.087] 683	[0.097] 569
		<b>Father Counts, Draws with Child</b>					<b>Mother Counts, Draws with Child</b>				
Mother's Policy Exposure		0.054	0.003	0.037	0.009	0.050	-0.032	-0.121	-0.125	-0.058	-0.011
No Obs.		[0.090] 951	[0.096] 887	[0.102] 799	[0.109] 683	[0.131] 569	[0.095] 951	[0.098] 887	[0.106] 799	[0.124] 683	[0.139] 569

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. If a woman has more than one child in this age group, only the last born is taken. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy (mother's policy exposure status) and split quadratic time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table E5.** Reduced-Form Effects on Learning Materials and Inadequate Supervision

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Three or More Books</b>					
Mother's Policy Exposure	0.048	0.018	0.037	0.066	0.042
	[0.068]	[0.072]	[0.076]	[0.085]	[0.091]
No. Obs.	965	901	811	693	578
<b>Ten or More Books</b>					
Mother's Policy Exposure	0.033	0.011	0.026	0.039	0.073
	[0.070]	[0.076]	[0.079]	[0.085]	[0.099]
No. Obs.	965	901	811	693	578
<b>Any Books</b>					
Mother's Policy Exposure	0.063	0.023	0.066	0.077	0.057
	[0.074]	[0.077]	[0.085]	[0.093]	[0.098]
No. Obs.	965	901	811	693	578
<b>Toys, Homemade</b>					
Mother's Policy Exposure	0.035	0.128	0.153*	0.170*	0.186*
	[0.081]	[0.082]	[0.087]	[0.089]	[0.102]
No. Obs.	954	892	803	685	573
<b>Toys from Shop</b>					
Mother's Policy Exposure	-0.003	-0.023	-0.032	-0.064	-0.025
	[0.036]	[0.038]	[0.040]	[0.042]	[0.050]
No. Obs.	965	901	811	693	578
<b>Toys from House Objects</b>					
Mother's Policy Exposure	0.052	0.047	0.061	0.002	-0.103
	[0.072]	[0.077]	[0.086]	[0.095]	[0.102]
No. Obs.	965	901	811	693	578
<b>Inadequate Supervision</b>					
Mother's Policy Exposure	0.036	0.065	0.076	0.077	0.100
	[0.060]	[0.066]	[0.067]	[0.070]	[0.072]
No. Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split quadratic time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.



**Table E6.** Reduced-Form Effects on Learning Materials and Inadequate Supervision

	<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4
<b>Three or More Books</b>					
Mother's Policy Exposure	0.048	0.018	0.037	0.066	0.042
	[0.068]	[0.072]	[0.076]	[0.085]	[0.091]
No. Obs.	965	901	811	693	578
<b>Ten or More Books</b>					
Mother's Policy Exposure	0.033	0.011	0.026	0.039	0.073
	[0.070]	[0.076]	[0.079]	[0.085]	[0.099]
No. Obs.	965	901	811	693	578
<b>Any Books</b>					
Mother's Policy Exposure	0.063	0.023	0.066	0.077	0.057
	[0.074]	[0.077]	[0.085]	[0.093]	[0.098]
No. Obs.	965	901	811	693	578
<b>Toys, Homemade</b>					
Mother's Policy Exposure	0.035	0.128	0.153*	0.170*	0.186*
	[0.081]	[0.082]	[0.087]	[0.089]	[0.102]
No. Obs.	954	892	803	685	573
<b>Toys from Shop</b>					
Mother's Policy Exposure	-0.003	-0.023	-0.032	-0.064	-0.025
	[0.036]	[0.038]	[0.040]	[0.042]	[0.050]
No. Obs.	965	901	811	693	578
<b>Toys from House Objects</b>					
Mother's Policy Exposure	0.052	0.047	0.061	0.002	-0.103
	[0.072]	[0.077]	[0.086]	[0.095]	[0.102]
No. Obs.	965	901	811	693	578
<b>Inadequate Supervision</b>					
Mother's Policy Exposure	0.036	0.065	0.076	0.077	0.100
	[0.060]	[0.066]	[0.067]	[0.070]	[0.072]
No. Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split quadratic time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth, dummies for the grandmother's schooling levels, dummies for birth order and gender interaction and dummies for six-months interval of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table E7.** Reduced-Form Effects on Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age

<i>Bandwidth (years) around the cutoff</i>					
	8	7	6	5	4
<b>Mother's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	-0.018	-0.026	-0.001	-0.002	0.015
	[0.080]	[0.087]	[0.089]	[0.101]	[0.114]
No. Obs.	966	901	811	693	578
<b>Formal Day Care</b>					
Mother's Policy Exposure	0.008	0.004	0.013	0.004	0.040
	[0.054]	[0.056]	[0.060]	[0.068]	[0.080]
No. Obs.	964	900	810	692	577
<b>Age Gap between Mother and Father</b>					
Mother's Policy Exposure	-0.079	-0.230	-0.236	-0.226	-0.634
	[0.563]	[0.605]	[0.618]	[0.662]	[0.750]
No. Obs.	943	881	792	679	565
<b>Mother's Education <math>\geq</math> Father's Education</b>					
Mother's Policy Exposure	0.272***	0.259**	0.226**	0.292**	0.262**
	[0.091]	[0.100]	[0.106]	[0.119]	[0.128]
No. Obs.	963	898	808	691	577

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes women who have at least one child aged 24-59 months. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split quadratic time trends on either side of the cutoff where the running variable is month-year of birth, the regressions also control for birth-month dummies, dummies for whether the childhood region was a village, district center, or province center, dummies for whether the mother tongue is Turkish, Kurdish, or Arabic, dummies for the NUTS-1 region of birth and dummies for the grandmother's schooling levels. For the Formal Day Care variable, dummies for birth order and gender interaction and dummies for six-month intervals of the child's age are also included. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

# Online Appendix F - Parametric Results with only Essential Control Variables

**Table F1.** Policy Effect on Mothers' Middle School Completion Status

	<i>Bandwidth (years) around the cutoff</i>				
	<i>8</i>	<i>7</i>	<i>6</i>	<i>5</i>	<i>4</i>
<b>A) Sample A (Women with 24- to 59-month-old children)</b>					
Policy	0.139** [0.063]	0.144** [0.067]	0.159** [0.072]	0.161** [0.077]	0.156* [0.087]
Observations	966	901	811	693	578
<b>B) Sample B (Women with 36- to 59-month-old children)</b>					
Policy	0.103 [0.087]	0.107 [0.093]	0.115 [0.100]	0.123 [0.110]	0.155 [0.125]
Observations	614	576	523	436	367

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. The regressions control for the policy dummy and split linear time trends on either side of the cutoff, where the running variable is the month-year of birth. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table F2.** Reduced-Form and 2SLS Effects on Early Child Development Indicators

<i>Bandwidth (years) around the cutoff</i>					
	8	7	6	5	4
<b>I) Reduced-Form Estimates</b>					
	<b>A) Readiness to Learn</b>				
Mother's Policy Exposure	0.077** [0.033]	0.066** [0.033]	0.067* [0.036]	0.074** [0.036]	0.063* [0.036]
Observations	606	568	515	429	362
	<b>B) Literacy and Numeracy</b>				
Mother's Policy Exposure	-0.033 [0.066]	-0.007 [0.067]	0.024 [0.073]	0.058 [0.085]	0.002 [0.091]
Observations	594	558	506	421	354
	<b>C) Physical Development</b>				
Mother's Policy Exposure	0.000 [0.028]	-0.001 [0.028]	-0.005 [0.029]	0.004 [0.028]	-0.002 [0.024]
Observations	604	566	513	428	362
	<b>D) Social-emotional Development</b>				
Mother's Policy Exposure	0.013 [0.087]	0.051 [0.090]	0.049 [0.093]	0.077 [0.099]	0.065 [0.111]
Observations	590	553	501	416	349
	<b>E) Early Childhood Development</b>				
Mother's Policy Exposure	0.039 [0.081]	0.071 [0.085]	0.075 [0.087]	0.089 [0.093]	0.070 [0.103]
Observations	575	540	489	406	342
<b>II) 2SLS Estimates</b>					
	<b>A) Readiness to Learn</b>				
Mother's Middle School Completion Status	0.384* [0.228]	0.316 [0.210]	0.267 [0.177]	0.303 [0.199]	0.237 [0.181]
Observations	606	568	515	429	362
F-stat	7.725	7.521	11.04	8.294	7.105
	<b>B) Literacy and Numeracy</b>				
Mother's Middle School Completion Status	-0.154 [0.304]	-0.031 [0.292]	0.086 [0.261]	0.219 [0.323]	0.007 [0.297]
Observations	594	558	506	421	354
F-stat	9.506	9.430	14.27	10.85	10.19
	<b>C) Physical Development</b>				
Mother's Middle School Completion Status	0.001 [0.138]	-0.005 [0.135]	-0.019 [0.112]	0.015 [0.117]	-0.009 [0.088]
Observations	604	566	513	428	362
F-stat	7.770	7.438	10.93	7.761	7.105
	<b>D) Social-emotional Development</b>				
Mother's Middle School Completion Status	0.064 [0.412]	0.231 [0.399]	0.188 [0.347]	0.310 [0.406]	0.245 [0.418]
Observations	590	553	501	416	349
F-stat	8.201	8.402	11.78	8.328	7.003
	<b>E) Early Childhood Development</b>				
Mother's Middle School Completion Status	0.173 [0.350]	0.294 [0.345]	0.263 [0.302]	0.334 [0.352]	0.233 [0.341]
Observations	575	540	489	406	342
F-stat	10.16	10.56	15.54	10.97	10.27

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 36-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions control only for the child's biological outcomes: dummies for interactions of birth order and gender and dummies for six-month intervals of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table F3.** Reduced-Form Effects on Parental Activities with Children

	<i>Bandwidth (years) around the cutoff</i>				
	<i>8</i>	<i>7</i>	<i>6</i>	<i>5</i>	<i>4</i>
<b>Total Mother Activities</b>					
Mother's Policy Exposure	0.161	0.248	0.343*	0.390*	0.292
	[0.195]	[0.196]	[0.204]	[0.213]	[0.236]
No Obs.	966	901	811	693	578
<b>Total Father Activities</b>					
Mother's Policy Exposure	0.529**	0.557**	0.562**	0.659**	0.660**
	[0.222]	[0.238]	[0.256]	[0.279]	[0.300]
No Obs.	966	901	811	693	578
<b>Total Parent Activities</b>					
Mother's Policy Exposure	0.263	0.356*	0.419**	0.470**	0.279
	[0.187]	[0.191]	[0.203]	[0.216]	[0.223]
No Obs.	966	901	811	693	578
<b>Total Adult Activities</b>					
Mother's Policy Exposure	0.337*	0.442**	0.468**	0.551**	0.460*
	[0.192]	[0.195]	[0.212]	[0.218]	[0.243]
No Obs.	966	901	811	693	578
<b>Total Others' Activities</b>					
Mother's Policy Exposure	0.202	0.221	0.145	0.193	0.296
	[0.149]	[0.153]	[0.164]	[0.186]	[0.194]
No Obs.	966	901	811	693	578
<b>Mother: 4 or more activities</b>					
Mother's Policy Exposure	-0.046	-0.024	0.001	0.027	0.002
	[0.060]	[0.063]	[0.066]	[0.070]	[0.077]
No Obs.	951	887	799	683	569
<b>Father: 4 or more activities</b>					
Mother's Policy Exposure	0.075	0.071	0.085	0.082	0.064
	[0.046]	[0.049]	[0.053]	[0.056]	[0.058]
No Obs.	951	887	799	683	569
<b>Mother: Any activity</b>					
Mother's Policy Exposure	0.036	0.047	0.044	0.037	0.033
	[0.030]	[0.030]	[0.033]	[0.034]	[0.039]
No Obs.	966	901	811	693	578
<b>Father: Any activity</b>					
Mother's Policy Exposure	0.119**	0.138**	0.105*	0.126*	0.150**
	[0.054]	[0.057]	[0.059]	[0.065]	[0.069]
No Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions control only for the child's biological outcomes: dummies for interactions of birth order and gender and dummies for six-month intervals of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table F4.** Reduced-Form Effects on Specific Parental Activities with Children

	<i>Bandwidth (years) around the cutoff</i>					<i>Bandwidth (years) around the cutoff</i>				
	8	7	6	5	4	8	7	6	5	4
	<b>Father Reads Books</b>					<b>Mother Reads Books</b>				
Mother's Policy Exposure	0.019 [0.059] 951	0.011 [0.062] 887	0.032 [0.065] 799	0.083 [0.072] 683	0.085 [0.072] 569	0.080 [0.060] 951	0.087 [0.063] 887	0.107* [0.064] 799	0.147** [0.069] 683	0.148* [0.078] 569
No Obs.	<b>Father Tells Stories</b>					<b>Mother Tells Stories</b>				
Mother's Policy Exposure	0.030 [0.062] 951	0.040 [0.066] 887	0.049 [0.072] 799	0.082 [0.081] 683	0.073 [0.091] 569	0.027 [0.064] 951	0.029 [0.067] 887	0.064 [0.071] 799	0.104 [0.076] 683	0.098 [0.085] 569
No Obs.	<b>Father Sings Songs</b>					<b>Mother Sings Songs</b>				
Mother's Policy Exposure	0.071 [0.054] 951	0.075 [0.057] 887	0.088 [0.062] 799	0.068 [0.070] 683	0.085 [0.075] 569	-0.026 [0.061] 951	-0.011 [0.064] 887	0.002 [0.070] 799	0.005 [0.073] 683	-0.022 [0.080] 569
No Obs.	<b>Father Takes Child Out</b>					<b>Mother Takes Child Out</b>				
Mother's Policy Exposure	0.123* [0.067] 951	0.104 [0.070] 887	0.120 [0.073] 799	0.151* [0.077] 683	0.172** [0.082] 569	-0.007 [0.051] 951	-0.015 [0.052] 887	-0.020 [0.056] 799	-0.036 [0.062] 683	-0.038 [0.066] 569
No Obs.	<b>Father Plays with Child</b>					<b>Mother Plays with Child</b>				
Mother's Policy Exposure	0.175*** [0.051] 951	0.172*** [0.054] 887	0.156*** [0.057] 799	0.138** [0.060] 683	0.127* [0.068] 569	0.044 [0.060] 951	0.033 [0.064] 887	0.096 [0.059] 799	0.111* [0.064] 683	0.082 [0.070] 569
No Obs.	<b>Father Counts, Draws with Child</b>					<b>Mother Counts, Draws with Child</b>				
Mother's Policy Exposure	0.070 [0.065] 951	0.092 [0.070] 887	0.058 [0.073] 799	0.062 [0.077] 683	0.021 [0.087] 569	-0.028 [0.063] 951	0.004 [0.066] 887	-0.020 [0.070] 799	-0.070 [0.076] 683	-0.117 [0.079] 569

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions control only for the child's biological outcomes: dummies for interactions of birth order and gender and dummies for six-month intervals of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table F5.** Reduced-Form Effects on Learning Materials and Inadequate Supervision

	<i>Bandwidth (years) around the cutoff</i>				
	<i>8</i>	<i>7</i>	<i>6</i>	<i>5</i>	<i>4</i>
<b>Three or More Books</b>					
Mother's Policy Exposure	0.053 [0.054]	0.061 [0.058]	0.074 [0.061]	0.078 [0.066]	0.061 [0.069]
No. Obs.	965	901	811	693	578
<b>Ten or More Books</b>					
Mother's Policy Exposure	0.043 [0.054]	0.049 [0.056]	0.052 [0.059]	0.065 [0.062]	0.043 [0.064]
No. Obs.	965	901	811	693	578
<b>Any Books</b>					
Mother's Policy Exposure	0.109** [0.050]	0.120** [0.052]	0.103* [0.055]	0.115* [0.060]	0.097 [0.066]
No. Obs.	965	901	811	693	578
<b>Toys, Homemade</b>					
Mother's Policy Exposure	-0.006 [0.063]	-0.037 [0.066]	-0.007 [0.070]	0.025 [0.076]	0.065 [0.082]
No. Obs.	954	892	803	685	573
<b>Toys from Shop</b>					
Mother's Policy Exposure	0.012 [0.028]	0.020 [0.030]	0.013 [0.032]	0.007 [0.034]	-0.020 [0.036]
No. Obs.	965	901	811	693	578
<b>Toys from House Objects</b>					
Mother's Policy Exposure	-0.026 [0.052]	-0.012 [0.054]	-0.001 [0.057]	0.025 [0.063]	0.045 [0.070]
No. Obs.	965	901	811	693	578
<b>Inadequate Supervision</b>					
Mother's Policy Exposure	0.017 [0.039]	0.006 [0.041]	0.011 [0.045]	0.024 [0.052]	0.029 [0.054]
No. Obs.	966	901	811	693	578

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions control only for the child's biological outcomes: dummies for interactions of birth order and gender and dummies for six-month intervals of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.

**Table F6.** Reduced-Form Effects on Father Schooling, Mother and Father Employment, Formal Day-Care Use, and Mother-Father Gaps in Schooling and Age

<i>Bandwidth (years) around the cutoff</i>					
	8	7	6	5	4
<b>Mother's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	-0.026 [0.063]	-0.021 [0.066]	-0.033 [0.070]	-0.023 [0.074]	-0.028 [0.082]
No. Obs.	966	901	811	693	578
<b>Partner's Middle School Completion</b>					
Mother's Policy Exposure	0.049 [0.065]	0.043 [0.069]	0.039 [0.076]	0.069 [0.078]	0.053 [0.086]
No. Obs.	946	882	796	680	567
<b>Partner's Employment in the Last 12 Months</b>					
Mother's Policy Exposure	-0.009 [0.020]	-0.014 [0.021]	-0.016 [0.021]	-0.020 [0.022]	-0.021 [0.021]
No. Obs.	942	880	791	677	563
<b>Formal Day Care</b>					
Mother's Policy Exposure	-0.032 [0.043]	-0.037 [0.046]	-0.031 [0.049]	-0.015 [0.050]	-0.028 [0.054]
No. Obs.	964	900	810	692	577
<b>Age Gap between Mother and Father</b>					
Mother's Policy Exposure	-0.631 [0.469]	-0.527 [0.489]	-0.426 [0.478]	-0.499 [0.469]	-0.151 [0.506]
No. Obs.	943	881	792	679	565
<b>Mother's Education Level <math>\geq</math> Father's Education Level</b>					
Mother's Policy Exposure	0.136** [0.067]	0.161** [0.071]	0.181** [0.073]	0.174** [0.080]	0.197** [0.089]
No. Obs.	963	898	808	691	577

*Notes:* The data come from the 2018 Turkish Demographic Health Survey. The sample includes children aged 24-59 months. Only the last born is taken if a woman has more than one child in this age group. The estimates in each column come from a separate regression using the sample defined according to the bandwidths specified in the column headings. In addition to the policy dummy and split linear time trends on either side of the cutoff where the running variable is month-year of birth, the regressions control only for the child's biological outcomes: dummies for interactions of birth order and gender and dummies for six-month intervals of child's age. The regressions are weighted using the sample weights. Standard errors are clustered at the month-year of birth level. Statistical significance \*\*\* at the 1 percent level, \*\* at the 5 percent level, \* at the 10 percent level.