POVERTY AND ENGAGEMENT WITH CHILDREN*

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March 26, 2026

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Abstract

I show that poverty is strongly associated with reduced engagement with young children in South Africa. This engagement by parents and caregivers include stimulating interactions such as talking to or conversing with the child, singing to or with, and reading to or telling them stories. Using nationally representative data on households with infants and toddlers, I show that income and other measures of well-being are strong predictors of child engagement even with a battery of controls and a host of robustness checks suggesting a potential causal link. At the same time, I find suggestive evidence that links this engagement in early childhood to short- and long-term literacy and schooling outcomes. I then show that a large cash transfer program that increases household income per capita also increases the levels of reported engagement with children. Finally, I explore potential mechanisms through which this grant alters engagement with children in the household.

Keywords: Cash Transfers, Children, Early Childhood Development, Parental Investment, Education, South Africa

JEL Codes: J13, J24, I25, O15

*This paper stems directly from a larger research project with Susan Godlonton and Emily Conover on the links between poverty and early childhood conditions. I thank Jeff Bloem, Steve Wu, Hani Mansour, Ryan Brown, Andrea Velasquez, Brian Duncan, and Lauren Nicholas for their feedback on early versions of this paper. I also thank seminar participants at NEUDC and PacDev for comments and suggestions that have helped push the paper forward. Data used in the analysis can be downloaded from the GHS of South Africa website—replication material provided upon request.

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1 Introduction

Stimulating interactions with young children—such as infant-directed speech and reading aloud—vary widely by socioeconomic status both within and across countries (Hoff, 2003; Huttenlocher et al., 2010; Farran et al., 2016; Cuartas et al., 2020). These early-life interactions are thought to have lasting impacts on children's cognitive and language development (Weisleder and Fernald, 2013; Fox, Levitt and Nelson III, 2010; Gertler et al., 2021). Together, these two findings suggest a mechanism through which poverty can perpetuate itself across generations: lower engagement in early childhood among poorer households may lead to weaker cognitive and non-cognitive skills and reduced educational attainment — outcomes that in turn shape future labor market performance and socioeconomic status (Dupas et al., 2023; Heckman and Masterov, 2007).

In this paper, I first document large, meaningful socioeconomic disparities in parental engagement with young children in South Africa. Using data on how frequently children aged six and under are read to, conversed with, or sung to,[1] I find that children in the poorest economic well-being deciles experience approximately one standard deviation (SD) lower engagement than children in the richest decile. These gaps persist after controlling for a wide range of household and child characteristics: a one SD decrease in economic well-being is associated with 0.12 SD lower engagement with young children. Using the methods proposed by Oster (2019), I show that selection on unobservables is unlikely to explain away the sign of this estimated relationship.

I then examine the short- and long-term consequences of early-life engagement. For a subsample of children aged 5 and 6, I show that current engagement levels are strongly correlated with literacy. For older children (ages 10–17), I proxy early-life engagement using the engagement currently reported for younger children in the same household. I find that this proxy is strongly predictive of older children's literacy and schooling outcomes, even after controlling for a wide range of household and child characteristics including income, wealth, and the educational attainment of older household members. While this exercise faces clear endogeneity concerns, I again show — using the approach of Oster (2019) — that unobserved confounding

[1] Where data permit, I also examine two additional engagement measures: (1) encouraging children to imitate adults or older children, and (2) teaching them object names and their purposes.

is unlikely to nullify or reverse these findings.

To further support a causal interpretation of the relationship between economic well-being and engagement with young children, I use the South Africa's flagship unconditional cash transfer to the elderly—the Older Person's Grant—and its sharp age-eligibility threshold as a source of quasi-experimental variation. I find that children living in households where the oldest member is just above the eligibility threshold experience approximately 0.3 SD higher reported engagement than those living with an elderly person just below it. I then explore potential mechanisms: I rule out changes in elderly recipients' labor supply as a major driver of this effect, while finding that reductions in food insecurity and increases in consumption may account for up to 50% of it. Although the specific features of this grant and the mechanisms at play may limit generalizability to other cash transfer programs, the results point to an under-appreciated benefit of such programs: the Older Person's Grant — which indirectly reaches nearly 30% of South African children — appears to meaningfully improve the quality of early-life interactions, a channel through which cash transfers may reinforce human capital accumulation across generations.

There are a number of potential explanations for the stark differences in engagement with children across socioeconomic status.[2] A commonly suggested reason is that poorer parents and caregivers lack information about the importance of parental engagement or about how to engage with them (Boneva and Rauh, 2018; Carneiro et al., 2019; Cunha, Elo and Culhane, 2022; List, Pernaudet and Suskind, 2021).[3] Another explanation for the differences in engagement across socioeconomic status is that parents from poorer backgrounds have fewer skills making them perceive that their engagement with the children is less productive (Mayer et al., 2019). As a stark example, literacy rates among the poor in developing countries is lower and thus reading to children specifically may be mechanically lower but can perhaps be substituted with storytelling.

The two explanations above emphasize ways in which poorer parents and caregivers are intrinsically different from wealthier ones. Other explanations focus on

[2]For an excellent and detailed review of these mechanisms, see Kalil and Ryan (2020).

[3]The findings on this are mixed as most parents understand the importance of enriching engagement but there is some evidence that poorer caregivers underestimate the benefits on average (Kalil and Ryan, 2020).

poverty itself being the source of—or an important contributor to—the difference. I present these explanations as mechanisms, per say, through which poverty may lead to less stimulating environments for children that include lower levels of engagement by parents and caregivers. First, poorer parents and caregivers may engage less with their children because they have fewer financial resources to buy the materials and experiences such as books and games that contribute to a more stimulating environment (Mayer et al., 2019).[4] Yet another explanation relates to time—poor parents may potentially work longer hours with more physically demanding jobs (Guryan, Hurst and Kearney, 2008; Sayer, Gauthier and Furstenberg Jr, 2004). However, most research shows that high-income parents (especially mothers who are typically the primary caregivers) tend to work more hours but still spend more time with their children (Kendig and Bianchi, 2008); still, parents in poorer households work more unpredictable and odd hours that may conflict directly with children's prime time at home such as evenings and weekends.

Furthermore, this type of engaged parenting requires effort—poverty itself is mentally taxing (Schilbach, Schofield and Mullainathan, 2016), and parents experiencing economic hardship living paycheck to paycheck (or even meal to meal) may have limited bandwidth to engage with their young children especially when the returns to this engagement are not salient. Related research considers present bias and discounting differences among parents suggesting that poor parents tend to be more present biased and have higher discount rates perhaps because they are more taxed (Lawrance, 1991; Spears, 2011; Shah, Mullainathan and Shafir, 2012). In this paper, I show that a shock to household income through a cash transfer program leads to an increase, on average, in engagement with children especially among the poor. This cash transfer relaxes the income constraint but has no informational value to the parents or caregivers suggesting that the lack of information or skills are not the only explanations and that mediators that can change when economic hardship is relaxed are plausible and important mechanisms.

This study contributes to several strands of literature across different fields. I add to the literature showing strong differences across wealth in child engagement

[4]For example, specifically related to reading to children, poor households have fewer books (Bradley et al., 2001). The difference in spending between rich and poor parents on children is increasing (Kornrich and Furstenberg, 2013). However, while access to books requires financial resources and may be limited in some rural contexts in South Africa, story telling does not have such restrictions.

and I investigate the predictors of engagement in a large middle-income country. For example, several studies show that infant-directed speech, time with children, and other stimulating interaction with children increase with socioeconomic status (Hoff, 2003; Guryan, Hurst and Kearney, 2008; Farran et al., 2016; Kalil, Ryan and Corey, 2012; Cuartas et al., 2020). Another line of research highlight the importance of early childhood conditions and parental investments (Heckman and Masterov, 2007; Gertler et al., 2021). I show suggestive evidence on the long-term effects of higher levels of childhood engagement contributing to an important literature documenting, for example, a clear association between reading to young children and numeracy and literacy later in life (Kloosterman et al., 2011; Mol and Bus, 2011; Hale et al., 2011; Raikes et al., 2006; Barnes and Puccioni, 2017). However, estimating the causal long-run impact of engagement during early childhood is difficult—most existing experimental work is limited in scope and based on small samples (Kalil and Ryan, 2020). Two studies attempt to estimate this effect with large-scale representative datasets using birth order as an instrument for child engagement which show that childhood engagement increases test scores and reading achievement later in life (Kalb and Van Ours, 2014; Price and Kalil, 2019).

I also add to the increasingly broad evidence on the multi-dimensional effects of cash transfer programs. Cash transfers and similar social protection programs are shown to have effects on variables such as health, mortality, education, labor supply, household composition, and intra-household violence, among others (Cahyadi et al., 2020; Hidrobo et al., 2014; Edmonds, Mammen and Miller, 2005; Abel, 2019; Richterman et al., 2023).[5] In related work, we show that a conditional cash transfer program in Peru led to a reduction in the physical punishment of children (Alloush, Conover and Godlonton, 2025). In this paper, I directly show the effect of a large monthly cash transfer on engagement with young children within their household. This suggests additional mechanisms through which cash transfers to families with children can help break the cycle of inter-generational poverty.

Finally, I contribute to a literature in economics and other social sciences that attempt to increase the quantity and quality of parental engagement with their children. Most of the recent existing work including List, Pernaudet and Suskind

[5]The literature on large scale cash transfer programs is large and growing and it would take a review paper on each outcome I list above to give proper credence to all the excellent research on this important topic. To sum, large scale cash transfer programs are shown to improve many outcomes and can be very effective in improving long-term outcomes of children.

(2021), Leech et al. (2018), and Dupas et al. (2023) seek to change the level of engagement by directly informing parents about its importance—while emphasizing a lack of knowledge about the returns to this engagement as an important constraint. I add to this literature by showing that a stable cash transfer program that alleviates poverty and material deprivation increases the engagement with children. This suggests that there are other mechanisms at play through which poverty leads to less engagement with children. A natural policy implication would be to pair cash transfer programs aimed at children with information or even encouragement designs to alleviate multiple constraints on engagement with children.

The rest of this paper is structured as follows: Section 2 discusses the data and setting highlighting some descriptive statistics of my main measures of engagement with children in South Africa. In Section 3, I outline the main empirical approaches I use in the paper. In Section 4, I show the main results of the paper showing how that income plays an important role in determining levels of engagement with children. In Section 5, I show suggestive evidence on the long-run importance of engagement. Finally, Section 6 concludes.

2 Data and Study Setting

In this section, I first discuss the dataset I use in this analysis and the main measures of engagement with children in the household available in the data. Then, I discuss the local context and provide some descriptive results on child engagement in South Africa.

2.1 Data

In this study, I use three waves of South Africa's General Household Survey (GHS). The GHS is one of the South Africa's longest running surveys—it is a repeated cross-sectional survey conducted yearly since 2002. Several broad areas are covered in the GHS which include health and social development, education, and food security among others. The survey aims to be nationally representative of non-institutionalized and non-military persons in South Africa and collects information on all usual residents of households. Household-level data is collected that includes information on the dwelling and access to different services. In addition,

questionnaires are designed to collect individual-level data on demographics, education, employment, health, and other measures of well-being.[6]

2.2 Measures of Engagement with Children

While some of the specifics of the questionnaires change over time, a lot of information is consistent across survey waves. In this study, I focus on the survey rounds from 2016-2018 which have a specific module for children age six and under where the household respondent is asked how often the child was engaged with in specific ways. For example, one question asks "How often does someone read/tell stories to [*name of the child*]?" The possible responses include never, sometimes, often, or every day. I create indicator variables for these child engagement variables identifying children who are engaged with in a specific way often or every day.[7]

Figure 1 shows that in the GHS data between 2016 and 2018, this type of engagement with young children peaks at ages four and five. Among 4 year old children in our sample, approximately 60% are reported to have someone regularly sing to or with them and a similar share have someone who regularly talks to or converses with them. On the other hand, reading or telling stories peaks at 40% at age 5. This contrasts with the work of Price and Kalil (2019) which shows that in the US, reading to children daily peaks earlier at age 2. I show a similar figure (A.2 in the Appendix) for the other two measures of engagement—imitation and object naming—which are only available in the 2016 survey wave. For those two measures, the share of children who experience them often or daily increases with age and is highest for the oldest children who these questions are asked of (age six).

The pattern in Figure 1 does not differ by the gender of the child; in Figure A.1(A) in the Appendix, I show an engagement index (a standardized aggregate of the three types of engagement I observe in 2016-2018 waves) by age differentiated by the sex of the child. There is no significant difference across sex in how engage-

[6] More on GHS here: https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/905

[7] I will refer to this as *reading to* in the rest of this paper. The other two questions ask: (1) how often does someone sing to or with [*name of child*], and (2) how often does someone in the household have a conversation with or talk to [*name of child]*. I will refer to these as *singing to* and *talking to* children, respectively. In the 2016 survey only, there are two additional questions that ask: (1) how often a child is encouraged to imitate daily activities of adults and other children, and (2) how often a child is told what the name of an object is and its purpose when they point to them. I will refer to these as *imitation* and *object naming*, respectively. I show results using these last two sparingly throughout the paper and mostly in the Appendix.

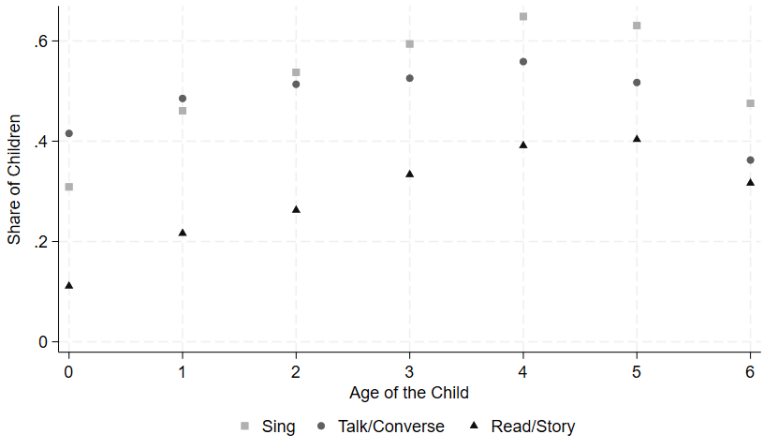


FIGURE 1: Engagement by Age of the Child shows that engagement as measured in our data peaks at ages four and five. Appendix Figure A.2 shows a similar figure for the other two measures of engagement only available in 2016.

ment evolves for the age of the child. On the other hand, when I differentiate by urban or rural settings, I find that urban areas have significantly higher levels of reported engagement for all ages—while this maybe a cultural difference, income and wealth vastly differ between urban and rural areas in South Africa. However, I show in the regression results that this difference across urban and rural areas remains even after controlling host a host of household characteristics including wealth, education of the adults, and other measures of socioeconomic status.

3 Estimation Approach

I am interested in testing the hypothesis that economic well-being (proxied through household wealth or income per capita) has a causal impact on engagement with children. In addition, I am interested in exploring the long-term associations of this early-childhood engagement. In this section, I discuss the several econometric approaches I use to estimate these relationships throughout the paper.

3.1 Descriptive Regressions

To start, I show descriptive figures showing the clear connection between economic well-being and engagement with children within a household. I then estimate the following simple linear model using Ordinary Least Squares (OLS):

$$y_{ihrt} = \beta w_{ihrt} + \Theta X_{ihrt} + \delta_r + \gamma_t + e_i hrt \quad (1)$$

where y_{ihrt} is an index of engagement at the child level and w_{ihrt} is a index measure of economic well-being that includes a wealth index, household income per capita, and expenditure per capita for child i, in household h, in region r, and year t. X_{ihrt} is a vector of child and household-level observable characteristics, and δ_r and γ_t are region and year indicators to control for region and time fixed effects.

The estimated coefficient $\hat{\beta}$ from equation (1) will give us the associated changes in child engagement when economic well-being increases controlling for time and region fixed effects and the observable factors in X_{ihrt}. This estimator for this coefficient is likely biased and unlikely to capture the causal effect of economic well-being on engagement as this simple model is fraught with endogeneity and measurement error. On the one hand, measurement error in the measure of economic well-being will attenuate our results while unobservable confounding factors that lead to omitted variable bias may inflate our estimates: for example, high ability parents will have higher levels of economic well-being and will likely know more about the returns to early childhood interactions and thus engage more with their children.

I test the robustness of the result to unobservable selection following the insights of Altonji, Elder and Taber (2005) and the methods of Oster (2019). This approach considers selection on observable variables as an indication of the extent of selection on unobservable household and child characteristics. This methodology effectively generates bounds on the causal effect estimate by first estimating a regression without control variables and then estimating a regression with additional control variables: if the coefficient of interest—in my case the β linking economic well-being and engagement with children—remains relatively stable compared to the R^2 when controls are added to the regression, then this suggests that unobservables are unlikely to explain away or reverse the observed direction of the result.[8]

These results rely on an assumption about R_{Max}—the maximum possible R^2 of the specification. The smallest possible value of R_{Max} is the R^2 from the regression with controls and the largest value is one. In this setting where I use household

[8]In recent work, Masten and Poirier (2022) and Diegert, Masten and Poirier (2022) point out shortcomings of the method and suggest additional sensitivity tests. I apply these tests and discuss their qualitative implications.

survey data to measure child engagement, it is likely that these variables are measured with considerable error (McKenzie, 2012) and so assuming R_{Max} to have a value of one is very conservative. I use the approach suggested by Oster (2019), which sets R_{Max} equal to 1.3 $\times$ the R^2 from the regression with controls. However, I show sensitivity to the choice of R_{Max} in the Appendix as is suggested by Masten and Poirier (2022).

Short and long-term associations of early childhood engagement—I also estimate, using OLS, a simple linear model to explore the potential long-term implications of early childhood engagement. For a subset of children (5 and 6 year olds), I have information on both engagement levels and literacy levels. For these children, I estimate the following equation:

$$lt_{ihrt} = \alpha y_{ihrt} + \Delta X_{ihrt} + \theta_r + \lambda_t + u_{ihrt} \tag{2}$$

where lt_{ihrt} is a measure of literacy adjusted for age and y_{ihrt} is the measure of engagement at the child level. The coefficient α shows the concurrent correlation between engagement and literacy of children.

In order to consider the potential long-term effects of early childhood engagement, for older children in the GHS data who have younger siblings who are six and under, I use the current engagement levels of the younger siblings as a proxy explanatory variable and show the associations with educational and literacy outcomes of the older children and estimate the following equation:

$$lt_{ihrt} = \alpha^* y^*_{hrt} + \Delta^* X_{ihrt} + \theta^*_r + \lambda^*_t + \epsilon_{ihrt} \tag{3}$$

where y^*_{hrt} is a household-level measure of average engagement of young children in the household. I test the robustness of this coefficient to unobservable selection using a host of household and individual controls. I discuss the weaknesses of this additional analysis when presenting the results in Section 4.

3.2 Income Shock: Cash Transfer to the Household

Income and other measures of economic well-being are clearly endogenous to the model above (equation 1). In an effort to overcome this issue and additionally show a secondary effect of cash transfer programs, I use a large sustained income

shock to the household from the Older Person's Grant to look at the effect of this cash transfer on the engagement with children in the household.[9] If economic well-being has a causal impact on engagement, then a transfer that improves economic well-being should itself affect engagement—all else equal. To look at the impact of the Older Person's Grant, I restrict my sample to children in households where the oldest member is near the age-eligibility threshold (60 years) of the grant. Several studies capture the effect of this unconditional cash transfer by restricting the analysis to samples with individuals or households with individuals in age ranges around the age-eligibility threshold (Duflo, 2003; Edmonds, 2006; Ambler, 2016). The identifying assumption is that households with an individual within a small age range above or below 60 are similar except for grant receipt. More recent work uses narrow age ranges (as small as 1 year on each side) and a local randomization regression discontinuity approach to estimate the effect of this grant on measures of household and individual well-being (Alloush, Bloem and Malacarne, 2024).

My estimation approach here is a local randomization approach in the regression discontinuity vein. This estimation strategy is appropriate (versus a normal RDD) in cases where the running variable is not continuous or only takes a few values—such as age in years in this context (Cattaneo and Titiunik, 2022).[10] The running variable is the age of the oldest person in the household where I restrict the sample to young children living with elderly around the threshold grant-eligibility age of 60. Children in households where the oldest person is currently 60 years old or above are in households likely benefiting from the grant. Figure A.8(A) in the Appendix shows the discontinuity in receipt in the relevant households with

[9]The Older Person's Grant, a means-tested large monthly cash transfer program to the elderly, is South Africa's flagship social protection program. South African citizens and residents become eligible at age 60 and they now receive over 2,000 South Africa Rands. Nearly 80% pass the means test and over 90% take it up (Abel, 2019). Nearly half of the elderly receiving the grant live with children and in the GHS 2016-2018 sample, 25% of children live with someone who is receiving the grant—a number that is higher among lower-income households. Early seminal work shows this grant is an effective tool at redistribution and has important inter-generational consequences as it reaches a lot of poor children who live in households with elderly persons (Case and Deaton, 1998; Duflo, 2000, 2003). In recent work, we show that the grant has large effects on household income, food consumption, and hunger, and it helps households deal with large shocks (Alloush, Bloem and Malacarne, 2024).

[10]Local randomization relies on the assumption that there is a neighborhood around the cutoff where treatment status is assumed to be as-if randomly assigned such that two conditions hold for all units in that window: (1) all units in the window have the same probability of receiving all running variable values, and (2) potential outcomes are unaffected by the running variable except through the treatment in that given window—i.e. the exclusion restriction (Cattaneo and Titiunik, 2022).

children six and under between 2016 and 2018.

While nearly a quarter of children in South Africa live in households with an Older Person's Grant beneficiary, the sample of children I use is not representative of all children in South Africa. These children living in inter-generational households with elderly near 60 are in general living in households that are poorer, larger, and more rural than average. Thus, the results here may not be representative of the general population.

Threats to identification—In this empirical setup estimating the effect of the Older Person's Grant on the engagement with children, there are several threats to the identification strategy. Importantly, if there systematic unobservable differences across the children in the GHS sample (those in households elderly below and above the threshold), then children with an elderly below the grant age-eligibility threshold are not a suitable counterfactual for children with elderly above. For example, strategic mothers may move in with an elderly after they start receiving the grant to benefit their children. This makes the children in the control group unobservably different from those treated group. Studies have documented changes in household composition, labor supply, and bargaining power due to the grant.[11] While I am unable to disentangle the monetary effect of the grant from other changes within the household, I try to control for observable household composition and employment variables. Moreover, recent studies show balance in narrow windows around the thresholds where households are quite similar (Alloush, Bloem and Malacarne, 2024). Finally, given the specifics of the Older Person's Grant such as its intended recipients (the elderly) and its documented effects, the impact on engagement I document may not easily be generalizable to other cash transfer programs.

4 Main Results

I present descriptive graphical and regression results in Section 4.1 showing a strong link between economic well-being and engagement with young children. In Section 4.2, I show graphical and regression results suggesting short- and long-term

[11] A series of studies document behavioral changes in response to this grant. For example there are documented household composition changes (Edmonds, Mammen and Miller, 2004; Hamoudi and Thomas, 2014); changes in employment patterns (Ranchhod, 2006; Abel, 2019; Jensen, 2004); and changes in bargaining power with the household (Ambler, 2016).

implications on literacy and schooling outcomes of early childhood engagement.

4.1 Economic Well-being and Engagement

I first start with clear descriptive work on the determinants of child engagement in the sample of children between 0 and 6 years old in South Africa. First, Figure 2 shows the share of children six and under who experience a specific type of engagement either often or every day by wealth decile. It is clear that reported engagement levels with young children increases with wealth of the household—a pattern that fits well with observations in other contexts around the world. For example, in the lowest wealth decile, 40% of children are actively talked to or conversed with whereas this share goes up to 67% for children in households in the top wealth decile. When it comes to reading or storytelling, only 20% of children in the bottom wealth deciles are read to while that share is nearly three times higher for children in the top wealth decile.[12] In Figure A.3 in the Appendix, I show a similar figure for an index of engagement with children differentiating by the sex of the child or by urban/rural region—I find no discernible differences in the pattern across these groups.

I also show binned means of the two other measures of child engagement (only available in the 2016 wave) across the different wealth deciles (Appendix Figure A.4). The increasing pattern is similar although the differences across wealth deciles are not as stark. The share of children who are regularly encouraged to imitate daily activities goes from 45% among the poorest to 60% among the wealthiest in the sample. The share of children who are taught object names and their purpose similarly increases from 28% to 40%.

These difference does not merely reflect differences in education levels of adults in the households as we expect more educated adults to invest more in children as is shown, for example, in Guryan, Hurst and Kearney (2008). In Figure A.5 in the Appendix, I show differences in engagement by the years of education of the household head differentiating by low and high wealth. From the figure, across all years of education, there are differences in engagement levels by wealth. This difference certainly may be confounding other factors such as education quality which I am unable to control for. The results are qualitatively similar if I use the

[12] The results are similar when using income per capita deciles instead of a wealth index.

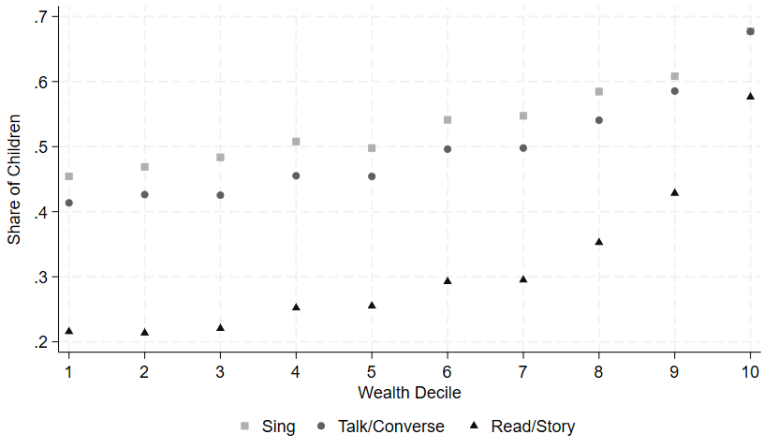


FIGURE 2: Child engagement varies by wealth. The figure shows the share of children within each wealth decile that experience a specific type of engagement either often or every day.

maximum or average years of education within the household instead.

These observed differences in engagement with children are large and could potentially have an impact on future outcomes of these children. These differences fit with other work in many other contexts around the world on the strong correlation between socioeconomic status and stimulating environments for young children in many different forms (Kalil, 2014; Huttenlocher et al., 2010; Ronfani et al., 2015; Hoff, 2003; Wacharasin, Barnard and Spieker, 2003; Farran et al., 2016; Cuartas et al., 2020). These parental investments and early childhood engagement are thought to have important long-term impacts on cognitive and language development early on while they are associated with long-run educational and socioemotional outcomes (Attanasio et al., 2020; Monnot, 1999; Weisleder and Fernald, 2013; Mistry et al., 2008; Fernald et al., 2012). Given these differences across socioeconomic status and the highlighted benefits, these gaps could increase the disadvantages poor children already have.

Next, I explore the association between measures of economic well-being and engagement with children while controlling for observable confounding factors. Table 1 shows regression results using ordinary least squares to estimate equation (1). I start with the most parsimonious specification in column (1) with no controls again showing the strong correlation between the measure of wealth and engagement with children in the household. A one standard deviation increase in wealth is associated with a 0.19 standard deviation increase in the engagement

index. In column (2), I add child-level controls and the coefficient drops to about 0.14—however it is still statistically significant at the 1% level.

The results in column (2) highlight other predictors of child engagement. Controlling for wealth, children from other racial groups in South Africa (Coloured, Indian/Asian, and White) have higher levels of engagement within their household. Compared to children who are the child of the household head, children who are grandchildren or other (such as other indirect relations or unrelated) are less likely to be engaged with by other members of the household.

In column (3), I add household-level characteristics and in column (4) I add province times urban fixed effects and year fixed effects. Across these different specifications, the coefficient on the wealth index remains statistically significant and about 0.12. This pattern holds when using household income, another measure of economic well-being of the household. Table A.1 in the Appendix shows that 20% higher household income per capita is associated with a 0.013 SD increase in engagement with children conditional on observable child and household characteristics.

I note a number of interesting patterns: conditional on the controls, households with more children under 12 report less engagement with each child. On the other hand, households with more women across age groups have higher levels of engagement with children suggesting traditional gender norms on who is responsible for taking care of the children. Finally, the education level of the household head is strongly predictive of engagement with children again fitting with the literature.

In Table 2, I show results on each of the measures of engagement available in the data. I use the same specification with controls as in column (4) of Table 1. The coefficients on wealth are statistically significant for all types of engagement, and it is largest for reading. A one standard deviation increase in wealth is associated with a 4.2 percentage point increase in the likelihood that the child is read to regularly.[13]

Finally, I explore whether there is non-linearity in the observed correlation. Again using the specification with many controls in column (4) of Table 1, I instead use indicator variables for wealth index deciles as my explanatory variables.

[13]In Table A.1 in the Appendix, I show that this pattern mostly holds when using household income per capita instead of wealth. The coefficients for imitation and object naming are not statistically different from zero when using log of household income per capita compared to the coefficients on the wealth index.

TABLE 1: Association between Wealth and Engagement with Children

	(1)	(2)	(3)	(4)
Wealth Index	0.187***	0.135***	0.118***	0.121***
	(0.007)	(0.007)	(0.008)	(0.008)
Female		0.027	0.026	0.020
		(0.017)	(0.017)	(0.016)
Coloured		0.409***	0.394***	0.286***
		(0.030)	(0.031)	(0.035)
Indian/Asian		0.175*	0.148	0.253***
		(0.094)	(0.094)	(0.090)
White		0.828***	0.803***	0.739***
		(0.058)	(0.058)	(0.056)
Relation to HH Head: Grandchild		-0.108***	-0.003	0.003
		(0.018)	(0.028)	(0.027)
Relation to HH Head: Other		-0.102***	-0.060*	-0.047
		(0.031)	(0.032)	(0.031)
Poor Health		0.016	0.004	-0.092
		(0.073)	(0.073)	(0.069)
Mother Alive		0.046	0.020	0.020
		(0.061)	(0.061)	(0.058)
Father Alive		-0.040	-0.044	-0.028
		(0.038)	(0.038)	(0.036)
HH: # of Children Under 6			-0.058***	-0.051***
			(0.009)	(0.009)
HH: # of Children between 7 and 12			-0.036***	-0.022***
			(0.009)	(0.009)
HH: # of Children between 13 and 17			-0.016	-0.007
			(0.011)	(0.011)
HH: # of Female Adults between 18 and 39			0.023**	0.026***
			(0.010)	(0.010)
HH: # of Female Adults between 40 and 59			0.030	0.026
			(0.020)	(0.019)
HH: # of Female Adults 60 and above			0.061**	0.055*
			(0.031)	(0.029)
HH: # of Male Adults between 18 and 39			-0.013	-0.004
			(0.010)	(0.010)
HH: # of Male Adults between 40 and 59			-0.025	-0.020
			(0.021)	(0.020)
HH: # of Male Adults 60 and above			-0.031	-0.004
			(0.033)	(0.032)
HH Head: Age			-0.002**	-0.001
			(0.001)	(0.001)
HH Head: Female			-0.026	0.020
			(0.024)	(0.023)
HH Head: Years of Education			0.012***	0.015***
			(0.003)	(0.003)
Constant	0.028***	-0.543***	-0.435***	-0.587***
	(0.009)	(0.071)	(0.092)	(0.088)
Child Age Year FE		✓	✓	✓
Year FE				✓
Province×Urban FE				✓
Observations	26,689	26,689	26,689	26,689

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

TABLE 2: Association between Wealth and Components of Engagement

	(1) Sing	(2) Talk	(3) Read	(4) Imitate	(5) Object
Economic Well-being Index	0.029***	0.029***	0.042***	0.008*	0.014***
	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)
Observations	26741	26743	26746	9045	8995

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. Dependent variables in columns 4 and 5 are only available in 2016 wave. A full set of controls (as in column 4 of Table 1) are used in the estimation.

Figure 3 shows that conditional on the controls in the specification, compared to households in the lowest wealth decile, engagement with children gradually increases with deciles perhaps with a slightly increasing rate at the top end of the wealth distribution.

Selection on unobservables—The results in this section suggest strong associations between wealth and engagement with children even when controlling for a host of observable household and child characteristics. In this model, there are many unobservable household, parent, and child characteristics that are correlated with wealth and determine engagement with children—for example, knowledge about the returns to reading to young children is likely correlated with wealth and determines engagement levels and is thus likely a source of omitted variable bias. Since my goal is to investigate if economic well-being has a causal effect on engagement with children, it is important to consider what would happen to my coefficient of interest if I were able to control for unobservable omitted variables. The method proposed by Oster (2019) does just this in a formal way—it tracks the stability of coefficient when observable controls are taken into account and reports the proportional selection coefficient or "Oster's δ." The proportional selection coefficient is a measure indicating how much more important selection on unobservable variables would need to be, relative to selection on observable controls, to break down the estimated coefficient to be indistinguishable from zero and thus suggest that wealth has no effect on engagement with children.

As discussed in the Section 3.1, typically one must make a choice on the maximum R^2 and generally most use $1.3 \times R^2_{long}$ as is recommended in Oster (2019).[14] Instead of choosing this maximum, I show values δ that would breakdown the co-

[14] R^2_{long} is the R^2 from the regression with controls.

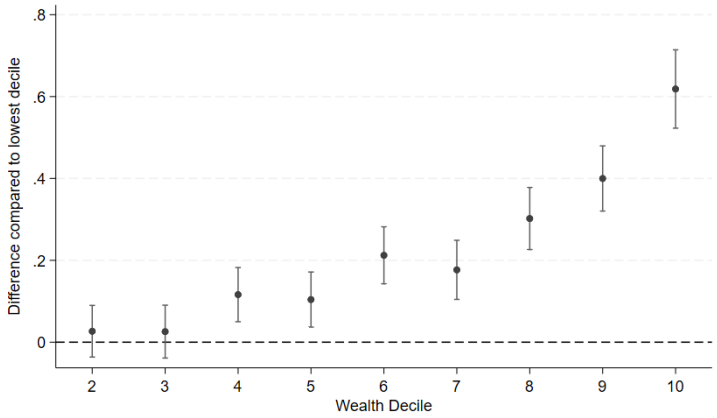


FIGURE 3: Increases in engagement is largely linear with wealth even when controlling for a host of household and child characteristics.

efficient for a range of maximum R^2 values. Figure A.6 in the Appendix shows these results. I find that for most lower levels of the maximum R^2, Oster's δ is relatively large. For example, for 1.3 times R^2_{long}, the selection on unobservables would need to be nearly four times as important as selection on observable variables to breakdown the wealth result. The δ remains above 1 (the value suggested in Oster (2019) to consider for robustness) for all values of the maximum R^2 up to 0.35 which is more than two times the R^2 from the regression with controls. This analysis suggests that the positive link between wealth and engagement with children is relatively robust to unobservable selection.

4.2 Short- and Long-term Outcomes

A direct consequence of engagement with children in early childhood that is posited in the literature is cognitive and language development. The evidence is mostly observational, although some experimental and quasi-experimental work supports this link (Price and Kalil, 2019; Kalil and Ryan, 2020). In this section, I will provide suggestive evidence that in the South African context, engagement in early life is highly correlated with short- and long-term literacy and educational outcomes for children.

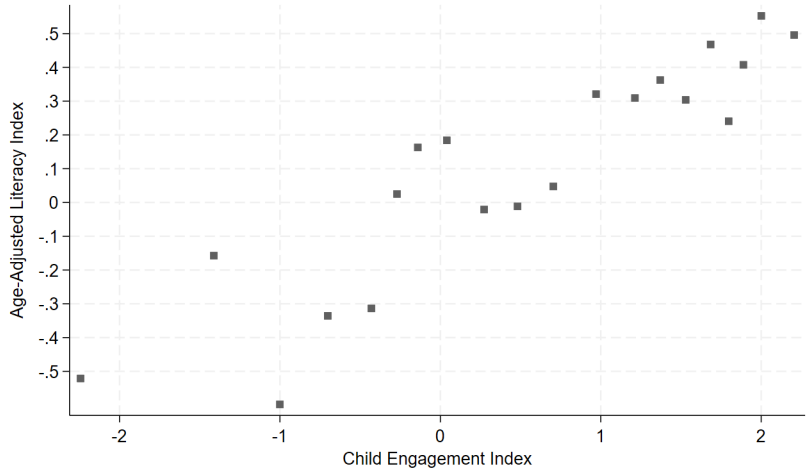
As with engagement with young children in the household, in South Africa, there are clear differences in literacy and educational outcomes of older children across wealth. In the GHS data, a series of questions on literacy are asked for children and adults. These include rating ease of reading, writing, numeracy, ability

to fill out forms, and ability to read road signs. I construct a literacy index using factor analysis of responses to these questions for the children in the sample. Most of the variation in this index occurs across age. In Figure A.7(A) in the Appendix, the average of the literacy index increases clearly with age reaching a plateau of nearly 1 at age 13. However, even in this figure, it is clear that there is a difference across wealth where children in lower wealth households have lower literacy levels on average across ages. In Figure A.7(B), I show the average of an age-adjusted literacy index by wealth deciles and I find a clear increase in literacy with wealth.

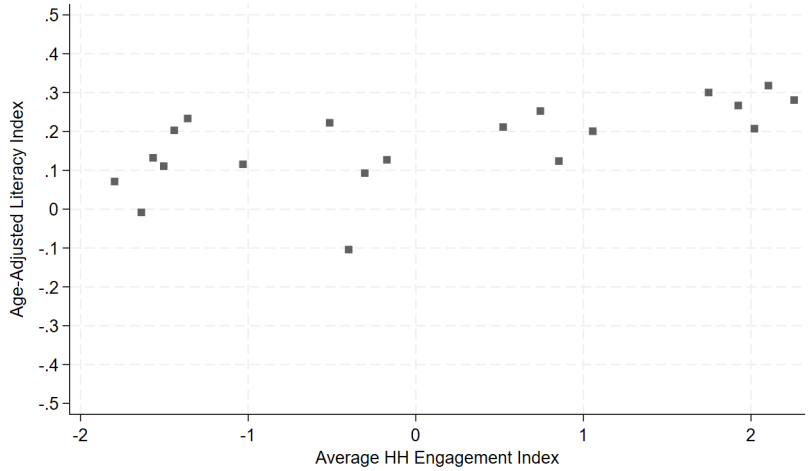
While literacy, as measured by these crude survey measurements, converge across wealth for older children, early cognitive skills can have lasting effects on schooling outcomes as well. In Figure A.11(B), I show that in the sample of children aged 14 to 17 in the GHS from 2016-2018, among those still in school, children in poorer households are almost three times as likely to have repeated a grade. Moreover, poorer children are also less likely to still be in school in the first place as is shown in Figure A.11(A) in the Appendix.

The literacy index is available for children ages five and over. So, for a subset of young children, those five and six years old, I have information both on engagement levels and literacy. In figure 4(A), I show that even after controlling for economic well-being, there is a strong correlation between reported engagement levels and the literacy level of five and six year old children. I motivate this work by emphasizing that the differences in early childhood engagement across wealth could play a role in perpetuating poverty. For this to hold, child engagement needs to influence long-term outcomes, not just short term. The question I am interested in is: Does engagement during early childhood predict literacy and educational outcomes later on? Does it help explain some of the differences I highlight in this sample of older children?

The GHS data is cross-sectional, so for older children in the data, I do not know their level of engagement during early childhood. However, for a subset of these older children who have other children in their households age six and younger, I have information on the level of engagement their younger co-residents (some of whom are siblings) are currently experiencing. I think of this is as a rough proxy for the level of engagement that the older child experienced when they were younger. For a variety of reasons, this approach is highly flawed in estimating causal impacts



(A) Current child-level reported engagement for 5 and 6 year-old children is highly correlated with their age-adjusted literacy index controlling for economic well-being.



(B) Household-level average engagement among younger children is weakly correlated with the age-adjusted literacy index among older children 10-13 years old.

FIGURE 4: School outcome improve with wealth.

of early childhood engagement: first, household characteristics that are likely determinants of engagement and stimulation of children have certainly changed since these older children were infants or toddlers and thus, current engagement levels are likely to also change making this proxy very noisy at best. If we believe that improved economic outcomes (as I show earlier) lead to more engagement, then over a 10 year period, on average more households have experienced growth in their income and improvement in their economic well-being and thus current engagement with children overestimate the engagement experienced by older children.

On the other hand, by using younger siblings, I am potentially underestimating the amount of engagement since first children tend to receive more attention compared to subsequent children (Price, 2008). Moreover, parents with teenagers with lower cognitive ability may either invest more in their younger children to compensate or invest less if they now perceive lower returns. Additionally, more educated older siblings might be interacting with their younger younger siblings more themselves leading to reverse causality in this setup.[15] Finally, a strong correlation likely confounds unobserved parental characteristics such as enthusiasm for education and inherent ability not captured by controls such as wealth, income, or education levels. This would be highly correlated with current engagement levels with younger children and with educational and literacy outcomes of older children.

Noting all these endogeneity and empirical concerns, I use the engagement of current young children in the household as a proxy and predictor of the literacy and educational outcomes of older children. Figure 4(B) shows a weaker correlation between engagement with younger children in the household and literacy levels of older children.

In regression analysis, I put in battery of controls and test the robustness of the sign of the coefficient to unobserved selection while still noting that unobservable confounding factors are not the only source of endogeneity. Table 3 shows these results. In column (1), I show a simple specification with no controls estimated using OLS: a 1 standard deviation increase in engagement among current children six and under in the household is associated with a 0.052 SD higher literacy score among children aged 10 to 13 in the household. This coefficient does not change much when I add controls to the regression such as economic well-being measures and child and household characteristics that include maximum years of education within the household.[16] For the sample of children aged 5 and 6 where observe both engagement level and the literacy index, the coefficient I estimate with the same set of controls as in column (4) of Table 3 is 0.042 which is similar in size to the estimate for older children. At minimum, these results show that current engagement of young child is highly correlated with the literacy rates of older children in the household. With caution, these results suggest that, in as much as current

[15]The questions on engagement do not specify who in the household is engaging with the children.

[16]The choice of maximum years of education does not affect the results—using average or education of the parent or primary caregiver specifically does not qualitatively change the results.

TABLE 3: Long-term associations of early childhood engagement

Dep var: *Literacy Index*	(1)	(2)	(3)	(4)
Panel A: Current engagement and literacy among 5 and 6 year olds				
Child Engagement Index	0.156***	0.144***	0.141***	0.138***
	(0.014)	(0.014)	(0.015)	(0.015)
Observations	5,351	5,351	5,351	5,351
Panel B: Engagement proxy and literacy among 10-13 year olds				
Max current engagement in HH	0.052***	0.045***	0.049***	0.050***
	(0.009)	(0.009)	(0.009)	(0.009)
Observations	8,831	8,831	8,831	8,831
Income & Wealth Controls		✓	✓	✓
Child & Household Controls			✓	✓
Region & Year Fixed Effects				✓

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. I use maximum engagement level among younger children in the household to proxy for early childhood engagement levels of older children.

levels of engagement with young children are a proxy for the level experienced by older children when they were younger, engagement in childhood likely has implications on literacy later in life.

Again applying the methods proposed by Oster (2019), I find that unobservable selection would have to be more than 17 times as important as observable selection to nullify these results (see Appendix Figure A.12). The size of this δ at $R_{max} = 1.3 \times R^2_{long}$ is not surprising as the coefficient is very stable when I add controls in Table 3. However, I reiterate that unobservable confounders are not the only source of endogeneity in this specification as I discuss above.

Finally, I also explore the association with the educational outcomes of older children. In Table A.3 in the Appendix, I find that current engagement with younger children is associated with a higher likelihood of still being in school for children between ages 14 and 17 and, if still in school, a lower likelihood of currently repeating a grade. This suggests a connection to long-term educational outcomes beyond the literacy measure.

5 Effect of the Older Person's Grant

Programs aimed at increasing the level of parental and caregiver engagement with young children have focused on encouragement or giving caregivers information

on the importance of specific types of interaction with children. These studies have had some success in increasing measures of engagement with children—at least in the short run. In this paper, I focus on showing if economic well-being has a causal impact on engagement; a fitting follow up question would be to ask if different shocks to household income change the level of engagement with children in household. In this section, I explore if a monthly cash transfer that increases household income affects levels of engagement. I am also asking: is increased child engagement a potentially additional second order benefit of cash transfer or other types of social protection programs?

For this analysis, I use the South African Older Person's Grant and the age eligibility threshold to see if children in households benefiting from this grant are experiencing more engagement. The specifics of the empirical approach are discussed in Section 3 and more thoroughly in Alloush and Wu (2023) and Alloush, Bloem and Malacarne (2024). I show two sets of results: first, since take up of the grant is not 100%, I begin with intention-to-treat-type estimates where I show the differences in engagement with children who live with an elderly just above 60 (the age-eligibility threshold) compared to children in households where the oldest person is just below 60. I then show the local average treatment effect estimates of the effect of the program using having an elderly above 60 as an instrument for household-level receipt of the Older Person's Grant within narrow windows around the threshold age of 60.

In Table 4, there are three groups of results. Panel A shows the effect of having a person above age 60 making them age-eligible for the grant for five different windows around the age eligibility threshold of 60.[17] In column (1) of panel A, the estimate shows that compared to children who live in households whose oldest person is 59 years old, children living in a household with a 60 year old have 0.18 SD higher levels of engagement. This is the smallest window of one year on each side of the threshold. Columns 2-5 display estimated coefficients for larger window sizes for the age ranges of the oldest members of the household shown in brackets. The estimated coefficients for these larger window sizes are positive but not statistically significant.

[17] Eligibility is also based on a means test that is effectively income-based where more than 80% are eligible. The fuzzy discontinuity of take up of the Older Person's Grant in our sample can be seen in Figure A.8(A). The sample is children in households where the oldest member is within the age

TABLE 4: The Older Person's Grant and Engagement with children

	(1) [59-60]	(2) [58-61]	(3) [57-62]	(4) [56-63]	(5) [55-64]
	Panel A: Full Sample				
Oldest Member Age-Eligible	0.177**	0.086	0.142	0.128	0.099
	(0.089)	(0.126)	(0.097)	(0.083)	(0.074)
Observations	1174	2284	3401	4617	5744
	Panel B: Bottom 4 Wealth Quintiles				
Oldest Member Age-Eligible	0.192*	0.124	0.121	0.081	0.065
	(0.102)	(0.138)	(0.105)	(0.090)	(0.080)
Observations	1006	1973	2957	4019	5017
	Panel C: Bottom 3 Wealth Quintiles				
Oldest Member Age-Eligible	0.306***	0.351**	0.309***	0.240**	0.159*
	(0.113)	(0.154)	(0.117)	(0.101)	(0.090)
Observations	760	1477	2198	3042	3821

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. Columns 1 through 5 show results for different windows around the threshold eligibility age of 60 starting with the smallest. Panel A shows the full sample, while Panels B and C successively remove wealthier households.

In panels B and C, I show estimates when removing wealthier households from the sample first by removing the top wealth quintile (Panel B) and second by removing the top two (Panel C). In Panel C, the estimated coefficients on age-eligibility of the oldest person in the household are larger and statistically significant for all windows. For the smallest three windows (columns 1-3), the estimated coefficients suggest that children in households with an elderly above 60 experience at least 0.3 SD more engagement compared to children in households where the elderly is just under 60. There are two main reasons why restricting to poorer households increases the observed ITT-type estimates: First, among the households in bottom three quintiles of wealth, most elderly pass the means test for the grant. As I show in the Figure A.8(B), household-level receipt when the age of the oldest person of the household is over 60 is over 80% for those in the bottom two thirds of wealth and drops for households in higher wealth brackets. Second, the grant itself is a fixed amount per month (currently 2,080 ZAR and 1,500 in 2016), however, as shown in Figure A.9 in the Appendix, as a share of household income, the grant is significantly larger for poorer households and thus may have a bigger impact on the overall economic well-being of the household.

window indicated in the column title.

TABLE 5: Older Person's Grant and Components of Engagement

	(1) Sing	(2) Talk	(3) Read	(4) Imitate	(5) Object
Oldest Member Age-Eligible	0.092**	0.042	0.120***	0.182**	0.254***
	(0.045)	(0.039)	(0.038)	(0.077)	(0.080)
Observations	2199	2201	2200	711	706

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. Columns 1 through 5 show results for each measure of engagement. The results here are restricted to the bottom 3 wealth quintiles and use the window size of 3 as in the result in Panel C column (3) of Table 4.

I also use information from the survey on receipt of the Older Person's Grant and use having an age-eligible elderly as an instrument for actual receipt at the household level.[18] I present these results in Table A.2 in the Appendix. As expected, I find strong first stage results where age-eligibility is a very strong predictor of receipt of the grant; having a person above 60 in the middle (3 year) window increases the likelihood of grant receipt by 67 percentage points with a F-stat of 647 for the excluded instrument. The results for receipt of the grant are expectedly scaled up compared to the ITT-type estimates. For the middle window size of 3 and for children living in households in the lowest three wealth quintiles, the estimated coefficient suggests that receipt of the grant increases the child engagement index by 0.46 SD—a result that is statistically significant at the 1% level.

In Table 5, I use the middle window size (57-62 years old) and the bottom three wealth quintiles and the same specification to look at age eligibility (ITT-type) and the change in five different measures of engagement. For the first three which are the components of the index (available for all three years), the results show positive coefficients on age-eligibility for the grant for all three measures. The largest observed difference is for reading which has the lowest baseline share on average among the three measures. This is consistent with the regression results in Table 2 which show that coefficient on wealth is largest for reading. The results show that within the window of 57 and 62, children in households with an oldest member just above 60 are 12 percentage points more likely to be regularly read to. For the other two measures (only available for 2018), the coefficients are large and statistically significant.

[18]This fuzzy local randomization approach is discussed thoroughly in Alloush, Bloem and Malacarne (2024) and requires assumptions discussed in Section 3.

The results in this section provide some additional suggestive evidence of a causal effect of the economic well-being of the household on enriching engagement with infants and toddlers. The Older Person's Grant is shown to significantly increase several measures of economic well-being in the household including income per capita, wealth, and food expenditure per capita (Case and Deaton, 1998; Alloush, Bloem and Malacarne, 2024).[19] Moreover, the results in this section also suggest an additional benefit of cash transfer programs. An unconditional cash transfer program not directed towards the children improved the levels of engagement infants and toddlers experience within the household.

Finally, as I test for the robustness of the coefficient on wealth to unobservable selection in Section 4.1, I conduct a similar exercise for the coefficient on having an elderly above age 60 in the narrow window of 57-62 years (column (3) in Table 4). In Figure A.10 in the Appendix, I show that the breakdown $delta$ for a maximum R^2 that is $1.3 \times R^2_{long}$ is approximately 7 suggesting that unobservable selection needs to be 7 times as important as observable selection to breakdown the positive link between having an elderly over 60 and engagement with children.

I interpret these results with some caution as the Older Person's Grant is shown to change more in the household than simply their economic well-being. I consider these potential mechanisms in the next section.

5.1 Potential Mechanisms

Other than increasing economic well-being in the household, the most relevant mechanisms through which the Older Person's Grant can affect on engagement with children are two: first, several studies show that the Older Person's Grant affects labor supply within the households in a number of different ways including decreasing the labor supply of women with children (Abel, 2019; Bertrand, Mullainathan and Miller, 2003).[20] This can be interpreted as a mechanism through which income changes may lead to increased engagement and is thus not a major drawback. As an example, in a setup with traditional family roles where a mother is working to supplement the father's potentially low income, an increase

[19] I show this increase in this GHS sample for log of income per capita by wealth quintile in Figure A.9 in the Appendix.

[20] Earlier evidence on this is mixed (Jensen, 2004), although the most recent work on labor supply suggests decline in labor supply of prime-aged adults (Abel, 2019).

in the wage of the husband may naturally lead to a reduction in labor supply of the woman at least partially to assume more traditional homemaking roles that include child rearing. Relatedly, the receipt of the grant by the elderly in the household likely decreased their own labor supply—now the elderly themselves may have more time to engage with the children in household as a potential consequence of retirement. In my regression specifications, I have controls for labor supply of household members at the extensive margin. Moreover, if I restrict the comparison group to children with elderly below the threshold age of 60 who are not in the labor force, the results do not change in a meaningful way.

Second, the Older Person's Grant is shown to change household composition bringing elderly and younger family members together (Edmonds, Mammen and Miller, 2005; Hamoudi and Thomas, 2014). Other research suggests that this grant changes bargaining power of the elderly in the household (Ambler, 2016). These changes are perhaps less typical of income increases and may make the estimated reduced-form effect of the Older Person's Grant less generalizable to broader income changes or cash transfer and social protection programs. Still, the Older Person's Grant is South Africa's flagship social protection program with nearly four million direct beneficiaries. In the GHS data, I find that nearly 40% of elderly recipients of the grant live in a household with a child six and under (this is over 50% for 12 and under). The effect I document shows the impact of the Older Person's Grant on engagement with children adding the evidence on its broad impacts.

If these potential mediators play a large role in explaining the observed effect on engagement, two things must be true. The grant should have a direct effect on the mediator, and the mediator itself should have an effect on engagement with children. The first step in this causal chain is straightforward to identify—I apply the same identification strategy on a set of potential mediators. The second step is fraught with endogeneity; typical mediation analyses assume that the mediators are independent of potential outcomes condition on the treatment and observed covariates that are unaffected by treatment. It is difficult to justify this assumption which would allow me to estimate the effect of the mediator itself on engagement, which then allows me to get a rough estimate of how much of the total observed effect of the grant can be explained by a specific mediator.

I first show in Figure 5 the estimated effect of the grant on a number of poten-

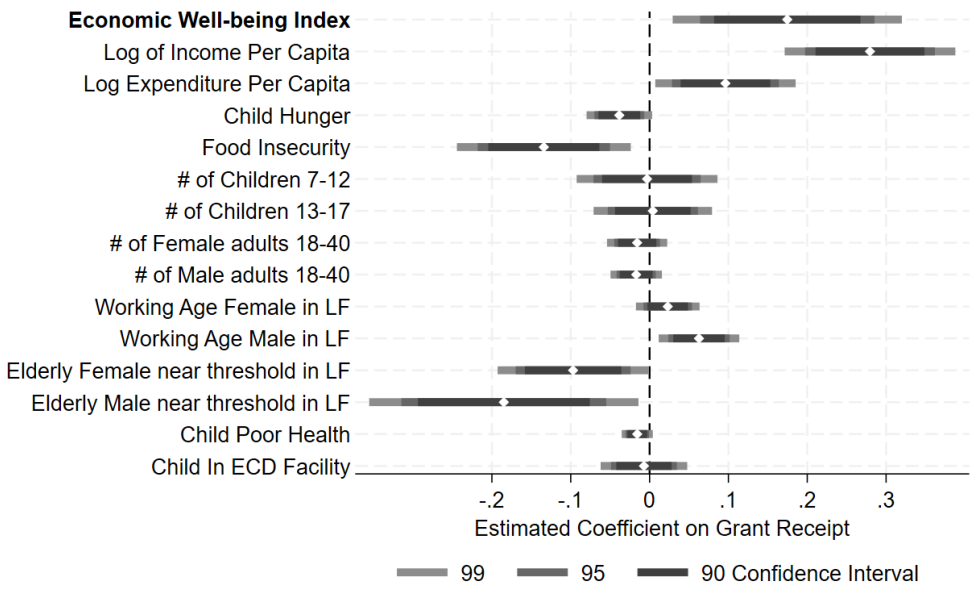


FIGURE 5: Household-level average engagement among younger children is weakly correlated with the age-adjusted literacy index among older children 10-13 years old.

tial mediators. The grant shows statistically significant on a number of measures of household well-being such as income per capita and food insecurity. On the other hand, it shows statistically insignificant effects on household composition. When it comes to labor force participation, it shows a statistically significant increase in labor force participation among male adults between ages 18 and 50 similar to other studies on the Older Person's Grant. I find also large decreases in labor force participation among the elderly who are the direct beneficiaries of the grant.

Without credible estimates for the second step, the effect of the mediator on engagement, I cannot give a proper estimate for the share of the overall effect that a specific mediator can explain. Given the sizes of the first stage effects, it seems plausible that both economic well-being and labor force participation of elderly both explain some of the observed effect. In terms of generalizing to other cash transfers, typically cash transfers do not reduce labor supply at the extensive margin as much as this elderly-targeted transfer does and thus the effects may be different for cash transfers more generally.

6 Conclusion

In this paper, I show that engagement with children in the household and thus stimulating environments for children differ starkly by economic status in South Africa. I show evidence that economic well-being is strongly predictive of engagement levels and that a large sustained cash transfer program directed at elderly in the household led to an increase in engagement with young children that includes talking, singing, and reading to them. Finally, I show suggestive evidence on the importance of childhood engagement in the long-run—I find that current rates of engagement with young children in the household is strongly associated with literacy and educational outcomes of older children.

This paper first provides evidence on early childhood engagement and how it may be a mechanism through which poverty is reinforced. Second, it shows another dimension of the broad, often under-appreciated, impacts of cash transfer programs beyond the first-order effects. While other studies have documented the effects on cognition of children (Paxson and Schady, 2010) while suggesting increased engagement, this paper is the first to directly look at the impact of a unconditional cash transfer to the households on the engagement levels with children.

Two policy recommendations follow: first, increasing stimulating environments for children in poor households is key whether it is through information or encouragement of parents or through perhaps high-quality daycare centers. Moreover, cash transfer programs, especially those directed at children such as the Child Support Grant in South Africa, could be complemented with information about the importance of engagement in early childhood. Evaluating the long-term effects of these interventions is important and may allow for more effective policies and programs that help break the cycle on inter-generational poverty. Second, in as much as we can be certain the early childhood engagement has important effects on long-term cognitive outcomes, this paper provides additional support for near universal cash transfer (or basic income) programs for households with children—exposure to various social protection programs during early childhood is shown to have broad long-term benefits.

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Appendix

Tables

TABLE A.1: Association between Household Income and Engagement

	(1) Index	(2) Sing	(3) Talk	(4) Read	(5) Imitate	(6) Object
Log of HH Income Per Capita	0.067***	0.010***	0.016***	0.029***	-0.002	0.004
	(0.008)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)
Observations	27414	27466	27468	27472	9279	9230

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. First column shows results for the index, columns 2 through 6 show results for each component.

TABLE A.2: Older Person's Grant and Engagement—IV

	(1) [59-60]	(2) [58-61]	(3) [57-62]	(4) [56-63]	(5) [55-64]
Household Receives OPG	0.451***	0.568**	0.458***	0.363**	0.236*
	(0.163)	(0.249)	(0.173)	(0.152)	(0.133)
First Stage F-stat	584.959	300.092	646.748	1017.118	1457.061
Observations	760	1,477	2,198	3,049	3,821

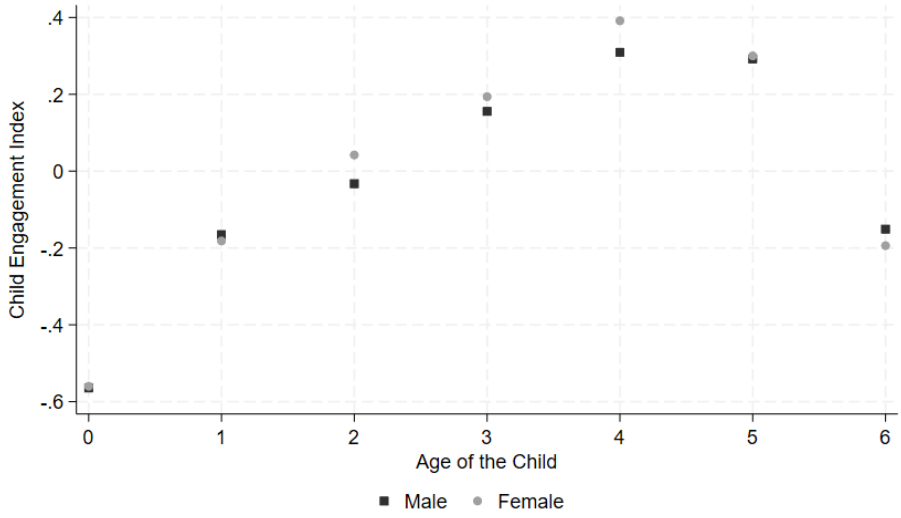
Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. Receipt of the grant at the household level is instrumented with presence of an age-eligible elderly (oldest member) within the window indicated in each column. First-stage F-stats suggest very strong relevance of the instrument. Balance tables shown in related work such as Alloush, Bloem and Malacarne (2024) show that in narrow windows, households are quite similar supporting the exlusion restriction.

TABLE A.3: Engagement and Long-term Education Outcomes

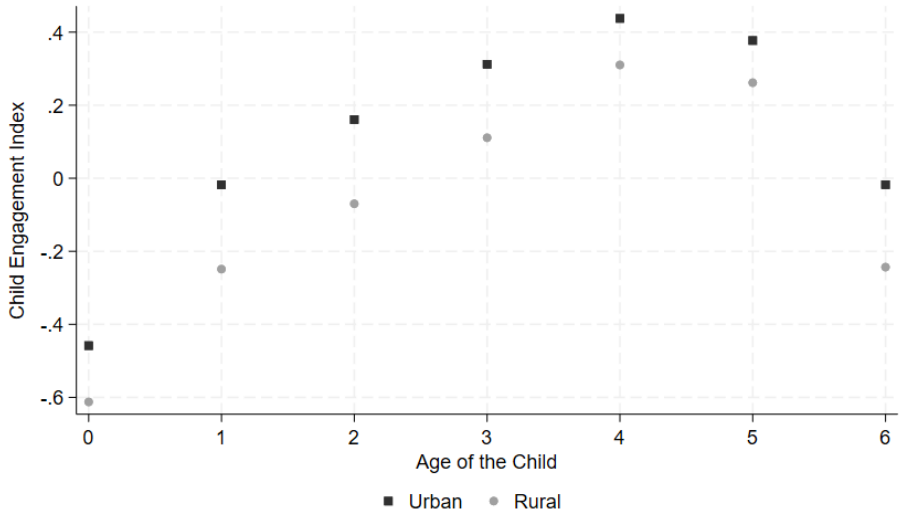
	(1) In School	(2) Repeat Grade
Maximum current engagement in household	0.005**	-0.006*
	(0.002)	(0.003)
Observations	7144	6569

Notes: Cluster robust standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1. Long-term educational outcomes of older children are correlated with current engagement levels of younger children in the household.

Figures



(A) Engagement index by age shows no clear differences across sex of the child.



(B) Engagement by age is higher overall for households in urban areas compared to rural areas.

FIGURE A.1: Some heterogeneity in the engagement by age.

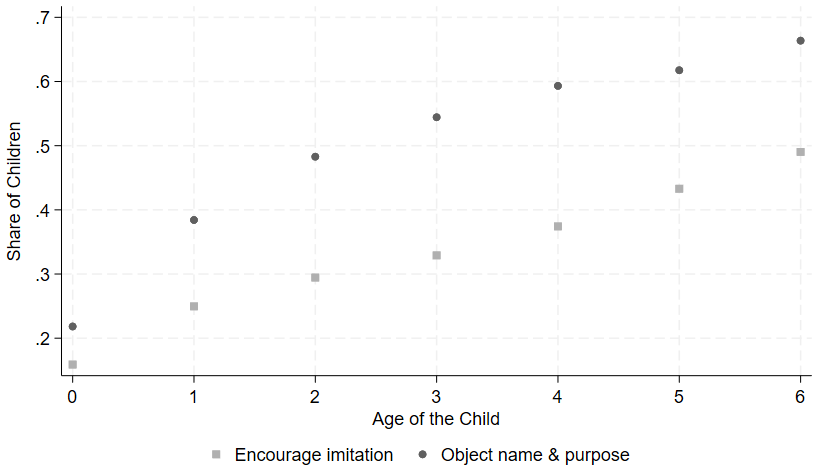
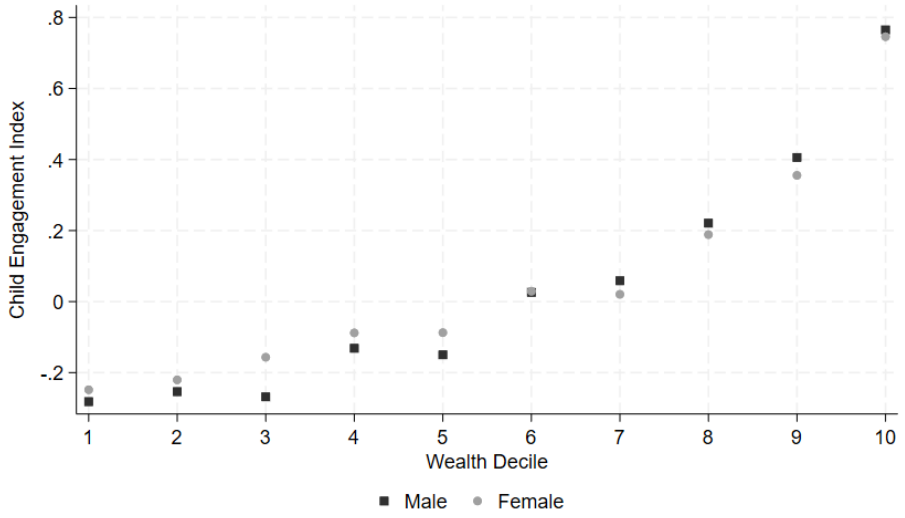
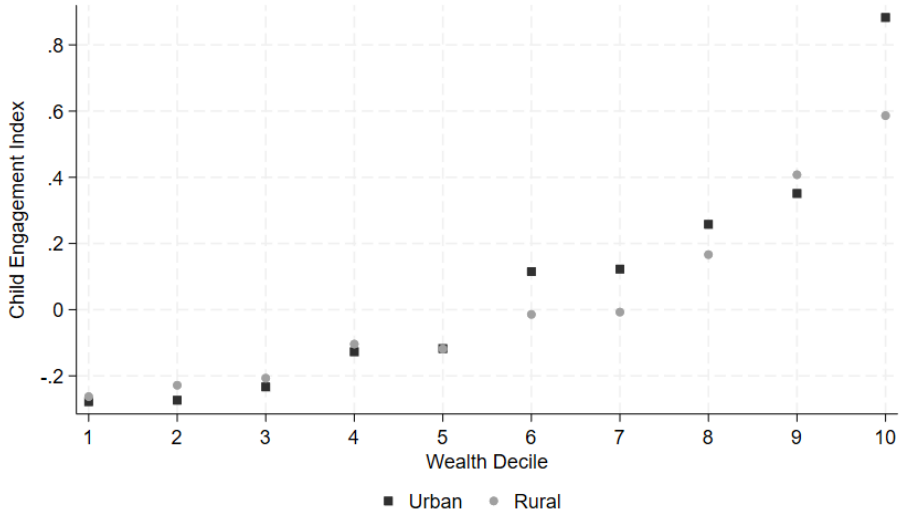


FIGURE A.2: Child engagement with the two measures only available in 2016 peak later at age 6.



(A) Engagement index by wealth shows no clear differences across sex of the child.



(B) Engagement by wealth is similar overall for households in urban areas compared to rural areas.

FIGURE A.3: No observable heterogeneity in the engagement by wealth.

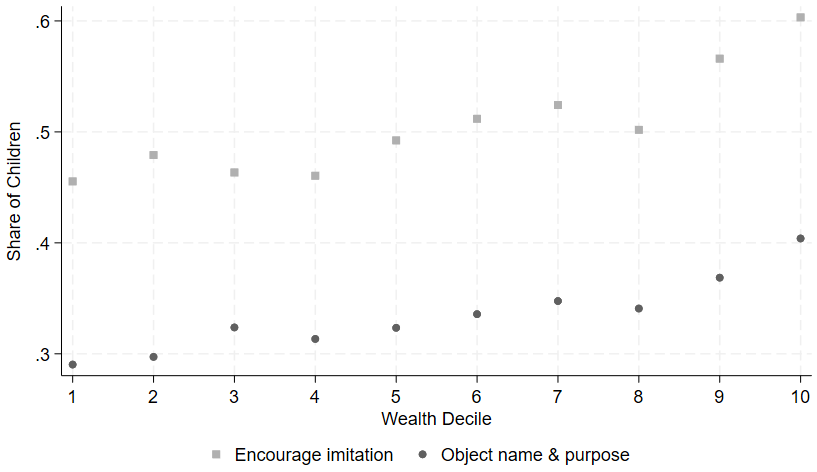


FIGURE A.4: Child engagement varies by wealth.

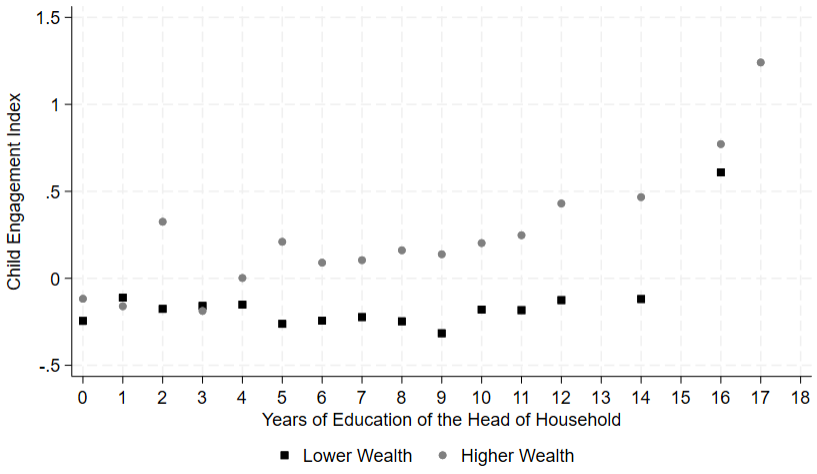


FIGURE A.5: Child engagement varies by wealth.

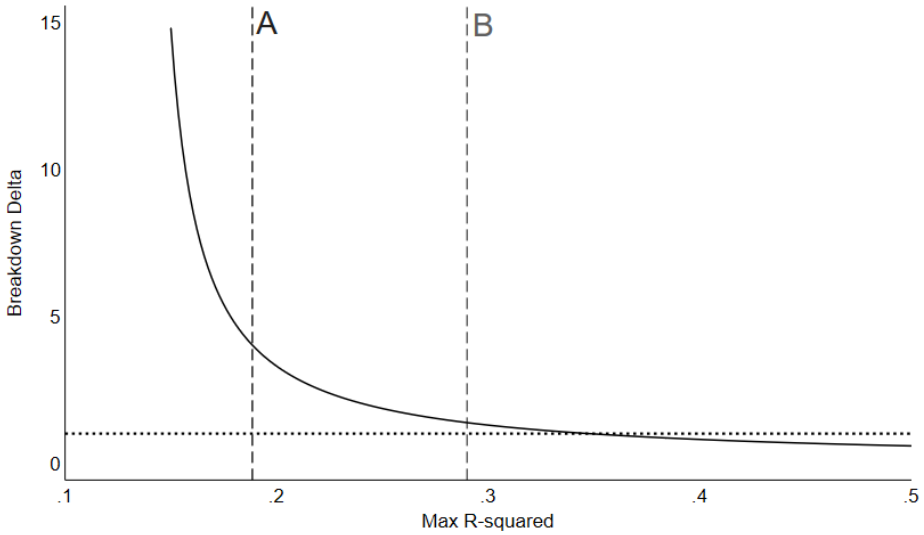
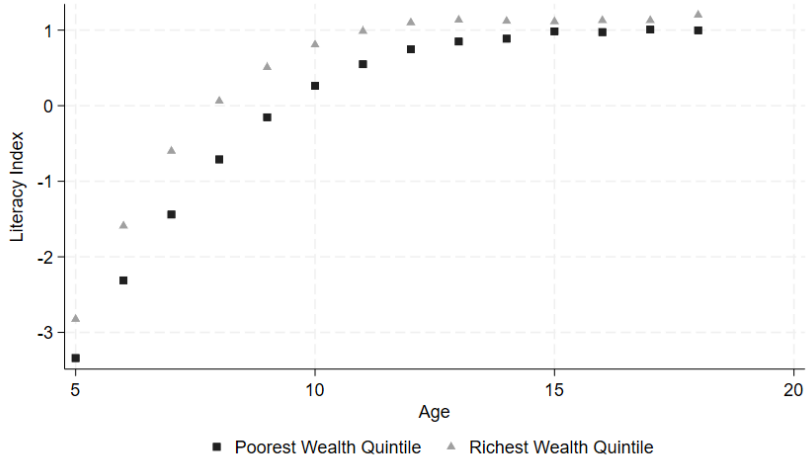
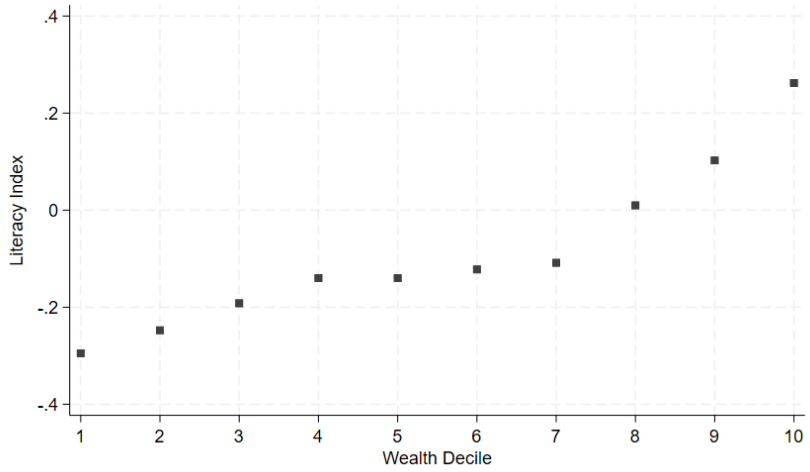


FIGURE A.6: Oster's δ by the maximum R^2 suggests robustness of the coefficient estimate of household wealth on engagement with children. Vertical line **A** marks $1.3 \times R^2_{long}$ while line **B** marks $2 \times R^2_{long}$. The dashed horizontal line is at 1.

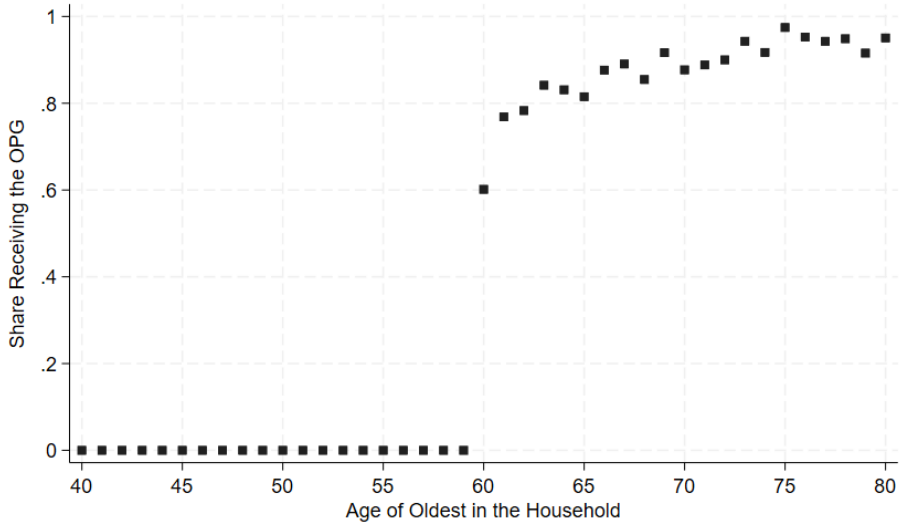


(A) Most of the variation in the literacy index is by age, however, even across age groups, the literacy index is still higher among children in wealthier households.

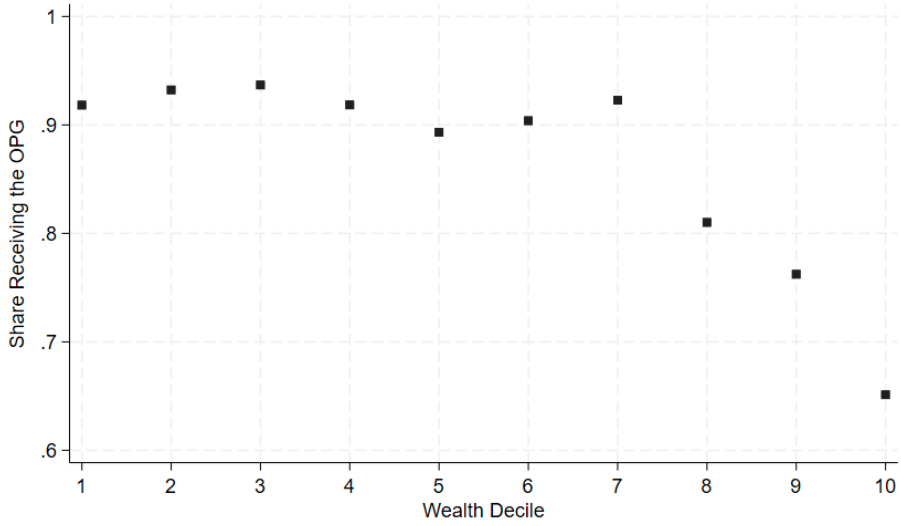


(B) Age-Adjusted literacy index increases with wealth.

FIGURE A.7: School outcome improve with wealth.



(A) In our sample of households with children six and under, household-level receipt of the Older Person's Grant increases sharply when the oldest person in the household is 60.



(B) In our sample, receipt of the Older Person's Grant is highest in the bottom 7 deciles of wealth.

FIGURE A.8: Older Person's Grant by Age and Wealth.

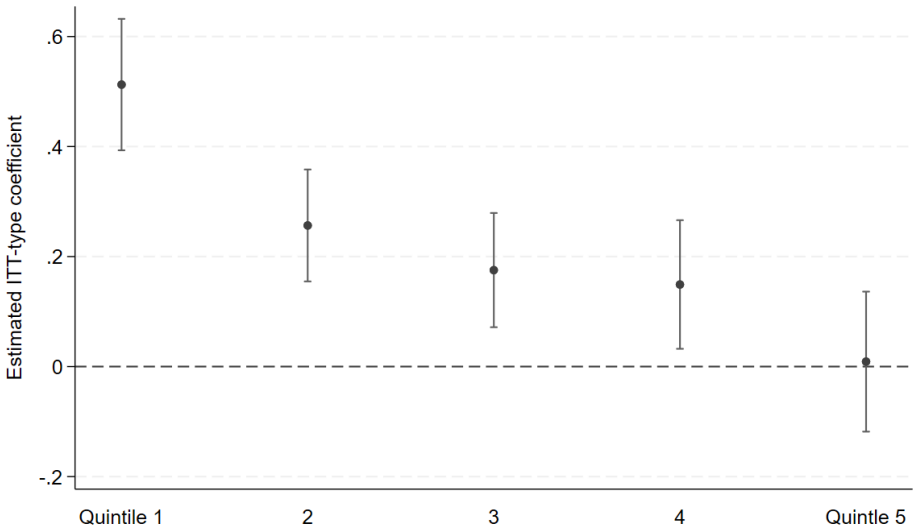


FIGURE A.9: ITT-type estimate by wealth quintile. Grant increases income per capita for poorer households by a larger percent.

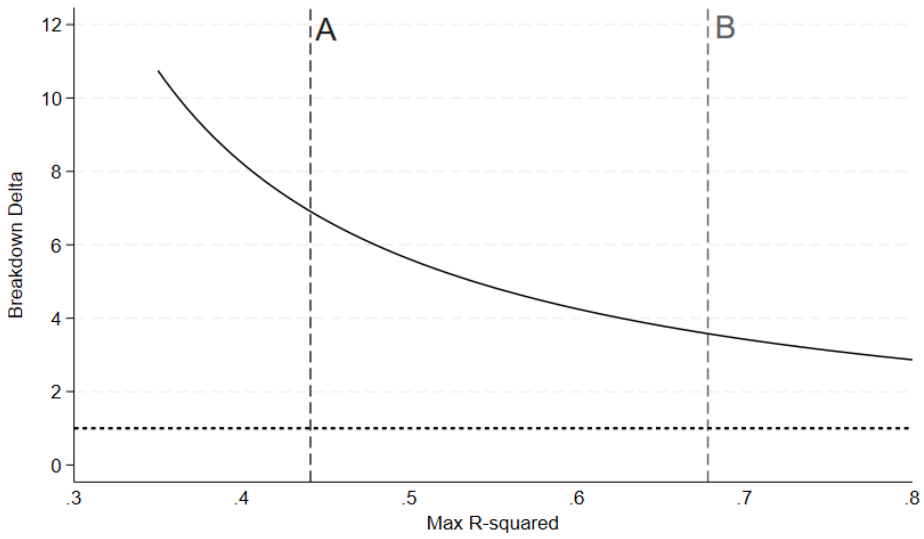
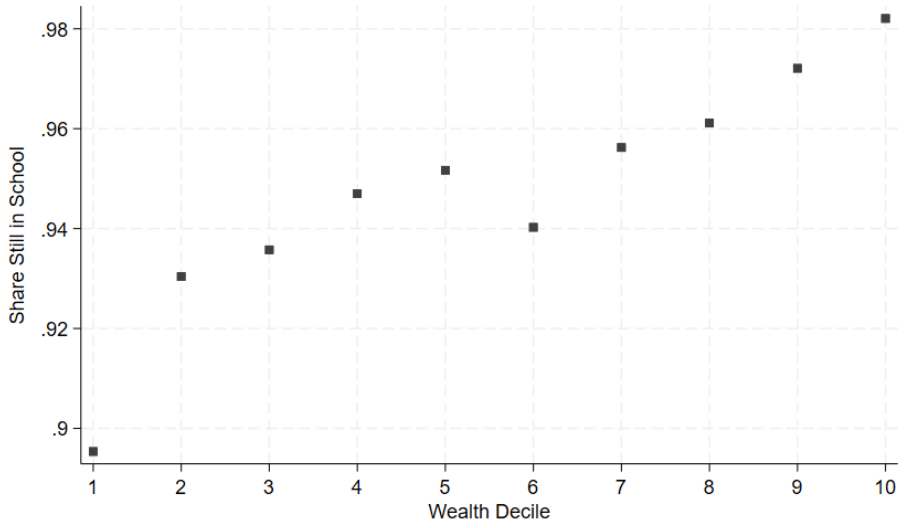
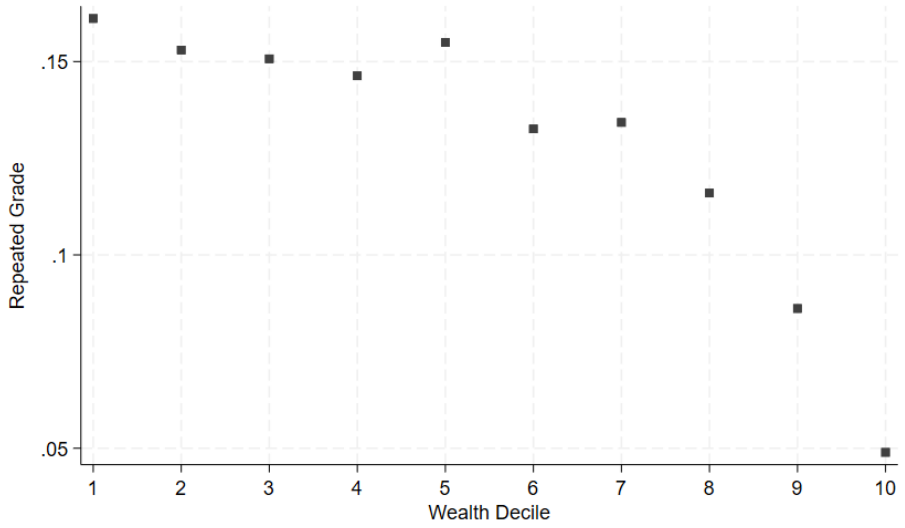


FIGURE A.10: Oster's δ by the maximum R^2 suggests robustness of the coefficient estimate of having an elderly above 60 on engagement with children within the window and for the bottom three quintiles. Vertical line **A** marks $1.3 \times R^2_{long}$ while line **B** marks $2 \times R^2_{long}$. The dashed horizontal line is at 1.



(A) Children 14-17 years old in poorer households are less likely to still be in school.



(B) Children 14-17 years old still in school who are poorer are three times as likely to have repeated a grade compared to those in the richest households.

FIGURE A.11: School outcome improve with wealth.

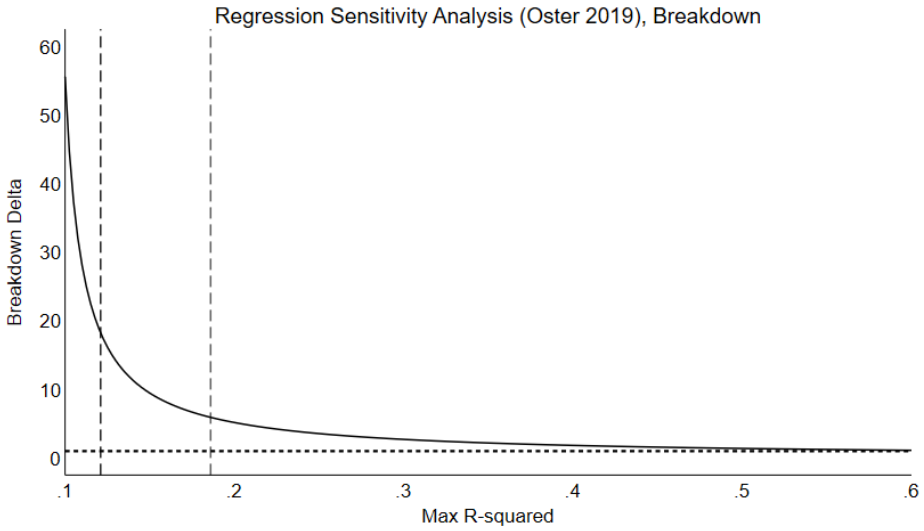


FIGURE A.12: Oster's δ by the maximum R^2 suggests robustness of the coefficient estimate of engagement with current young children on the literacy index of 10-13 year olds. Vertical line **A** marks $1.3 \times R^2_{long}$ while line **B** marks $2 \times R^2_{long}$. The dashed horizontal line is at 1.