All I Really Need to Know I Learned in Kindergarten?
Evidence from the Philippines

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†University of Minnesota
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#DIYCSAE
Early childhood education is fundamentally important
- Mediates the success of other economic development policies and programs
- Extensive literature suggests investments have large, positive, and lasting effects
  - See, e.g., Currie 2001; Behrman et al. 2004; Cunha et al. 2006; Heckman 2006; Chetty et al. 2011; Heckman et al. 2013

Important caveats exist
- Effectiveness hinges on the behavioral response of parents
  - See, e.g., Das et al. 2013; Heckman et al. 2006; Bouguen et al. 2018
- Less agreement about specific ways to design education program and systems
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First decade of the 21st century defined by declining educational standards
- The net enrollment rate for primary schools
  - 96% in 2000
  - 84% in 2005
- In 2005, the primary school completion rate was below 70%

The cost of this reality lingers into the future
- In 2013, one in ten—about 4 million—Filipino youth between the ages of 6 and 24 was not enrolled in school
Primary Education in the Philippines

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Responses to this Trend

- International Care Ministries (ICM)
  - Started the Jumpstart kindergarten program in 2005
    - Private kindergarten option in a small number of villages

- The Philippine government
  - Passed the Kindergarten Education Act in 2011
    - Mandated kindergarten education prior to primary school
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Research Questions

- Core questions:
  - What is the effect of Jumpstart on academic performance in primary school?
  - What is the effect of gov’t kindergarten on academic performance in primary school?

- Secondary questions:
  - Did either program out-perform the other?
  - What potential mechanisms (e.g., academic or psychological) explain these results?
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- Did either program out-perform the other?
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Data

- Household survey of mothers implemented in 2017
  - Includes 2,437 kids in 943 households across 88 villages
- Key outcome: Primary school academic performance
  - As reported by mothers:
    - Which child performed best in third grade?
    - Which child performed best in elementary school?
  - Pro: Within-household comparison of primary school academic performance
  - Con: Not administrative data, relies mother’s reporting
    - Control for: child age, sex, and birth order
- Alternative outcomes
  - Placed in “top section” in third grade
  - Enrollment status — among “school aged” kids (age 4 - 24)
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Identification Strategy

- Baseline OLS specification

\[ y_{hi} = \beta_0 + \beta_1 Jumpstart_{hi} + \beta_2 Government_{hi} + X'_{hi} \Gamma + \omega_h + \epsilon_{hi} \]  \hspace{1cm} (1)

- \( y_{hi} \) represents a binary outcome variables
  - Best in third grade
  - Best in elementary
  - Placed in “top section”
  - Currently enrolled

- \( Jumpstart_{hi} = 1 \) if child \( i \) attended Jumpstart
- \( Government_{hi} = 1 \) if child \( i \) attended a gov’t kindergarten
- \( X_{hi} \) is a vector of child-level control variables
- \( \omega_h \) is a household/mother fixed effect
- \( \epsilon_{hi} \) is the error term

- Robustness: Use village-level fixed effects with household/mother control variables
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- Robustness: Use village-level fixed effects with household/mother control variables
Within households enrollment in kindergarten may still be endogenous
  - Parents could make strategic choices about which of their children to enroll

Exploit the rollout of the Jumpstart and government kindergarten programs
  - Use the age of children when Jumpstart entered their village to instrument for Jumpstart enrollment
    - Between 2008 - 2015, depending on village
  - Use the age of children when the Kindergarten Education Act passed
    - In practice some villages introduced gov’t kindergarten as early as 2008

Relevant: Age determines kindergarten eligibility
Excludable: Timing of rollout is exogenous to parental choices
  - Kindergarten enrollment, to have kids, etc.
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Instrumental Variables

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- **Relevant**: Age determines kindergarten eligibility
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  - Kindergarten enrollment, to have kids, etc.
IV Specification

- Two-stage least squares

\[ \text{Jumpstart}_{hi} = \sum_{j=1}^{11} I_{ji} + \sum_{g=1}^{11} I_{gi} + X'_{hi} \Pi + \tau_h + \mu_{hi} \]  

(2)

\[ \text{Government}_{hi} = \sum_{j=1}^{11} I_{ji} + \sum_{g=1}^{11} I_{gi} + X'_{hi} \Psi + \kappa_h + \eta_{hi} \]  

(3)

\[ Y_{hi} = \delta_0 + \delta_1 \text{Jumpstart}_{hi} + \delta_3 \text{Government}_{hi} + X'_{hi} \Xi + \rho_h + \nu_{hi} \]  

(4)

- \( y_{hi} \) same as equation (1)
- \( \text{Jumpstart}_{hi} = 1 \) if child \( i \) attended Jumpstart
- \( \text{Government}_{hi} = 1 \) if child \( i \) attended gov’t kindergarten
- \( X_{hi} \) is a vector of child-level control variables
- \( \tau_h, \kappa_h, \) and \( \rho_h \) are household/mother fixed effects
- \( \mu_{hi}, \eta_{hi}, \) and \( \nu_{hi} \) are the error terms
## Effect on Primary Outcomes — OLS and IV Estimates

<table>
<thead>
<tr>
<th></th>
<th>Performed Best in Third Grade</th>
<th>Performed Best in Elementary</th>
<th>Placed in Top Third Grade Section</th>
<th>Currently Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS (1)</td>
<td>IV (2)</td>
<td>OLS (3)</td>
<td>IV (4)</td>
</tr>
<tr>
<td></td>
<td>OLS (5)</td>
<td>IV (6)</td>
<td>OLS (7)</td>
<td>IV (8)</td>
</tr>
<tr>
<td><strong>Jumpstart</strong></td>
<td>0.282*** (0.0652)</td>
<td>0.259*** (0.0615)</td>
<td>0.178*** (0.0576)</td>
<td>0.165** (0.0773)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.229*** (0.0505)</td>
<td>0.213*** (0.0548)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.112** (0.0483)</td>
<td>0.0865** (0.0421)</td>
</tr>
<tr>
<td><strong>Gov’t kindergarten</strong></td>
<td>0.00997 (0.0506)</td>
<td>-0.0122 (0.0823)</td>
<td>-0.00782 (0.0544)</td>
<td>-0.0735 (0.0881)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.177*** (0.0492)</td>
<td>0.188*** (0.0622)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.0479 (0.0519)</td>
<td>-0.0858* (0.0483)</td>
</tr>
<tr>
<td><strong>Jumpstart = Gov’t test (p-value)</strong></td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.007</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>2,437</td>
<td>2,437</td>
<td>2,437</td>
<td>2,437</td>
</tr>
<tr>
<td><strong>No kindergarten mean</strong></td>
<td>0.27</td>
<td>0.29</td>
<td>0.35</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.254</td>
<td>0.253</td>
<td>0.185</td>
<td>0.184</td>
</tr>
<tr>
<td><strong>Weak IV test</strong></td>
<td>Jumpstart (F-stat)</td>
<td>78.08</td>
<td>78.08</td>
<td>78.08</td>
</tr>
<tr>
<td></td>
<td>Gov’t kindergarten (F-stat)</td>
<td>25.19</td>
<td>25.19</td>
<td>25.19</td>
</tr>
<tr>
<td><strong>Child controls</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Household/mother fixed effects</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Notes: Results are relative to a child who did not attend kindergarten. Child controls include the child’s age, the sex of the child, and birth order dummy variables. In columns (1) through (6) an additional control variable indicates if a child is less than 9 years old. In columns (7) and (8) two additional control variables indicate if the child is less than 4 or over 24 years old. Weak instrument tests report the Sanderson and Windmeijer (2016) F-statistic. In columns (1) through (4) and (7) through (8) standard errors are clustered at the village level. In columns (5) and (6) standard errors are bootstrapped with 1000 replications. *** p<0.01, ** p<0.05, * p<0.1
Measuring academic and socio-emotional skills

- Ask a list of questions to mothers about their children.
  - “Relative to children his/her age [child $i$] practices math frequently.”
  - “Relative to others his/her age [child $i$] is easily discouraged.”

- Create scales measuring the following concepts:
  - Academic and scholastic indices
  - Grit, peer-affiliation, self-control, and self-identity indices
  - Behavior and spiritual indices

- An alternative organization of questions, measure the “Big 5” characteristics
  - Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism
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Mediation Analysis

- Use the approach of Preacher and Selig (2012)

\[
M_{hi} = \alpha_0 + \alpha_1 Jumpstart_{hi} + \alpha_2 Government_{hi} + X'_{hi}\Theta + \psi_h + \xi_{hi} \tag{5}
\]

\[
Y_{hi} = \gamma_0 + \gamma_1 Jumpstart_{hi} + \gamma_2 Government_{hi} + M'_{hi}\Lambda + X'_{hi}\Delta + \varphi_h + \zeta_{hi} \tag{6}
\]

- Direct effect: \(\gamma_1\) and \(\gamma_2\) in equation (6)
- Indirect effect: \(\alpha_1\) or \(\alpha_2 \times\) corresponding \(\Lambda\)

- Use Monte Carlo simulations to calculate a distribution of indirect effects
  - Easy to implement, but causal inference is tricky
    - Adding an endogenous mediating variable \(M_{hi}\) can lead to bias Acharya et al. (2016)
  - We argue our mediating variables are not endogenous
    - Implement coefficient stability tests Oster (2017)
    - The “Big 5” are “comprehensive” measures of personality (Heckman et al. (2013))
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Mediation Example with a DAG

- A visual example of mediation (Preacher and Selig 2012)
  - Direct effect = $c'$
  - Indirect effect = $a \times b$
# Effect on Psychological Attributes — OLS and IV Estimates

## First-stage Mediation

<table>
<thead>
<tr>
<th></th>
<th>Grit index</th>
<th>Peer affiliation index</th>
<th>Self control index</th>
<th>Self identity index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>OLS</td>
<td>0.131*</td>
<td>0.141**</td>
<td>0.113</td>
<td>0.0498</td>
</tr>
<tr>
<td>IV</td>
<td>(0.0699)</td>
<td>(0.0687)</td>
<td>(0.0716)</td>
<td>(0.0798)</td>
</tr>
<tr>
<td></td>
<td>0.0763</td>
<td>0.131</td>
<td>0.0180</td>
<td>0.157**</td>
</tr>
<tr>
<td></td>
<td>(0.0676)</td>
<td>(0.0805)</td>
<td>(0.0645)</td>
<td>(0.0738)</td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.473</td>
<td>0.902</td>
<td>0.136</td>
<td>0.215</td>
</tr>
<tr>
<td></td>
<td>(0.795)</td>
<td>(0.795)</td>
<td>(0.832)</td>
<td>(0.829)</td>
</tr>
<tr>
<td>Gov’t kindergarten</td>
<td>0.136</td>
<td>0.215</td>
<td>0.334</td>
<td>0.706</td>
</tr>
<tr>
<td></td>
<td>(0.220)</td>
<td>(0.178)</td>
<td>(0.220)</td>
<td>(0.178)</td>
</tr>
<tr>
<td>Jumpstart = Gov’t test (p-value)</td>
<td>78.08</td>
<td>78.08</td>
<td>78.08</td>
<td>78.08</td>
</tr>
<tr>
<td>Observations</td>
<td>2,437</td>
<td>2,437</td>
<td>2,437</td>
<td>2,437</td>
</tr>
<tr>
<td>R-squared</td>
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<td>0.795</td>
<td>0.832</td>
<td>0.829</td>
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**Notes:** Each of the indices are standardized using the technique used by Kling et al. (2007). Results are relative to a child who did not attend kindergarten. Child controls include the child’s age, the sex of the child, and birth order dummy variables. Weak instrument tests report the Sanderson and Windmeijer (2016) F-statistic. Standard errors are clustered at the village level. *** p<0.01, ** p<0.05, * p<0.1
### Effect on Other Indices — OLS and IV Estimates

#### First-stage Mediation

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<thead>
<tr>
<th></th>
<th>Behavior index</th>
<th>Spirituality index</th>
<th>Academic expectations index</th>
<th>Academic skills index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) OLS</td>
<td>(2) IV</td>
<td>(3) OLS</td>
<td>(4) IV</td>
</tr>
<tr>
<td>Jumpstart</td>
<td>-0.0162</td>
<td>0.0231</td>
<td>0.0358</td>
<td>0.104*</td>
</tr>
<tr>
<td></td>
<td>(0.0450)</td>
<td>(0.0520)</td>
<td>(0.0688)</td>
<td>(0.0620)</td>
</tr>
<tr>
<td>Gov’t kindergarten</td>
<td>-0.0371</td>
<td>0.0301</td>
<td>0.0721</td>
<td>0.133*</td>
</tr>
<tr>
<td></td>
<td>(0.0481)</td>
<td>(0.0562)</td>
<td>(0.0488)</td>
<td>(0.0711)</td>
</tr>
</tbody>
</table>

Jumpstart = Gov’t test (p-value) 0.667 0.910 0.514 0.680 0.921 0.969 0.414 0.905
Observations 2,437 2,437 2,437 2,437 2,437 2,437 2,437 2,437
R-squared 0.898 0.898 0.834 0.834 0.728 0.727 0.639 0.637

Weak IV test

<table>
<thead>
<tr>
<th></th>
<th>Jumpstart (F-stat)</th>
<th>Gov’t kindergarten (F-stat)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78.08</td>
<td>25.19</td>
</tr>
</tbody>
</table>

Child controls

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
</table>

Household/mother fixed effects

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
</table>

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## Effect on “Big 5” Characteristics — OLS and IV Estimates

### First-Stage Mediation

<table>
<thead>
<tr>
<th></th>
<th>Openness Index</th>
<th>Conscientiousness Index</th>
<th>Extraversion Index</th>
<th>Agreeableness Index</th>
<th>Reverse(Neuroticism) Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) OLS</td>
<td>(2) IV</td>
<td>(3) OLS</td>
<td>(4) IV</td>
<td>(5) OLS</td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.181**</td>
<td>0.226**</td>
<td>0.183**</td>
<td>0.192**</td>
<td>0.059</td>
</tr>
<tr>
<td></td>
<td>(0.0902)</td>
<td>(0.0935)</td>
<td>(0.0794)</td>
<td>(0.0833)</td>
<td>(0.0836)</td>
</tr>
<tr>
<td>Gov’t kindergarten</td>
<td>0.104</td>
<td>0.127</td>
<td>0.0863</td>
<td>0.170*</td>
<td>0.0309</td>
</tr>
<tr>
<td></td>
<td>(0.0837)</td>
<td>(0.123)</td>
<td>(0.0738)</td>
<td>(0.102)</td>
<td>(0.0648)</td>
</tr>
<tr>
<td>Jumpstart = Gov’t test (p-value)</td>
<td>0.299</td>
<td>0.356</td>
<td>0.249</td>
<td>0.855</td>
<td>0.728</td>
</tr>
<tr>
<td>Observations</td>
<td>2.437</td>
<td>2.437</td>
<td>2.437</td>
<td>2.437</td>
<td>2.437</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.677</td>
<td>0.677</td>
<td>0.720</td>
<td>0.720</td>
<td>0.768</td>
</tr>
</tbody>
</table>

| Weak IV test            |                |                        |                   |                    |                         |                         |                         |                         |                         |                         |
| Jumpstart (F-stat)      | 78.08          | 78.08                   | 78.08             | 78.08              | 78.08                   | 78.08                   | 78.08                   | 78.08                   | 78.08                   | 78.08                  |
| Child controls          | Yes            | Yes                    | Yes               | Yes                | Yes                     | Yes                     | Yes                     | Yes                     | Yes                     | Yes                    |
| Household/mother fixed effects | Yes          | Yes                    | Yes               | Yes                | Yes                     | Yes                     | Yes                     | Yes                     | Yes                     | Yes                    |

Notes: Each of the indices are standardized using the technique used by Kling et al. (2007). Results are relative to a child who did not attend kindergarten. Child controls include the child’s age, the sex of the child, and birth order dummy variables. Weak instrument tests report the Sanderson and Windmeijer (2016) F-statistic. Standard errors are clustered at the village level. *** p<0.01, ** p<0.05, * p<0.1
Second-Stage Mediation

Core Indices
Second-Stage Mediation

“Big 5” Indices
### Panel A: Core indices

<table>
<thead>
<tr>
<th></th>
<th>Performed best in third grade (1)</th>
<th>Performed best in elementary (2)</th>
<th>Placed in top section (3)</th>
<th>Currently enrolled (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit index</td>
<td>[-0.001; 0.022]</td>
<td>[-0.011; 0.008]</td>
<td>[-0.007; 0.007]</td>
<td>[-0.001; 0.007]</td>
</tr>
<tr>
<td>Peer affiliation index</td>
<td>[-0.015; 0.005]</td>
<td>[-0.017; 0.006]</td>
<td>[-0.003; 0.015]</td>
<td>[-0.005; 0.006]</td>
</tr>
<tr>
<td>Self-control index</td>
<td>[-0.005; 0.017]</td>
<td>[0.000; 0.029]</td>
<td>[-0.002; 0.016]</td>
<td>[-0.002; 0.011]</td>
</tr>
<tr>
<td>Self-identity index</td>
<td>[-0.019; 0.005]</td>
<td>[-0.007; 0.017]</td>
<td>[-0.004; 0.013]</td>
<td>[-0.007; 0.004]</td>
</tr>
<tr>
<td>Behavior index</td>
<td>[-0.009; 0.005]</td>
<td>[-0.005; 0.004]</td>
<td>[-0.003; 0.003]</td>
<td>[-0.005; 0.003]</td>
</tr>
<tr>
<td>Spirituality index</td>
<td>[-0.003; 0.019]</td>
<td>[-0.004; 0.019]</td>
<td>[-0.003; 0.012]</td>
<td>[-0.001; 0.010]</td>
</tr>
</tbody>
</table>

### Panel B: Alternative “Big 5” indices

<table>
<thead>
<tr>
<th></th>
<th>Performed best in third grade (1)</th>
<th>Performed best in elementary (2)</th>
<th>Placed in top section (3)</th>
<th>Currently enrolled (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness index</td>
<td>[-0.008; 0.021]</td>
<td>[-0.008; 0.026]</td>
<td>[0.002; 0.029]</td>
<td>[-0.005; 0.015]</td>
</tr>
<tr>
<td>Conscientiousness index</td>
<td>[0.001; 0.033]</td>
<td>[-0.004; 0.019]</td>
<td>[-0.010; 0.011]</td>
<td>[0.000; 0.014]</td>
</tr>
<tr>
<td>Extraversion index</td>
<td>[-0.013; 0.007]</td>
<td>[-0.005; 0.008]</td>
<td>[-0.005; 0.009]</td>
<td>[-0.003; 0.005]</td>
</tr>
<tr>
<td>Agreeableness index</td>
<td>[-0.011; 0.005]</td>
<td>[-0.013; 0.005]</td>
<td>[-0.006; 0.008]</td>
<td>[-0.008; 0.002]</td>
</tr>
<tr>
<td>Reverse(neuroticism) index</td>
<td>[-0.007; 0.006]</td>
<td>[-0.009; 0.010]</td>
<td>[-0.004; 0.004]</td>
<td>[-0.005; 0.005]</td>
</tr>
<tr>
<td>All “Big 5”</td>
<td>[-0.009; 0.043]</td>
<td>[-0.013; 0.036]</td>
<td>[-0.003; 0.037]</td>
<td>[-0.005; 0.023]</td>
</tr>
</tbody>
</table>

**Notes:** We calculate these confidence intervals using the Monte Carlo approach detailed by Preacher and Selig (2012). Figures showing the distributions of these indirect effects are presented in the appendix.
Summary and Concluding Thoughts

- Substantial effects of enrollment in Jumpstart kindergarten
  - Twice as likely to be the best third grade student within their household
  - 70 percent more likely to be the best elementary student within their household
  - More than 50 percent more likely to be placed in the “top section” in third grade
  - About 15 percent more likely to be currently enrolled

- Socio-emotional skill mediation
  - First Stage
    - Jumpstart increases grit, self-control, self-identity, openness, and conscientiousness
    - Generally weaker effects for the government kindergarten
  - Second Stage
    - Significant indirect effects of some socio-emotional skills
    - The direct effect of Jumpstart enrollment remains strong
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Thank you!
Any questions and/or feedback?
## Summary Statistics

### Panel A: Household Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HH income</td>
<td>4,982</td>
<td>4.246</td>
<td>921</td>
</tr>
<tr>
<td>IHS HH income&lt;sup&gt;a&lt;/sup&gt;</td>
<td>9.00</td>
<td>0.73</td>
<td>921</td>
</tr>
<tr>
<td>HH size</td>
<td>6.08</td>
<td>2.36</td>
<td>942</td>
</tr>
<tr>
<td>Mother’s age</td>
<td>42.73</td>
<td>9.35</td>
<td>943</td>
</tr>
<tr>
<td>Mother attended high school</td>
<td>0.48</td>
<td>0.50</td>
<td>943</td>
</tr>
<tr>
<td>Mother attended college</td>
<td>0.10</td>
<td>0.30</td>
<td>943</td>
</tr>
<tr>
<td>Mother married</td>
<td>0.86</td>
<td>0.34</td>
<td>943</td>
</tr>
<tr>
<td>Mother “stay-at-home”</td>
<td>0.58</td>
<td>0.49</td>
<td>943</td>
</tr>
<tr>
<td>Mother graduated VHL</td>
<td>0.83</td>
<td>0.38</td>
<td>943</td>
</tr>
</tbody>
</table>

<sup>a</sup> IHS HH income is the income of the head of household.
## Summary Statistics

### Panel B: Child Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Obs.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>11.67</td>
<td>2.30</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>9.54</td>
<td>2.68</td>
<td>791</td>
</tr>
<tr>
<td>No Kindergarten</td>
<td>17.71</td>
<td>4.67</td>
<td>1,081</td>
</tr>
<tr>
<td><strong>Child current grade</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>5.86</td>
<td>2.02</td>
<td>544</td>
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<tr>
<td>Gov’t Kindergarten</td>
<td>4.18</td>
<td>2.38</td>
<td>774</td>
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<tr>
<td>No Kindergarten</td>
<td>9.57</td>
<td>2.40</td>
<td>647</td>
</tr>
<tr>
<td><strong>Sex of Child (1 = Male)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.51</td>
<td>0.50</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>0.54</td>
<td>0.50</td>
<td>791</td>
</tr>
<tr>
<td>No Kindergarten</td>
<td>0.57</td>
<td>0.49</td>
<td>1,081</td>
</tr>
<tr>
<td><strong>Performed best in third grade</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.51</td>
<td>0.50</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>0.27</td>
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<td>791</td>
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<tr>
<td>No Kindergarten</td>
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<td>1,081</td>
</tr>
<tr>
<td><strong>Performed best in elementary school</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.49</td>
<td>0.50</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>0.30</td>
<td>0.46</td>
<td>791</td>
</tr>
<tr>
<td>No Kindergarten</td>
<td>0.29</td>
<td>0.46</td>
<td>1,081</td>
</tr>
<tr>
<td><strong>Placed in top third grade section</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.44</td>
<td>0.50</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>0.38</td>
<td>0.49</td>
<td>791</td>
</tr>
<tr>
<td>No Kindergarten</td>
<td>0.35</td>
<td>0.48</td>
<td>1,081</td>
</tr>
<tr>
<td><strong>Child currently enrolled in school</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Jumpstart</td>
<td>0.96</td>
<td>0.19</td>
<td>565</td>
</tr>
<tr>
<td>Gov’t Kindergarten</td>
<td>0.98</td>
<td>0.15</td>
<td>791</td>
</tr>
<tr>
<td>No Kindergarten</td>
<td>0.60</td>
<td>0.49</td>
<td>1,081</td>
</tr>
</tbody>
</table>