Academic Benefits of Living On Campus

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Does living on campus lead to higher student performance?
- Immediate effects
- Delayed/permanent effects

Through what channels is living on campus likely to lead to higher student performance?
- University resources
- Peer effects
Positive impact on academics: Thompson, et. al. (1993).

Critical thinking skills: Pascarella et. al. (1993).


No difference: Delucchi (1993).

Faculty/Student interaction
- Pascarella and Terenzini (1991)
- Astin (1993)
- Kuh and Hu (2001a)

Information technology: Kuh and Hu (2001b)

Institutional spending / not necessarily academic support:
Toutkoushian and Smart (2001)
Positive influences are dominant: Henderson et. al. (1978).

Negative influences carry through college: Betts and Morell (1999).

“Average” students most susceptible to peer influence: Zimmerman (2003).
Population

- Undergraduate students at Indiana University Purdue University - Indianapolis.
- Approximately 19,700 students under age 25.
- Extremely limited on-campus housing capacity: 1,107.
- No on-campus housing requirements.

Sample

- Electronic survey given to 6,000 undergraduate in Fall 2008.
- 363 completed questionnaire.
- Questions included: living situation, social habits, study habits, campus resource utilization, personal background, academic background.
Variables

Measure of academic performance
- Spring 2008 Semester GPA.
- Cumulative GPA through Spring 2008.
(Each examined in turn)

Living on campus dummy
- Student lived on campus in Spring 2008.
- Student lived on campus during an part of their time at IUPUI.
(Each examined in turn)
Instrumental variables

- Distance of hometown from campus - positively related to whether a student lived on-campus.
- On-campus housing turned down due to lack of available space (dummy).

Controls

- Gender
- Parents’ income
- Non-traditional student dummy (age > 25)
- ACT/SAT percentiles
- Number of semesters completed
- Number of credits in Spring 2008.
Estimation

Estimation Procedure

1. OLS
2. Just-identified using only distance from campus.
3. GMM using both instruments.
4. Two-stage MLE (first stage probit) using both instruments.

Three Specifications

1. Cumulative GPA on DORM_EVER.
2. Spring Semester 2008 GPA on DORM_EVER.
3. Spring Semester 2008 GPA on DORM_S08.
## Results

### Coefficient on Living on Campus Dummy

<table>
<thead>
<tr>
<th></th>
<th>Cumulative GPA on DORM_EVER</th>
<th>Spring 2008 Semester GPA on DORM_EVER</th>
<th>Spring 2008 Semester GPA on DORM_S08</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>IV</td>
<td>GMM</td>
</tr>
<tr>
<td>Coefficient on Living on Campus Dummy</td>
<td>0.210**</td>
<td>0.312*</td>
<td>0.448***</td>
</tr>
<tr>
<td>Standard errors in parenthesis</td>
<td>[0.087]</td>
<td>[0.187]</td>
<td>[0.140]</td>
</tr>
</tbody>
</table>

### Channel Variables

#### University Provided Resources: Fall 2008
- Use of fitness resources (hours per week – Tobit).
- Use of tutors (hours per week - Robust OLS).
- Engagement in extra-curricular activities (dummy - Probit).
- Hours using campus resources (hours per week - Tobit).
- Hours studying (hours per week - Tobit).

#### Peer-Influenced Variables
- Number of drinks per week (Robust OLS)
- Ever used drugs while at IUPUI (Probit)
- Study with roommates (hours per week - Tobit)
- Study with classmates (hours per week - Tobit)
Explanatory Variables:

- **DORM_PAST**: Whether or not student lived on campus in the past.
- **DORM_F08**: Whether or not student lived on campus in Fall 2008 semester.
  (Both included simultaneously)
- Same set of controls.

- No IV estimation yet.
## Results

### Campus Resource Variables

<table>
<thead>
<tr>
<th></th>
<th>FITNESS Tobit</th>
<th>TUTORS Robust OLS</th>
<th>XTCUR Probit</th>
<th>CAMPUS Tobit</th>
<th>STUDY Tobit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DORM_F08</strong></td>
<td>-3.687**</td>
<td>0.153</td>
<td>0.788*</td>
<td>-6.613***</td>
<td>-1.702</td>
</tr>
<tr>
<td></td>
<td>[1.459]</td>
<td>[0.136]</td>
<td>[0.429]</td>
<td>[2.066]</td>
<td>[1.55]</td>
</tr>
<tr>
<td><strong>DORM_PAST</strong></td>
<td>0.023</td>
<td>-0.279**</td>
<td>0.937***</td>
<td>0.916</td>
<td>1.296</td>
</tr>
<tr>
<td></td>
<td>[1.069]</td>
<td>[0.11]</td>
<td>[0.268]</td>
<td>[1.532]</td>
<td>[1.317]</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>207</td>
<td>225</td>
<td>232</td>
<td>231</td>
<td>225</td>
</tr>
<tr>
<td><strong>F-stat</strong></td>
<td>1.67</td>
<td>1.46</td>
<td>—</td>
<td>3.09***</td>
<td>1.46</td>
</tr>
<tr>
<td><strong>Wald Stat</strong></td>
<td>—</td>
<td>—</td>
<td>50.45***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>(Pseudo) R^2</strong></td>
<td>0.0163</td>
<td>0.0206</td>
<td>0.1663</td>
<td>0.0228</td>
<td>0.0025</td>
</tr>
</tbody>
</table>

- Except for extra-curricular activities, significant values have opposite than expected signs.
- Engaging in extra-curricular activities is an immediate and permanent effect.
## Peer-Influenced Variables

<table>
<thead>
<tr>
<th></th>
<th>DRINKS</th>
<th>DRUGS</th>
<th>STUDCLASS</th>
<th>STUDDROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Robust OLS</td>
<td>Probit</td>
<td>Tobit</td>
<td>Tobit</td>
</tr>
<tr>
<td>DORM_F08</td>
<td>-0.186</td>
<td>0.200</td>
<td>0.051</td>
<td>2.077</td>
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<tr>
<td></td>
<td>[0.183]</td>
<td>[0.389]</td>
<td>[1.156]</td>
<td>[1.803]</td>
</tr>
<tr>
<td>DORM_PAST</td>
<td>-0.341***</td>
<td>0.204</td>
<td>2.313***</td>
<td>2.467**</td>
</tr>
<tr>
<td></td>
<td>[0.131]</td>
<td>[0.312]</td>
<td>[0.812]</td>
<td>[1.218]</td>
</tr>
<tr>
<td>N</td>
<td>226</td>
<td>230</td>
<td>231</td>
<td>230</td>
</tr>
<tr>
<td>F-stat</td>
<td>4.58***</td>
<td>—</td>
<td>2.37**</td>
<td>3.50***</td>
</tr>
<tr>
<td>Wald Stat</td>
<td>—</td>
<td>26.98***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>(Pseudo) $R^2$</td>
<td>0.1322</td>
<td>0.1140</td>
<td>0.0272</td>
<td>0.0601</td>
</tr>
</tbody>
</table>

Delayed but significant long term effects:

- Less likely to drink.
- More likely to study with peers.
Find significant statistical evidence that living on campus improves student performance.

- Immediate effect: estimates range from 0.303 (OLS) to 0.973 (IV/GMM) increase in semester GPA.
- Permanent effect: estimates range from 0.210 (OLS) to 0.448 (IV/GMM) increase in cumulative GPA.

Channels:

- More likely to develop productive relationships with peers.
- Consume less alcohol in subsequent semesters.
- More likely to participate in extra-curricular activities, stay involved.
- Largely failed to identify channels to explain an immediate effect.
Non-significant campus resources
  - Nothing was significant
  - Very low R-squared, insignificant F-stat.

Next steps:
  - Should include both current and past living situation simultaneously in academic benefits regressions.
  - Use instrumental variables to account for endogeneity in channels regressions.
  - Investigate more channels: living with a roommate that drinks, attend faculty office hours.