Education and the Common Good
Social Benefits of Higher Education in Kentucky

Kentucky Association of Institutional Research, 2005 Conference
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Mission Statement

The Long-Term Policy Research Center will serve as a catalyst to change the way decisions are made in government by providing decisionmakers a broader context in which to make decisions, taking into consideration the long-term implications of policy and critical trends and emerging issues which are likely to have a significant impact on the state.
KLTPRC History

• Created in 1992 by the Kentucky General Assembly
• Intellectual architects
  • decades of experience in executive and legislative branches of state government
• Principal motivation
  • enrich policy process with forecasts and trend analysis
    • avoid problems and capture opportunities
KLTPRC Organization

• Attached to the legislative branch
• A 21-member board
  • 4 members from the executive branch
  • 6 from the legislative branch
  • 11 at-large members who represent citizen groups, universities, local governments, and the private sector
KLTPRC Purpose

• Help the state cope with change
  • anticipate change
  • manage change
• Focus on the future
  • identify critical trends and emerging issues
  • understand long-term implications of policies
• Advise, inform, and educate
  • policymakers and citizens
KLTPRC Responsibilities

• Biennial trends report
  • tied to the state budget
• Identify and study long-term issues
  • scanning, surveys
• Consider alternative futures
  • scenario development

• Coordinate and encourage others to focus on long-term planning
  • strategic visioning
• Engage the public
  • annual conference, publications
KLTPRC Scope

- Economic - technology, income, infrastructure
- Education - early childhood to adult
- Community - health care, social capital
- Environment - air, water, land
- Government - planning to fiscal issues
Studying Higher Education in Kentucky

- 1997 Kentucky Postsecondary Education Reform Act
- Questions asked:
  - Why should we, as a society, invest public dollars in higher education?
  - What are some of the barriers that keep our high schoolers from attending college?
  - What makes a high school a high-producer of “college-going” graduates?
High School Attainment Rates

Percent of Adults 25 to 64 years old with at least a high school diploma, Kentucky and the US

KY
US

Bachelor’s Degree Attainment Rates

Percent of adults 25 to 64 years old with at least a Bachelor's Degree, Kentucky and the US
“Education should not compete with national defense, the trade deficit, drugs or AIDS. Think of it as a solution to those problems.”

-David Kearns, Chairman of Xerox Corporation
Education and Democracy

“Jefferson argued . . . that generally available education would have an equalizing role on American society . . . [influencing] the nation’s democratic values, while simultaneously preserving individual liberties.”

- The Institute for Higher Education Policy
Higher Education and Kentucky

“If at the end of Kentucky’s 20-year commitment to reforming postsecondary education, what we’ve done is build institutions of higher learning, but 25 percent of Kentucky’s children still live in poverty and a million people still are challenged as to reading and writing, if at the end of 20 years we haven’t changed the condition within which women, men and children in this state live, we shall have failed.”

- Gordon Davies, Former President of the Kentucky Council on Postsecondary Education
Economic Benefits of “Going to College”

**Private Economic**
- Higher Salaries and Benefits
- Employment
- Higher Savings Levels
- Improved Working Conditions
- Personal/Professional Mobility

**Public Economic**
- Increased Tax Revenues
- Greater Productivity
- Increased Consumption
- Increased Workforce Flexibility
- Decreased Reliance on Government Financial Support
Social Benefits of “Going to College”

• Private Social
  • Improved Health/ Life Expectancy
  • Improved Quality of Life for Offspring
  • Better Consumer Decision Making
  • Increased Personal Status
  • More Hobbies, Leisure Activities

• Public Social
  • Reduced Incarceration and Crime Rates
  • Increased Volunteerism and Charitable Giving
  • Increased Quality of Civic Life
  • Social Cohesion/ Appreciation of Diversity
  • Improved Ability to Adapt to and Use Technology
College Attainment and Earnings Per Job, Kentucky and 16 Comparison States, 2004

- Percent of Adults 25 to 64 Years Old with a Bachelor's Degree or Higher
- Annual Earnings Per Job, Non-Manufacturing Jobs, 2004

Graph showing the relationship between college attainment and earnings per job for Kentucky and comparison states in 2004.
# Education Pays

<table>
<thead>
<tr>
<th>Training Category</th>
<th>Total Employment</th>
<th>Avg. Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postgraduate</td>
<td>60,490</td>
<td>$61,391</td>
</tr>
<tr>
<td>Bachelor’s Degree &amp; Bachelor’s Degree with Work Experience</td>
<td>281,892</td>
<td>$48,600</td>
</tr>
<tr>
<td>Associate’s Degree or Postsecondary Vocational Training</td>
<td>140,629</td>
<td>$33,309</td>
</tr>
<tr>
<td>Work Experience in a Related Occupation or Long-Term OJT</td>
<td>296,684</td>
<td>$34,118</td>
</tr>
<tr>
<td>Moderate-Term OJT</td>
<td>393,998</td>
<td>$27,760</td>
</tr>
<tr>
<td>Short-Term OJT</td>
<td>710,069</td>
<td>$19,244</td>
</tr>
</tbody>
</table>

*Source: Kentucky Occupational Outlook to 2010*
The Hypotheses: Relationship Between College Attainment and Social Benefits

- Federal Tax Payments +
- State Tax Payments +
- Welfare (TANF) –
- Food Stamps –
- Criminal Justice –
- Physical Functioning +
- General Health +
- Mental Health +
- Smoking –
- Community Group Participation +
- Leader of that Group +
- Leadership Program +
- Volunteering +
- Hours Volunteered +
- Registering to Vote +
- Reading Daily to Children +
- Entrepreneurism +
- Participation in Cultural Activities +
- Access and Use of Computer and Internet Technology +
The Independent Variables

Series of dichotomous variables:

• Education (baseline= high school diploma)
  - Less than High School
  - Some College or a 2 yr degree
  - Bachelor’s degree or Higher
• Household Income (baseline= less than $20K)
  - $20K to $40K
  - $40K to $70K
  - $70K or higher

• Age (continuous variable)
• Gender
• Race and Ethnicity (white, non-Hispanic and otherwise)
• Urban (location of residence in an urban or rural area)
The Models and data

• Individual level data from 6 datasets were used, including Kentucky specific surveys and data from the Current Population Survey.

• 19 social benefits of higher education were modeled using multivariate regression analysis: OLS, probit, and a Heckman model.

• Benefit-cost analysis compares public investment with social returns.
Higher Education and Taxation

Present Value of Lifetime State and Federal Income Taxes, by Education Level, 2000

State
- Less Than High School: $2.3
- High School Diploma: $9.9
- Some College or Two-Year Degree: $18.0
- Bachelor's Degree or Higher: $32.8

Federal
- Less Than High School: $16.3
- High School Diploma: $45.2
- Some College or Two-Year Degree: $74.0
- Bachelor's Degree or Higher: $117.2

Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey Data and Internal Revenue Service Information Services
Note: All values adjusted to 2000 dollars using the CPI-U
Public Program Participation

Expected Annual Welfare and Food Stamp Benefits for Kentucky Women and Men, Age 30, by Education, 2000

Source: University of Kentucky Survey Research Center and Kentucky Cabinet for Families and Children
The Criminal Justice System

Present Value of Expected Lifetime Criminal Justice Costs for Kentucky Men by Education Level, 2000

Source: Kentucky Long-Term Policy Research Center analysis of Current Population Survey Data, U.S. Department of Justice, and Kentucky Department of Corrections
Predicted Probabilities of Civil Society Participation by Education, Kentucky, 2000

- Group Participation:
  - High School Diploma: 43%
  - Bachelor's Degree or Higher: 59%

- Leader of Group:
  - High School Diploma: 14%
  - Bachelor's Degree or Higher: 29%

- Leadership Program:
  - High School Diploma: 16%
  - Bachelor's Degree or Higher: 45%

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Higher Education and Volunteerism

Expected Annual Value of and Number of Volunteer Hours by Education, Kentucky, 2000

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Political Participation

Probability of Being Registered to Vote by Education, Kentucky, 2000

- Less Than High School: 74%
- High School Diploma: 88%
- Some College or 2-Year Degree: 95%
- Bachelor's or Higher: 93%

Source: University of Kentucky Survey Research Center
Higher Education and Smoking

Model Estimates of the Probability of Smoking by Education, Kentucky, 2000

<table>
<thead>
<tr>
<th>Education</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than High School</td>
<td>37%</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>34%</td>
</tr>
<tr>
<td>Some College or Two-Year Degree</td>
<td>31%</td>
</tr>
<tr>
<td>Bachelor's Degree or Higher</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Smoking Costs in Kentucky, 2000

- Annual health care expenditures in Kentucky directly related to tobacco use: $1.0 billion

- Residents’ state and federal tax burden caused by tobacco-related health costs: $520 million

- Kentucky government Medicaid payments directly related to tobacco use: $200 million
Higher Education and Health

Predicted Average Health Related Quality of Life Scores by Education, 1997

- Physical Functioning Index
- General Health Perceptions
- Mental Health Index

- Less Than High School
- High School Diploma
- Some College or Two-Year Degree
- Bachelor's Degree or Higher
Higher Education and Technology Use


Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Higher Education and Entrepreneurism

Predicted Probability of Starting a Business by Education, 2000

- High School Diploma: 22%
- Some College or Two-Year Degree: 33%
- Bachelor's Degree or Higher: 26%

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Higher Education and Parenting

Predicted Probability of Reading *Every Day* to Children Under 8 by Parents' Education, 1998 and 2000

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than High School</td>
<td>50%</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>62%</td>
</tr>
<tr>
<td>Some College or Two-Year Degree</td>
<td>68%</td>
</tr>
<tr>
<td>Bachelor's Degree or Higher</td>
<td>87%</td>
</tr>
</tbody>
</table>

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
Higher Education and Cultural Activity

Predicted Probability of Visiting a Museum, Festival, Arts Performance or Historical Site in County of Residence in the Previous Year by Education, Kentucky, 2000

- Less Than High School: 38%
- High School Diploma: 56%
- Some College or Two-Year Degree: 65%
- Bachelor's Degree or Higher: 74%

Source: Kentucky Long-Term Policy Research Center and University of Kentucky Survey Research Center
General Fund Support Per Full-Time Equivalent Student at Kentucky’s 4-Year Institutions, 1998

• One Year:  $6,663

• NPV of Four Years:  $24,626

Note:  Does not include medical, agriculture, research, public service, or debt service support, support of CPE and KHEAA or 2-year institutions.

Source:  Council on Postsecondary Education
**Present Value of Expected Lifetime Social Benefits of a 4-Year Degree, Compared to a High School Diploma**

<table>
<thead>
<tr>
<th>Social Benefit</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Federal Income Tax</td>
<td>$83,097</td>
<td>$63,061</td>
</tr>
<tr>
<td>Additional State Income Tax</td>
<td>$28,242</td>
<td>$19,031</td>
</tr>
<tr>
<td>Welfare (5 years) Savings</td>
<td>$190</td>
<td>$263</td>
</tr>
<tr>
<td>Food Stamps Savings</td>
<td>$1,773</td>
<td>$5,397</td>
</tr>
<tr>
<td>Criminal Justice System Savings</td>
<td>$2,367</td>
<td>$123</td>
</tr>
<tr>
<td>Additional Volunteerism</td>
<td>$10,457</td>
<td>$8,949</td>
</tr>
<tr>
<td>Total Social Benefits</td>
<td>$126,126</td>
<td>$96,823</td>
</tr>
</tbody>
</table>
Caveats and Conclusions

• Not all benefits occur for all levels of education, however.
• Benefits in the area of civil society are more closely linked to higher education, while health benefits are strongly linked to achievements at the secondary level.
• Not all benefits quantified or even identified.
• Also, we only analyzed the benefits associated with a more educated populace. Research and public service benefits of a postsecondary institution were not analyzed.
Conclusions: How does Education Pay in Kentucky?

• Evidence that achievements at the postsecondary education level are related to many social benefits that can enhance the lives of all Kentuckians.

• Those benefits include:
  • increases in tax revenue
  • lower program participation
  • lower incarceration and smoking rates
  • better health
  • increased civil society participation
  • higher frequency of reading to children
  • higher likelihood of starting a business and of having access to and using information technology
Want More Information?

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