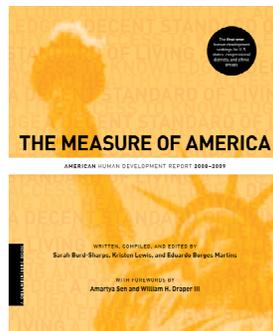


# **The American Human Development Index Research Summary: Non-financial returns to education**



BACKGROUND PAPER COMMISSIONED FOR:

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### *Introduction*

The methodology of the global Human Development Report has been applied in over 140 countries, and is now being applied in the United States for the first time. The report will contain a Human Development Index (HDI) for the country as a whole, ranked by state, ethnic group, gender and Congressional District. The HDI is a composite index made up of three dimensions: longevity, knowledge and standard of living. They are all weighted equally under the premise that they are each equally of value for expanding people's freedoms and opportunities. The issue addressed in this literature summary concerns the knowledge dimension. In the index reproduced annually by UNDP for the global Human Development Report, adult literacy is used together with enrollment (primary, secondary, tertiary) as a proxy for "knowledge". For the current project, a modified HDI is being used; the "adult literacy" indicator has been replaced with a more demanding measure for the U.S. context: An educational achievement sub-index that is made up of 4 indicators--the percent of the population with less than a high school education, with a high school diploma, with a college degree, and with a graduate degree.

The HDI operates under the philosophy that education has intrinsic as well as instrumental value. The goal of this literature summary is to better understand what has been studied regarding the intrinsic value of education, or at least those benefits that go beyond looking at economic returns to education. Though non-financial returns to education will always be subjective, the goal is to construct a ranking system that captures the relative benefits of a high school, college, and graduate degree to Americans. Unless otherwise noted, research reviewed here was conducted in the United States or in countries with similar standards of living and educational systems (e.g., the United Kingdom and Australia).

### *Non-financial returns to education*

Generally, research suggests that the value of education to individuals and to society goes beyond increased income potential. For individuals, higher educational attainment is associated with:

- better health
- greater life expectancy
- increased civic participation
- increased ability to adjust to change

- clearer self-identity
- greater social cohesion, and
- greater social capital passed on to their children.

For society, a better educated population is associated with:

- reduced dependency on public support programs
- lower crime rates
- increased civic participation
- political stability, and
- environmental benefits

Higher educational attainment is associated with better health. Generally, those with postsecondary degrees show increased life expectancy and better general health (Williams and Swail, 2005). Additionally, these college graduates have lower smoking rates, more positive perceptions of personal health, and healthier lifestyles than those who have not graduated from college (Baum and Ma, 2007). According to a 50-state analysis of the public and private benefits of education conducted by the Institute for Higher Education Policy (IHEP), 82% of those with only a high school diploma nationwide reported being in “excellent, very good, or good” health, compared to 93% of those with a bachelor’s degree (Williams and Swail, 2005).

More education is also associated with increased civic participation. Higher levels of education are correlated with higher levels of volunteer work, voting, charitable donations, and blood donation (Wolfe and Haveman, 1984; Williams and Swail, 2005). According to the same IHEP study above, in September 2004, 21% of the U.S. population with a high school diploma and aged 25 or older reported ever volunteering, compared to 36% of those with a bachelor’s degree or higher. Following a similar pattern, 56% of those 25 and older with a high school diploma reported that they voted in the 2000 presidential election, compared to 76% of those with bachelor’s degrees (Williams and Swail, 2005). Education is also associated with greater levels of openness to the opinions of others (Baum and Ma, 2007).

Other social benefits have been described in the literature as well. Pascarella and Terenzini reviewed the research on the personal benefits of attending college and describe results including measurable improvements in substantive knowledge and in quantitative and verbal competencies, maturity, moral character development, personal happiness, and positive societal contributions (1991, as cited in Fairweather and Hodges, 2006).

### *Benefits of Literacy and Learning*

The literature also describes benefits of literacy and learning by itself, even if no formal degree is being obtained. For example, Bynner et al found that adults who increase their literacy and numeracy levels see several [non-financial] benefits, including better physical and mental health, children who experience less difficulty in school, more active participation as citizens (including higher voting rates and expressing an interest in politics), and less discriminatory attitudes towards others (2001, as cited in Hartley and Horne, 2005).

Furthermore, a qualitative study by the National Centre for Vocational Education Research (NCVER) in Australia also found that students taking vocational and basic adult literacy and

numeracy courses highly valued the social capital outcomes resulting from their participation and that these played an important role in improving the students' quality of life. The study found that "almost 80% of the students interviewed had gained social capital outcome as a result of participation" in the courses (Hartley and Horne, 2005).

### *Causality and Mediating Factors*

It is very important to note that the benefits above are documented in the literature only through correlations. It could be, for example, that higher educational attainment does not lead to better health, but that healthier people are able to pursue higher education. However, the associations are strong, and research designs to support causality are not feasible.

It is also possible that the financial benefits of education act as a mediator for some of the benefits listed above. For example, reduced dependency on public support programs is likely a direct result of higher employment rates and higher incomes for those with college degrees. Reduced crime rates associated with higher education levels may also be at least somewhat related to increased income, particularly property crimes.

McMahon (2002) controls for the mediator problem by including income as an independent variable in his models. In other words, monetary returns are not double counted. From this study, some key findings emerge:

- Higher enrollment rates in higher education are associated with political stability. Two pathways are hypothesized: Indirectly, more education leads to more widespread newspaper communications, which leads to political stability. However, more education also leads to more urbanization, leading to lower political stability. The net effect is more political stability.
- Regarding crime rates, McMahon cites statistics showing that young men through the age of 25 have the highest rates of participation in criminal activity. Those not in school have an even higher rate; physically attending school until students are older may therefore lead to lower crime rates.
- Through a complex path of effects, McMahon determines that *secondary* education also has a net positive impact on the environment. Expansion of *secondary* educational opportunities shows an adverse effect on the environment at first but is later associated with reduced deforestation and less water and air pollution. *Higher* (postsecondary) education leads to reduced pollution but has less of an effect on deforestation. There are also indirect (via income) effects of higher education on the environment: higher levels of education lead to less rural poverty, which leads to less deforestation. Similarly, higher levels of education also lead to less urban poverty, which leads to less air and water pollution.
- McMahon found that the gaining of "new knowledge" from education was **not** found to have a separate effect from other variables. In other words, his controls argue that learning itself is not what leads to well-being, contesting findings cited above.

Unlike other studies reviewed here, it should be noted that McMahon's models are based on research from countries around the world at all stages of development.

An Australian study conducted by NCVET also used income as a mediating variable in their models, and found only a very small direct impact of education on health, although larger for men than women, suggesting that education is more important for men's health than women's. In their models, the indirect effect of education through increased income contributed substantially to high correlations between education and health (Hartley and Horne, 2005).

### *Linearity*

For all non-financial benefits listed above, the literature seems to suggest a relatively linear trend: each additional level of education accrues a similar increase in benefit. Therefore, a linear scale for educational attainment in the HDI (e.g., 1 = high school, 2 = college, 3 = graduate degree) is recommended.

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