

Beyond income: Multi dimensional returns to Education across economic and social outcomes

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Abstract

This study examines the multidimensional returns to education beyond traditional income-based measures. Using a secondary research approach, the paper explores the economic, health, social, psychological, intergenerational, and societal outcomes associated with educational attainment. While education is widely recognised for improving earnings, employment opportunities, and productivity, its benefits extend to improved health literacy, healthier behaviours, increased life expectancy, cognitive development, decision-making, emotional resilience, civic participation, social cohesion, and reduced crime. The study also examines how educational returns vary according to socioeconomic background, gender, institutional quality, and access to opportunities, highlighting persistent inequalities in the distribution of these benefits. Furthermore, education generates broader societal externalities through economic growth, innovation, reduced social costs, and stronger democratic participation. The findings suggest that evaluating education solely through wages and employment provides an incomplete understanding of its overall value. A multidimensional framework is therefore necessary to assess education as both a private investment and a public good.

Keywords: Education; Multidimensional Returns; Economic Returns; Health Outcomes; Social Capital; Psychological Well-being; Social Mobility; Human Capital

Chapter 1: Introduction

1.1 The Integral Position of Education in Society

Education has emerged as a fundamental right of immense importance in the status quo. Its most direct impact is on the individual, particularly in terms of intellectual, social, and intrapersonal development. In particular, a practical curriculum helps create informed citizens who can identify, question, and rectify loopholes in a societal system. In a holistic sense, society benefits from an educated citizen (Wobbekind, 2012). Educated citizens can develop efficient technical and governance systems, enhance overall social structures, and uplift their communities. Societies educate their young; it's what they do to maintain their existence and to offer their children their best chance of surviving and flourishing (Selwyn, 2019).

1.2 Limitations of Income-Based Evaluation

The value of education has traditionally been evaluated in terms of its effects on salary and job opportunities. Higher levels of education are commonly associated with higher income, better job security, and easier access to the labor market (Becker, 1964; Psacharopoulos & Patrinos, 2018). The emphasis on income has been influential in academic research and policy discussions primarily due to its quantifiable and comparable nature. However, such an approach provides only a partial account of education's full value.

Education contributes to a person's life in many ways besides just income, such as health, happiness, engagement in the community, and upward social mobility (Oreopoulos & Salvanes, 2011). People with

higher levels of education tend to make healthier lifestyle choices, experience longer life expectancy, and participate more actively in political and civic life (Cutler & Lleras-Muney, 2006). Although these outcomes are often more difficult to measure than wages, they are central to individual well-being and social development.

An excessive focus on income as the main measure of educational success can create a narrow view of education policy. When education is evaluated mainly through employment outcomes and incomes, greater emphasis may be placed on developing marketable skills, while broader intellectual, social, and civic development receive less attention.

As a result, it may be the case that certain subjects which generally foster critical thinking, ethical reasoning, and social integration are sidelined (Sen, 1999). In such a context, education risks being viewed primarily as an economic investment rather than as a force that shapes individual development and contributes to society as a whole.

1.3 Emergence of Multidimensional Perspectives

In response to the limitations of income-based evaluation, multidimensional perspectives on educational returns have gained increasing attention. These approaches recognize that education affects not only economic outcomes, but also health, well-being, social trust, and civic engagement. This shift closely aligns with the human development approach, which emphasizes the expansion of individuals' freedoms and quality of life rather than economic output alone. (Sen, 1999; Nussbaum, 2011).

Global institutions and researchers have increasingly incorporated multidimensional indicators into their analyses. Measures such as life satisfaction, social trust, and civic engagement are now considered important components of educational outcomes (OECD, 2019). This broader perspective acknowledges that the true value of education lies not only in its economic returns but also in its ability to enhance individuals' overall life experiences and societal contributions.

1.4 Purpose and Scope

This paper employs a secondary research method to explore the multifaceted returns to education. Through literature review, data analysis, and theoretical discussion, the study intends to thoroughly illustrate the ways in which education affects economic as well as non-economic outcomes.

The major aim is to juxtapose the conventional economic returns like earning capacity and job prospects with the non-economic returns such as health, happiness, social involvement, and self-actualization. Such a comparative study would lead to a more comprehensive assessment of education's effects on various aspects.

Education is recognized from different angles—which the paper reflects. While not totally rejecting the income-based metric, the research demonstrates that there are other important aspects too. Thus, it intends to provide an outline which is inclusive and will allow for the assessment of educational outcomes at a much finer level.

1.5 Research Question

The central research question guiding this study is: To what extent does education generate multidimensional returns across economic and social outcomes beyond traditional income-based measures?

This question provides the foundation for exploring the broader implications of education and assessing whether current evaluation systems adequately capture its full range of benefits. By addressing this question, the study seeks to bridge the gap between traditional economic perspectives and emerging multidimensional approaches to education.

Chapter 2: Literature Review

2.1 Evolution of Returns to Education

People's understanding of returns to education has evolved a lot over time. The early studies in this field primarily sought to answer a straightforward question: how much more does a person earn by obtaining more education? Initially, economists focused mainly on wage differentials and the direct relationship between years of schooling and income levels. Education was viewed as a financial investment with individuals expected to receive measurable economic returns in the form of higher salaries (Mincer, 1974). Human Capital Theory has been central to the widespread acceptance of this perspective. Authors like Gary Becker argued that education enhances an individual's skills, knowledge, and productivity, thereby increasing earning potential (Becker, 1964).

Nevertheless, researchers gradually realized that focusing solely on wages was too narrow an approach. Although income is undoubtedly an important factor, it is far from the only outcome influenced by education.. Time spent on education can have a greater impact on individuals' lives and on society as a whole. As a result, interest in educational outcomes beyond purely economic ones began to grow. Research has since shown that education can improve health, modify social behavior, and enhance one's general wellness, suggesting that its benefits extend beyond financial returns alone (Oreopoulos & Salvanes, 2011). This broader perspective reflects a shift away from an exclusively economic interpretation toward recognition of the multidimensional role of education.

2.2 Evidence on Economic Returns

Although interest in a wider range of outcomes has grown, the financial benefits of education remain one of the most frequently confirmed results in research. Numerous studies have shown that individuals with higher levels of education tend to earn higher incomes than those with lower levels of educational attainment. This extra pay for education is evident in various countries and different time periods, but the size of the benefit differs (Psacharopoulos & Patrinos, 2018).

Besides higher income, education equips individuals with skills that enhance their employability. For instance, those holding diplomas, degrees, or certificates of competences are more likely to obtain employment, remain employed for longer periods, and access more stable jobs with a lower risk of displacement (OECD, 2019). Educational credentials, therefore, serve as a buffer against unemployment, which is a significant factor during periods of economic crises.

That said, it's also crucial to highlight that the returns to education are not uniform across contexts. In fact, the impact of education may vary substantially based on factors such as the place of education, level of education attained, the field of study, and broader economic conditions. For example, in developing countries, even well-educated individuals may face limited access to high-quality employment opportunities, which can reduce the economic returns to education (World Bank, 2020). Such differences show that although education in a way results in better economic outcomes, the extent of such outcomes depends on the environment in which education is received and utilized.

2.3 Social and Health Evidence

It has been found that the impact of education extends beyond economic status contributing to improvements in physical and mental health as well as broader social well-being. Studies show that more educated individuals tend to enjoy better health, live longer, face lower risk of diseases, and generally adopt healthier lifestyles (Cutler & Lleras-Muney, 2006). Education increases awareness and access to information, thereby enabling individuals to make decisions that support healthier lives.

However, the effects of education on society go beyond only health issues. Research has shown that more educated societies tend to experience lower crime rates and higher levels of civic and political participation. Those who have attained education are more inclined to cast their votes, take part in their local community, and overall contribute to democracy (Lochner, 2011). This highlights the important role of education in fostering responsible citizenship and promoting social stability..

In addition, education generates indirect societal advantages that can be transmitted across generations. Households with better-educated parents generally allocate more resources to their offspring's education and overall welfare, which in turn contributes to improved outcomes for future generations (Oreopoulos & Salvanes, 2011). This effect from one generation to the next, further establishes the notion that education serves not just as a means of empowerment of individuals but also as a vehicle for the development of society as a whole.

2.4 Psychological Insights

The psychological effects of education have received increasing attention in recent research. Education strengthens one's brain functions in several areas, including critical thinking, reasoning and problem-solving. Such skills are essential for handling complicated circumstances and constantly adjusting to changing environments.

From a behavioral perspective, education also influences the way individuals make decisions. Educated individuals, for instance, are better at assessing risks, grasping the chain of results of their actions and at the same time being able to restrain themselves from making rash decisions. This is consistent with insights from behavioral economics, which suggest that education can improve individual's ability to recognize their erroneous ways of thinking better (cognitive biases) and make more informed and reasonable decisions over time (Becker, 1964).

Education is also an important determinant of life satisfaction and well-being. Individuals with higher levels of education are more likely to experience a sense of control over their lives, greater self-confidence, and deeper personal fulfillment. These outcomes result in a richer and more rewarding life, even when money or material possessions are not taken into account (Stiglitz et al. 2009). Thus, it backs the notion that the worth of education is not only measured through the economic indicators.

2.5 Gaps in Literature

Already a substantial amount of work on the returns to education has been done. However, there are still a bunch of things that need to be figured out. One major limitation is the lack of tightly integrated frameworks that incorporate economic, social, and psychological outcomes within a single model. Most of the research still zeroes in on one aspect at a time which leaves one scratching their head as to the overall impact of education.

Besides that, there is a very clear fragmentation of research work across different disciplines. Education in general is researched in various fields viz. economics, sociology psychology, and public health and often without the proper integration. Such a siloed approach is quite limiting as it prevents the development of a holistic understanding of the way education affects different facets of one's life.

Besides, one can point out a clear bias in the geographical focus of existing research as well. A lot of literature is, in fact, based on data from developed countries where systems are more organized and data availability is higher. So, the problems of developing countries, which are very different, are more often than not ignored (World Bank, 2020). Tackling these issues will be very important if we want to have a more inclusive and globally relevant understanding of the multidimensional returns to education.

Chapter 3: Theoretical Foundations

3.1 Human Capital Theory

The human capital theory holds that education should be viewed as an investment rather than a cost. While conferring education comes at a price, such an amount is overridden by the expectations of high returns on investment, better living conditions, quality of life, and, often, other material benefits. The theory is based on the idea that individuals are willing to bear substantial costs and forgo current income to pursue quality education, provided that the expected rate of return exceeds what they could have earned before receiving training. (Eide, 2010). Thus, education is expected to generate future benefits in line with individual preferences.

Although productivity growth is not always accompanied by proportional wage growth, research shows that productivity often increases at a faster rate than wages. Studies suggest that there is a considerable surge in productivity and efficiency as a result of investment in human capital. This leads to an increase in production, stronger financial performance and higher profit (Makrevska & Gjorgjiev, 2024).

More often than not, empirical evidence focuses on the monetary benefits of education as an investment. This focus tends to overlook the social and intrapersonal rewards, such as personal growth and overall well-being. Although this limitation in the literature is increasingly being resolved through advanced econometrics and multiple regression analysis, important challenges remain, particularly those associated with nonrandom sampling i.e. sampling conducted using subjective criteria and specific participant selection. In addition, unobserved effort and innate ability play instrumental roles in distorting data on the causal relationship between education and expected returns (Eide and Showalter, 2010).

3.2 Social Capital Theory

Social capital arises from the human tendency to act kindly, generously, and in ways that benefit others. The benefits derived from such sociability may be understood as social capital.. A key question, however, is why individuals engage in actions that appear to offer no immediate personal benefit and instead contribute to the social good. This is understood through the integration of sociology and economics. The concept of Homo Economicus views humans as self-interested utility maximisers (Arrow, 1999). Social capital provides an explanation for actions through more than just an economic lens, situating action within a broader social context in which feelings of gratitude and respect also encourage helpful behaviour.

The networks formed as a result of interactions can be viewed as resources (Korniordos, 2016). This means that what emerged as an act of social good earlier provides indirect benefits to the doer in the long-term through the formation of a ‘favour bank’. The Social Capital Theory also facilitates knowledge exchange and interchange in an efficient and quick manner (Michailova & Hutchings, 2006). It fosters a collaborative culture requiring students to collaborate, openly share their ideas and resources, and trust each other (Bakker et al., 2006; Johnson, 2013; Korniordos, 2016). Such positive interactions are essential for effective peer collaboration and support.

(Sandefur and Laumann 1998, p. 484) provided a useful description of the network approach. It is listed as *‘an individual’s potential stock of social capital consists of the collection and pattern of relationships in which she is involved and to which she has access, and further to the location and patterning of her associations in larger social space’*.

The Social Capital Theory also lays importance on indirect career benefits. Popular advice for “getting ahead” in one’s career rarely fails to mention the importance of ‘networking’ for the achievement of career goals (e.g., Bolles, 1992; Kanter, 1977). Luthans, Hodgetts, and (Rosenkrantz 1988) found that the most

successful managers spent 70% more time engaged in networking activities and 10% more time in routine communication activities than their less successful counterparts.

3.3 Capability Approach

Capabilities refer to the activities or actions that a person is effectively able to carry out, should they choose to do so. Economist-philosopher Amartya Sen pioneered the capabilities approach, and philosopher Martha Nussbaum, among other scholars, have significantly developed it further. Sen's notion of *capabilities* involves activities we are able to undertake ('doings') and the kinds of persons we are able to be ('beings'). Capabilities are the *real freedoms* that people have to achieve their potential doings and beings.

Sen's *Equality of What?* objects to utilitarian measures of well-being. Under utilitarianism, well-being is evaluated in terms of the amount of utility one derives from goods or resources. By contrast, Sen's approach is concerned directly with the quality of life an individual is genuinely able to achieve, including being well nourished and literate, enjoying political freedom, and attaining physical safety. This approach provides a strong example of how the benefits of education can be understood in terms that extend beyond income alone.

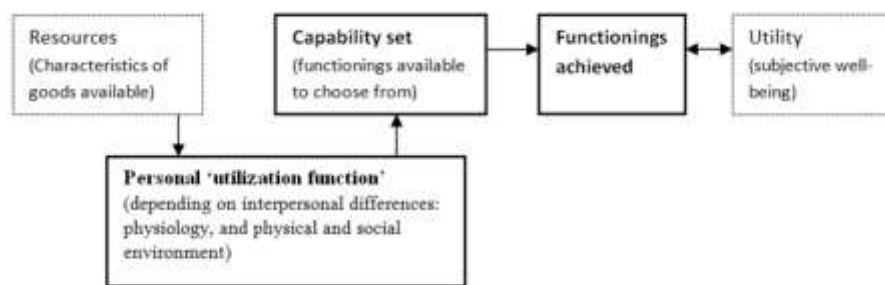


Figure 1. Outline of the core relationships in the Capability Approach

Source: Internet Encyclopedia of Philosophy

Chapter 4: Framework for Measuring Multidimensional Returns

4.1 Need for a Framework

At a minimum, returns to education can be classified in three ways: private returns, social returns, and labour productivity returns. A key component of all three classifications is the impact of education on earnings. (Blundell, Dearden & Sianesi, 2001). Most academic studies have developed and applied statistical techniques primarily to measure this relationship.

Within this classification, one approach measures education solely by the number of years of schooling. It is referred to as the uni-factor model of measurement. This is an alternative to the multiple factor model of measurement which takes into consideration different levels of education that will retain different levels of returns, thereby providing comparatively more accurate results.

This calls for a framework that evaluates returns beyond income. Accordingly, this paper examines health, psychological, and social returns, while giving limited attention to economic returns. These aspects examine how individuals benefit from education in other areas of life. They are important because quality of life and living standards serve as intrinsic motivators, thereby increasing the relevance of such indicators.

4.2 Key Dimensions

In order to analyze the returns to education as an investment, this paper classifies them into four key dimensions: economic, health, psychological, and social. All four dimensions can summarize the return on investment in a holistic sense. An important distinction in the literature on returns to education is between cognitive and non-cognitive abilities. (Heckman and Vytlačil, 2001).

High earnings and income are the key considerations in terms of economic investment. Conditional on earning a wage, more educated male cohorts earn about 10% more, are about 3% more likely to work for a wage, and are 2.5% more likely to earn a salary rather than be in casual work. On the other hand, women appear to have negative cohort returns in the wage market (Fulford, 2014). This can be accredited to the relatively low participation of women in the workforce. However, consumption and earnings are inconsistent measures to assess welfare generated through education. Consumption can only be assessed at the household level, whereas wages are attributable to individuals.

There is said to be a positive association between health and education. Knowledge of, and attitude toward, healthcare appear to play a smaller role than access to resources made possible through income and cognitive ability (Cutler and Lleras-Muney, 2010). In this way, returns to health are also connected to the economic returns to education. There is strong evidence that individuals with higher cognitive ability tend to live longer (Deary, 2008, Der et al., 2009, Calvin et al., 2011, Kaestner and Callison, 2011).

However, contradictory research also exists. Although smoking declined more than among less educated individuals, this alone was not enough to explain the overall trend. Obesity increased across all education groups, while control of blood pressure and cholesterol increased as well. Some studies also depict that well-off individuals receive better and earlier medical care than their less advantaged counterparts (Rathore et al. 2000). This points to a persistent inequity within the healthcare system.

Overall, there is a mixed perspective on the impact of education on health. More often than not, it is a subjective phenomenon, with consequences (whether positive or negative) varying widely from person-to-person as a result of their own choices.

Aristotle viewed happiness as the ultimate goal of human life. This idea is also briefly connected to Sen's Capability Approach since it emphasizes personal well-being and individual freedom as the primary goal of development. Following this vision, happiness is considered to be an important element of human development (Mihut, 2024). Thus, while the process of attaining education is mildly stressful and creates a negative impact on an individual's mental health, the psychological returns are generally considered to be positive.

In terms of social outcomes, a person's education significantly affects the kind of relationship an individual develops with their colleagues, neighbors, and others (Marshall, 1890). This is not only the result of the education, rather, the process of socialisation an individual goes through during schooling also plays an important role in refining their social temperament. The total social returns may be smaller or larger than the individual returns (Bowman, 1962). Private and social returns are not mutually exclusive, rather, complementary dialects of returns.

4.3 Methodological Challenges

Given the secondary nature of the paper, some data and measurement limitations prevail in the research methods. The scope of finding relevant data that is accurate and aligns with other academic discoveries is limited.

Additionally, there has been an attempt to cover up any gaps and loopholes in existing academia in order to ensure a seamless study experience. The absence of any primary survey has resulted in limited access

to information from direct sources, however, qualitative and quantitative data has been collected, gathered, and verified from various sources.

Chapter 5: Economic Returns to Education

5.1 Wage Premium

Education is widely recognized as one of the most significant contributors to a wage premium. It is well-documented that individuals who spend more years in school tend to earn more money over their lifetimes than those who stop their studies earlier (Psacharopoulos & Patrinos, 2018). This pattern where higher levels of education are associated with higher earnings has been observed across countries and over time. The returns to education are not limited to higher earnings immediately after graduation. Rather, they accrue throughout an individual's career. More highly-educated individuals are more likely to be rewarded with faster wage growth, greater opportunities for promotion, and access to higher-paying occupations and sectors. Gradually, these factors accumulate and mainly contribute to greater financial security and stronger wealth accumulation.

However, it should be understood that the size of the wage premium is spatially diverse. First, it depends on the field of study chosen; second, on the quality of education received, and last, on prevailing labor market conditions. To illustrate, it is well-known that a diploma in fields like technology, finance, and medicine can lead to a significantly higher economic return in comparison to a general diploma or less specialized fields. In other words, while education boosts an individual's earning potential, the choice and relevance of education are fundamental features that determine the extent to which one's financial returns will be affected.

5.2 Employment and Mobility

Education is a powerful tool, far beyond giving you a job. It can be a game-changer regarding possibilities especially in the labor market and finding jobs. It's a fact that those who have spent time getting educated usually have better chances of finding jobs, face less risk of getting unemployed, and also enjoy a more stable career path (OECD, 2019). Having a certain level of education serves as a strong signal to employers that an individual possesses the necessary skills and knowledge.

Beyond providing access to employment, education is often associated with upward mobility and individual success. It can significantly alter a person's life trajectory by increasing earning potential and improving job security. Education also facilitates entry into the formal sector, where jobs are more likely to offer opportunities for career advancement, better working conditions, and access to social security benefits.

Moreover, education can be viewed as an investment in one's ability to adapt to and even stay ahead of changes in the labor market. Workers who remain tied to a narrow range of occupations or industries may be more vulnerable to being left behind as economies are reshaped by technological change and globalization. Education provides not only occupation-specific skills but also transferable skills that can be applied across different contexts and roles.

Nevertheless, education is not a guaranteed pathway to social mobility. The relationship between education and labor market outcomes is shaped by broader social and economic conditions. Issues like the gap between rich and poor, uneven development of regions and working environment loopholes can put a cap on the ability of education to bring about mobility, especially in the case of developing countries, which results in not fully enjoying the benefits of education (World Bank, 2020).

5.3 Productivity and Skills

Education plays a major role in developing both cognitive and non-cognitive skills of the individual, thus enhancing their productivity. For instance, cognitive skills such as analytical reasoning, critical thinking, and technical competence equip individuals to efficiently carry out complicated tasks and make sound decisions.

Besides these skills, education also leads to the development of non-cognitive skills such as communication, teamwork adaptability, and time management. These skills are highly considered in today's work environments where cooperation and innovation are indispensable. The integration of cognitive and non-cognitive skills leads to an increase in the overall efficiency of the workforce.

Generally speaking, an educated workforce is a major driver of economic growth since it encourages innovation, efficiency, and makes the economy more receptive to the introduction of new technologies. Education is fundamentally involved in creating and sharing knowledge which are two pillars in maintaining long-term economic growth (Hanushek & Woessmann, 2015).

On the other hand, the relationship between education and productivity depends largely on the quality and pertinence of education systems. For example, teaching programs are not aligned with industry needs or if teaching quality is poor, the expected productivity gains from education may be limited.

5.4 Limitations

Although the economic returns to education are well documented, numerous limitations challenge the assumption that education is a guaranteed path to better financial outcomes. One such limitation is overeducation, a situation in which workers possess higher levels of education than their jobs require. This often results in the underutilization of skills and lower job satisfaction.

Credential inflation is another important issue. As access to higher education expands, the relative value of educational qualifications may decline. Employers may begin to require higher levels of education for positions that previously demanded lower qualifications, thereby reducing the signaling value of additional education.

Another source of job mismatch is that people might take jobs which are not related to their area of education either because of lack of options or labor market constraints. Besides lowering personal returns, this also causes macroeconomic inefficiencies.

Finally, outside factors like changes in the economy, new technological changes, and policy changes can affect how well education results in economic benefits. Such limitations stress the importance of a wider assessment of education and give further strength to the idea that income is not enough to represent all returns of education.

Chapter 6: Health Returns to Education

6.1 Health Literacy

A tangible return to education is the development of health literacy. This refers to the capacity of individuals to act in an informed manner in matters related to health. Education is a vital factor to prepare individuals with knowledge on diseases and treatments as well as the cognitive tools required to navigate complex healthcare and make proper decisions about their wellbeing. Health literacy is truly connected with education, and is gaining growing attention from both researchers and policymakers over recent years.

The mechanisms through which education shapes health literacy involves knowledge and measures of cognitive ability together. These account for approximately 30% of the gradient between education and

health responses. Thus, education is a central driver of how educated individuals engage with their health (Cutler and Lleras-Muney, 2010). This effect extends beyond passive knowledge to active decision-making. Educated individuals are more likely to follow medical instructions accurately, correctly interpret healthcare information, and recognize early warning signs that may call for professional attention (Cutler and Lleras-Muney, 2010). Increasing levels of education lead to diverse patterns of thinking and decision-making, which in turn produce better interactions with the healthcare system (Cutler and Lleras-Muney, 2006).

A notable point is that health literacy is not uniformly distributed even among educated people, and factors such as access to healthcare infrastructure continue to affect the extent to which literate people can reap better health outcomes. Despite this, evidence supports education as one of the most consistent determinants of health literacy.

6.2 Education Gradient in Health Behaviours

Education also shapes how people behave in relation to their own health regularly. Research has identified an "education gradient" in health behaviors. Educated individuals are more likely to engage in preventive health practices and avoid behaviors that can cause long-term risk.

Income, health insurance coverage, and family background account for roughly 30% of the education gradient in health behavior, while knowledge and cognitive ability explain a further 30%, and social networks account for approximately 10% (Cutler and Lleras-Muney, 2010). This corroborates that the benefits of education are not isolated to income alone and also involve cognitive and social capital. Educated individuals are more likely to exercise regularly, maintain healthier diets, and avoid tobacco use. The relationship is not, however, entirely linear. Evidence from South Korea suggests that the interaction between education and lifestyle choices varies significantly by gender and social context. This highlights the importance of treating the relationship between education and behavior as heterogeneous rather than uniform. Earlier literature also shows that, in some cases, more educated groups have adopted harmful behaviors more rapidly..

Unhealthy behaviors often emerge and consolidate during childhood and adolescence, persisting into adulthood (Spengler et al., 2025). This puts into perspective the value of early intervention through which lifelong health habits are formed. School programs that integrate health literacy in their curriculum have shown positive effects on physical activity levels and diets, all of which carry long-term implications for chronic disease risk.

6.3 Life Expectancy

Arguably, the most striking dimension of health returns is its association with mortality and longevity. A growing body of evidence demonstrates that education is among the strongest predictors of how long an individual is likely to live.

Prior studies in various countries have found that individuals with more years of schooling face a lower mortality risk compared to those with less education (Lleras-Muney, Price, and Yue, 2022). Cutler and Lleras-Muney (2008) report a gain of approximately 0.2 years of adult life expectancy for each additional year of schooling. This finding results in considerable differences in lifespan. An additional four years of education is associated with a reduction in five-year mortality of 1.8 percentage points and also reduces the risk of heart disease (Cutler and Lleras-Muney, 2006).

These longevity returns have both direct and indirect aspects. Directly, more educated individuals tend to make healthier choices, as discussed above. Indirectly, education increases earning capacity and social mobility, which results in better access to better nutrition, safer living conditions, and more responsive

healthcare. Education and income are strong predictors of both health and longevity (Lleras-Muney, 2022). The evidence from studies supports that education is an investment for human longevity.

Disparities in life expectancy have also widened considerably over time. In the United States, there are educational gaps in mortality rates that have grown since the mid-1980s (Lleras-Muney, Price, and Yue, 2022). This has brought into notice some inequalities in healthcare access and lifestyle, serving as a warning signal. The health returns to education are dynamic with significant consequences.

6.3 Economic and Aggregate Burden of Low Health Literacy

The health benefits received by more educated individuals do not remain confined to those individuals only. Rather, they aggregate into public health and economic consequences at the larger level. A less-educated population carries a heavier burden of preventable disease and calls for more expenditure. After all this, it still contributes less productively to the economy because of higher morbidity and premature mortality rates.

Adults with less than a high school diploma account for a disproportionate share of education-related healthcare costs making up only 9 percent of the population while bearing 26 percent of the associated economic burden (Orsi, Margellos-Anast, and Whitman, 2023).

Low health literacy has been estimated to impose an annual economic burden on the United States healthcare system of between \$106 billion and \$238 billion, representing 7% to 17% of total personal healthcare expenditure (Eichler et al., 2009, as cited in Naccarella et al., 2021). Beyond direct healthcare costs, poor health significantly reduces labor productivity, increases the number of leaves people take from work, and limits the tax revenue available for public services.

Public policies aimed at addressing widening gaps in economic and health outcomes include expanding early childhood health and educational investments, increasing support for displaced workers, and reinforcing social safety nets (Basu et al., 2020). A healthier and better-educated population reduces strain on healthcare infrastructure, mitigates inequalities, and generates the kind of human capital that enables sustained economic development. Thus, health-related returns to education extend well beyond the individual; they are, fundamentally, a public good.

Chapter 7: Social and Civic Returns

The civic and social returns to education are highly pervasive. From fostering civic engagement and social trust to crime reduction and strengthening democratic stability, education helps shape mindful citizens who are considerate of their society and its future. Civic education, in particular, aims to promote and shape civic engagement by developing citizens' competencies needed for participation in community, government, and politics (UNICEF). It involves teaching about political institutions and processes, and citizens' rights and responsibilities. This includes understanding how the government works, electoral processes, the rule of law, the mechanisms of decision-making, as well as social and political principles and values (UNICEF).

Civic education is associated with education through multiple angles. First, educated individuals are more likely to recognize the social issues that arise in their vicinity. Beyond basic awareness, they are often better equipped to interpret these issues in a nuanced way, engaging with their complexity through critical thinking and informed judgment. Education also fosters a stronger sense of responsibility, encouraging individuals to act thoughtfully and constructively toward the world around them.

Schools also play a vital role in promoting environmental responsibility. Through environmental literacy, critical thinking and problem-solving lessons, schools shape informed citizens who are environmentally

responsible and make conscious decisions (UNEP). More than 700 higher education institutions in over 100 countries are part of Nature Positive Universities, dedicated to halting and reversing biodiversity loss through habitat restoration, biodiversity monitoring, and sustainable infrastructure projects. These actions are integral for solidifying the possibility of a nature-positive future.

Literate citizens are able to dissect and analyze subjective experiences better through past learnings. As a result, they are generally better equipped to respond to new situations in an informed and measured way. A Toronto University study shows that well-educated people have better control over their lives. They are also involved in work that is intellectually challenging and enriching. This indirectly curates a sharper and alert mindset that welcomes obstacles, challenges, and problems instead of adopting a negative perspective towards them.

College-educated individuals also tend to vote at higher rates. Research suggests that there is a direct effect of college attendance on voting. This is because it increases an individual's interest and engagement in politics through social networks or human capital accumulation (Ahearn, Brand & Zhou, 2023). Educational attainment also appears to influence voter turnout more broadly. According to Current Population Survey data, college-educated individuals are 50 percent more likely to vote than those with only a high school diploma (U.S. Bureau of the Census, 2020). This indicates that there is a positive correlation between level of education and composition of voters.

In terms of social trust, it can be inferred that societies with comparatively lesser educated individuals lack the fundamental social cohesion required to hold them together and maintain peace and harmony. This gap can be attributed to the reduced amount of social etiquette training and exposure to social situations. Education can foster social cohesion in several ways. For instance, education can promote the democratic norms required for building a peaceful, harmonious, and cooperative society. Additionally, it can promote a healthy culture of dialogue and negotiation. Through such initiatives, young people can learn to overcome differences. It can also shape the behaviour of students who have the potential to become responsible citizens of a democratic system in addition to nurturing inclusion and cohesion in the society through fair and nondiscriminatory grassroots practices.

Downward educational pathways were attributable to increase in crime, whereas upward pathways were associated with decreases in crime. These associations were partially due to family transitions, but were more strongly influenced by economic stressors (Swisher & Dennison, 2016). Attaining education has been negatively associated with crime. This has been established very well. At the secondary level, studies have shown that dropping out of high school is a strong predictor of delinquency and crime (Farrington, 1989; Thornberry, Moore, and Christenson, 1985). On the other hand, vocational training, life-skills training, emotional crisis management, and optimal student-teacher ratios have reduced the chances of incarceration.

Chapter 8: Psychological and Behavioral Returns

8.1 Cognitive Development

Education and cognition have a strong correlation. A study demonstrated research showing that education was positively associated with cognition at baseline. These results are consistent with the cognitive reserve theory, suggesting that education reduces the risk of Alzheimer's disease and related dementias (ADRD)-pattern cognitive decline (Clouston, Smith, Mukherjee, et al., 2019).

The Cognitive Reserve Theory explains discrepancies between severity of clinical dementia syndromes and the extent of dementia pathology (Whalley, Staff, Fox, and Murray, 2016). It dissects why individuals

with higher educational, occupational, or lifestyle engagement can tolerate more brain pathology (like Alzheimer's disease) before showing clinical symptoms, and suggests that the brain actively uses pre-existing cognitive networks or mechanisms to maintain functioning despite damage.

According to this hypothesis, education delays the onset of symptoms of neuropathology, allowing individuals to compensate with neurodegeneration, until the neuropathology progresses to a level where cognitive decline can no longer be masked, and cognitive decline is, thereafter, more rapid than would be predicted (Clouston, Smith, Mukherjee, et al., 2019).

The protective effects of CR may provide an important mechanism for preserving cognitive function and cognitive well-being with age, in part because it can be enhanced throughout the lifespan (Pettigrew, Soldan, 2019).

8.2 Decision-Making

Educated citizens are more likely to make well-informed decisions by understanding and acknowledging various risks pertaining to a situation. Education improves decision-making by boosting cognitive skills, financial literacy, and long-term planning ability. Decision education, which teaches students how to analyze options and weigh consequences, is essential for navigating life, reducing anxiety, and improving outcomes. It shifts decision-making from intuition toward data-driven, structured approaches, and fosters clearer and logic-backed choices.

Education is integral in enhancing an individual's economic rationality. Educated people tend to act as rational consumers, weighing the marginal utility of a product against its price when making purchasing decisions. In economic theory, the ideal consumer is assumed to act rationally, and educated individuals are often seen as more closely aligned with this model. However, in reality, most people do not behave in a perfectly rational manner.

On a similar note, education on risk awareness fosters proactive safety habits by teaching individuals to identify, assess, and mitigate potential dangers. It transforms an individual's mindset from simple compliance to a 'safety first' thought process, and involves understanding the probability and impact of accidents. This empowers people to make informed decisions and prevent errors in both personal life and professional environments.

8.3 Well-being

In terms of well-being, two important factors the returns to education can be assessed upon are life satisfaction and quality of mental health. Life satisfaction refers to the feelings and ideas an individual has towards their own life. In other words, it is their perspective towards the current happenings of their life. It has been deduced through various studies that life satisfaction generally increases with an increase in education levels. However, there exists contrary research wherein students have stated that they did not find a huge difference in life satisfaction post education. In fact, some students have also reported a negative correlation between the two. A plausible explanation for this negative relationship is that the focus of one's goals switches from attaining happiness to leading an 'acceptable' life. Additionally, some evidence points to a relationship between years of schooling and patterns of homeownership. If higher educational attainment is associated with shorter periods of stable homeownership, this could be interpreted as reflecting a more uncertain or unsettled lifestyle. Similarly, research suggesting that Ph.D graduates report lower levels of happiness than bachelor's or master's graduates may indicate that higher levels of education may sometimes be associated with lower levels of happiness.

A key distinction in this matter is whether life satisfaction is an absolute or positional good. If education is a positional good, the value of holding a certain level of education would come from its scarcity and the

advantage it gives over other people with less prestigious degrees. Therefore, from the positional perspective, the relationship between a certain level of education and life satisfaction will vary by how much the given level of education is shared among the population. If education is an absolute good, more education will be linked to greater life satisfaction in all cases for individuals no matter how much it is shared among the population.

8.4 Emotional Resilience

Emotional resilience is the ability of an individual to adapt to emotional crises, cope with challenges, and react to situations in a flexible manner. Education, through socialization and knowledge attainment, provides a pathway for individuals to absorb complex social processes and learn how to react to them in a constructive manner. While learning, individuals are exposed to various environments, fostering them to adapt and develop flexible responses to obstacles.

Another important aspect of attaining education is the ability to deal with stress in a healthy and responsible manner.

Stress management is integral in stabilizing physiological, psychological, and mental processes. Effective stress management is positively correlated with improved academic performance and higher educational attainment. Proper coping skills directly reduce academic burnout, improve focus, and boost memory, allowing students to manage pressures. Conversely, unmanaged stress is a strong negative predictor of success, often causing lower GPA, reduced motivation, and increased dropout rates. Studies show a moderately positive and significant relationship ($r=0.46$) between stress management skills and academic achievement (Jeyapriya, Jaganathan, Jessy, 2025).

Chapter 9: Intergenerational & Inequality in Returns

The returns to education are not distributed equally across society. An uncomfortable truth is that the people who stand to gain the most from education are often the least likely to access it. This chapter examines how an individual's background shapes their outcomes, how education enables or fails to enable social mobility, and where inequalities in returns are most pronounced.

9.1 Parental Education Effects

The relationship between parents' education and their children's outcomes is highly pronounced. Highly educated parents raise children in environments where learning is valued in ways that policy alone often struggles to replicate. Haveman and Wolfe (1995) were among the first to systematically document how parental education affects children's outcomes across multiple dimensions, not only academically but also health, earnings, and behavioural development. Their argument was that parental education shapes what they called the "home production function", which is a set of inputs a family provides towards child development. It has been found that more educated parents are more likely to read to their children, engage with schools, and make better-informed decisions about nutrition and healthcare.

More recently, Björklund and Salvanes (2011) revisited this question using large-scale Scandinavian data and found that while the causal effect of parental education is somewhat smaller than earlier correlational studies suggested, it remains meaningful and statistically robust. Children of more educated parents perform better academically and go on to receive higher levels of education themselves. This is partly due to the learning environment at home, including the books that are present and the kinds of conversations children are exposed to as well as the expectation that university is a natural next step after schooling. It can also be attributed to social capital, networks, and norms that educated parents pass on, often unconsciously.

Parental education affects the trajectory of an individual's entire life. The intergenerational transfer of human capital means that inequality in one generation does not simply disappear, rather, it shapes how the individual lives and learns.

9.2 Social Mobility

Whether education can break poverty cycles is highly debated in economics. A more optimistic perspective of the evidence might suggest that education is a key factor in enhancing social mobility from one generation to another. This means that individuals who access quality schooling can and, often, do escape the circumstances into which they were born. A more sceptical perspective argues that when access to quality education is itself stratified by class, education can just as easily entrench inequality.

Solon (1992) created a foundational estimate of intergenerational income elasticity in the United States, finding it to be substantially higher than what was previously thought: around 0.4, which means that about 40% of income disadvantage remains from one generation to the next. In this framework, education is a major mediating variable. Children from lower-income families who attain higher levels of education tend to experience substantially better intergenerational outcomes than those who do not.

Hertz et al. (2007) extended this analysis across 42 countries and found that intergenerational mobility, defined here as the extent to which children's educational attainment is independent of their parents, varies significantly across nations. For example, the Nordic countries consistently exhibit greater mobility than the United States or the United Kingdom. This difference can be explained majorly by public investment in early education and the degree to which schools are funded more equally. Where school quality is relatively uniform, education has a greater chance of equalising opportunity; where it is stratified, education tends to enhance the existing hierarchy.

9.3 Inequality in Returns

Even among individuals who have access to education, the returns are not equal. For instance, two students graduating from the same university with the same degree may face very different labour market outcomes depending on various factors, such as their gender, socioeconomic background, and the quality of the institution they attended. This is an inconvenient truth but an important one to note.

Inequality based on gender is the most studied aspect. An important contribution by Goldin (2014) studied the evolution of the gender pay gap in the United States and demonstrated that while gaps in receiving education between men and women have been largely eliminated, especially since women now outpace men in degree completion in most developed economies, there is still a significant earnings gap that persists.

There still exist occupations and industries that reward long hours and continuous availability, and pay disproportionately well. Because women's disproportionate responsibility to care for households makes it difficult to compete on those terms, their return to the same year of education is lower simply because the labour market treats their education differently.

As per Hanushek and Woessmann (2008), it is not years of schooling that drive economic returns but the cognitive skills that are actually acquired. School quality that is measured through international assessments is seen to vary enormously within as well as between countries. In other words, a student who completes twelve years of low-quality schooling may leave with weaker cognitive skills than one who completes eight years of high-quality instruction. The implication is that policies focused solely on access and availability of education instead of their quality, will systematically understate inequality in actual returns.

9.4 Policy Responses to Improve Returns

Given the evidence above, the policy challenge that prevails here is not just expanding access to education but also ensuring that the returns to education are not structurally directed solely towards those who are already privileged. There has been development of several intervention strategies with some of them showing real promise.

Among these, inclusive education policies aimed at early childhood have the strongest evidence of effectiveness. Heckman (2006) argues that the returns to educational investment are highest in the earliest years of life because early cognitive and non-cognitive development is the foundation on which all subsequent learning in the later years is built. It can be said that the same dollar invested at age four does more than the same dollar invested at age eighteen.

Properly designed scholarships and targeted interventions have also demonstrated impact. Dynarski (2003) finds that financial aid significantly increases college completion rates among low-income students in the United States, specifically, assured grants provide more certainty than loans with variable terms. Additionally, students from low-income backgrounds who receive active guidance through the application and transition process are more likely to enrol in and complete higher education.

Finally, addressing structural inequality means going beyond the education system itself. Card (1999) notes that the returns to education are shaped by the labour markets that graduates enter, the discrimination they face, and the social networks they interact in. Of course, educational investment will not fully close gaps caused by labour market discrimination or residential segregation. Policies that complement educational investment in terms of minimum wage floors, anti-discrimination enforcement, and investment in high-poverty communities are necessary if the goal is genuinely equitable returns rather than merely formal access.

The literature suggests that education is a powerful but insufficient equaliser. It can do much to expand opportunity and mobility, but only when it is delivered equitably, at high quality, and supported by a broader policy environment that seriously addresses the structural roots of inequality.

Chapter 10: Externalities, Conclusion & Future Directions

The preceding chapters of this paper have largely treated education as a private investment, something individuals undertake in pursuit of higher earnings, better health, and better quality of life. That framing is useful and well-supported by the evidence, but also it is incomplete. Education does not generate returns only at the individual level; it also spills outward into communities, labour markets, and political systems in ways that individual wage scenarios cannot fully capture. This final chapter assesses those broader returns and identifies where the research agenda needs to go next.

10.1 Education as a Public Good

The benefits of an educated population are not fully captured by just the individuals who receive that education. When an individual becomes more educated, they do not just improve their own prospects, they also make the people around them more productive, civic-minded, and capable of participating in complex social processes. These spillovers mean that private markets, left on their own, will underinvest in education in comparison to what is socially optimal. This refers to the classic public goods problem, and it provides a strong theoretical justification for public funding that goes beyond arguments about equity or social mobility.

Weisbrod (1964) was among the first economists to articulate this argument systematically, distinguishing between the direct benefits of education to individuals and what he referred to as the neighbourhood

effects. The social benefits that diffuse and accrue to communities and societies as a result of a more educated population. While his framework was broad, including not just economic spillovers but also civic participation, reduced crime, and the option of having an educated citizenry capable of responding to unforeseen challenges, the argument has aged remarkably well.

Moretti (2004) provides some of the most intriguing evidence for these spillovers. Using variation in college graduation rates across American cities, he estimates that workers without a college degree earn significantly more when they live in cities with a higher share of college-educated workers. More educated workers produce ideas and practices that raise the productivity of everyone around them and not just themselves. This finding is integral in deducing that the social return to higher education is substantially larger than the private return.

Acemoglu and Angrist (2001) are more cautious in this context, finding that the external returns to schooling are positive but modest, and difficult to estimate precisely. Their work provides a counterbalance to more useful optimistic claims, but it does not undermine the basic case for public investment. Rather, it just suggests that the magnitude of the externality is an empirical question that warrants continued scrutiny.

The implication is fairly clear: if education generates benefits that individuals cannot fully capture and, in turn, cannot fully value in their private investment decisions, there is a legitimate and enduring role for the government in funding and organising education at scale. This justification is distinct and stronger from the arguments based purely on redistribution or social mobility, because it holds its weight even in a world where there is perfect equality of opportunity present.

10.2 Societal Spillovers

The spillovers from education operate through at least two distinct channels: economic growth and innovation on one hand, and the reduction of social costs on the other.

On the growth side, there has been a foundational contribution by Lucas (1988), who built human capital accumulation into an endogenous growth theory and argued that the long-run rate of economic growth depends critically on the stock of human capital in an economy, and not just its physical capital or natural resources. In Lucas's framework, education raises the productivity of all factors of production, not just that of the individual worker. This generates growth effects that increase over time.

Mankiw, Romer, and Weil (1992) subsequently provided some cross-country evidential support for this view, concluding that human capital, when measured through school enrolment rates, explains a considerable portion of the variation in income levels across countries, even after controlling for physical capital investment and population growth.

The relationship between education and innovation can be considered even more consequential in the long run. Aghion and Howitt (1998) have developed a model of Schumpeterian growth in which skilled human capital is the key input in the research and development process that is responsible for technological progress. In their framework, investment in higher education does not just raise output, rather, it increases the economy's capacity for innovation, with progressive effects on productivity and living standards. Significant evidence also broadly supports this: countries and regions with higher levels of university-educated workers tend to be more innovative, patent more, and generate more technological spillovers to neighbouring areas (Moretti, 2012).

The second channel, which is reduction in social costs, is lesser known but equally important. Lochner and Moretti (2004) have produced one of the most rigorous studies of the relationship between education and crime. They use compulsory schooling laws as important elements for educational attainment in the

United States, and find that one additional year of schooling reduces the probability of incarceration by a meaningful margin, with the effect concentrated among men and particularly among high school completion. The implied fiscal savings, in terms of reduced criminal justice expenditures, lower incarceration costs, and reduced costs to victims, are substantial and represent a genuine return to public investment in education that does not appear in any individual's wage equation.

Along with crime reduction, as discussed in earlier chapters, more educated individuals make better health decisions and live longer, healthier lives. These effects reduce burdens on public health systems and contribute to a more productive workforce. Cutler and Lleras-Muney (2010) estimate that the health returns to education are large enough to represent a significant fraction of education's total social value.

All these aspects, considered together, portray education as one of the highest-return public investments available to governments, specifically in lower- and middle-income contexts where baseline educational attainment remains low. Now that the theoretical case has been established, the challenge remains in measuring the returns comprehensively enough to calculate what would be sensible policy prioritisation.

10.3 Conclusion

This paper set out to answer a simple question: what are the returns to education excluding economic ones? The answer, as the preceding chapters have demonstrated, is that the returns are multidimensional, substantial, and extend well beyond the income effects that dominate the academic literature.

At the individual level, education raises earnings through the accumulation of human capital and the increase in productivity to employers. It improves health outcomes, extends life expectancy, and shapes political participation and civic behaviour in ways that reinforce democratic institutions. It generates private non-market returns in terms of parenting, consumption, and psychological wellbeing. These do not appear in any wage regression but are real and important components of human development. While these returns are not distributed equally because of discrimination based on gender, socioeconomic background, and access to quality schooling, they all mediate the relationship between education and outcomes in ways that demand urgent policy attention.

At the societal level, education is a driver of economic growth and technological innovation, a potential reducer of crime, and a creator of civic capital that helps in enabling institutions to function better.

The overall view is that education is a fundamentally transformative force that operates across multiple dimensions simultaneously. It is one of the most powerful tools available for improving individual and holistic welfare. The research question this paper posed has a clear answer: education generates returns that can be considered broad, deep, and social in ways that no single evaluation metric or criteria can fully capture. Any policy framework that evaluates educational investment solely through the lens of graduate earnings is not just incomplete, rather, it is also likely to underestimate the true value of education and, potentially, underinvest in it.

10.4 Future Research Directions

Despite the broad wealth of the existing literature, significant gaps remain. The most pressing methodological need is for better measurement tools. The dominant approach to estimating returns to education, which is the Mincerian wage regressions, is well-developed but narrow. It measures one particular return (earnings) for one particular population (formal labour market participants) over one particular time horizon (cross-sectional or short-panel).

Non-market returns, including civic returns, the health returns, and the intergenerational returns are all measured less, and through diverse methodologies that are difficult to aggregate or compare at that. Developing more comprehensive frameworks for measuring human capital returns, along the lines

proposed by Jorgenson and Fraumeni (1989) that is updated for contemporary data environments, would enhance the relevance of this literature extremely well.

The second major gap is that most of the studies reviewed in this paper observe outcomes over relatively short time periods. The truly long-run returns to education, such as the effects on health in old age, on children and grandchildren, and on civic participation across lifetimes, are much more difficult to study. Thus, they are also much less well understood. Therefore, studies that follow cohorts from childhood into late adulthood across multiple outcome domains are an urgent subject of attention.

Finally, and perhaps most importantly, the field needs more honest engagement with diversity and inclusion. Aggregate returns to education mask enormous heterogeneity by gender, class, race, and geography. Future research needs to move beyond asking what the average return to education is and instead ask how large the return is, for whom, under what conditions, and through what mechanisms. Those are the questions that matter for policymaking. Education is a vast, heterogeneous set of experiences whose returns vary enormously depending on context. A research theme that takes that heterogeneity seriously will produce considerably more useful guidance than one that continues to refine average estimates that conceal just as much as they attempt to reveal.

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