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A review of human development and environmental outcomes

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Abstract

As climate change and its impact on our physical environment becomes increasingly evident, its relationship with education is becoming a key area of research. Recent research indicates a two-way relationship between human development factors and the environment. While considerable attention has been given to studying how the environment impacts education, the reverse association has received comparatively less scrutiny. This survey of literature on formal schooling and climate change reveals a predominance of theoretical, correlational, and observational studies, leaving scope for more causal research. Of the 31 studies reviewed, a majority (27 studies) present observational findings, while only 4 studies (13 percent) use quasi-experimental design to establish causality. The few causal studies suggest that while education can change attitudes, changing actual environmental behaviors is more difficult. We further present a conceptual framework incorporating direct and indirect pathways – including cognitive, affective, and situational factors – that can guide future work on how education influences environmental outcomes. The review raises the key question of whether policies aimed at improving climate change awareness through education can effectively produce long-lasting pro-environmental behavior change. Much more research is needed to understand how education policy can support mitigation and adaptation to climate change.

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1. Introduction

The broader relationship between economic development and environmental outcomes has been a topic of enquiry for researchers for a long time. The seminal paper by Grossman and Krueger (1995) introduced the Environmental Kuznets Curve, and postulated that as countries prosper economically, their citizens demand better environmental conditions thus improving environmental standards. Later research (Jha and Murthy 2003, Dogan and Inglesi-Lotz 2020, Mrabet *et al*. 2021) has helped refine our understanding of this relationship, showing that environmental impacts rise at early development stages but decline as human development advances.

These studies have alluded to the relationship that exists between human development and environmental outcomes. However, unpacking this relationship and identifying the exact pathways has only gained more interest in recent years. On the one hand, increasing concerns around environmental degradation and climate change have prompted greater research on its impacts on human development outcomes, especially those pertaining to health and education of the populace. On the other hand, there is increasing attention to understanding the role that human development interventions such as those in education can play in addressing environmental concerns. Literature thus suggests the existence of a bi-directional relationship with environmental factors affecting human development and in turn getting affected by human development factors (Caruso *et al*. 2024).

Extensive research from all over the world has shown that environmental conditions, such as those pertaining to natural resources and climate, can influence human development outcomes through health, education, and labor markets (Deuster 2021, Das 2020, Li 2023, Zivin and Neidell 2014). For example, Park *et al*. (2021) show that learning decreases with exposure to hot school days, with impacts up to three times greater for low-income students. Similarly, Zivin *et al*. (2018, 2020) demonstrate that short-run temperature shocks significantly reduce cognitive performance.

The converse relationship, i.e. the role of human development interventions in ensuring better environmental outcomes remains relatively understudied in literature. Studies such as Bangay and Blum (2010) argue that a robust education system can equip and empower people to deal with climate uncertainties. They also present a generalized sequential framework to identify education responses ranging from provision of adequate educational infrastructure in the short term (adaptation) to equipping learners with the requisite skills, knowledge, and attributes to deal with future challenges in the long term. DFID's report on Education, Climate and Environment (Blum 2015) further emphasizes the role that education and educational infrastructure can play in building the resilience of communities (particularly poor and vulnerable population groups) to climate and environmental change, and the potential opportunities provided by low carbon technology and environmentally sensitive construction and design (mitigation) in that process.

This paper situates itself within this growing body of work but focuses specifically on education as a core human development intervention. While human development includes multiple domains such as health, nutrition, and social protection, our review operationalizes this concept through formal education because of its direct and indirect influence on environmental awareness,

behaviors, and outcomes. While there is a large body of literature on the broader role that education sector can play in climate change adaptation and mitigation (highlighted above), the scope of this literature review is restricted to understanding the pathways between education, individual attitudes and behaviors, and environmental impacts.

Education is widely recognized as a central determinant of human capital formation, social mobility, and civic participation, and it holds particular potential to influence environmental decision-making by strengthening cognitive skills, values, and norms that underlie pro-environmental behavior. Existing studies show that the education sector can affect environmental outcomes, but schooling may play a broader role by influencing attitudes and equipping individuals with tools to address climate impacts.

Building on this perspective, our review draws on conceptual frameworks that link education to environmental outcomes through multiple pathways (see *Section 3.1*). We synthesize the evidence on these linkages and assess the strength of associations reported in the literature. In particular, we review causal estimates of the impact of educational interventions on environmental outcomes and examine how evidence can be established for policies at the intersection of human development and environmental sustainability. The objectives of the paper are twofold: (1) to explore the relationship between education and environmental outcomes and (2) to identify methodological approaches that can help determine the direction of causality.

2. Method

This review systematically examines the empirical and conceptual linkages between education and environmental outcomes by synthesizing research from economics, education, environmental science, and development studies. An initial scoping exercise helped identify the following four themes which reflect both recurring concerns in literature and emerging areas of policy interest: (1) economic growth and its relationship with environmental outcomes, (2) role for education in climate adaptation and mitigation, (3) nature of relationship between schooling and environmental outcomes, and (4) instruments used for research on environment and education. These themes informed the keywords selection for the review.

To identify relevant literature, a structured search was conducted across academic databases (Scopus, JSTOR, ScienceDirect, Google Scholar) and institutional repositories (World Bank, OECD, UNDP, FCDO). Keywords included combinations of “human development,” “education and climate,” “school education,” “climate change,” “schooling and environmental outcomes,” “adaptation and mitigation,” and “environmental behavior.”

Inclusion criteria were limited to English-language publications from 1990 to 2024 that offered empirical or theoretical insights into the mutual influences of education and environmental outcomes. Journal articles, working papers from reputable institutions, and widely cited policy reports were prioritized. Studies were screened by title, abstract, and text for relevance.

The review followed a descriptive synthesis approach. Studies were classified by type of evidence (observational, experimental, or causal) and by the environmental outcomes examined (e.g.,

recycling, energy use, pro-environmental attitudes) and findings were compared to identify common patterns. Interpretation of results was guided by a conceptual framework linking education to environmental outcomes through cognitive, affective, and situational pathways (see *Section 3.1*). This approach highlights that while most studies report positive associations between education and environmental outcomes, the majority rely on observational data, with relatively few offering causal estimates.

3. Impact of Schooling on Climate

Schooling is widely highlighted by policymakers and thinktanks as a powerful lever for climate adaptation and mitigation. Here we refer to schooling as the general education curriculum delivered in schools encompassing foundational learning such as literacy, numeracy, critical thinking, and problem-solving. We do not delve into literature on the impacts of climate change education, which involves specialized curricula aimed at building students' understanding of climate change and preparing them to adapt to such change (World Bank 2022). Education is expected to shape knowledge, attitudes, and behaviors that support pro-environmental action. The empirical literature provides a more nuanced picture.

Table 1: Summary of findings on relationship between education and pro-environmental behaviors

Aspects of environmental behavior	**Nature of relationship with educational factors**	**Studies included**
Resource (water and energy) conservation	Studies find a weak or insignificant relationship with total years of education or highest level of education	Berk *et al*. 1993 Ek and Soderholm 2008 Gilg and Barr 2006 Grafton 2014 Kriström and Kiran 2014 Poortinga *et al*. 2004 Rowlands *et al*. 2003
Waste reduction and recycling	Studies found a positive relationship with the level of education achieved	Callan and Thomas 2006 Duggal *et al*. 1991 Ferrara and Missios 2005 Reschovsky and Stone 1994
Sustainable food purchases	Most studies find a positive relationship with total years of education; some studies find a negative relationship with level of education	Bellows *et al*. 2008 Blend and van Ravenswaay 1999 Brecard *et al*. 2009 Johnston *et al*. 2001 Millock and Nauges 2014 Monier *et al*. 2009 Thompson and Kidwell 1998 Wessells *et al*. 1999 Zepeda and Li 2007
Environmental awareness and concern	Studies find a positive relationship with total years of education as well as level of education	De Silva and Pownall 2014 Klineberg *et al*. 1998 Smith 1995 Teisl *et al*. 2008 Torgler and García-Valiñas 2007 Xiao *et al*. 2013

Following our descriptive synthesis approach, we categorized studies by the environmental outcomes they examined, and the type of evidence employed. Outcomes include household conservation behaviors (such as recycling and water use), sustainable consumption choices (including organic or eco-labeled products), energy use patterns, and broader environmental attitudes and concerns.

Most of these observational studies find positive effects (for example, Bellows *et al*. 2008, Gilg and Barr 2006, and Xiao *et al*. 2013). A few find negative effects (Grafton 2014) or no effects (Millock and Nauges 2014). A summary of the key findings from these studies is presented in Table 1 while an overview of all the studies included has been provided as Appendix A.

A systematic review by Ardoin, Bowers, and Gaillard (2020), synthesizing 105 studies, similarly concluded that education tends to promote positive environmental outcomes. However, their quality checks looked for studies that could document impact, but it is not clear if the studies were randomized or causal.

The body of research together suggests a positive correlation between education and pro-environmental outcomes but falls short of drawing a definitive causal relationship. Differences in climate attitudes may also arise from unobserved characteristics such as early life experiences, family background, political ideologies, and inborn predispositions (Powdthavee 2021). Addressing this gap requires introducing mechanisms of exogenous variations in schooling such as compulsory schooling legislations to overcome the endogeneity issue and provide more credible evidence. These themes are taken up in the next subsections, beginning with a conceptual framework and then turning to methodological approaches for establishing causality.

3.1. The linkages between education and climate change: towards a conceptual framework

Establishing the impact of schooling on climate also requires understanding the pathways that could lead from increased educational attainment to improved environmental outcomes. Schooling influences knowledge skills, attitudes, and decision-making capacities that may translate into pro-environmental action.

The first set of pathways relates to cognitive and affective skills. Research shows that education enhances reasoning and information-processing abilities, shaping environmental awareness (Pekkala Kerr 2013, Dahmann 2017). Beyond cognition, attitudes and behaviors acquired through schooling can strengthen individuals' ability to engage with climate information and act upon it (McGuire 2015, Powdthavee 2021). It also builds affective attributes such as concern, emotions, and willingness to act,, which often predict behavior more strongly than knowledge alone (Hwang *et al*. 2000, Levy *et al*. 2016).

Besides these, situational factors provide a third pathway. Education is closely linked to higher earnings, greater access to information, and improved resource availability, which can facilitate mitigation and adaptation choices. For instance, households with higher education and income are better positioned to install renewable energy technologies, adopt conservation practices, or support carbon taxes (Chankrajang and Muttarak 2017).

These mechanisms build on the well-documented causal effect of schooling on income (Heckman *et al*. 2016), thereby creating an indirect route from education to environmental outcomes. However, this pathway is not unambiguously positive. Rising incomes can also lead to higher consumption and energy use, offsetting potential environmental gains. Literature shows that household emissions increase sharply with expenditure and affluence (Arachchi 2022, Ivanova *et al*. 2016), underscoring the need for policy incentives and social norms that steer income growth toward pro-environmental choices.

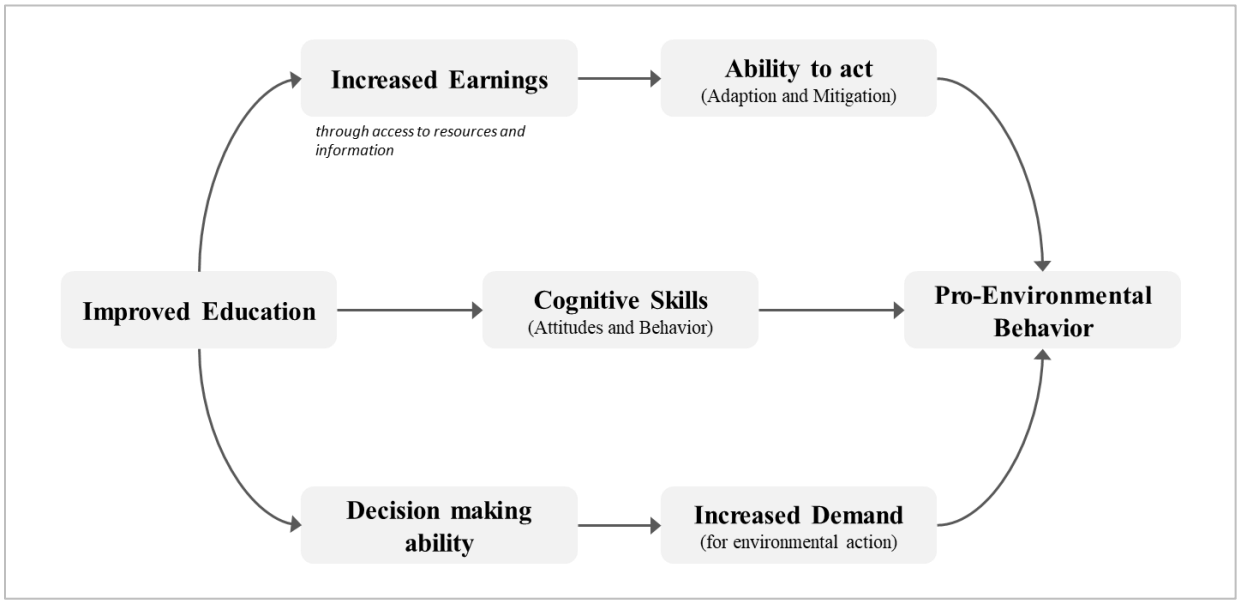

Figure 1: Direct and indirect pathways from improved education to pro-environmental behavior

Together, these direct and indirect pathways (Figure 1) provide a conceptual framework linking education to climate change. This framework provides the theoretical basis for why identifying causal effects of education on environmental outcomes through large-scale empirical studies is important, as explored in the following subsections.

3.2. Establishing Causality in Educational Research

Establishing causal relationships between education and later life outcomes such as incomes, employability, and even voting behavior has been of interest for many decades. While there is evidence for the positive impact that schooling can have, researchers have been cautious in drawing strong inferences about the causal effect of schooling.

The emergence of large-scale microeconomic datasets such as OECD's Programme for International Student Assessment (PISA), Trends in International Mathematics and Science Study (TIMSS), and Progress in International Reading Literacy Study (PIRLS) has provided researchers with more tools to study these relationships. It is now possible to deploy econometric methods such as Instrumental Variables (IV), Regression Discontinuity (RD), Propensity Score Matching (PSM), Difference-in-Differences (DiD), and different fixed-effects specifications to establish causality (Cordero *et al*. 2017, Schlotter et al. 2011). These methods have been frequently used for comparison between public and private schools, or to study the effects of class size, tracking,

instructional time, teaching methods, school entry age, etc. The authors further suggest creating longitudinal datasets to further causal research in the sector.

Other techniques include using co-twin control designs on many monozygotic twin pairs to understand the impact of schooling on factors such as political knowledge (Weinschenk and Dawes 2019), wages (Bingley *et al*. 2007), and health (Fujiwara and Kawachi 2009). Heckman *et al*. (2016) and Card (1999) further present theoretical models that build on variations of the simple static models presented by Becker (1964) to estimate the private returns to education. However, estimating the social returns using these models remains a limitation.

Thus, while numerous methods have been advanced to causally estimate the ex-post returns for education, the lack of large-scale panel data limits generalizability of these results. Using compulsory schooling laws as a source of exogenous variation is one possible way to overcome this limitation, especially because many countries have historically introduced or made changes to their compulsory schooling laws at different times. The next sub-section presents an overview of some studies that make use of these laws to establish causality.

3.3. Compulsory Schooling as an Instrument and Use on Climate Research

Numerous studies have used changes in compulsory schooling laws as a natural experiment to research the effect of educational attainment on various aspects of human development. These reforms create exogenous variation by requiring some cohorts to remain in school longer than others, allowing researchers to isolate the impact of additional schooling on later life outcomes. For example, Angrist and Krueger (1991) show that compulsory school attendance laws in the US had a positive effect on educational attainment and earnings (see also Domnisoru 2021). This is further confirmed by Lleras-Muney (2002, see also Grenet 2013) who shows that legally requiring children to attend school for one more year increased educational attainment by about 5 percent and can even reduce mortality by 3-6 percent.

Evidence from multiple countries confirms the broad utility of this approach. Researchers have used it to estimate the returns to schooling in Venezuela (Patrinos and Sakellariou 2005), the Netherlands (Levin and Plug 1999), Australia (Leigh and Ryan 2008), Sweden (Card 2001), Ireland (Callan and Harmon 1999), Turkey (Patrinos *et al*. 2021), US (Harmon and Walker 1995), for example. In Europe, Brunello, Fort and Weber (2009), using data from 12 European countries show that compulsory school reforms significantly affect educational attainment, especially among individuals belonging to the lowest quantiles of the distribution of ability. There is also evidence that additional education reduces conditional wage inequality, and that education and ability are substitutes in the earnings function. Aparicio and Kuehn (2017) further find that educational attainment is a key factor for understanding cross-country migrations in Europe. Beyond earnings and mobility, compulsory schooling laws have been used in mortality studies (Albouy and Lequien 2009, Gathmann *et al*. 2015), health (Kemptner *et al*. 2011), crime (Bell *et al*. 2016), religion (see Hungerman 2014), preferences (Yang 2022), and immigration (Cavaille and Marshall 2018). While contexts differ, the consistent finding is that additional schooling produces measurable impacts across a wide range of domains.

Despite extensive research, compulsory schooling instruments are rarely applied to environmental outcomes. Extending these approaches to climate attitudes and practices could yield the robust causal evidence lacking in current correlational studies.

3.4. Use of Compulsory Schooling Laws to Study the Impact on Environmental Behaviors

Recent research has begun applying compulsory schooling reforms to assess whether additional education influences climate literacy and pro-environmental behavior. Using the raising of school leaving age (ROSLA) law from September 1972 which increased school leaving age from 15 to 16 years in England as a natural experiment, Powdthavee (2021) shows that remaining in school because of the reform causally reduced people's unwillingness to change their behaviors for the environment and their perception that climate change is a distant concern. However, the study finds little evidence that more education improves pro-environmental behaviors, thus raising an important question about whether policies focused on climate awareness through education can produce long-lasting changes in pro-environmental behaviors.

For Europe as a region, Meyer (2015) uses changes in compulsory education laws across 14 countries as a source of exogenous variation and finds strong evidence of a positive average treatment effect of increased education on pro-environmental behavior. Using two waves of Eurobarometer surveys, Meyer finds a positive local average treatment effect for 7 of 8 pro-environmental behaviors. An analysis of related questions in the survey supports the notion that education causes individuals to be more concerned with social welfare and to accordingly behave in a more environmentally friendly manner. Yet, the majority of reforms raised minimum schooling to 9 or 10 years, limiting generalizability to the lower end of the attainment distribution.

The few studies that focus on developing countries unearth different results. In Thailand, Chankrajang and Muttarak (2017) used teacher supply as an instrument and found that education improved knowledge-based environmental actions but had limited effects on cost-saving measures such as conserving energy or paying environmental taxes. Similar research in Philippines by Hoffmann and Muttarak (2020) using PSM finds that additional year of schooling significantly increases the probability of pro-environmental actions by 3.3 percent. However, the study uses cross-sectional non-experimental data thus lacking causality. The mixed evidence across countries also reflects the mechanisms outlined in *Section 3.1*, where cognitive gains from schooling may translate more consistently into knowledge-based actions, while affective and situational factors shape whether such awareness results in sustained behavioral change. In a recent study, Angrist et al. (2024) using cross-country data from Europe applied an IV design to show that higher educational attainment increases pro-climate beliefs, environmentally responsible behaviors, and green voting patterns, providing some of the strongest multi-country causal evidence to date. The various studies reviewed here are summarized in Table 2.

Table 2: Summary of Studies using Compulsory Schooling Laws as Instruments to Study Impact on Climate Outcomes

Country, year	Data	Dependent variable	Education variable	Controls	Methods	Result	Reference
England, Wales 2012, 2014	Cross-section	Climate change literacy; pro-environmental behaviors	Education level	Month of birth, Sex	Causal: RD - compulsory schooling laws	(+) willingness to change behavior for the environment; no effect on pro-environmental behaviors	Powdthavee 2021
Europe 2007, 2011	Cross-section	Pro-environmental behaviors	Education level	Age, Country fixed effects	Causal: RD - compulsory schooling laws	(+) pro-environmental behaviors	Meyer 2015
Europe 2002 to 2018	Cross-section	Pro-climate beliefs, behaviors, policy preferences, and voting outcomes	Education level	Country fixed effects	Causal: IV - compulsory schooling laws	(+) pro-climate beliefs, behaviors, most policy preferences, green voting	Angrist *et al*. 2024
Thailand 2013	Cross-section	Environmental attitudes; willingness to pay for environmental tax	Education level	Age, Occupation, Wage, Sex	Causal: IV - compulsory schooling, teachers per 1000 students	(+) knowledge based pro-environmental actions; no cost-saving action; no impact on concern for global warming; no impact on willingness to pay	Chankrajang and Muttarak 2017
Philippines 2015	Cross-section	Pro-environmental behaviors	Education level	Education propensity based on personal and regional characteristics	Non-Causal: PSM	(+) increased knowledge; some effect on behavior	Hoffmann and Muttarak 2020

4. Discussion

Our findings build on and advance previous research by reviewing the causal evidence on the impact of education on environmental behaviors. While a large body of literature established a positive correlation between educational attainment and environmental attitudes and behaviors (Torgler and Garcia-Valiñas 2007, McCright and Dunlap 2011, Lee *et al*. 2015), most studies relied on observational data, limiting their ability to disentangle the independent effect of education from confounding factors and establish causality.

In contrast, the causal studies we review here diverge from much of this earlier work by using natural experiments based on compulsory schooling laws to establish causal effects. For instance, Powdthavee (2021) showed that the 1972 ROSLA reform in England reduced climate change skepticism but did not significantly change actual pro-environmental behaviors. Other studies that replicate and extend the approach used by Meyer (2015) across a wider range of countries and outcomes, confirm that increases in education do indeed have a positive, and more durable, causal effect on a range of pro-environmental behaviors.

These findings underscore the importance of context, outcomes measured, and time horizons. National data, longer follow-ups, and coverage of both developed and developing countries reveal impacts that short-term or narrow studies may miss. Studies using causal inference methods such as IV and RD strengthen validity by addressing endogeneity concerns.

These results are also consistent with the conceptual framework outlined in Section 3.1, where education influences environmental outcomes through cognitive, affective, and situational pathways. The observed behavioral changes align with these mechanisms, including improved reasoning and awareness (cognitive), stronger environmental concern (affective), and greater resource access (situational). Together, empirical and conceptual evidence reinforces education's multifaceted role in shaping pro-environmental behavior.

Thus, policies that raise educational attainment, especially broad reforms like compulsory schooling laws, can be effective tools for fostering environmentally responsible behaviors. Education emerges not only as a human capital investment but also as a lever for sustainable development. Expanding causally robust, large-scale evidence remains essential for guiding education and climate policy.

5. Conclusion

Education and environmental outcomes are intrinsically linked. While much literature highlights the impact of environmental conditions on human development, the reverse – how education interventions affect environmental outcomes – is harder to pin down. Studies often show positive correlations between higher education and pro-environmental practices, but these rely on observational data and cannot rule out confounding factors such as socio-economic background, values, or early-life experiences.

We assess compulsory schooling laws as a possible instrument to determine causality. These laws, used as natural experiments in regression discontinuity designs, have helped estimate effects of education on returns to schooling, migration, and more. Recent studies applying this method to environmental outcomes suggest additional years of education reduce climate skepticism and foster sustainable behaviors, though effects vary by context and outcome. Evidence is strongest with nationally representative data, longer follow-up, and broad geographic coverage.

Overall, the findings position education as both a driver of human capital and a lever for sustainable development. By enhancing cognitive skills, access to information, and engagement, schooling shapes responses to climate change. Yet persistent challenges, such as unobserved

heterogeneity and scarce causal data from developing countries, underscore the need for more comprehensive longitudinal research.

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Appendix A: Summary List of Observational Studies on Relationship between Schooling and Climate Attitudes and Behavior

Dependent variable	Education variable	Controls	Methods	Result	Reference
Waste generation	Not specified	Not specified	Not specified	No relationship	Ayalon *et al*. 2014
Frequency of purchasing organic foods	Not specified	Shopping engagement, political affiliation, age, food production knowledge	Bivariate associations and OLS	(+) for both bivariate and multivariate models	Bellows *et al*. 2008
Water saving behavior	Years of education	Social desirability index, LA indicator, income, occupation, children at home, own dwelling, have pool, have lawn or garden	Quasi-MLE Poisson regression	(+) but statistically insignificant	Berk *et al*. 1993
Intention to purchase eco-labeled apples	Years of completed education	Price, type of eco-labeling, grocery vs. supermarket, frequency of buying organic apples, income, household size, age, gender	Contingent choice, Cragg Double-Hurdle Model, Tobit Model	(+) for probability of eco-labeled purchase, insignificant for quantity of eco-labeled purchase	Blend and van Ravenswaay 1999
Desire for eco-labeling of fish	Proxied with professional situation	Environmental attitudes, seaside frequentation, age, gender, marital status, country effects, localization of habitat	Ordered probit regression	(+) for intellectual profession	Brecard *et al*. 2009
Municipal solid waste, municipal recycling	Percentage of town with baccalaureate education	Population, income per capita, median age, housing density, price of waste disposal, frequency of collections, recycling grants	Simultaneous equations, 3SLS	(+) quadratic relationship between education and municipal recycling	Callan and Thomas 2006
4 attitudes toward sustainability (1 to 10 scale)	High school, college indicators	Gender, mortgage owner, age, no. of children, income, regional/city controls	OLS, matching estimation	(+) for college education in 3 of 4 attitudes. (+) for high school education in 1 attitude	De Silva and Pownall 2014
Newspaper and glass recycling	Percent population over 25 with 4 or more years of college	Family median income, availability of curbside pickup	OLS	(+) in most of the models	Duggal *et al*. 1991
Willingness to pay (WTP) for green electricity	Indicator for university degree	Electricity price, electric heating, self-image controls, perception of green benefits, gender, age, presence of social norm	Probit regression	(+) in 1 of 3 reported models	Ek and Soderholm 2008
Recycling participation (7 categories)	Highest education level attained	Price, weekly recycling, free units, unit limit, mandatory recycling, home ownership, income, household size, age	Ordered probit regression	(+) for post-grad in 4 of 7 recycling categories, several other education levels (+) for some recycling categories	Ferrara and Missios 2005
Water saving behavior	Level of formal education	None	Cluster analysis	Significant differences in education levels across clusters	Gilg and Barr 2006

Dependent variable	Education variable	Controls	Methods	Result	Reference
Several water saving behaviors	Years of post-secondary education	None	Correlation coefficient	(−) for plugging sink while washing dishes, recycling rainwater, taking shower instead of bath; no relationship for turn off water while brushing teeth, water garden in coolest part of day	Grafton 2014
Preferences for eco-labeled seafood	Indicator for at least a 4-year degree	Member of environmental organization, frequency of consuming seafood, seafood budget, gender, age, income	Contingent choice, logit model	(−) for Norwegian households, insignificant for USA households	Johnston *et al*. 2001
4 measures of environmental concern	Years of education	Gender, age, ethnicity, size of town, income, political ideology, religiosity	Logistic, Poisson regressions	(+) for almost all specifications and measures of concern	Klineberg *et al*. 1998
WTP for green energy, electricity demand	Years of post-secondary education	Income, member of environmental organization, energy behavior index, index of concern for climate change, home size, household size, home type, years in residence, urban, age, gender, marital status, employment status	OLS, Tobit, Hurdle model, Exponential type-II Tobit	(+) for WTP for green energy, no significant relationship for electricity demand	Kriström and Kiran 2014
Organic food consumption	Indicator for at least one-year post-high school education	Not specified	Not specified	No significant relationship	Millock and Nauges 2014
Purchase of organic eggs and milk	Not specified	Income, age, family size	Discrete choice, multivariate logit	(+) in increasing cross-complementarity between choices of organic products	Monier *et al*. 2009
Energy use	Level of education, units not specified	Age, income, household size, self-enhancement, environmental quality, self-direction, openness to change, maturity, family, health and safety, achievement, new environmental paradigm, concern about global warming	OLS	(−) for home energy use, (+) for transport energy use	Poortinga *et al*. 2004
5 household recycling behaviors	Indicators for level of education (beyond HS degree, bachelor's degree, and graduate or professional degree)	Measures for availability and knowledge of recycling programs, household size, marital status, gender, age, number of hours worked per week, income	Probit regression	Beyond HS degree (+) for 3 behaviors, bachelor's (+) for 4 behaviors, graduate (+) for 4 behaviors	Reschovsky and Stone 1994

Dependent variable	Education variable	Controls	Methods	Result	Reference
Willingness to pay premium for green electricity	Indicators for highest level achieved (high school or less, some college, bachelor's degree, graduate degree)	None	Spearman's correlation	(+) association	Rowlands *et al*. 2003
Contributing money to environmental groups, signing petition about environmental issues, recycling	Years of education, college major	Income, gender, age, race, support of environmental laws, science, and environmental knowledge	Probit regression	(+) for recycling, not statistically significant for other behaviors, majors mostly not significant	Smith 1995
Credibility of ecolabel information, perceived environmental friendliness of vehicle, importance of label information	Years of education	Gender, age, some environmental belief/concern measures	Simultaneous equations, Ordered probit	(+) for credibility and importance of ecolabel, (−) for perceived environmental friendliness	Teisl *et al*. 2008
Purchase of organic produce	Indicators for level of education (college degree and graduate or professional degree)	Cosmetic defects, price, income, age, number of children in household, gender, distance to grocery store	Random utility discrete choice model	(−) for graduate or professional degree	Thompson and Kidwell 1998
Willingness to prevent environmental damage	Formal education (age at which completed formal education), informal education (discussing politics)	Age, gender, marital status, employment status, trust, membership in environmental org., geographic identification, size of town, regional and time controls	Ordered probit regression	(+) for informal education (robust), (+) for formal education (not robust)	Torgler and García-Valiñas 2007
Preferences for eco-labeled seafood	Indicator for at least high school degree	frequency of fish purchases, weekly seafood budget, trust in certifying agencies, region, gender, principal shopper, member of environmental organization, subscription to environmental magazine, beliefs on overfishing	Contingent choice, logit model	No significant relationship	Wessells *et al*. 1999

Dependent variable	Education variable	Controls	Methods	Result	Reference
6 measures of environmental concern	Number of years of schooling	Gender, income, residence, age, non-admin job, admin job, Chinese Communist Party affiliation	Structural equation modeling (SEM)	(+) for composite environmental concern variable	Xiao *et al*. 2013
Purchase of organic food	Indicator for at least four years of college	Number of children, gender, age, race, religion, political identity, income, food expenditures, cooking controls, knowledge/familiarity variables, personal connection variables, intention to act variables, opportunity variables			Zepeda and Li 2007