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How personality traits affect the way Gen Z faces economic and environmental sustainability: an econometric investigation

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Abstract

Before the coronavirus disease (COVID-19) pandemic, awareness of the relevance of sustainability issues and climate change had increased significantly, especially among the younger generation. The COVID-19 pandemic and the related shutdown of many economic activities raised concerns about the conservation of biodiversity and the environment and about the state of personal economic well-being.

Theoretically, at least two associations between sustainability and personal financial habits are relevant: a) they concern the decision-making process regarding the use of scarce resources, and b) they need a medium/long-term horizon as they exert their impacts over time. In this study, we examined how Generation Z deals with issues of sustainability and money management.

By using the technique of the principal components, two synthetic indexes were derived on the basis of a set of multivariate information from a questionnaire that investigated the approach to the issue of sustainability by a representative sample of 400 girls aged between 13 and 18 years. The GREEN INDEX represents environmental practices, and the MONEY INDEX represents habits in money management. They are used as dependent variables to detect how socio-demographic factors and personality elements influence the degree of awareness.

Our results show the importance of character traits at both levels of awareness and the strong association between attention to money management and a sense of responsibility toward the environment, highlighting the possibility that financial education can set in motion a virtuous circle.

JEL Classification: G53, Q50, J10

Keywords: Sustainability, Environment, Financial Education, Gen Z

1. Introduction

The aim of this study was to answer the following question: “How does Generation Z perceive the link between the issues of economic and environmental sustainability?”

Sustainability education is increasingly at the center of policy makers' agenda, as demonstrated by the Sustainable Development Goals (SDG) initiative, approved in 2015 by the United Nations (UN) and defined as a framework of 17 objectives in a roadmap toward achieving a more sustainable economy in 2030, and by the centrality of Environmental, Social and Governance (ESG) issues in business strategies. The issue of sustainability has become the subject of investment programs, which have significant monetary impacts, as shown by the European Union's commitment to allocate 30% of the 1,800 billion allocated for the 2021–2027 budget for the transition toward a decarbonized economy.

The 360° vision of sustainability also includes specific attention to economic-financial education: man and the environment have no sustainable interaction without careful and rational management of economic resources. Less than 40% of individuals in Italy have financial literacy, with significant inequalities in terms of gender, educational qualification, and at least in part, territorial distribution. Levels are also very low among students. According to the latest OECD Pisa survey,^[1] the percentage of Italian students that can solve the most complex tasks (top 5-level performer) is less than half that recorded at the OECD average level (4.5% vs 10.5%), while about one of five students lack the minimum skills necessary to make responsible and well-informed financial decisions.

The results of an analysis by the Bank of Italy on the level of financial literacy in 2020 (D'Alessio et al., 2020) confirmed the delay of Italians.^[2] The survey uses the OECD methodology, which derives an overall indicator of competencies starting from the scores calculated for three subdimensions: knowledge, behavior, and attitudes (or attitudes). The Bank of Italy study, through an econometric analysis, showed only a slight improvement in the knowledge component, while behaviors and attitudes are slightly worsening.

The intent of our research was to investigate a segment of the population that is not normally included in the surveys to understand the sensitivity to environmental issues and the relationship the latter has with the awareness of the use of money. The aim was to identify any spillover between the two dimensions, which could be useful from the perspective of public policy design and therefore focuses on the above-mentioned attitude component and potential effectiveness of the educational interventions that exploit the overlap between the environmental dimension and use of money.

The question, though of great importance, has not yet been the subject of careful analysis in the literature. In fact, only a few contributions have investigated the attitudes and behaviors of Generation Z in terms of consumption and sustainability. For example, Li and Leonas (2022) presented the results of an analysis of a sample of 257 young women with reference to the purchase of swimwear. The authors found that price is the key factor but is accompanied by elements such as the materials used in the production of the apparel and information concerning the sustainability of the production process. Another study (Bollani et al., 2019) based on data from 267 university students of the millennial generation focused on the relationship with food, particularly highlighting how the information and actions aimed at reducing food waste and waste generation are increasingly important.

Other studies have delved into aspects more related to lifestyles and behaviors. An analysis of 362 young American consumers (McCoy et al., 2021) revealed how much the consumption model inspired by the so-called sharing economy is gaining ground compared with that based on ownership of tangible assets or electronic devices. The study in question highlights how, among the reasons that explain the phenomenon, other reasons connected to sustainability are understood as status. By using American data, Cho et al. (2018) studied the trend of reduced participation in voluntary activities and focused on a sample of 360 Generation Z subjects to investigate the reasons for the decreasing trend, highlighting sustainability as a strong motivational lever.

Beyond surveys or questionnaires that contain specific sections dedicated to environmental sensitivity, such as the European Social Survey of 2018,¹²⁴ which has a thematic focus on global warming, not many studies have focused on the younger population and examined the relationship between environmental sustainability and attitudes in the use of money.

Some literature reviews have focused on the role of sustainability education from childhood. For example, Breble et al. (2017) established a taxonomy of the characteristics and learning objectives of the Education to Sustainable Development paths, more importantly identifying a framework that can guide research, even empirical studies, to examine their impacts.

In a meta-analysis, Somerville and Williams (2015) highlighted how the number of publications dedicated to the topic of sustainability education has increased significantly over the last few years by identifying three lines along which the research has developed: connection with nature, children's rights, and theoretical frameworks.

A review by Samuelsson and Park (2017) detailed the results of an analysis of the relationship between sustainability and childhood by focusing on objective 4 of the SDGs, which was to guarantee access to quality education services for all. The article addresses the question of how important it is to introduce the theme of sustainable education starting from primary school and then focused on the quality of the school service itself as an intrinsic element of sustainability if viewed from the perspective of *life long education*.

An interesting study is that of Bamberg and Moser (2007), who conducted a meta-analysis of psychological articles published over the last few decades that reported the main results regarding the characteristic/behavioral components that correlate with environmental sensitivity. This is an article of interest for the purpose of our research, as the following analysis delves into the dimension of character traits.

Another study that sought to investigate the relationship between environmental sensitivity and other specific skills is that of List et al. (2020), which used data from the OECD PISA survey and compared the linguistic, mathematical, and scientific skills of 15-year-old students at an international level. The research highlighted the correlation between scientific skills and the development of awareness of the issue of sustainability.

Finally, the only study that considered sustainability from both environmental and economic points of view for children between 23 and 26 years old is that of White et al. (2018). On the basis of a series of information relating to declared intentions, to the answers to some questions relating to the knowledge of financial concepts, to saving behaviors, and to the sense of trust and self-control, the authors found a positive relationship between

attitudes to environmental sustainability and good money management practices. However, the study lacked sufficient econometric evaluation, and this invalidates any inference from the points of view of statistics and policy indications.

Our article is structured as follows: section 2 describes the data structure and the main sociodemographic characteristics of the sample; section 3 illustrates the empirical methodology and the identification strategy of the econometric model; section 4 presents the results; and section 5 concludes with some ideas also in terms of public policy.

2. Data description

An online sample survey was conducted to collect sociodemographic data and information on a sample of 400 Italian adolescents aged between 13 and 18 years.^[4] The degree of coherence between the answers highlights the ability of the individuals in the sample to provide sensible and reasonable feedback, thus providing reassurance on the degree of reliability of the survey.^[5] The sample size is equivalent to other published studies on Generation Z.

The questionnaire was distributed between February 5 and 17, 2021. The sample was selected to be representative of the population of young Italians on the basis of age, gender, and geographic residence.

The sociodemographic information provides some indications on family background and is summarized in Tables 1 and 2. From these, we can deduce that the sample shows a slight prevalence of males over females and, given the age range, a prevalence of high school students (80.6% of the sample), with a preponderance to technical institutes rather than to high schools (71.4% vs 28.6%). The number by age group was equally divided. The geographic distribution indicates a greater number of children interviewed in the south and the islands over the rest of the geographic areas, in line with a greater relative presence of the youth population in this area. From the point of view of family cultural background, the presence of a parent with a degree is consistent with national data, which indicate a proportion of approximately 19%, decreasing to 14% when the percentage accounted for the degrees of both parents. The most frequent qualification was high school diploma for both parents. Approximately 31% of the children interviewed had between 25 and 100 books at home. This percentage gradually decreased to 10% for ranges between 201 and 500 and 5% for volumes of more than 500.

Among boys and girls, a division of "preferences" is apparent between scientific subjects (55% of males vs 32% of females) and humanities (43% of females vs 20% of males). This is a probable indication of the cultural conditioning of social origin, which has its roots in the family and is not questioned even by schools.

In addition to demographic information, the survey consisted of four sections. The first section consisted of questions aimed at identifying the personality traits prevalent among children and was inspired by the European Social Survey, Personal and Social Well-Being section.^[6] It is composed of 17 questions aimed at measuring emotional stability, open-mindedness, conscientiousness, social confidence, happiness, and sociability.

Table 3 presents the grouping of personality traits obtained through a cluster analysis that revealed three character groups based on specific questions, whose answers included the attribution of grades from 0 to 10. The "restless" were the angriest children, who had lower self-esteem and found it difficult to contain anger and to respond to evil in a rational way. The "curious" were the most open, had a great desire to learn, were interested in the stories and opinions of others even when they did not share them, and were very sociable. Finally, the "conscientious" were precise, scrupulous, and eager to hang and had a good deal of trust in others because they probably believe that others behave like them.

At the level of distribution among the character groups, approximately 50% of the sample fell into the "restless" group. Males were more represented among the "curious"; and females, among the "conscientious." High school kids appeared more frequently among the "restless" and "curious" (as might be expected at their age), whereas middle school kids were overrepresented among the "conscientious." Openness and restlessness are growing functions related to age.

The second section of the questionnaire contained four questions aimed at capturing knowledge and sensitivity to environmental issues. It includes questions on knowledge of the problem of global warming, personal commitment in the fight against waste and global warming, the responsibilities of adults, and the effectiveness of the role of governments in addressing the issue of environmental sustainability. From Table 4, section A, approximately 80% of the sample were attributed values higher than 6 (on a scale from 0 to 10) with respect to the possibility of making a difference to reduce global warming and waste. As many as 64% of the sample believed that the responsibility of adults in the current situation of environmental degradation is high, assigning a score between 8 and 10. The opinion on the possibility that governments can act to encourage change is more evenly distributed, with 70% of the sample assigning it a value higher than 6.

The third section of the questionnaire contains questions relating to habits associated with the use of money. Six questions (Table 4, section B) assessed the availability of money to be managed independently and the habits associated with the use of the available sums: from planning to the ability to give up and to generosity of spirit. The availability of periodic money (i.e., from pocket money) concerns only a quarter of the sample, with a higher prevalence of males than females. In the event that money was available, the students declared that they pay attention to its use and that they save by thinking about the realization of a project (77%). Furthermore, approximately 77% declared that they know how to keep unnecessary expenses under control (giving themselves a grade higher than 6, with 47% of them being convinced that they deserve a grade between 8 and 10) and 63% declared that they were particularly satisfied when, after having set aside some money, they managed to buy what they wanted. In the sample, a certain individualism prevailed, which led to using money above all for one's own happiness, even if the girls were slightly more altruistic and attributed an average value of 5 for themselves rather than 6, which the male peers attributed to themselves.

The fourth section of the survey questionnaire contains information on the parenting model and the use of digital media such as *social media* and video games. It allows us to understand the ability of parents to be *role models* with respect to the behavior of children and the extent to which the use of *social media* and video games can influence the decisions of children for issues such as the use of scarce resources. Parents remained a point of reference for children. Of the young people, 82% answered "a lot" or "enough" to the question of how much of a role model in the management of environmental resources their parents were, while the percentage increased to 91% when the question was related to the management of

economic resources. At the character level, the conscientious felt closest to the parental model (89.7% and 96.6%). Regarding the use of *social media*, 91% of the girls spent time on *social media* every day, whereas 79% of males and 80% of boys were more attracted to video games and dedicated a few hours daily to engaging in these games (against 31% of the girls). The use of *social* platforms is an important access tool for the youngest in the world and for information channels, as shown by a recent survey by the PEW Research Center, even if it refers to the case of the United States (Shearer and Mitchell, 2021).

3. Methodology

To assess the degree of awareness in the use of scarce resources, two synthetic indicators were constructed, which we used as a proxy for environmental awareness (GREEN INDEX) and economic awareness (MONEY INDEX), in the form of weighted averages of the answers to the questions in the second and third sections of the questionnaire (presented briefly in Table 4). The weight value was obtained using principal components analysis (PCA). The use of multivariate statistical techniques for the construction of synthetic indicators is widespread in the literature (Vyas and Kumaranayake, 2006; Filmer and Pritchett, 2001). Of course, the choice of questions to be aggregated lends itself to different interpretations. However, the flexibility of this methodology in the case of items with categorical variables for answers to subjective questions makes the analysis particularly useful and has hundreds of applications in the social science literature (Poirier JM, Grepin KA, Grignon M., 2020).

The GREEN INDEX indicator uses the coefficients of the first main component (i.e., vectors 0.27, 0.28, 0.22, and 0.23) to weigh the answers to questions (1), (2), (3), and (4), which are reported in section A of Table 4. For the MONEY INDEX, given the nature of the questions, the synthetic index was constructed in two steps. The answers to questions (8), (9), and (10), as indicated in Table 4, were grouped with an arithmetic mean.¹⁴ This value was then used to estimate the principal components of a vector, which also included the answers to questions (5), (6), and (7). The synthetic value was obtained using the coefficients of the first principal component (0.21, 0.33, 0.11, and 0.35) to weigh the vector formed by the average value of the answers to questions (8), (9), and (10) and the single answers to questions (5), (6), and (7).

The distributions of the two synthetic indexes are shown in Table 5. The highest values of both indexes were achieved by the so-called conscientious children; and the lowest values, by the "restless," showing significant differences based on the adjusted Wald test. The differences between males and females based on the same test were not statistically significant. The "conscientious" were associated with the highest average values of the two indexes, followed by the "curious." The lowest average values (albeit higher than sufficient) are associated with the "restless."

Table 6 shows an interesting fact: 48.5% of the boys who fell into the fourth quartile of the economic awareness index also belonged to the top quartile of the environmental awareness index, which is evidence that also characterizes the lowest quartile. Evidence also showed a close relationship between the two forms of awareness at both extremes. The average correlation between the indexes was 41%.

MONEY INDEX and GREEN INDEX represent the two proxy dependent variables of the degree of awareness, which can be considered a latent variable. The research idea is to infer how socioeconomic status, family, school, and characteristics affect the degree of awareness.

We started by first estimating linear sample regressions for each synthetic indicator. Four models, from the simplest to the most complex, were tested. Many answers in the questionnaire, together with some fixed regionally based variables, were used as independent variables in the different econometric specifications (see Appendix, List of variables).

Linear equations can be briefly represented as follows:

$$Y_{1i}^* = \alpha_{1i} X_{i1} + \gamma_1 Y_{2i} + \varepsilon_{1i} \quad (1)$$

$$Y_{2i}^* = \alpha_{2i} X_{i2} + \gamma_2 Y_{1i} + \varepsilon_{2i}, \quad (2)$$

where Y_{1i}^* , Y_{2i}^* are the latent variables of economic and environmental awareness approximated to the synthetic indicator MONEY INDEX and GREEN INDEX, X_{in} is the explanatory variable, α_{ni} is the vector of the coefficients, and finally, ε_{ni} is the error term assumed to be distributed as a normal standard $\varepsilon_{ni} \sim N(0,1)$, with $n = 1,2$.

The next step was to estimate the probability of falling into the different quartiles of the indexes through two distinct ordered probits. In this case, each dependent variable Y_{ni}^* , where $n = 1,2$, can take on four values from 1 to 4, as coded below:

$$\begin{cases} = 1 \text{ se } 0 \leq Y_n^* \leq \mu_1 \\ = 2 \text{ se } \mu_1 < Y_n^* \leq \mu_2 \\ = 3 \text{ se } \mu_2 < Y_n^* \leq \mu_3 \\ = 4 \text{ se } \mu_3 < Y_n^* \leq \mu_4, \end{cases} \quad (3)$$

where $\mu_1, \mu_2, \mu_3, \mu_4$ are the threshold values identified respectively as the first, second, third, and fourth quartiles of the distribution of Y_{ni} .

It is therefore possible to estimate the values of the coefficients α_{ni} in the three cutoff terms k_n and, consequently, the probability that Y_{ni} assumes the values 1, 2, 3, and 4 using the standard formulas of the ordered probit.

The next step was to focus attention on the top performers and consider that a correlation may exist between the error terms, given the importance of what we defined as cross-awareness. For this reason, we decided to adopt a bivariate probit estimate (biprobit) that allows simultaneous modeling of two dependent variables related to each other. In this case, cross-awareness was not included in the exogenous list.

The bivariate probit model follows Greene's (2017) formula:

$$Y_{1i} = \alpha_{1i} X_{i1} + \varepsilon_{1i}, \quad Y_{1i} = 1 \text{ se } Y_{1i}^* > \mu_{13}, 0 \text{ otherwise}$$

$$Y_{2i} = \alpha_{2i} X_{i2} + \varepsilon_{2i}, \quad Y_{2i} = 1 \text{ se } Y_{2i}^* > \mu_{23}, 0 \text{ otherwise}, \quad (4)$$

where the dependent variables assume a value of 1 if the value of the indicator composed of economic and environmental awareness falls in the fourth quartile and the error terms are expressed by the following formula:

$$\begin{pmatrix} \varepsilon_{1i} \\ \varepsilon_{2i} \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right], \quad (5)$$

where ρ is the cross-equation correlation of errors. The econometric estimates were obtained with STATA, which allows the estimation of a two-equation model in the seemingly unrelated probit version using the maximum likelihood method. In this case, the margins are to be interpreted as the impact of each independent variable on both dependent variables or pseudoelasticity calculated on the average values.

4. Empirical results and discussion

Table 7 in sections A and B reproduces the estimate of four explanatory models (eqs. 1 and 2) for the two synthetic indexes. The models use a similar set of explanatory variables for the two indexes.

Model 1 (M1) considers only the impact of demographic variables, the sociocultural context, the type and quality of the school, and the use of *social media* by children, making it a useful tool for collecting information from sources outside the family and school itself. The model shows a greater explanatory capacity of the variance for the MONEY INDEX ($R^2 = 10\%$), where the SES variables, ^{un} SOCIAL, ISTEC, and QSCHOOL, are statistically significant and of the expected sign compared with the GREEN INDEX ($R^2 = 6\%$), where only the SES variable is significant and of the expected sign.

M2 and M2.A incorporate, among the explanatory variables, the character traits grouped into the three clusters described in paragraph 2. For both indexes, the PERSONALITY variable is significant and can increase the variance explained by the model by more than 4 and by approximately 9 percentage points.

By opening the clusters and considering some specific character traits, the M3 model highlights the key role of aspects such as CURIOSITY, CAREFULNESS, and TRUST for both awareness indexes. The increases in R^2 were 14 and 18 percentage points, reaching 28% and 34%, respectively. The RELATIONSHIP WITH OTHERS or the ability to get along with even those who do not have the same ideas is significant only in the case of the MONEY INDEX.

The M4 model adds to the explanatory variables both the parental model represented by the ROLE MODEL variable (Eco/Green) and the synthetic index of cross-awareness to take into account the evidence provided in Table 6. From the variance inflation factor and link tests, the introduction of this variable as an explanatory variable does not involve significant distortions but increases the explanatory capacity of the model by approximately

4% in the case of the MONEY INDEX and by approximately 3% in the case of the GREEN INDEX. This confirms the evidence that attention to environmental causes and money management are linked.^[10] If the models are estimated by distinguishing by gender, see models 4.A and 4.B, the explanatory power increases, highlighting differences in the significance of some single variables between the genders. Taken together, these differences do not affect the overall results. If anything, they offer interesting nuances. However, it should be remembered that the SEX variable is never significant in regressions, highlighting substantial uniformity between genders in terms of economic and environmental awareness.

Overall, while economic awareness (MONEY INDEX) is influenced by external contextual factors connected to family, school, use of *social media*, and personality, the structure of causal relationships that affect environmental awareness is quite different (GREEN INDEX). In this case, the influence of context variables is residual, and that of the sociocultural condition (SES) of the family is not stable and disappears in the more complex specification (Table 7, Section B M3 and M4), where the use of *social media* appears to play a significant role as a probable source of information more for males than for females (see M4.B). Also relevant is the age structure of the opposite sign for girls and boys. The variable relating to the air quality of the reference region (QUALAIR) does not appear to have any relevance to the linear estimate. All the regressions reported in Table 7 show a correct specification and substantial absence of collinearity among the regressors.

The ordinal structure of the proxy indexes of awareness offers the possibility of analyzing the impact of exogenous variables on the probability of belonging to the different quartiles and therefore on the level/degree of awareness. Table 8 presents the ordered probit estimates for the MONEY INDEX and GREEN INDEX variables transformed according to formula (3) into ordinal variables (MONEY QUARTILES and GREEN QUARTILES). They allow for highlighting even better similarities and differences between the explanatory factors of economic and environmental awareness. It is evident that the incidence of context variables on economic awareness was higher than that on environmental awareness. The key role for both dependent variables of some personality traits such as CURIOSITY, SCRUPULOSITY, and TRUST. The role of parents stands out more decisively (ROLE MODEL) on the value of both economic and environmental sustainability, in line with the response rates reported in paragraph 2,^[11] confirming the important role of cross-awareness. We emphasize that the structure of significance remains unaffected in the event that cross-awareness is not included in the regression.

On the basis of the results of the analysis of the marginal effects, as reported in Table 9, we can state that the probability of falling into the four quartiles is a function of the exogenous variables identified relevantly. For example, a family's good sociocultural status increases the probability of falling into the fourth quartile by 3% (i.e., in the most aware class). By contrast, symmetrically, a low social status increases the probability of being in the first quartile by 3% (among those with a low degree of awareness). School quality also increases the likelihood of being in the top quartile by 6%. Among the personality traits, CURIOSITY had the highest impact (3.2% for environmental awareness and 2.5% for economic awareness), followed by SCRUPULOSITY (2.4% and 1.6%, respectively). The difference in the marginal effect of TRUST was similarly measured (2.6% and 1.6%, respectively). The level of self-esteem also depends on economic awareness in probabilistic terms; that is, higher self-esteem increases the probability of falling back among the best by 1.1%. Cross-awareness is relevant in both specifications, with a symmetric impact in terms of probability of approximately 7%.

Finally, to analyze the impact on the last quartile more clearly, the GREEN INDEX and MONEY INDEX variables were estimated as a bivariate probit, represented by equation (4). The results are reported in Table 10, where the dependent variables assume values [1, 0], depending on whether the value of the synthetic indexes falls into the highest quartile of the distribution. They are called MONEY TOP and GREEN TOP. The estimation of the coefficient of equation (5) confirms the advisability of jointly estimating the two regressions. It takes on a value of 0.40 and is highly significant. The significance of the variables was largely confirmed for both specifications.

Finally, Table 11 presents a joint estimate of the marginal impact of the explanatory variables on the endogenous variables. A non-secondary role of age is evident in the 14- and 18-year-olds being more sensitive to both issues (with a marginal effect of approximately 8 percentage points). The impact of the character aspects already highlighted remains in the range of 1–2% (CURIOSITY, SCRUPULOSITY, and TRUST), to which the impact of sociality was added through an increase of 2% in the probability of being among the top performers connected to the variable RELATIONSHIP WITH OTHERS.

5. Conclusions

This study examined the relationship between environmental awareness and the attitude of Generation Z toward the use of money in Italy through a representative sample of the population composed of 400 young people between the ages of 13 and 18 years.

Even within the context in which sustainability is an increasingly central issue in the agenda of both the policy makers and the corporate world, we did not find previous studies that investigated the relationship between the two dimensions. However, we believe this research is promising because of the possible spillover effects that can translate into specific policy orientations.

The empirical analysis was conducted from the construction of two synthetic indicators using a multivariate statistical technique to analyze principal components. MONEY INDEX and GREEN INDEX captured sensitivity to the use of money and environmental resources, respectively.

Both indicators have been used in different econometric specifications as dependent variables to explain which factors correlate with them and to determine whether the two variables overlap.

The correlation index between the GREEN INDEX and MONEY INDEX, equal to 0.41 and significant at 1%, shows a clear and close statistical association between the two dimensions, later confirmed in the econometric analysis. The probability of belonging to the last quartile of the environmental sustainability indicator is also strictly connected to that of belonging to the last quartile in regard to the attitude toward the responsible use of money.

As for the variables that correlated with the two employees, some common traits and differences emerged. Character traits had a significant impact on both dimensions, with the propensity to trust others and curiosity playing important roles. Young people who show greater confidence and curiosity

are also more likely to be more sensitive to the environment and responsible use of money. Scrupulousness and sociability are also significant variables for environmental sensitivity and the use of money, having positive impacts on both.

The main differences were in the external variables, for which interesting specificities have been reported. If the cultural condition of the family has a significant impact and with the expected sign on the propensity to responsible use of money (therefore, higher levels of cultural background correspond to higher levels of sensitivity to the use of money), such an effect is not significant with regard to environmental sustainability.

The role of the family as a *role model* and the type of school are more relevant with regard to the use of money, while they have a residual impact on environmental sensitivity. A possible explanation could lie in the fact that the use of money, for many young people, represents a practical skill that they already exercise through personal management of small sums, as evidenced from our own dataset, or that they observe closely in the role models in the family. Conversely, education on environmental sustainability, in some respects, may lack a practical correlation that links a specific behavior to the social norm.

Obviously, due caution must be exercised when interpreting the data. The present survey provides a significant statistical association, but we believe that more insights can be gained from further research aimed at more clearly isolating the causal link between the two dimensions.

From the point of view of public policy orientation, the spillover between aptitude in the responsible use of money and environmental sensitivity could translate into efficient use of monetary resources to achieve a dual purpose. If education on responsible use of money is also associated with greater awareness in the use of natural resources, economic and financial education can turn into a formidable tool for education for sustainability according to the 360° definition that also emerges from frameworks such as the UN 2030 Agenda.

APPENDIX

Variables list

<i>First name</i>	<i>Description</i>	<i>Average</i>	<i>Source</i>	<i>Note</i>
MONEY INDEX	Synthetic economic awareness indicator	6.90	In-house calculation	See paragraph 3
GREEN INDEX	Synthetic indicator of environmental awareness	6.88	In-house calculation	See paragraph 3
SEX	Gender of the interviewee	1.48	Survey	Variable [1, 2]
AGE	Age of the interviewee	15 and 1/2	Survey	Variables [1–6] 1 = 13; ...; 6 = 18
SES	Family cultural background	1.42	In house calculation	Weighted average of each parent's educational qualification and the number of books in the home. See note 7
SOCIAL	Use of social channels	0.85	Survey	Variable [0.1]
ISTEC	School type, technical institute	0.42	Survey	Variable [0.1]
Q SCHOOL	School quality	11	ISTAT (May 2021)	Average of the median grades of the high school diploma of I and II degree by region in 2019 - regional data
QUAIR	Air quality	37.78	National System for Environmental Protection	Number of stations with a 50- $\mu\text{g}/\text{m}^3$ limit exceedance for PM10 in 2020 - regional data
PERSONALITY	Character cluster	1.75	In house calculation	Variable that takes a value of 1 for the restless, 2 for the curious, and 3 for the conscientious
SELF-ESTEEM	Assertion evaluation: "Sometimes I feel like I'm not worth much."	5.40	Survey	Variable [0.10]
CURIOSITY	Assessment of the claim: "I like lessons where I learn something new that I didn't know before."	7.68	Survey	Variable [0.10]

RELATIONSHIP WITH OTHERS	Assessment of the claim: "I try to get along with people even when they don't have my ideas."	7.11	Survey	Variable [0.10]
SCRUPULOUSNESS	Evaluation of the claim: "I am very attentive and thorough when I do my school homework."	6.68	Survey	Variable [0.10]
HUMOR	Assessment of the claim: "My mood depends a lot on the judgment of others."	5.05	Survey	Variable [0.10]
CONFIDENCE	How much do you think others can be trusted?	5.74	Survey	Variable [0.10]
FRIENDSHIP	How many people are you able to talk about your intimate and private matters?	2.85	Survey	Variable [1,6] [none, 1, 2, 3, 4-6, 7+]
ROLE MODEL/eco	How inspired are you of your parents? How much of a role model for money management are they to you?	1.69	Survey	Variable [1.4] [much, enough, little, not at all]
ROLE MODEL/green	How inspired are you of your parents? How much of a role model for the management of environmental resources are they to you?	1.89	Survey	Variable [1.4] [much, enough, little, not at all]

^[1]References to technical reports published by OECD are available at this [link](#).

^[2]The survey was conducted among a representative sample of 2000 adults aged between 18 and 79 years.

^[3]Here is the [link](#) to the European Social Survey website.

^[4]In the field, the investigation was conducted by Episteme. Thirteen-year-olds completed the questionnaire in the presence/with the help of their parents in accordance with the provisions of the law enforced. The sample was representative of the Italian population, stratified by age and geographic origin.

^[5]The sample size is equivalent to those in other published studies on Generation Z.

^[6]<http://www.europeansocialsurvey.org/data/themes.htm? t=personal>

[7] Table 3 does not report the two questions included in the section on personality traits because they are not relevant to the purposes of the cluster analysis, which allows the children to be divided into three reference groups. Specifically, these are the questions, "How often do you meet your friends outside of school?" (answers from daily to less than once or twice a week) and "How many people do you talk to about your most intimate and private things?" (answers from none to more than 7). The answers show a distinct lack of sociability, with a third (34%) of the sample not dating friends outside their school even once a week, more than a third (36%) of the sample having at most two close friends, and 37% having no friends or with only one close friend. These responses seem to be clearly affected by the confinement imposed by the pandemic situation associated with the spread of coronavirus disease, which is caused by severe acute respiratory syndrome coronavirus 2.

[8] The PCA on the first answers (8), (9), and (10) gives results equivalent to an arithmetic mean.

[9] The SES variable is constructed as a weighted average using the weights of the first major component (0.6216, 0.6173, and -0.4783) of the following responses on maternal education level (1 = undergraduate or postgraduate, ..., 6 = no formal education), paternal education level (1 = graduate or post-university, ..., 6 = no formal education), and the number of books available at home (1 = 0-10, ..., 6 = more than 500). In line with the construction of the variable, low values of the same indicate a high socio-cultural context.

[10] Excluding the cross-awareness index, the results of the regression did not change from a qualitative point of view. However, the percentage of variance explained was lower.

[11] The role of parents deserves further study. If we replace the variable with a dummy [0,1] in correspondence with the answer "a lot" in the case of economic awareness, the positive role of parents will stand out clearly, with a significance of 5% in the linear regression and 10% in forms probit with a significant marginal effect of 5 percentage points. It was not relevant in the linear regression for green awareness but became relevant in the oprobit and biprobit estimates, where the coefficients must be read as a variation from the baseline value corresponding to 1 = a lot.

Tables

Table 1 Demographic features (sample of 400 young Italians aged between 13-18)

Percentage Values

	<i>Sex</i>	<i>School</i>		<i>Type of High School</i>		<i>Preferred Subjects</i>		
		<i>Middle</i>	<i>High</i>	<i>Lyceum</i>	<i>Technical</i>	<i>Humanities</i>	<i>Scientific</i>	<i>None</i>
Male	51.6	19.4	80.6	28.6	71.4	20.3	54.7	25.0
Female	48.4	15.0	85.0	45.7	54.3	43.5	32.3	24.2

<i>Age</i>		<i>Area</i>		<i>Number of Inhabitants</i>	
13	16.7	N-W	25.8	up to 10k	26.0
14	16.6	N-E	19.1	10-30k	23.5
15	16.8	CE	18.9	30-100k	24.5
16	16.6	S-I	36.1	100-500k	14.6
17	16.6			>500K	11.5
18	16.8				

Table 2 Family cultural background

Percentage Values

<i>Qualification</i>	<i>Parents</i>	<i>Father</i>	<i>Mother</i>
Bachelor's degree or more (2)	13.9		
Bachelor's degree or more (1)	18.7	22.5	23.6
High School Diploma (2)	26.5		
High School Diploma (1)	20.3	40.0	47.7
Lower Licences	20.7	37.5	28.7
<i>How many books do have you at home?</i>			
0-10	12.28		
11-25	18.73		
26-100	30.76		
101-200	22.64		
201-500	10.45		
more	5.14		

Table 3 Personality Traits

Section A. Average Value [range 0-10]	Tot	Restless	Curious	Conscientious	
I often lose control, and I am quick to anger	4.7	6.2	3.2	3.2	
There are events that I do not like and that make me angry	6.7	6.9	6.5	6.4	
Sometimes I feel like I'm not worth much	5.4	6.5	4.6	4.1	
If someone says something bad about me I reply immediately saying something nasty	5.2	6.4	3.7	4.2	
I like lessons where I learn something new that I didn't know before	7.7	6.8	8.7	8.5	
I'm interested in stories of people living in other countries of the world	6.4	5.9	7.6	6.5	
I try to get along with people, even when they don't have my ideas	7.1	6.3	8.2	7.6	
It's easy to socialize with me	7.2	6.3	8.5	7.8	
I like reading different kinds of books (essays, novels, comics)	5.5	4.9	4.9	7.4	
I always finish everything I start	6.6	5.7	6.8	8.1	
I'm very attentive and thorough when I do my school homework	6.7	5.9	6.6	8.4	
I tidy up everything I use as soon as I finish to use them	6	5.4	5.4	7.7	
In general, how much do you think you can trust people?	5.7	5.5	5.4	6.5	
	Section B. Percentage Values	Tot	Restless	Curious	Conscientious
	Male	51.6	51.3	54.2	49.7
	Female	48.4	48.7	45.8	50.3
	High School	17.3	14.5	14.2	25.8
	Middle School	82.7	85.5	85.8	74.2
	North-West	25.8	24.2	25.8	29.1
	North-East	19.1	23.7	16.9	12.5
	Centre	18.9	19.3	20.5	16.6
	South and Islands	36.1	32.8	36.9	41.8

Table 4 Components of the synthetic indexes (row percentage)

Section A. Vote [range 0-10]	<i>Components Green Index</i>		
<i>score</i>	[0-5]	[6-7]	[8-10]
Make the difference (1)	0.22	0.38	0.40
Personal commitment (2)	0.24	0.40	0.36
Adults' responsibility (3)	0.11	0.25	0.64
Government action (4)	0.29	0.39	0.32
Section B. Vote [range 0-10]	<i>Components Money Index</i>		
<i>score</i>	[0-5]	[6-7]	[8-10]
Expenses under control (5)	0.23	0.30	0.47
For my own happiness (6)	0.38	0.33	0.20
Satisfaction (7)	0.11	0.26	0.63
Money at disposal (8)	Periodically	Occasionally	None
	0.25	0.43	0.32
Think how to use money (9)	Yes	No	
	0.85	0.15	
Reasons to save (10)	Project	Fear	By chance
	0.77	0.10	0.13

Questions:

- (1) How much do you think that your daily attitude can make the difference to reduce global warming?
- (2) How much do you feel personally committed to reducing the problem of waste of natural resources?
- (3) How severe do you believe the impact of lack of attention to sustainability themes by adults will be?
- (4) How likely do you believe that Governments might act to change the world development model so that it becomes more sustainable over time?
- (5) I keep my expenses under control and, if something is not necessary, I avoid buying it
- (6) My money is used only and exclusively for my happiness, without thinking about the impact it can generate on others
- (7) If you want something you like, and you cannot afford it immediately, how much satisfaction do you feel in being able to buy it when you reach the needed amount?
- (8) Do you usually have money at your disposal?
- (9) If you have money at disposal, do you have the habit of thinking how to use it?
- (10) Why do you save money?

Table 5 Respondents' evaluation of the relevance of environmental and economic sustainability

Percentage values	x <=2	>2 x <=3	>3 x <=4	>4 x <=5	>5 x <=6	>6 x <=7	>7 x <=8	>8 x <=9	>9 x <=10
Green Index	0.75	1.25	2.00	8.25	13.00	27.70	24.25	17.75	5.00
Money Index		1.75	3.50	7.75	15.50	20.50	23.75	18.25	9.00
Average value [range 0-10]	<i>Mean</i>	<i>Std.Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Male</i>	<i>Female</i>	<i>Restless</i>	<i>Curious</i>	<i>Consc.</i>
Green Index	6.88	1.53	0.00	10.00	6.91 (a)	6.87 (a)	6.49(b)	7.17(c)	7.38(d)
Money Index	6.90	1.61	2.43	10.00	6.82 (e)	6.91(e)	6.37(f)	7.01(g)	7.65(h)

Average value [range 0-10]	<i>Mean</i>				<i>Std. Dev.</i>			
	1° quartile	2° quartile	3° quartile	4° quartile	1° quartile	2° quartile	3° quartile	4° quartile
Green Index	4.88	6.52	7.44	8.67	0.12	0.03	0.03	0.05
Money Index	4.75	6.43	7.56	8.86	0.09	0.04	0.03	0.05

Adjusted Wald test:

- (a) Male=Female adj. Wald test 0.07 (p=0.7880)
- (b) Restless=Curious adj. Wald test 11.22 (p=0.0009)
- (c) Restless=Conscientious adj. Wald test 23.06 (p=0.0000)
- (d) Curious=Conscientious adj. Wald test 0.93 (p=0.3347)
- (e) Male=Female adj. Wald test 0.31 (p=0.5751)
- (f) Restless=Curious adj. Wald test 11.99 (p=0.0006)
- (g) Restless=Conscientious adj. Wald test 56.66 (p=0.0000)
- (h) Curious=Conscientious adj. Wald Test 10.56 (p=0.0013)

Table 6 Joint presence by quartile (percentage values)

		Green Index			
		4° quartile	3° quartile	2° quartile	1° quartile
Money Index	4° quartile	48.5	26.6	11,7	13.4
	3° quartile	21.1	38.2	25.2	15
	2° quartile	20.7	23.6	25.6	28
	1° quartile	9.6	11.6	37.6	43.6

Table 7 Survey Linear Regressions

Section A. Dependent Variable MONEY INDEX														
	M1		M2		M2.A		M3		M4		M4.A		M4.B	
Exogenous Variables	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	<i>(femmine)</i>		<i>(masc hi)</i>	
											Coeff	St.Error	Coeff	St.Error
SEX	0.0563	0.1688	0.0650	0.1646	0.0711	0.1643	-0.0193	0.1518	-0.0344	0.1476				
AGE	0.0743	0.0479	0.0723	0.0475	0.0680	0.0480	0.0943	0.0486 **	0.0801	0.0472 *	0.106795	0.0660	0.0497	0.0670
SES	-0.2755	0.0547 ***	-0.2417	0.0549 ***	-0.2420	0.0550 ***	-0.1459	0.0518 ***	-0.1341	0.0466 ***	-0.1728	0.0610 ***	-0.0990	0.0681
SOCIAL	0.4962	0.2464 **	0.4897	0.2388 **	0.4723	0.2373 **	0.3891	0.2171 *	0.4559	0.2190 **	-0.0883	0.3940	0.7117	0.2524 ***
ISTEC	0.3671	0.1777 **	0.4738	0.1746 ***	0.4740	0.1746 ***	0.4369	0.1649 ***	0.4611	0.1547 ***	0.3717	0.1959 *	0.6022	0.2220 ***
QSCHOOL	0.5214	0.1951 ***	0.4833	0.1912 **	0.4794	0.1913 **	0.3162	0.1770 *	0.3296	0.1720 *	0.1414	0.2213	0.3000	0.2585
PERSONALITY			0.4216	0.0895 ***										
	2				0.5533	0.1929 ***								
	3				0.8168	0.1800 ***								
SELF-ESTEEM							0.0353	0.0300	0.0406	0.0285	0.0790	0.0425 *	0.0061	0.0410
CURIOSITY							0.1616	0.0461 ***	0.1067	0.0470 **	0.0519	0.0637	0.1161	0.0710
RELATIONSHIP WITH OTHERS							0.1167	0.0459 **	0.1014	0.0442 **	0.1126	0.0557 **	0.1318	0.0629 **
SCRUPULOUSNESS							0.1094	0.0369 ***	0.0686	0.0366 *	0.0637	0.0488	0.0841	0.0527
HUMOR							-0.0323	0.0355	-0.0416	0.0343	-0.1115	0.0482 **	0.0208	0.0445
CONFIDENCE							0.1121	0.0410 ***	0.0765	0.0409 *	0.0597	0.0528	0.1034	0.0520 **
FRIENDSHIP							0.0464	0.0642	0.0266	0.0605	0.0234	0.0873	0.0164	0.0818
ROLEMODEL/ Eco							-0.1599	0.1166	-0.1551	0.1120	0.0894	0.1429	-0.3377	0.1645 **
GREEN INDEX									0.2507	0.0601 ***	0.3821	0.0811 ***	0.1336	0.0764 *
CONS	0.6204	2.1559	0.2055	2.1325	0.6649	2.1253	-0.5358	2.0320	-1.3385	1.9896	0.4450	2.5540	-0.8073	3.0117
R2	0.0993		0.1436		0.1451		0.2804		0.3184		0.3741		0.3398	
F(ve,dof)	6.6 ***		8.68 ***		7.94 ***		11.00 ***		13.56 ***		12.27 ***		8.51 ***	
LINKTEST	NO		NO		NO		NO		NO		NO		NO	
VIF									1.61					

[LINKTEST NO means that the single-equation model is specified correctly; ve= number of exogenous variables, dof=degrees of freedom; VIF = Variable inflation factors test for the presence of multicollinearity; *** p<0.01; **p<0.05; * p<0.10]

Section B Dependent Variable GREEN INDEX														
	M1		M2		M2.A		M3		M4		M4.A		M4.B	
Exogenous Variables	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	Coeff	St.Error	<i>(femine)</i>		<i>(maschi)</i>	
											Coeff	St.Error	Coeff	St.Error
SEX	0.0980	0.1667	0.1098	0.1582	0.1103	0.1584	0.0591	0.1360	0.0582	0.1317				
AGE	0.0337	0.0469	0.0311	0.0445	0.0307	0.0444	0.0553	0.0405	0.0398	0.0396	-0.0968	0.0490 **	0.1403	0.0565 **
SES	-0.1991	0.0583 ***	-0.1534	0.0567 **	-0.1535	0.0568 ***	-0.0480	0.0521	-0.0145	0.0475	-0.0095	0.0546	0.0165	0.0686
SOCIAL	-0.0674	0.2211	-0.0761	0.2091	-0.0776	0.2088	-0.2814	0.1597 *	-0.3521	0.1628 **	-0.1544	0.2283	-0.5203	0.2219 **
ISTEC	-0.2520	0.1767	-0.1080	0.1707	-0.1080	0.1707	-0.0947	0.1530	-0.1993	0.1458	-0.2247	0.2188	-0.1902	0.1995
QSCHOOL	0.1766	0.1899	0.1252	0.1816	0.1249	0.1811	-0.0068	0.1965	-0.0886	0.1960	0.2388	0.2470	-0.3186	0.2898
PERSONALITY			0.5688	0.0823 ***										
	2				0.5803	0.1779 ***								
	3				1.1353	0.1647 ***								
SELF-ESTEEM							-0.0212	0.0301	-0.0266	0.0284	0.0120	0.0450	-0.0668	0.0341 *
CURIOSITY							0.2198	0.0465 ***	0.1825	0.0462 ***	0.3014	0.0536 ***	0.0605	0.0603
RELATIONSHIP WITH OTHERS							0.0598	0.0418	0.0348	0.0403	-0.0495	0.0492	0.1179	0.0671 *
SCRUPULOUSNESS							0.1631	0.0391 ***	0.1372	0.0380 ***	0.0804	0.0461 *	0.2168	0.0537 ***
HUMOR							0.0369	0.0311	0.0441	0.0297	0.0427	0.0462	0.0436	0.0364
CONFIDENCE							0.1429	0.0378 ***	0.1166	0.0372 ***	0.0511	0.0420	0.1662	0.0545 ***
FRIENDSHIP							0.0794	0.0616	0.0654	0.0580	0.0756	0.0822	0.0830	0.0748
QUALAIR							0.0021	0.0042	0.0015	0.0041	0.0020	0.0061	0.0005	0.0053
ROLEMODEL/green							-0.0035	0.1042	-0.0359	0.1006	0.0375	0.1174	-0.1454	0.1536
MONEY INDEX									0.2110	0.0488 ***	0.2928	0.0671 ***	0.1134	0.0629 *
CONS	5.0958	2.1243	4.5360	2.0296	5.1081	2.0216	2.6153	2.3534	3.0782	2.3354	-0.6270	2.8184	6.0181	3.5409 *
R2	0.0619		0.1502		0.1502		0.3390		0.3741		0.4570		0.4086	
F(ve,dof)	2.05 ***		8.75 ***		7.71 ***		8.92 ***		12.43 ***		9.67 ***		10.55 ***	
LINKTEST	NO		NO		NO		NO		NO		NO		NO	
VIF									1.58					

[LINKTEST NO means that the single-equation model is specified correctly; ve= number of exogenous variables, dof=degrees of freedom; VIF = Variable inflation factors test for the presence of multicollinearity; *** p<0.01; **p<0.05; * p<0.10]

Table 8 Ordered Probit

Dependent Variable	MONEY QUARTILES			GREEN QUARTILES		
		M4		M4		
Exogenous Variables		Coeff.	St.Error	Coeff.	St.Error	
SEX		-0.0509	0.1210	0.0327	0.1197	
AGE						
	14	0.3787	0.2075 *	0.0347	0.2000	
	15	0.3929	0.1917 **	-0.1008	0.2061	
	16	0.4922	0.1996 **	-0.1046	0.1936	
	17	0.2931	0.2059	0.0413	0.2174	
	18	0.3987	0.2181 *	0.1339	0.1984	
SES		-0.1066	0.0390 ***	-0.0087	0.0403	
SOCIAL		0.1823	0.1880	-0.1830	0.1627	
ISTEC		0.3401	0.1317 **	-0.1344	0.1385	
QSCHOOL		0.2420	0.1441 *	-0.0053	0.1630	
SELF_ESTEEM		0.0427	0.0250 *	-0.0310	0.0265 ***	
CURIOSITY		0.0948	0.0368 **	0.1244	0.0416	
RELATIONSHIP WITH OTHERS		0.0837	0.0361 **	0.0487	0.0333	
SCRUPULOUSNESS		0.0625	0.0309 **	0.0931	0.0331 ***	
HUMOR		-0.0417	0.0286	0.0330	0.0279	
CONFIDENCE		0.0596	0.0339 *	0.1007	0.0332 ***	
FRIENDSHIP		0.0434	0.0501	0.0156	0.0528	
QUALAIR				-0.0002	0.0036	
ROLEMODEL/Eco						
	2	-0.2425	0.1261 *			
	3	-0.0613	0.2503			
	4	0.1448	0.3800			
ROLEMODEL/Green						
	2			-0.2202	0.1309 *	
	3			0.0198	0.2240	
	4			-0.1828	0.4124	
GREEN QUARTILES		0.2830	0.0621 ***			
MONEY QUARTILES				0.2694	0.0615 ***	

	cut/1	4.7821		1.7795
	cut/2	5.6010		2.5869
	cut/3	6.4321		3.4620
F(ve, dof)		ve=21 dof=379	6.36***	ve=22 dof=378 5.69***

[ve= number exogenous variables, dof=degrees of freedom; *** p<0.01;
**p<0.05; * p<0.10]

Table 9 Margins Ordered Probit (delta method)

Dependent Variable	MONEY QUARTILES			GREEN QUARTILES			
	Outcome 4° quartile			Outcome 4° quartile			
		Coeff.	St.Error		Coeff.	St.Error	
SEX (female)		-0.0132	0.0314		0.0084	0.0307	
AGE							
	14	0.0907	0.0508	*	0.0090	0.0517	
	15	0.0945	0.0456	**	-0.0251	0.0512	
	16	0.1219	0.0493	**	-0.0260	0.0482	
	17	0.0683	0.0485		0.0107	0.0563	
	18	0.0961	0.0533	*	0.0355	0.0526	
SES		-0.0277	0.0101	***	-0.0022	0.0103	
SOCIAL		0.0473	0.0487		-0.0469	0.0415	
ISTEC		0.0883	0.0340	***	-0.0344	0.0358	
QSCHOOL		0.0628	0.0373	*	-0.0014	0.0417	
SELF-ESTEEM		0.0111	0.0065	*	-0.0079	0.0067	
CURIOSITY		0.0246	0.0096	**	0.0318	0.0106	***
RELATIONSHIP WITH OTHERS		0.0217	0.0093	**	0.0125	0.0085	
SCRUPULOUSNESS		0.0162	0.0080	**	0.0238	0.0083	***
HUMOR		-0.0108	0.0074		0.0084	0.0071	
CONFIDENCE		0.0155	0.0087	*	0.0258	0.0085	***
FRIENDSHIP		0.0113	0.0130		0.0040	0.0135	
QUALAIR					-0.0001	0.0009	
ROLEMODEL/Eco							
	2	-0.0634	0.0334	**			
	3	-0.0168	0.0679				
	4	0.0415	0.1115				
ROLEMODEL/Green							
	2				-0.0571	0.0348	*
	3				0.0054	0.0619	
	4				-0.0479	0.1035	
GREEN QUARTILES		0.0735	0.0156	***			
MONEY QUARTILES					0.0690	0.0154	***

[*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$]

Table 10 Bivariate Probit

Dependent Variable	MONEY TOP			GREEN TOP		
	M4			M4		
Exogeneous Variables						
		Coeff.	St.Error		Coeff.	St.Error
SEX		-0.0688	0.1645		0.0656	0.1602
AGE						
	14	0.8090	0.2936 ***		0.1178	0.2551
	15	0.5130	0.3087 *		-0.1108	0.2860
	16	0.5503	0.3071 *		-0.1844	0.2603
	17	0.6982	0.2996 **		0.0380	0.2699
	18	0.7725	0.3029 **		0.1452	0.2644
SES		-0.0870	0.0519 *		-0.0078	0.0601
SOCIAL		0.0025	0.2236		-0.0916	0.2086
ISTEC		0.3925	0.1745 **		-0.1957	0.1847
QSCHOOL		0.4299	0.1954 **		-0.1152	0.2098
SELF-ESTEEM		0.0379	0.0318		-0.0011	0.0322
CURIOSITY		0.1333	0.0573 **		0.1475	0.0584 **
RELATIONSHIP WITH OTTHERS		0.1259	0.0503 **		0.1137	0.0517 **
SCRUPULOUSNESS		0.1160	0.0451 **		0.1018	0.0468 **
HUMOR		-0.0266	0.0356		0.0000	0.0324
CONFIDENCE		0.0443	0.0430		0.0839	0.0440 *
FRIENDSHIP		0.1209	0.0654 *		0.0171	0.0732
QUALAIR					-0.0015	0.0049
ROLEMODEL/Eco						
	2	-0.2826	0.1585 *			
	3	-0.1108	0.3952			
	4	0.3679	0.4294			
ROLEMODEL/Green						
	2				-0.4592	0.1689 ***
	3				-0.0697	0.2601
	4				-0.2832	0.6251
CONS		-9.3978	2.2851 ***		-2.2765	2.4509
F(40,360)		3.10	***			
athrho		0.4246	0.1116 ***			
rho		0.4008	0.0946 ***			

[rho = error terms cross-equation correlation cfr. Equation (6); *** p<0.01; **p<0.05; * p<0.10]

Table 11 Margins Bivariate Probit
(delta method)

		M4		
		dy/dx	St.Error	z
SEX (female)		0.0001	0.0228	0.00
AGE				
	14	0.0841	0.0389	2.16 **
	15	0.0341	0.0373	0.91
	16	0.0305	0.0317	0.96
	17	0.0645	0.0365	1.77 *
	18	0.0835	0.0397	2.10 **
SES		-0.0083	0.0082	-1.01
SOCIAL (si)		-0.0083	0.0308	-0.27
ISTEC		0.0150	0.0273	0.55
QSCHOOL		0.0269	0.0282	0.95
SELF-ESTEEM		0.0032	0.0047	0.68
CURIOSITY		0.0254	0.0090	2.81 ***
RELATIONSHIP WITH OTHERS		0.0216	0.0078	2.77 ***
SCRUPULUOSNESS		0.0196	0.0070	2.82 ***
HUMOR		-0.0023	0.0050	-0.46
CONFIDENCE		0.0117	0.0063	1.85 *
FRIENDSHIP		0.0122	0.0101	1.21
ROLEMODEL/Eco				
	2	-0.0249	0.0138	-1.81 *
	3	-0.0100	0.0352	-0.28
	4	0.0316	0.0350	0.90
QUALAIR		-0.0001	0.0004	-0.32
ROLEMODEL/Green				
	2	-0.0435	0.0158	-2.76 ***
	3	-0.0066	0.0248	-0.27
	4	-0.0270	0.0597	-0.45

[*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$]

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