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IZA DP No. 12488

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ABSTRACT

Self-Control: Determinants, Life Outcomes and Intergenerational Implications*

This paper studies self-control in a nationally representative sample. Using the well-established Tangney scale to measure trait self-control, we find that people's age as well as the political and economic institutions they are exposed to have an economically meaningful impact on their level of self-control. A higher degree of self-control is, in turn, associated with better health, educational and labor market outcomes as well as greater financial and overall well-being. Parents' self-control is linked to reduced behavioral problems among their children. Importantly, we demonstrate that self-control is a key behavioral economic construct which adds significant explanatory power beyond other more commonly studied personality traits and economic preference parameters. Our results suggest that self-control is potentially a good target for intervention policies.

JEL Classification: D91, J24

Keywords: self-control, Tangney scale, personality traits, intergenerational transmission

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The human capacity to exert self-control is arguably one of the most powerful and beneficial adaptations of the human psyche.

Tangney et al. (2004, p. 1)

1 Introduction

Self-control is fundamental to understanding human behavior. The ability to exert self-control assists people in overriding their immediate impulses, resisting temptation, and, as a consequence, achieving their long-term goals. Those with a greater capacity for self-control are predicted to have a more healthy lifestyle, achieve higher educational attainment, have more labor market success, and experience greater financial well-being (see, e.g., Angeletos et al., 2001; Laibson, 1998; O'Donoghue and Rabin, 1999a, 2000; Gruber and Kőszegi, 2001; Tangney et al., 2004; Kaur et al., 2015). These key outcomes not only shape people's personal life chances, but can also drive a society's overall living standards through their effects on productivity. Consequently, a better understanding of these life outcomes is of vital interest to politicians and economists alike.

Outside of economics, self-control is one of the most studied concepts in social science (Duckworth and Kern, 2011).[1] Economists are increasingly drawing on this rich tradition to expand their theoretical models of intertemporal choice to incorporate self-control. The objective is to understand why some people make decisions that are inconsistent with their own goals. In particular, people are often time-inconsistent in a present-biased manner (O'Donoghue and Rabin, 1999a). When thinking about future choices, they prefer a large, distant reward (such as losing body weight) over a small, immediate reward (such as eating chocolate cake), but when making a choice in the present, they prefer the small, immediate reward. Economists typically model self-control through hyperbolic discounting or dual-self decision making.[2]

In sharp contrast to the central role of self-control in behavioral economic theory, there is a lack of representative empirical evidence on self-control in intertemporal choice. Self-control has been widely studied, but the evidence comes from small, exclusively non-representative, samples

[1] Self-control is closely related to various concepts and measurements from psychology, sociology, and neuroscience, such as self-regulation, impulsivity, delay of gratification, inattention-hyperactivity, executive function, willpower, and conscientiousness (Moffitt et al., 2011).

[2] A non-exhaustive list of economic models of self-control and its implications for individual behavior includes Strotz (1955); Thaler and Shefrin (1992); Laibson (1997, 1998); Carrillo and Gromb (1999); O'Donoghue and Rabin (1999a,b, 2000, 2001, O'Donoghue and Rabin); Bénabou and Tirole (2004); Kőszegi (2005); Gruber and Kőszegi (2001); Heidhues and Kőszegi (2009, 2010, 2015, 2017); Phelps and Pollak (1968); Fudenberg and Levine (2006); Angeletos et al. (2001); Gul and Pesendorfer (2001, 2004); Loewenstein and Prelec (1992).

of children and adults or, in some cases, incentivized, experimental studies with university students (e.g., Houser et al., 2018). Much of the evidence is based on short-term outcomes or, in one case, longer-term outcomes for a single birth cohort (Moffitt et al., 2011). Proxies for self-control are often used since direct measures are not available (e.g., Miller et al., 2011).

We make an important contribution by providing the first comprehensive empirical understanding of self-control using novel nationally representative data from the 2017 Innovation Sample of the German Socio-Economic Panel (SOEP–IS) which now includes a well-established measure of trait self-control (Tangney et al., 2004). The richness of these data allows us to provide comprehensive evidence on: (i) the determinants of adult self-control; (ii) the role of self-control in predicting key life outcomes in multiple domains (i.e., educational attainment, health and health-related behaviors, labor market outcomes, financial well-being, and life satisfaction); and (iii) the intergenerational implications of parental self-control for child development. Throughout, we discuss our findings in the light of the existing literature in personality and developmental psychology and behavioral economics. Moreover, we explore whether trait self-control has explanatory power beyond that attributable to other commonly utilized measures of personality traits and economic preferences. While much of our analysis is descriptive, we exploit the fall of the Berlin Wall and a major educational reform as natural experiments to generate causal estimates of the impact of institutions and education on Germans' self-control.

Our results demonstrate that there is substantial heterogeneity in adult self-control. Self-control increases linearly with age, for example, confirming Gottfredson and Hirschi's (1990) conjecture that a constant process of socialization leads to increasing self-control throughout the life cycle. Self-control tends to be negatively related to fluid intelligence. At the same time, an educational reform that increased the required years of formal education did not result in greater self-control; educational attainment is a consequence rather than cause of self-control. We also provide the first evidence that institutions play a role in shaping self-control. Exposure to the suppressive, communist regime of former German Democratic Republic (GDR) results in higher levels of self-control consistent with the need for GDR residents to be cautious in what they said and did so as not to jeopardize their educational and career opportunities, preserve their individual freedom (Fulbrook, 2008), and protect their families and friends (Jahn,

2014). Interestingly, the self-control distribution is virtually identical for men and women suggesting that gender differences in self-control are not a source of gender gaps in health behavior, education, or labor market outcomes. The absence of gender disparities in adult self-control contrasts with the disparities found in girls' and boys' ability to self-regulate (see, e.g., Silverman, 2003; Matthews et al., 2009)—highlighting the importance of representative empirical evidence from an adult population for a comprehensive understanding of self-control.

These differences in people's capacity for self-control are highly predictive of their life outcomes. Those with more trait self-control have higher physical, mental and financial well-being than do those with less trait self-control. They have greater life satisfaction—a commonly used proxy of well-being overall—providing direct evidence of the benefits of greater self-control. Importantly, self-control appears to influence labor market success mainly by raising educational attainment; once education is accounted for there is only a weak relationship between self-control and most labor market outcomes. Exploiting the richness of the SOEP data, we employ 22 different outcome variables. For that reason, we report not only conventional p-values but also adjust for multiple hypothesis testing using the method suggested by Romano and Wolf (2005). We adopt an empirical strategy that relies on estimating a series of models which start with using exogenous baseline controls only and then increasingly control for other personality traits and economic preferences as well as endogenous drivers of people's life chances. Our results demonstrate that in many cases self-control has substantial power in predicting people's life outcomes despite this rich set of potential confounders. The relevance of self-control is further underlined since it is frequently picked by the least absolute shrinkage and selection operator (LASSO), a variable selection devise, and its "R^2 rank," a measure of how much self-control contributes to explaining variation in outcomes compared to the other explanatory variables.

Finally, we exploit the unique household structure of our data to investigate the intergenerational consequences of self-control. We find a modest correlation in the self-control of adult children and their parents which is evident only between sons and their mothers and between daughters and their fathers. Moreover, children whose parents score higher on self-control have fewer behavioral problems and tend to behave in a more prosocial manner. The relationship between parental self-control and the type of school children attend is sensitive to the other con-

trols in the model; when it is evident, it indicates that greater parental self-control is associated with an increased likelihood that children attend an academic high school. On balance, parental self-control is most closely linked to child development through the effect it has on children's behavioral problems. Systematic differences in child outcomes by parental self-control can contribute to a better understanding of intergenerational correlations in, for example, educational and health outcomes and point at a potential mechanism underlying social immobility.

In sum, our results emphasize that higher levels of self-control have broad benefits for individuals, their offspring, and societies as a whole. As a consequence, self-control emerges as a clear target for intervention policies. Such interventions exist and have been shown to be successful when targeted at children (Alan and Ertac, 2018; Piquero et al., 2016).

Our results also contribute to the field of personality psychology and economics (e.g., Almlund et al., 2011; Borghans et al., 2008) as they demonstrate that self-control adds significant explanatory power on top of the more commonly used Big Five personality traits and economic preference measures.

The remainder of the paper is structured as follows: Section 2 provides the details of our data, while the determinants of self-control are analyzed and discussed in light of the related literature in Section 3. We investigate the predictive power of self-control for a broad range of life outcomes in Section 4. Section 5 considers the intergenerational implications of parental self-control for children's development. Finally, we conclude and discuss the broader implications of our findings in Section 6.

2 Data

2.1 The Estimation Sample

Our analysis takes advantage of novel data from the Innovation Sample of the German Socio-Economic Panel (SOEP). The SOEP is a representative household panel that provides data for approximately 30,000 individuals who are surveyed annually (Goebel et al., 2019). In 2011, an innovation sample of respondents (SOEP–IS) began to be surveyed in conjunction with the core SOEP sample (SOEP–Core). The goal was to provide the scope for new and novel survey items to be explored (Richter and Schupp, 2015). By 2014, the SOEP–IS included more than 5,500 people living in over 3,500 separate households.

Following a competitive tender process, we were offered the opportunity to integrate the 13-item version of the Tangney Self-Control Scale (TSCS) into the SOEP–IS in 2017. For the first time, it is possible to study self-control in a nationally representative sample, not only for individuals but also for entire households.[3] A handful of studies have analyzed proxies of self-control derived from measures of behavioral and attitudinal problems using representative cohort data (Nofziger, 2008; Perrone et al., 2004). In contrast, our measure is specifically designed to capture self-control and it has been psychometrically validated (see below). The SOEP–IS data are also representative of the entire German adult population (not just a specific birth cohort) and their richness means that we can consider a vast array of life outcomes (e.g., educational attainment, labor market attachment, income, assets and savings, physical and mental health, health-related behaviors, and life satisfaction) while accounting for key factors such as socio-demographic characteristics, intelligence, economic preferences, and personality traits.[4]

The TSCS was administered in 2017 to 2,090 respondents who were first surveyed in 2012 and 2013. We omit 129 respondents (6.2 percent) who did not provide complete information for all 13 items of the scale.[5] Drawing on data from 2017, augmented with additional data from 2012–2016, provides us with a final estimation sample of 1,961 individuals.[6]

2.2 The Tangney Self-Control Scale

Self-control is measured using the brief (13-item) version of the well-established TSCS (Tangney et al., 2004). The TSCS provides a comprehensive measure of trait self-control with high predictive validity (de Ridder et al., 2012). The 13-item scale is highly correlated with the full 36-item version (0.92–0.93, Tangney et al., 2004), but is more suitable for large-scale representative surveys. It has high internal consistency with a Cronbach's alpha between 0.79 and 0.85 (Tangney et al., 2004; Bertrams and Dickhäuser, 2009) and a high test–retest reliability both after three (0.87) (Tangney et al., 2004) and seven weeks (0.82) (Bertrams and

[3]The SOEP–IS is nationally representative by design. In Online Appendix A, we show that our final estimation sample of respondents with valid self-control measures is also nationally representative.

[4]The details of the measures we use are discussed in the relevant sections below. An overview is provided in Online Appendix A, Table A2.

[5]Missing data are largely driven by "I don't know" responses to the item "People would say I have iron self-discipline."

[6]Specifically, we use data from the SOEP–IS, years 2012–2017 (doi:10.5684/soep.is.2016).

Dickhäuser, 2009). Survey-based measures of self-control also have the advantage of having higher convergent validity than do task-based measures (Duckworth and Kern, 2011).

The 13-items are introduced by the following: "Using the scale provided, please indicate how much each of the following statements reflects how you typically are." Individuals respond using a five-point Likert scale ranging from 1 ("not at all") to 5 ("very much"). The items assess, for example, whether people can resist temptation, can work towards long-term goals, or are lazy. Importantly, most of the items do not specifically refer to self-control, reducing the chances of deliberate non-response or social desirability-induced response bias. Additionally, the items appear in two blocks separated by other questions making it less obvious to respondents that all 13 items belong to the same survey module. Figure A1, in Online Appendix A, lists each item and presents the distribution of responses, which highlights a substantial degree of variation in responses.

We obtain an aggregate measure of self-control by standardizing each individual item and summing the result over all 13 items. For ease of interpretation, we standardize the aggregate scores to be mean zero and standard deviation one. The distribution of our aggregated self-control measure is presented in the bottom panel of Figure A1.

2.3 Self-control, Economic Preferences, and Other Personality Traits

Self-control is considered to be a key personality trait; thus it is an integral part of people's non-cognitive skill set (Almlund et al., 2011). It is conceptually different to locus of control, i.e., the extent to which people believe that their life chances are shaped by their own efforts versus external factors such as luck or powerful others (Rotter, 1966). Almlund et al. (2011) argue that locus of control is a facet of emotional stability, while self-control is more closely related to conscientiousness and time preferences. Given this, we investigate how strongly self-control is correlated with other personality traits (as measured by the Big Five), the willingness to take risks, and patience. We are particularly interested in understanding the potential for measures of self-control to extend economic analyses which, to date, have largely considered a narrower range of non-cognitive skills.

We regress self-control on our measures of the Big Five personality traits, patience and risk preferences.[7] Table 1 reveals that the strongest predictors of self-control, both in terms of

[7]The Big Five are measured via 15 items which use a seven-point Likert response scale (see Gerlitz and Schupp, 2005). Patience and risk preferences are measured using responses (on an 11-point scale) to the questions

magnitude and statistical significance, are conscientiousness, emotional stability, and agreeableness. A one standard deviation (std.) increase in these traits is associated with between a 0.2 std. (agreeableness) and 0.4 std. (conscientiousness) increase in self-control. The relationship between patience and self-control, while weaker, is also significant and positive. In contrast, increases in risk tolerance, extraversion and openness are associated with modest, but significant, reductions in the level of self-control. Pairwise Pearson correlation coefficients generally confirm these findings (see Online Appendix A, Table A3). With the exception of openness, our measures of personality traits and economic preferences are more strongly correlated with self-control than is education which we use as a benchmark. At the same time, while self-control is significantly related to other personality traits and economic preferences in intuitive ways, the adjusted R^2 is only 0.41; there is substantial variation in self-control that is unexplained by the other non-cognitive skills and economic preferences we consider. This raises the possibility that self-control may provide additional traction in predicting people's key life outcomes. We return to this point in Section 4 below.

—Insert Table 1 here—

2.4 The Intra-household Correlation in Self-control

The previous literature sheds very little light on intra-household patterns in self-control. There is a modest, but statistically significant, correlation of 0.11 in the incidence of low self-control within married and unmarried U.S. couples raising small children (Boutwell and Beaver, 2010), while, consistent with theoretical predictions, economic preferences also appear to be positively correlated within couples (Dohmen et al., 2012; Bisin and Verdier, 2000, 2001). Dohmen et al. (2012) find a significant correlation of 0.27 for risk attitudes and of 0.41 for trust between cohabiting married and non-married couples.

The unique household structure of our data allows us to extend these limited findings by investigating how a person's level of self-control is correlated with that of his or her partner. Importantly, each household member in our sample completes the SOEP–IS survey individually, providing us with separate measures of self-control for each partner. We have 524 partner-pairs (91 percent of all pairs) providing complete data on self-control. Figure 1 shows that people's

"Would you describe yourself as an impatient or a patient person in general?" and "How do you rate yourself personally? In general, are you someone who is ready to take risks or do you try to avoid risks?", respectively. All measures are standardized to have mean zero and standard deviation one.

level of self-control is positively correlated with that of their partners. The estimated linear slope is 0.29 indicating that there is positive assortative mating on self-control.

—Insert Figure 1 here—

3 The Determinants of Self-control

In what follows, we investigate several key determinants of self-control. We begin with a focus on people's demographic characteristics (age, gender), family background (paternal and maternal education), fluid intelligence, and political institutions (exposure to the GDR). These factors are chosen for analysis because they are arguably exogenous, draw on the strengths of the SOEP–IS data, and, in some cases, have been shown to be important in previous studies of children. We conclude by using a reform of the German educational system to provide quasi-experimental evidence on the role of one's own education in shaping self-control.

3.1 Previous Literature

The emergence of effective self-control is a cornerstone of human development.[8] Most children rapidly develop the capacity for self-control between the ages of 3 and 7 along growth trajectories that are correlated with factors such as gender, language development, and maternal education (Montroy et al., 2016). Still, the development of self-control is not a linear process. Adolescent-specific changes in brain circuity leave teenagers more sensitive to environmental cues (both negative and positive)—and less able to regulate their responses—than either children or adults (Casey, 2015). The way that self-control evolves into middle- and old-age remains a matter of debate. In their General Theory of Crime, Gottfredson and Hirschi (1990, p. 107) argue that self-control is likely to increase with age since "socialization continues to occur throughout life", but suggest that within-age-cohort position in the self-control distribution is generally constant after age 10. Subsequent research on the lifetime rank- and level-stability of self-control has found substantial support for the stability hypothesis, though for many individuals self-control is dynamic and subject to influence (both positively and negatively) into early adulthood (see Diamond, 2016).

[8] Our literature reviews cover findings on both self-control and self-regulation since Tangney et al. (2004) argue that their concept of self-control (i.e., as overriding responses) fits well with work on self-regulation. We use the term "self-control" to refer to both constructs.

Exercising self-control is a complex process; it requires the coordination and processing of multiple skills across several domains (Calkins, 2007; Cole et al., 2010). Children's ability to draw on, integrate, and manage these processes increases as they mature developmentally (McClelland and Cameron, 2012; McClelland et al., 2014) and acquire the language skills necessary to express themselves (Montroy et al., 2016).[9] Children with high IQs have a higher capacity for self-control than their peers with average IQs (Calero et al., 2007) and there is evidence that intellectual disability is associated with poorer self-control (Memisevic, 2015).

Girls appear to have a slightly higher capacity for self-discipline and delay of gratification than do boys (Silverman, 2003). There is evidence that gender gaps in self-control emerge as early as age 3 (Cameron Ponitz et al., 2008), persist into kindergarten (Matthews et al., 2009), and at least partially explain why eighth-grade girls receive higher grades despite doing worse on IQ and only marginally better on standardized achievement tests (Duckworth and Seligman, 2006).

Previous research also links the development of self-control to parenting style, prenatal circumstances, and childhood experiences. For example, ineffective parenting is associated with children having less self-control (Nofziger, 2008). However, the overall effect of parenting can be weak once genetic effects (Harris, 1998; Wright et al., 2008) and prenatal complications (Beaver and Wright, 2005) are controlled. Heavy prenatal exposure to alcohol and abuse in childhood have also been linked to deficits in executive functioning and increased impulsivity (Mattson et al., 2008).

Finally, cultural influences, neighborhoods, and family background also play a role in shaping self-control. Children growing up in cultures which highly value self-control develop the capacity for self-control earlier (Oh and Lewis, 2008), while those growing up in neighborhoods lacking social cohesion have less capacity for self-control (Pratt et al., 2004).[10] Maternal education has been linked to the development of self-control (Miech et al., 2001; Montroy et al., 2016) and young children in disadvantaged families perform worse on self-control tasks than do their more advantaged peers (Noble et al., 2005; Evans, 2003). Bernheim et al. (2015) argue that poverty damages self-control by trapping people in low-asset environments with diminished incentives to exercise self-control.

[9] See Montroy et al. (2016) for an interesting review of the cognitive processes underpinning self-control.

[10] In contrast, Gibson et al. (2010) fail to find a relationship between self-control and neighborhood influences once other factors are controlled.

3.2 Demographics, Family Background, Intelligence and Political Institutions

The previous research is largely based on samples of children or adolescents. In contrast, our analysis considers several key determinants (age, gender, paternal and maternal education, fluid intelligence, GDR exposure) of self-control in the adult population. Specifically, column 1 of Table 2 presents the results we obtain when regressing self-control simultaneously on all six potential determinants.[11] Column 2 adds controls for potentially endogenous factors such as labor market outcomes and health which may themselves be outcomes of self-control (see Section 4). The estimates in column 3 additionally control for people's Big Five personality traits, patience, and general willingness to take risks. Estimates of the effects of the additional controls in columns 2 and 3 are unlikely to have a causal interpretation; consequently, we refrain from interpreting them as such. Nonetheless, we are interested in the way that accounting for these controls alters the interpretation of the truly exogenous determinants.

—Insert Table 2 here—

Age is an important determinant of adults' self-control; each additional year of age results in a 0.018 std. increase in self-control. Estimated age effects are somewhat smaller, but remain statistically significant and economically meaningful, even after we account for more detailed controls (column 2) and personality traits (column 3). Moreover, the relationship is highly linear. Figure 2 depicts the point estimates from a regression of self-control on all controls (similar to column 3 of Table 2) and a full set of three-year age bins. Given the cross-sectional nature of our data, it is not possible to identify age effects separately from cohort effects. Nonetheless, the strong linearity in the age pattern of self-control suggests that the relationship is largely driven by aging and that adults' capacity for self-control continues to evolve even as they enter old age.[12]

—Insert Figure 2 here—

[11] See Table B1 in Online Appendix B for complete regression results. In addition, Figure B1 depicts the heterogeneity in the distribution of self-control across each of these determinants and presents the results from Kolmogorov–Smirnov tests for the equality of distributions.

[12] For other personality traits, such as risk preference, research on panel datasets is able to disentangle age effects from birth cohort or period effects. Using, among other datasets, SOEP data, Dohmen et al. (2017) find a linear decrease in the willingness to take risks until approximately age 65. Additional evidence from the SOEP data indicates that a strong decline in risk by age is prevalent across different socioeconomic groups up to age 45 (Schurer, 2015). Similar results have been found for the U.S. (Sahm, 2012). The absence of birth cohort or period effects in risk preference suggests that age effects are a plausible driver of the linear increase in self-control in out data.

Table 2 also reveals that average self-control is the same for men and women. The developmental advantage that girls have during childhood and adolescence in self-regulation and delaying gratification is no longer evident once they reach adulthood. Interestingly, Falk et al. (2018) find that women are less, not more, patient than men on average across the world, though the disparities are small.

Although there is evidence that children's capacity for self-control increases with maternal education and families' socioeconomic status (Miech et al., 2001; Montroy et al., 2016; Noble et al., 2005; Evans, 2003), our results indicate that this relationship is more nuanced in adulthood. We find that the unconditional relationship between people's level of self-control and their parents' educational attainment is, in fact, negative.[13] People's capacity for self-control is significantly greater if their fathers or mothers have only 8–9 years of education than if they have more (see Panels (d) and (e) of Figure B1). However, once conditioning on other potential determinants of self-control (see Table 2) the effect of parental years of education becomes statistically insignificant, suggesting that family background may be a much weaker predictor of self-control in adulthood than it appears to be in childhood.

Given that complex cognitive processes are necessary to exercise self-control (see Montroy et al., 2016), it is interesting to consider how self-control is related to intelligence. Many experts believe that personality traits are more related to crystallized than fluid intelligence because personality affects achievement rather than ability (Vigil-Colet and Morales-Vives, 2005). Therefore, we focus on fluid intelligence because it is often considered to be a measure of innate ability (see Baltes, 1993; Anger and Heineck, 2010). We find that the unconditional relationship between self-control and fluid intelligence is negative for adults aged 17+ (see Panel (f) of Figure B1). Those in the bottom third of the fluid intelligence distribution have significantly higher levels of self-control than do those in the middle third of the distribution (p-value 0.00); similarly those in the middle third of the distribution have significantly higher self-control than do those in the top third (p-value 0.01).[14] Once we account for other controls (including personality traits), the estimated effect of fluid intelligence on self-control remains negative, but is no longer statistically significant at conventional levels (see Table 2). Taken together,

[13] We consider three levels of parental education: 8–9 years of schooling (corresponding to basic secondary track, *Hauptschule*), 10 years (intermediate track, *Realschule*), and 12–13 years (academic track, *Gymnasium*).

[14] Tables B2 and B3 in the Online Appendix B present the results when parental education and fluid intelligence, respectively, enter the specification more flexibly as in Figure B1. Our main conclusions are unchanged.

our results are consistent with previous evidence that those with lower fluid intelligence may "compensate for this deficiency with conscientiousness and hard work, dedication, good time management and self-discipline"(Djapo et al., 2011, p. 66).

We also consider how exposure to the GDR's political institutions is related to people's self-control. We do this using an indicator for those who ever lived in the former GDR (East Germany) prior to the fall of the Berlin Wall in 1989.[15] We find that those Germans who were GDR residents have significantly higher levels of self-control in 2017 than those who were not (see Panel (c) of Figure B1). Specifically, once other potential determinants are controlled, former East German residents have self-control scores that are 0.28 std. higher than former West German residents; those living abroad (i.e., outside Germany) score 0.23 std. higher. The East–West disparity remains both statistically significant and economically meaningful in our fully specified model (column 3); the effect of living abroad does not.

Our results are consistent with previous evidence that political and economic regimes can have a causal role in shaping important aspects of people's personality.[16] Our finding that living in the GDR also heightens people's capacity to exercise self-control is new, though perhaps not surprising. Many parents encouraged their children to minimize any negative consequences of the GDR's political regime by suppressing their own thoughts and desires (Jahn, 2014). There was an incentive for people to be circumspect in their options and behavior so as not to jeopardize their educational and career opportunities, preserve their individual freedom (Bruce, 2012; Fulbrook, 2008), and protect their families and friends (Jahn, 2014).[17]

Finally, we investigate whether longer exposure to the GDR's institutional framework heightens self-control by examining patterns across birth cohorts. To the extent that it is length of exposure that matters, we would expect the East–West gap in self-control to be greatest for

[15]Specifically, we define individuals as residing in the GDR based on their place of secondary schooling and where they lived in 1989. When the place of secondary schooling is missing (because individuals went to school before the GDR was founded), we only use the latter piece of information. People born after 1989 are classified by their current place of residence. In Table 2 the difference in average self-control for people living abroad in 1989 is captured through a separate indicator. In Figure 3 we only consider people living in East or West Germany in 1989 and people born after the reunification.

[16]Previous research on economic preferences and other personality traits has documented disparities between East and West Germans in their preferences for: redistribution and state intervention (Alesina and Fuchs-Schündeln, 2007); solidarity (Ockenfels and Weimann, 1999; Brosig-Koch et al., 2011); trust, cooperation and risk attitudes (Rainer and Siedler, 2009; Heineck and Süssmuth, 2013; Neugart, 2016); and locus of control, neuroticism and openness (Pannenberg and Friehe, 2019; Friehe et al., 2015; Kleinjans and Gill, 2018).

[17]As we cannot disentangle certain institutional aspects, our point estimates state the compound effect of having lived in the GDR. While the repressive regime certainly heightened the societal need to exert self-control, the benefits of a higher level of self-control in school or at the place of work were probably less pronounced than in the West German social market economy.

people born earlier. We test this hypothesis by re-estimating our models allowing for an interaction between age (continuous) and residential location. The coefficient on the age-location interaction is positive, but statistically insignificant and economically unimportant ruling out a simple exposure story (see Online Appendix B, Table B4). Alternatively, self-control may respond to the specific political circumstances in which one grows up. Figure 3 depicts the difference in the average self-control of former East versus West Germans, by birth cohort, highlighting four distinct periods: born before 1949 (when the GDR was established), 1949–1961 (when the Berlin Wall was built), 1962–1990 (while the Berlin Wall existed, the Berlin Wall fell in November 1989) and post-1990 (when Germany was reunified). It is only for those born after Germany's reunification that we find no differences between East and West Germans' levels of self-control. Otherwise, East–West differences in self-control appear remarkably constant across birth cohorts. Thus, it appears that it is residence in the GDR—irrespective of its length or timing—which is linked to higher self-control.

—Insert Figure 3 here—

3.3 The Role of Own Education

We turn now to consider the potential for one's own education to influence the development of self-control. Although people's capacity for self-control is almost certainly a key factor in their educational attainment (we consider this further in Section 4), it is also possible that education itself strengthens self-control. Accounting for this type of reverse causality is empirically challenging; however, we are able to make progress by using a policy reform that increased the number of years of compulsory schooling in Germany. Before the reform, students in basic schools (*Hauptschulen*), the least academically demanding and most common school track at the time, were required to attend eight years of schooling in total (four years of elementary school and four years of basic school). The compulsory schooling reform added a mandatory ninth grade for students in basic schools. Whether students were affected by the reform was determined by their year of school graduation (and, thereby, year of birth) and state of residence at the time.[18] This exogenous variation in years of education allows us to test whether additional years of education affect people's capacity for self-control.

[18]See, for example, Pischke and von Wachter (2008), Siedler (2010), Kemptner et al. (2011), Cygan-Rehm and Maeder (2013), and Kamhöfer and Schmitz (2016) for evidence on the effect of this reform and Angrist and Krueger (1991), Oreopoulos (2006), Stephens and Yang (2014), and Meghir and Palme (2005) for international evidence on similar reforms in other countries.

We regress actual years of education on a reform indicator and state and birth-cohort fixed effects in the first stage of a two-stage least squares (2SLS) approach. We find that being affected by the reform increases the average years of education by about 1.4 years for all students and 0.7 years for students in basic schools (see Table 3).[19] Our second-stage results indicate that an exogenous increase in years of schooling has no significant effect on self-control.[20] As we show in Section 4, educational achievement is a consequence rather than a determinant of self-control.

—Insert Table 3 here—

4 Self-control as a Predictor of Key Life Outcomes

We continue by investigating the extent to which self-control predicts important life outcomes. Taking a broad perspective, we consider outcomes across five domains: educational attainment, health and health-related behaviors, labor market outcomes, financial well-being, and life satisfaction. After briefly reviewing the literature, we discuss our empirical strategy and present results with and without controls for other personality traits. We conclude by running a horse race designed to stress test the predictive power of self-control.

4.1 Previous Literature

"High self-control is relevant to nearly all forms of behavior conducive to a successful and healthy life" (de Ridder et al., 2012, p. 76). Given this, it is not surprising that there is substantial evidence that people's capacity for self-control underpins their physical and mental health, economic well-being, pro-social behavior, and interpersonal relationships (see de Ridder et al., 2012; Moffitt et al., 2011, for reviews). Those with greater self-control act in ways that are consistent with their own long-term interests, while those with low self-control tend to take more risks (e.g., Friehe and Schildberg-Hörisch, 2018; Gerhardt et al., 2017) and engage in more deviant behavior (e.g., Engel, 2012). Critically, the consequences of self-control are lifelong; self-control measured in early childhood predicts a myriad of adult outcomes from income, financial security, and savings to substance abuse and criminal convictions (Moffitt et al., 2011).

[19] The first-stage F-statistic of the instrument indicates that we do not have a weak instrument problem.

[20] As the 2SLS approach only yields the local average treatment effect, our finding does not rule out that other margins of education affect self-control.

Three key insights from the voluminous literature linking self-control to educational success are particularly worth noting. First, self-control is linked to skill development from an early age. Preschoolers' capacity for self-regulation is positively associated with their literacy, vocabulary, and math skills as well as their school readiness, for example (Blair and Razza, 2007; McClelland et al., 2007). As children's ability to self-regulate grows so too does their academic achievement (see, e.g., Morrison et al., 2010; McClelland et al., 2014). Second, self-control is consequential. Adolescents' capacity for self-discipline is a better predictor of their academic performance than is their IQ (Duckworth and Seligman, 2005). Third, while it is easy to imagine a joint relationship between education and self-control, the directionality appears to be stronger from behavioral regulation to academic achievement than the reverse. Within-individual changes in self-control over time predict subsequent changes in students' grade point averages, but not the reverse for example (Duckworth et al., 2010).

People's physical and mental health is also related to their capacity for self-control. Using U.S. Adolescent Health data, for example, Miller et al. (2011) provide evidence that a measure of low self-control predicts adverse health conditions such as diabetes, asthma, cancer, high cholesterol, Attention Deficit Hyper-Activity Disorder, and depression.[21] Moreover, the link between health and self-control appears to operate in part through the influence self-control has on the risks people accept and the health behaviors they adopt. Self-control has been linked to physical exercise, dieting, condom use (see de Ridder et al., 2012, and the references therein) as well as to crime and other deviant behavior (Engel, 2012; Vazsonyi et al., 2017). Importantly, Moffitt et al. (2011) find that the benefits of self-control for adult functioning are partially mediated by better decision-making during adolescence. Self-controlled adolescents are less likely to smoke, drop out of high school or become teenage parents and staying out of these three kinds of trouble explains some of the effects of self-control on adult outcomes.

A lack of self-control exposes people to financial risks and diminished financial well-being. People with self-control problems are more likely to suffer income shocks, rely on easy-access high-cost forms of credit, and be denied credit (Gathergood, 2012). Importantly, the foundations of this relationship appears to be set in childhood. Studies of British cohort data, for example, find that children with low self-control experience 1.6 times as many months of

[21] Their self-control proxy is constructed using 23 parent- and self-reported items capturing young people's behavioral and social problems that may arise from low trait self-control.

adult unemployment as those with high self-control (Daly et al., 2015), while each std. increase in childhood self-control is associated with a 4–5 percentage point (pp.) increase in having a pension as much as four decades later (Lades et al., 2017).

Finally, people's trait self-control is positively related to their happiness and life satisfaction (see Wiese et al., 2018). This appears to be true, in part, because they have fewer conflicts between their current desires and their longer-term goals (Hofmann et al., 2012, 2014). Stutzer and Meier (2016) find, for example, that obesity is associated with lower subjective well-being only among those who report having limited self-control.

4.2 Overview: Self-Control and Key Life Outcomes

We provide a descriptive overview of the unconditional relationship between self-control and our 22 different life outcomes by contrasting the outcomes of those in the top half of the self-control distribution with those in the bottom half. Although this median split is somewhat arbitrary, it is nonetheless useful in providing a broad perspective on the relevance of self-control. Average outcomes are presented in columns 4 and 5 of Table 4, while the self-control gap in outcomes (in std.) is depicted in column 7 using horizontal bars with statistically significant differences (at 5 percent) indicated in dark green and red, whereas non-significant differences are in pale colors. Table 4 also provides helpful information regarding: (i) units of measurement (column 1); (ii) sample sizes (column 2); (iii) age ranges (column 3); and (iv) the unconditional std. (column 6). Variable definitions are provided in Online Appendix Table A2.

—Insert Table 4 here—

To illustrate, consider our mental health measure, the Mental Health Component Summary score (MCS score, see Table A2 for the measurement), which has been standardized to be mean zero and std. one. People with above-median self-control have, on average, an MCS score of 0.21, while those with below-median self-control have an average MCS score of -0.13. Thus, having above-median self-control is associated with a mental health score that is approximately 0.35 std. higher (after rounding); a statistically significant difference.

Overall, our data confirm that higher self-control is related to improved health outcomes (better mental health, lower BMI, less obesity), a more active lifestyle (increased sports participation, reduced oversleeping), higher educational attainment, improved employment outcomes (higher wages, less unemployment), financial well-being (home ownership), and greater life sat-

isfaction. Most of these relationships are not only statistically significant, but also large enough to be economically meaningful.

4.3 Estimation Strategy

We investigate the predictive power of self-control using a multifaceted approach. First, we regress each outcome (y_i) on self-control and a set of control variables:

$$y_i = \alpha + \beta S_i + \boldsymbol{X}_i'\boldsymbol{\gamma} + \varepsilon_i, \tag{1}$$

where S_i captures self-control and β is the coefficient of interest.[22] $\boldsymbol{X}_i$ is a vector of baseline controls (gender, parental education, migration background, number of siblings, and religion as well as age, state, and interview-month fixed effects) assumed to be exogenous with respect to self-control. In addition, ε_i is the error term and all other terms are parameters to be estimated.

Equation (1) is estimated using OLS. Given the large number of outcomes we consider, in addition to conventional p-values, we also report p-values adjusted for multiple hypothesis testing using the method suggested by Romano and Wolf (2005). These adjusted p-values account for the family-wise error rate (i.e., the probability of making at least one type-I error when performing our 22 hypothesis tests) which conventional p-values do not.[23]

We augment our linear regression results with additional statistics on the predictive power of self-control. Specifically, we employ the least absolute shrinkage and selection operator (LASSO) as a direct test of the capacity of self-control to predict the outcomes of interest. LASSO is a regression method which incorporates variable selection and is frequently used in machine learning applications to enhance the prediction accuracy and interpretability of the resulting model. In effect, LASSO chooses the subset of variables from the larger set of all potential predictors (self-control plus all control variables) which contributes the most to the predictive power of the model (see Tibshirani, 1996).[24] If self-control is chosen when using

[22] Figure C1 in Online Appendix C unfolds the association between self-control and the outcome variables along the level of self-control and suggests that linearity is a fair approximation.

[23] We calculate the Romano-Wolf p-values using the Stata ado file `rwolf` by Damian Clarke which follows the algorithm described in Romano and Wolf (2016). In order to account for varying control vectors for each outcome variable and specification, we repeat the procedure and condition on the control variables accordingly.

[24] Formally, LASSO is a penalized OLS estimator that minimizes the sum of squared residuals while adding a penalty term for the sum of the coefficients in the model. This penalty term is chosen so as to maximize the out-of-sample fit of the model (see James et al., 2013). We refer to variables as "chosen" or "selected" when their coefficient is non-zero. We implement LASSO using the Stata ado file `lassoShooting` by Christian Hansen (see Belloni et al., 2014).

LASSO, we have evidence that self-control contributes to explaining outcomes over and above the (non-selected) control variables.

LASSO only provides information on whether self-control is chosen (i.e., has a non-zero coefficient) or not. Consequently, we expand on this by reporting not only the models' R^2, but also what we refer to as the "R^2 rank." The latter results from a process in which variables are added to the model sequentially. Specifically, each outcome variable is regressed separately on each of the K right-hand side variables (self-control plus controls) in the specification. The variable with the highest R^2 is added to the model and the outcome is regressed on the variable with the highest R^2 in the first round and, in turn, the remaining $K-1$ variables. This continues until all K variables have been added to the model. A variable's R^2 rank is the order in which that variable was added to the model. Thus, the lower the R^2 rank of self-control, the more it contributes to explaining variation in outcomes.[25]

Finally, we investigate the predictive power of self-control by considering two extensions of our baseline model. The first extension (see Section 4.5) adds controls for measures of the other personality traits (Big Five traits) and economic preferences introduced earlier. The second extension (see Section 4.6) exploits the full potential of our rich survey data by also accounting for additional factors (mediators) that may themselves be endogenous with respect to self-control. These include marital status, height (considered to be a proxy for nursing in early childhood, see Currie, 2009), measures of fluid and crystallized intelligence as well as other outcomes. We control, for example, for education when regressing wages on self-control. As education is itself partially determined by self-control, the estimated coefficient on self-control in this extended model will capture only partial (direct) effects.

These extensions are useful for two reasons. First, changes in estimates across specifications allow us to make a tentative assessment regarding the potential for omitted variable bias to confound our results (see Altonji et al., 2005; Oster, 2017; Ichino et al., 2008). Second, these models provide a stress test for the predictive power of self-control. If self-control is economically meaningful and statistically significant in the face of these additional controls, this provides

[25] A similar sequential procedure is suggested by Imbens (2015) and Imbens and Rubin (2015) to select the variables used to estimate propensity scores. They use a logit model and rely on a likelihood ratio test as a selection criteria. Although the sequential procedure is computationally demanding since it requires $(K^2+K)/2$ regressions for each outcome, it has the advantage that the correlation structure between the right-hand side variables (e.g., between self-control and the other personality traits) is taken into account when assessing the variables' contributions to the variation in the outcomes.

evidence of its predictive power over and above those factors typically considered in economic analyses.

4.4 Baseline Results

Higher self-control is related to better health outcomes and more positive health behaviors. A one std. increase in self-control is associated with a 0.14 std. increase in people's Mental Health Component Summary Score and a 0.15 std. improvement in their Physical Health Component Summary score (PCS score, see Table 5 for the point estimates). Those with greater self-control adopt more active lifestyles. A one std. increase in self-control is linked to a 10 percent (5.5 pp.) increase in monthly sports participation and a 15 percent (5.2 pp.) reduction in the chances of oversleeping at least once a week. Perhaps not surprisingly, greater self-control translates into fewer weight issues. On average, BMI drops by 2.4 percent and the probability of being obese falls by 4.9 pp. (25 percent) with every std. increase in self-control. These effects are highly significant even when we consider the Romano–Wolf adjusted p-values which account for multiple hypothesis testing (see column 3).

—Insert Table 5 here—

There is also a statistically significant relationship between self-control and both educational attainment and subsequent labor market outcomes. Specifically, a one std. increase in self-control is associated with 0.2 additional years of education and approximately a 10 percent higher likelihood of having at least a high school (3.3 pp.) or college (2.1 pp.) education. Moreover, higher self-control is linked to better outcomes across all four employment measures we consider. Hourly wages are 5 percent higher with each std. increase in self-control, while the probabilities of being currently unemployed or having been unemployed in the last 10 years are 25 percent (1.6 pp.) and 15 percent (5.0 pp.) lower, respectively. On average, each std. increase in self-control results in two fewer months spent in unemployment over the previous 10 years.[26] Interestingly, self-control is unrelated to either the extensive margin (labor force participation) or intensive margin (working hours) of labor supply once we condition on baseline controls.

Financial well-being is higher in households with more self-control. Each std. increase in household self-control is associated with an increase of 4.2 pp. (8 percent) in the chances that

[26] Our unemployment measure captures registered unemployment.

the household owns (rather than rents) their home.[27] Self-control is unrelated to whether households hold financial assets (such as stocks) in their portfolios and has only a small (4 percent) effect on the chances of saving monthly which is not statistically significant once we adjust for multiple hypothesis testing. As the ability to save likely depends on home ownership, we also estimate our savings model separately for home owners and renters. Increased self-control is negatively associated with saving propensities (2.9 pp.) for home owners, while renters are 5.5 pp. more likely to save each month as their self-control increases. The relationship between self-control and the savings of home owners is not significant once we account for multiple hypothesis testing.

Consistent with previous evidence that subjective well-being is positively related to the capacity for self-control (see Wiese et al., 2018), we find that increased self-control is associated with significant increases in people's overall life satisfaction as well as in their satisfaction with their health, work and family lives. Greater self-control is associated with better health and employment outcomes; thus, it is not particularly surprising that this is also reflected in the greater satisfaction that more self-controlled people have in these domains. Marital status is not closely linked to self-control, however, indicating that the influence of self-control on satisfaction with family life operates through channels other than family structure per se.[28]

How important is self-control in predicting key life outcomes? Our baseline specifications account for self-control plus 29 additional control variables.[29] The number of variables chosen by the LASSO is shown in column 4 of Table 5, while column 5 indicates whether self-control is among them. Self-control is chosen as a predictor in seven of the 22 outcomes we consider, namely mental and physical health, years of education, and all four life satisfaction measures. In fact, self-control is the only predictor variable chosen by LASSO in the case of overall life satisfaction and satisfaction with family life. Self-control appears to be less relevant for labor market outcomes and financial well-being.[30]

[27] For couple-headed households, we use the highest self-control level reported by the two spouses as a measure of household capacity for self-control. Table C6, in Online Appendix C, presents results separately for single- and couple-headed households.

[28] Results available upon request.

[29] Although age enters the regression models through year fixed effects, we count it as one variable. In the LASSO specification we use a linear term for age in years rather than a set of year indicators. The same is true for interview month.

[30] In the case of financial well-being, the LASSO sometimes selects no variables indicating that our set of controls does a rather poor job in explaining these outcomes.

The predictive power of self-control can also be understood by focusing on its R^2 rank (see column 7 of Table 5). Overall, our control variables explain between 3 (saving of home owners) and 64 percent (labor force participation) of the variation in the outcomes we consider (see column 6). Self-control is among the 10 most important variables in explaining this variation in all but two cases, labor force participation and holding financial assets. Moreover, self-control is the single most important variable in understanding overall life satisfaction and satisfaction with work and family life and is the second most important factor (after age) in explaining mental and physical health, health behaviors, and health satisfaction.

Taken together, our baseline results indicate that self-control is an important factor in explaining key life outcomes. People with higher levels of self-control experience higher levels of physical, mental, economic, and overall well-being than do those with less capacity for self-control.

4.5 Controlling for Other Personality Traits and Economic Preferences

Self-control is conceptually distinct from other personality traits (e.g., Big Five) and economic preferences (risk attitudes, patience). Nonetheless, people's traits and preferences are not only correlated (see Table 1), they may also operate jointly to influence the decisions that people make and the outcomes that they achieve (Almlund et al., 2011). In particular, conscientiousness, emotional stability, and patience are all in some degree reliant on willpower making them likely confounders of the effects of self-control. Consequently, we add measures of personality traits and economic preferences to our baseline specification in order to assess the explanatory power of self-control over and above these potential confounders.

The resulting point estimates for our self-control index are in column 1 of Table 6. We investigate the importance of these additional controls by testing the null hypothesis that these estimates are the same as in the baseline regression (column 1 of Table 5) using standard t-tests. The resulting p-values are provided in column 2. In the case of mental health, educational attainment, working hours, saving for tenants, and life satisfaction, we reject the equality of the two estimates at the 5 percent level, while the estimated effects of self-control on unemployment probabilities and months in unemployment (last 10 years) are significantly different at the 10 percent level. In most cases, the estimated effect of self-control is very similar in magnitude to that obtained in our baseline specification. The most notable exception is mental health

where the estimated effect of self-control falls to less than 0.03 std. compared to 0.14 std. in the baseline specification. The relationship between self-control and one's subjective well-being becomes weaker as well, but remains statistically significant in most cases.

Overall, controlling for other personality traits and economic preferences in models of key life outcomes adds explanatory power and often reduces the estimated effect of self-control, but does not render it statistically insignificant.

—Insert Table 6 here—

4.6 The Horse Race: Controlling for Endogenous Factors

We conclude this section by considering the results of models that account for relevant, but potentially endogenous, factors in addition to our baseline controls as well as personality traits and economic preferences (see columns 5–8 in Table 6). As previously noted, this does not provide an estimate of the overall effect of self-control on people's life outcomes, but rather is best thought of as a stress test for the predictive power of self-control. Our models of health outcomes and health behaviors, for example, now account for marital status, intelligence, highest educational degree, gross monthly labor market income, and non-employment—all of which may be driven by self-control (see the notes to Table 6 for details.)

There are several key messages. First, while self-control is unrelated to mental health, greater capacity for self-control is linked to improvements in people's physical health and the health behaviors they adopt. Given the central role that education and income play in models of health production (see Grossman, 1972), the consistent effect of self-control—over and above that due to human capital and financial resources—in producing good health is quite remarkable. On balance, these results are consistent with previous evidence that greater capacity for self-control results in better health outcomes in part because of the health choices that people make (see de Ridder et al., 2012).

Second, self-control continues to have a strong association with educational attainment even after we account for mental and physical health, fluid and crystallized intelligence, and marital status (see column 5). In contrast, the estimated effect of self-control on hourly wages drops by two-thirds relative to the baseline specification once education is controlled. Our estimates fall by half when we focus on our three unemployment outcomes. Thus, self-control appears to influence labor market success mainly by raising educational attainment. Interestingly, Almlund

et al. (2011) reach a similar conclusion regarding the mechanism linking other personality traits to labor market outcomes.

Third, there is surprisingly little relationship between self-control and financial well-being whether we control for income (Table 6) or not (Table 5). While those with a greater capacity for self-control are somewhat more likely to be home owners (who in turn are less regular savers), self-control is unrelated to households' propensity to hold risky assets and to the savings of tenants.

Finally, the association between self-control and life satisfaction is weaker in the face of our endogenous controls. Life satisfaction encapsulates life outcomes such as labor market success, good health, and educational achievement. The large drop in the estimated effect of self-control once these endogenous outcomes are accounted for is consistent with self-control influencing people's well-being largely through these channels. Still, it is remarkable that the association of self-control with health and work satisfaction remains evident (albeit weaker) despite controlling for income which is traditionally regarded as a key driver of work satisfaction (Clark, 2015). In fact, self-control is among the four LASSO-chosen predictors of work satisfaction, whereas income is not.

5 The Intergenerational Implications of Self-control

The household nature of our data provides us with a unique opportunity to study the intergenerational implications of parental self-control. Previous research leads us to expect that the influence of parents' self-control on children's life chances may operate not only through the direct intergenerational transmission of self-control, but also, for example, through the role it has in shaping parenting behavior or the family environment. Given this, we focus our analysis, first, on assessing the intergenerational transmission of self-control; and, second, on estimating the effects of parental self-control on three key facets of child development: (i) health, (ii) education, and (iii) behavior. We begin our investigation with a brief review of the existing literature.

5.1 Previous Literature

Previous researchers have identified intergenerational links in many personality traits other than self-control (see Grönqvist et al., 2017; Anger, 2012; Brown and van der Pol, 2015; Falk et al.,

2017, for reviews). Regarding self-control, U.S. data from the National Longitudinal Survey of Youth 1979 (NLSY79) and the Fragile Families and Child Wellbeing Study, for example, provide evidence that children are more likely to have low levels of self-control if their mothers and/or fathers also have low self-control (Nofziger, 2008; Boutwell and Beaver, 2010). These studies do not rely on measures of children's trait self-control per se, but instead proxy low self-control with children's behavioral issues.

What we know about the role of parental self-control in influencing child development is even more limited. We are unaware, for example, of any evidence linking parental self-control to children's educational success, though the role of self-control in improving one's own academic achievement (see, e.g., Duckworth and Seligman, 2005; Tangney et al., 2004) together with the intergenerational transmission of self-control makes such a link plausible. Similarly, the relationship between parental self-control and child health has not been studied extensively, despite the strong associations between self-control and one's own health. An exception is Stoklosa et al. (2018), who find that U.S. parents' self-control problems are associated with an increase in the likelihood that their children are obese.

Self-control has been more closely linked to parenting behaviors. A mother's capacity for self-control determines, to some degree, the way she chooses to punish and supervise her children (Nofziger, 2008). Moreover, low parental self-control is associated with significantly less family cohesion, reduced parental efficacy, and more family conflict, resulting in a less positive family environment overall (Meldrum et al., 2016). As a result, children of parents with self-control issues appear to develop more behavioral problems. The 101 U.S. juvenile offenders Meldrum et al. (2016) study, for example, face significantly more charges if their parents have low self-control than if they do not in part because of the family environment they are exposed to. Similarly, Meldrum et al. (2018) find a negative association between maternal self-control and early childhood aggression in a sample of 117 three-year-old Dutch boys which operates through ineffective parenting and the child's own self-control. Interestingly, the authors find no evidence of a relationship between paternal self-control and boys' aggression.

Given this evidence, we are particularly interested in the transmission of self-control from parents to their children and in the relationship between parents' self-control and their chil-

dren's development. Our study is the first to study these issues using large-scale data from a representative sample of parents.

5.2 Sample

Using the household structure of the SOEP–IS, we are able to identify 999 parent-offspring pairs belonging to 364 separate families.[31] Our information on offspring comes from two sources. First, offspring aged 17+ living in sampled households are SOEP respondents themselves; they answer the usual questionnaires and remain in the sample even after moving out of their parents' household. For the 298 offspring-parent pairs (188 individual offspring) identified in this way, we have information on their own self-control as well as on the self-control of at least one of their parents. Thus, in contrast to Boutwell and Beaver (2010) who proxy children's self-control at age 3 and Nofziger (2008) who proxy self-control at age 10–11, we directly measure children's self-control at age 17 or later when it is arguably more stable. Importantly, self-control is measured in the same way for parents and their young adult children.

Second, offspring younger than age 17 are not interviewed themselves but are captured through separate child-focused questionnaires which survey one parent about the child's development. Survey items include, for example, questions related to children's education, health, typical behaviors, and characteristics. This questionnaire is usually answered by the mother, sometimes by the father, and we can use parents' relationship information to also match in data from spouses. For the 822 offspring-parent pairs (510 individual offspring) captured through the child-focused questionnaires, we only have their self-reported self-control score if they have turned age 17 by the time of the 2017 interview and are, thereby, SOEP respondents themselves. This is the case for 121 offspring-parent pairs (73 individual offspring). That is, 121 offspring-parent pairs are identified using sources of information giving us data on outcomes in childhood and adulthood in addition to self-control. Figure 4 presents the age distribution among the offspring for each outcome we investigate.

—Insert Figure 4 here—

[31] In total, we observe 625 offspring. Of these, we observe both parents in 374 cases (60 percent). We also observe multiple offspring for some parents. This is true for 72.1 percent (243) of mothers and 71.0 percent (174) of fathers.

5.3 Intergenerational Transmission of Self-control

We assess the intergenerational transmission of self-control using our self-control measure for 188 adult children (aged 17 to 55, median age 22) and their 298 parents. Figure 5 shows the correlation between the offspring's and each parent's self-control score. The positive slope parameter of 0.15 is significant at the 5 percent level, indicating that there is a modest correlation in the self-control of parents and their adult children.

—Insert Figure 5 here—

Figure D1, in Online Appendix D, shows the correlation by parent's and offspring's gender. Interestingly, we only find a positive and statistically significant relationship in the self-control of parent-offspring pairs of opposite sex. Specifically, the estimated slopes are 0.39 (standard error 0.12) between mothers' and their son's self-control and 0.41 (standard error 0.20) between fathers' and their daughter's self-control; both are significant at the 5 percent level. In contrast, the estimated slopes between mothers and daughters and between fathers and sons are -0.04 and 0.03, respectively.

These findings indicate that the self-control of parents and their adult children is correlated, particularly so between mothers and their sons and between fathers and their daughters. This transmission mechanism opens the door for parental self-control to affect aspects of child development beyond the capacity for self-regulation. We investigate this proposition in the following analyses. Given the existing evidence on the potential mechanisms linking parental self-control to child outcomes, we expect that parental self-control may operate in part by shaping parenting styles and influencing the family environment.

5.4 Parental Self-control and Child Development

Our objective is to investigate the relationship between parents' self-control and key aspects of their children's development, at different ages depending on the outcome (see Figure 4 for the age distribution by outcome). Parental self-control is measured using the self-control score of the child's mother, the child's father, or an average of the two in the cases when both are available (60 percent). Similar to the analysis in Section 4, we consider three sets of control variables. Our baseline estimation includes the gender and age-in-years and state-of-residence

fixed effects for the offspring as well as five-year age bins and indicators for the migration background of both parents.[32]

We investigate the health consequences of parental self-control by regressing children's BMI on parental self-control (for all results in this section, see Table 7). The resulting point estimate is negative, close to zero, and statistically insignificant. However, when differentiating by gender (see Online Appendix D, Table D1), we find that a one std. increase in maternal self-control decreases her daughter's BMI by 3.7 percent. In contrast, there is no evidence that parental self-control is linked to children's educational attainment as measured by the probability that the child attends an academic track high school (*Gymnasium*). Although the point estimate is positive, in line with our expectations, it is modest in size (3.7 pp.) and statistically insignificant. The same holds true when we estimate models that differentiate by the gender of both parents and children.

The relationship between parents' capacity for self-control and children's behavioral issues is assessed using information from the Strengths and Difficulties Questionnaire (SDQ, see Table A2).[33] We find that parental self-control is negatively related to children's behavioral problems. Each std. increase in parental self-control results in a significant reduction in the child's SDQ score of 0.39 std. Moreover, the LASSO procedure chooses parental self-control as the only predictor of the child's behavioral problems from a total of 30 variables. Parental self-control also is the largest contributor to the R^2. Thus, parents with greater self-control have children with fewer behavioral issues. Consistent with this, we also find a significant positive effect of 0.18 std. of parental self-control on pro-social behavior.[34] Differentiating by gender, we find that the increase in pro-social behavior is driven exclusively by mothers and the reduction in behavioral problems is driven by the effects of mothers' self-control on both their daughters and sons and from fathers' self-control on their sons only (see Table D1). These baseline results

[32]In those cases where we only observe the self-control of one of the parents, we set the control variables for the unobserved parent to zero (rather than missing) and control for indicators whether we observe one or both parents and whether this is the mother or the father. To take into account that childhood information may have been assessed in a previous wave, we also control for year-of-observation fixed effects.

[33]The SDQ measures behavioral problems along four dimensions: emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems. Each dimension is surveyed with 2 to 4 items; parents report their child's typical behavior using a 7-point Likert-type scale. To calculate the SDQ score, we first average responses within each dimension, then add all four dimensions, and standardize the resulting score to mean zero and std. one.

[34]Pro-social behavior is assessed as a fifth dimension together with the four problem dimensions of the SDQ in one questionnaire, but does not form part of the SDQ score. It is measured as the average of 4 items, each using a 7-point Likert-type scale, that survey whether the child is typically considerate, helpful, and shares with others, standardized to mean zero and std. one.

are in line with Meldrum et al. (2018) who find maternal self-control to be more effective than paternal self-control in reducing childhood aggression.

—Insert Table 7 here—

As in Section 4, we assess the predictive power of parental self-control by considering two extensions of our baseline model. The first adds controls for measures of parents' other personality traits (Big Five traits) and economic preferences (risk attitudes and patience) introduced earlier (see Section 4.5) in addition to our baseline controls. The second also accounts for additional factors that may mediate the effect of parental self-control (see Section 4.6).

Interestingly, we find that controlling for parents' Big Five personality traits, risk attitudes, and patience strengthens the relationship between parental self-control and children's educational outcomes (second panel). Each std. increase in parental self-control is associated with an 9.0 pp. increase in the chances that children attend an academic track high school. At the same time, the effect of parental self-control on children's SDQ scores is reduced to 0.25 std., a decrease of 35.2 percent. Despite this reduction parental self-control is still chosen as the only predictor of the child's behavioral problems by the LASSO algorithm from all 50 controls considered; it also ranks the highest in contributing to the R^2. Also, the coefficient on children's pro-social behavior is reduced to 0.08 std. and is no longer statistically significant.

Finally, we assess the power of parental self-control to predict children's developmental outcomes by additionally controlling for parental measures of marital status, education, crystallized and fluid intelligence, gross labor market income, and employment (see third panel). Parental self-control continues to be economically meaningful and negatively related to children's SDQ scores. Parental self-control is chosen as the only predictor from 82 controls in the LASSO algorithm; it also remains the largest contributor to the model's overall R^2.

Taken together, our results lead us to conclude that the dimension of child development that is most strongly related to parental self-control is children's behavior, in particular the incidence of behavioral problems. Parents' capacity for self-control appears to have less bearing on their children's health and educational attainment. These findings are consistent with the intergenerational transmission of self-control operating, at least in part, through parenting styles and the family environment.

6 Conclusions

Choice inevitably involves trade offs. It is therefore not surprising that people's capacity for self-control has wide-ranging implications for the choices they make, the behaviors they adopt, and the outcomes they achieve. For this reason, self-control often takes center stage in behavioral economic theory. In contrast, there is a remarkable lack of corresponding empirical evidence on the way that self-control affects decision making and the consequences this has for people's life chances.

Our research extends the self-control literature by—for the first time—providing nationally representative evidence on the relationship between trait self-control and physical, mental, and economic well-being. We use one coherent approach to study not only the determinants of self-control, but also the predictive power of self-control and the intergenerational implications of parental self-control for children's outcomes. In this respect, our paper offers a holistic view of the diversity in trait self-control; its consequences for people's health, educational attainment, labor market success, financial well-being, and life satisfaction; and its potential role in social and economic (im)mobility.

Trait self-control predicts the diversity in an extraordinarily broad range of life outcomes. Our results confirm previous evidence—based on smaller and selective samples—of importance of self-control for good health, educational achievement, and financial well-being. They also highlight that higher self-control translates into higher levels of satisfaction with health, work, family life, and life overall. In short, self-control is critically important for people's overall well-being. At a societal level, the capacity for self-control is likely to affect productivity (and hence living standards) as well as the costs of providing health care, education, and social assistance.

Our results lead us to a number of important conclusions. First, some of the disparity in self-control associated with family background, gender, and IQ that is commonly observed in childhood appears to be much more nuanced in adulthood. Self-control increases as people age which is good news for aging societies given the link between greater self-control and improved health, better labor market performance, reduced criminality, and greater overall well-being. At the same time, gender and family background are weaker predictors of self-control in adulthood than appears to be the case in childhood. This underscores the importance of studying self-control in representative adult populations as well as in children.

Second, self-control is linked to wage rates and unemployment experiences mainly through its mediating effect on educational attainment. Once education is controlled, there is no significant effect of higher self-control on the labor market outcomes we consider. This is consistent with Almlund et al. (2011) who reach a similar conclusion regarding the mechanism linking other personality traits to labor market outcomes. Importantly, a reform of the German educational system which exogenously raised the years of education students received had no discernable effect on their self-control. Thus, there seems to be no reverse causality between education and self-control; educational achievement is a consequence rather than a determinant of self-control.

Third, while previous researchers have focused solely on the individual, family background or neurobiological foundations of self-control, we demonstrate that political and economic institutions also have the potential to shape people's capacity for self-control. Specifically, former East German residents have an average trait self-control that is 0.28 std. higher; a difference which, given our baseline estimates, is expected to result in, for example, 0.06 additional years of education and a 1.4 pp. lower obesity risk. This economically meaningful impact of the institutions that people are exposed to requires that we broaden our research focus to consider other key drivers of self-control, such as culture or social norms.

Fourth, the benefits of high self-control extend beyond people themselves and into the next generation. We find that the capacity for self-control is transmitted from parents to their offspring, in particular to children of the opposite sex. In addition, parents with higher levels of self-control have children with fewer behavioral problems, who tend to behave in a more prosocial manner. These results are important as child temperament predicts not only functioning in childhood, but is also systematically related to a broad range of adult outcomes (Caspi, 2000; Caspi et al., 2003). As a consequence, the link between parental self-control and children's behavioral problems deepens our understanding of the intergenerational transmission of educational, labor market, and health outcomes and points to a potential mechanism for social immobility.

Fifth, our research findings emphasize the comprehensive benefits of higher self-control for individuals themselves, their offspring, and for societies as a whole; consequently, they provide a strong argument in favor of social interventions that aim to increase self-control. Numerous programs to enhance children's self-control have been developed[35] and positively evaluated (see

[35] Strayhorn Jr (2002) reviews various components and mechanisms underlying self-control training programs.

Alan and Ertac, 2018, and the meta-analysis on self-control interventions for children under age 10 by Piquero et al., 2010, 2016). Such programs often rely on teaching goal setting as well as training and rewarding perseverance towards these goals (Strayhorn Jr, 2002).

Our work suggests the benefits of such programs are potentially quite large. Specifically, consider, for example, a typical effect size of 0.3 std.[36] In that case, our results indicate that interventions targeting self-control would translate, for example, into a 1.5 percent increase in monthly wages, a 0.5 pp. decrease in the likelihood of unemployment, and a 1.5 pp. reduction in obesity risk in adulthood. Moreover, as life outcomes typically increase linearly in self-control, higher levels of self-control would provide similar benefits to people along the entire self-control distribution. Thus, policy makers could opt for either targeted interventions that explicitly focus on those with low self-control or more universal interventions (avoiding stigmatization) without incurring an efficiency loss.

Finally, our results reinforce the critical importance of self-control for personality psychology and behavioral economics (e.g., Almlund et al., 2011; Borghans et al., 2008). Importantly, trait self-control adds explanatory power for people's key life outcomes—and those of their children—beyond that obtained from more commonly used Big Five personality traits and measures of time, risk, and social preferences alone. The availability of high-quality data on trait self-control provides an exciting opportunity to close the gap in our theoretical and empirical understanding of the way that self-control influences human behavior.

[36] In their meta-analysis, Piquero et al. (2016) identify an average effect size of 0.32 of interventions on self-control, measured by Hedges' g. Hedges' g is a standardized mean difference and thus, while not the same, comparable in magnitude to standard deviations. Moreover, Kosse et al. (2018) and Gertler et al. (2013) report effect sizes of childhood interventions on non-cognitive skills other than self-control that are measured in regressions with standardized coefficients. These effect sizes range from 0.22 to 0.39 std. and are thus of similar magnitude.

Tables

Table 1: Linear regression of self-control on personality traits and economic preferences

	Dependent variable: self-control
Extraversion	-0.060^{*}
	(0.031)
Conscientiousness	0.441^{***}
	(0.031)
Emotional stability	0.247^{***}
	(0.030)
Openness	-0.077^{**}
	(0.032)
Agreeableness	0.221^{***}
	(0.031)
Risk tolerance	-0.103^{***}
	(0.029)
Patience	0.084^{***}
	(0.031)
Constant	0.013
	(0.028)
Observations	767
Adj. R^2	0.41

Notes: Own calculations based on SOEP–IS, wave 2017. All variables (including the dependent variable) are standardized to mean 0 and standard deviation 1. Observations with missing information in any of the personality traits are excluded. Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Potential determinants of self-control

	(1)	(2)	(3)
	Dependent variable: self-control		
	without controls	with controls	plus personality traits
Age (in years)	0.018***	0.014***	0.008***
	(0.002)	(0.003)	(0.003)
Female	0.009	0.049	−0.018
	(0.046)	(0.068)	(0.057)
Dad: > basic school	0.025	−0.050	−0.034
	(0.061)	(0.060)	(0.050)
Mom: > basic school	−0.058	−0.083	−0.042
	(0.063)	(0.063)	(0.052)
Fluid intelligence	0.025	−0.017	−0.035
	(0.029)	(0.029)	(0.024)
Lived in 1989: East	0.277***	0.362***	0.194***
	(0.058)	(0.066)	(0.055)
Lived in 1989: abroad	0.228**	−0.080	0.072
	(0.096)	(0.143)	(0.117)
Lived in 1989: missing	0.128	0.089	0.203**
	(0.096)	(0.112)	(0.093)
SES controls		yes	yes
Personality controls			yes
Observations	1679	1679	1679
Adj. R^2	0.10	0.17	0.44

Notes: Own calculations based on SOEP–IS, wave 2017. The dependent variable, self-control, is standardized to mean 0 and standard deviation 1. The coefficients of socioeconomic status (SES) controls (including interview-month fixed effects) and personality traits are omitted from the regression table, full results are available in Online Appendix Table B1. Missing information in the key variables is kept as missing. Missing information in the control variables is replaced with zero in order to keep the number of observations constant and an indicator for this transformation is included. Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: The effect of compulsory years of education on self-control

	(1)	(2)
	All students	Basic school students
First stage		
Reform	1.381***	0.659***
	(0.376)	(0.181)
Second stage		
Years of educ.	0.076	−0.541
	(0.101)	(0.374)
Observations	1,424	446
First-stage F stat.	13.480	13.210

Notes: Own calculations based on SOEP–IS, wave 2017. The first stage gives the effect of the compulsory schooling reform on years of education (including schooling and post-secondary education). The second stage gives the effect of (instrumented) years of schooling on self-control (standardized to mean 0 and standard deviation 1). The first column considers all individuals, the second column only those who went to a basic track school (as only this school track was affected by the reform). The first-stage F-statistic refers to the F-statistic of the instrument. State–birth-cohort-clustered standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Unconditional relationship between self-control and life outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Variable mean if self-control:			
Variable	Unit of meas.	Num. of obs.	Age range	above median	below median	Std. of var.	Difference in std. of var.
Health and health behaviors							
MCS	std.	1,860	18–92	0.21	-0.13	0.98	0.35
PCS	std.	1,860	18–92	0.03	-0.05	0.98	0.08
BMI	units	1,925	17–92	26.31	26.83	5.14	-0.10
Obesity (BMI>30)	1=yes	1,925	17–92	0.18	0.23	0.40	-0.12
Sports ($\geq$ once a month)	1=yes	1,958	17–92	0.52	0.46	0.50	0.13
Oversleep ($\geq$ once a week)	1=yes	800	21–88	0.27	0.41	0.47	-0.29
Educational attainment							
Years of education	years	1,845	18–92	12.61	12.35	2.73	0.10
$\geq$ High school	1=yes	1,862	18–92	0.38	0.33	0.48	0.11
College	1=yes	1,961	17–92	0.23	0.17	0.40	0.15
Labor market performance							
Hourly wage	Euro	901	18–65	18.71	16.19	10.94	0.23
Labor force participation	1=yes	1,961	17–92	0.52	0.63	0.49	-0.22
Working hours	hours	1,036	18–79	35.55	36.12	13.17	-0.04
Unemployment	1=yes	1,133	18–65	0.05	0.08	0.25	-0.11
Unemp. last 10 years	1=yes	1,367	18–65	0.28	0.36	0.47	-0.17
Months unemp. 10 years	months	1,360	18–65	5.84	8.25	19.99	-0.12
Financial well-being							
Home owner	1=yes	1,442	17–92	0.57	0.43	0.50	0.28
Financial assets	1=yes	1,442	17–92	0.61	0.56	0.49	0.09
Saving	1=yes	1,442	17–92	0.66	0.61	0.48	0.10
Satisfaction with several aspects of life							
Overall life satisfaction	std.	1,961	17–92	0.17	-0.15	0.98	0.33
Health satisfaction	std.	1,961	17–92	0.11	-0.09	0.99	0.20
Satisf. with work	std.	1,117	17–82	0.14	-0.14	1.00	0.28
Satisf. with family life	std.	1,942	17–92	0.11	-0.12	1.00	0.23

Notes: Own calculations based on SOEP–IS, wave 2017. Column 1 gives the unit of measurement. Variables measured in standard deviations (std.) have been normalized to mean 0 and standard deviation 1. Deviations are due to rounding errors. For ease of interpretation, the descriptives for the hourly wage are in Euros, in the analysis to follow, however, we use the log hourly wage; similarly for BMI. Column 2 includes the number of observations. Assets and savings are measured at the household level and the self-control score is taken from the spouse with the highest self-control. The upper age range for the labor market outcomes in column 3 is restricted to 65: the legal retirement age. Columns 4 and 5 give the mean value of the outcome variable for individuals with a self-control score above and below the median, respectively. The median is calculated separately for each sample for which we observe the outcome variable. Column 6 states the unconditional standard deviation of the outcome variable. Column 7 reports the difference in the outcome variable between individuals with above-median and below-median self-control in units of a standard deviation of the outcome variable. Specifically, we assess the difference and the significance by running the following regression:

$$\Phi(y) = \alpha + \beta \mathbb{1}(\text{self-control} > \text{median self-control}) + \varepsilon,$$

where $\Phi(y)$ is the normalized outcome and $\mathbb{1}(\cdot)$ is an indicator function that equals 1 if an individual has above-median self-control (and 0 otherwise). The difference in column 7 is the coefficient β. The significance level is taken from the regression. Pale bars indicate that β is not significant at the 5 percent level.

Table 5: Conditional relationship between self-control and life outcomes, baseline estimates

	(1) Point estimate	(2) Un-adjusted p-value	(3) Romano–Wolf p-value	(4) Vars chosen by LASSO	(5) Self-control chosen	(6) R^2	(7) R^2 rank
Health and health behaviors							
MCS	0.137***	0.00	0.00	3/30	yes	0.15	2
PCS	0.154***	0.00	0.00	4/30	yes	0.19	2
Log(BMI)	−0.024***	0.00	0.00	4/30	no	0.09	3
Obesity (BMI>30)	−0.049***	0.00	0.00	2/30	no	0.05	2
Sports (≥ once a month)	0.055***	0.00	0.00	1/30	no	0.08	2
Oversleep (≥ once a week)	−0.052***	0.00	0.02	1/30	no	0.11	2
Educational attainment							
Years of education	0.218***	0.00	0.00	8/30	yes	0.22	4
≥ High school	0.033***	0.00	0.02	4/30	no	0.14	3
College	0.021**	0.02	0.12	6/30	no	0.12	10
Labor market performance							
Log(wage)	0.050***	0.00	0.02	3/30	no	0.21	7
Labor force participation	0.007	0.31	0.62	3/30	no	0.64	25
Working hours	0.413	0.32	0.62	1/30	no	0.23	6
Unemployment	−0.016**	0.04	0.20	3/30	no	0.05	4
Unemp. last 10 years	−0.050***	0.00	0.00	1/30	no	0.12	3
Months unemp. 10 years	−1.980***	0.00	0.00	4/30	no	0.09	4
Financial well-being							
Home owner	0.042***	0.00	0.02	3/30	no	0.13	8
Financial assets	0.012	0.40	0.62	0/30	no	0.05	27
Saving	0.026*	0.07	0.26	0/30	no	0.05	7
Saving (owners)	−0.029	0.15	0.46	2/30	no	0.03	6
Saving (tenants)	0.055***	0.01	0.03	1/30	no	0.12	2
Satisfaction with several aspects of life							
Overall life satisfaction	0.200***	0.00	0.00	1/30	yes	0.07	1
Health satisfaction	0.212***	0.00	0.00	4/30	yes	0.13	2
Satisf. with work	0.192***	0.00	0.00	2/30	yes	0.04	1
Satisf. with family life	0.154***	0.00	0.00	1/30	yes	0.04	1

Notes: Own calculations based on SOEP–IS, wave 2017. The number of observations for the respective outcomes is as stated in Table 4. Column 1 is the estimated coefficient of self-control (standardized to mean 0 and standard deviation 1) on the outcome variable resulting from separate regressions (including separate estimations when conditioning saving on home ownership). Full regression estimates underlying these results can be found in the Online Appendix, Tables C1 to C5. The p-values and the additional statistics in columns 2–7 are calculated as described in the text. All specifications include indicators for gender, father's and mother's education below basic schooling, religious affiliation, migration background in the first and second generation, as well as the number of siblings and age, state, and interview-month fixed effects. For the LASSO procedure age is considered linearly. Stars attached to the coefficients summarize the level of statistical significance according to the unadjusted standard errors with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Conditional relationship between self-control and life outcomes, controlling for other personality traits and endogenous factors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Baseline controls							
	+personality traits				+personality traits +endogenous controls			
	Point estimate	p-val. to baseline	R^2	R^2 rank	Point estimate	p-val. to baseline	R^2	R^2 rank
Health and health behaviors								
MCS	0.027	**0.00**	0.22	7	0.028	**0.00**	0.22	8
PCS	0.144***	0.57	0.19	2	0.126***	0.14	0.22	2
Log(BMI)	−0.028***	0.19	0.11	3	−0.026***	0.45	0.12	3
Obesity (BMI>30)	−0.050***	0.93	0.05	2	−0.047***	0.77	0.06	2
Sports (≥ once a month)	0.056***	0.87	0.08	3	0.050***	0.57	0.12	7
Oversleep (≥ once a week)	−0.043*	0.52	0.12	2	−0.052**	0.99	0.13	2
Educational attainment								
Years of education	0.331***	**0.01**	0.25	13	0.274***	0.24	0.33	15
≥ High school	0.051***	**0.03**	0.16	5	0.046***	0.13	0.21	8
College	0.043***	**0.00**	0.14	16	0.035***	0.06	0.19	20
Labor market performance								
Log(wage)	0.052***	0.82	0.22	15	0.017	**0.01**	0.32	39
Labor force participation	0.009	0.73	0.64	18	0.005	0.65	0.67	36
Working hours	−0.447	**0.00**	0.24	12	−0.467	**0.00**	0.27	24
Unemployment	−0.004	0.07	0.05	36	0.007	**0.00**	0.11	40
Unemp. last 10 years	−0.047***	0.80	0.12	3	−0.025	**0.02**	0.16	15
Months unemp. 10 years	−1.094	0.07	0.09	16	−0.108	**0.00**	0.14	46
Financial well-being								
Home owner	0.052***	0.35	0.14	9	0.021	0.08	0.20	47
Financial assets	0.000	0.25	0.05	40	−0.025	**0.00**	0.14	37
Saving	0.011	0.16	0.06	28	−0.014	**0.00**	0.15	31
Saving (owners)	−0.036	0.64	0.02	6	−0.059**	0.08	0.07	7
Saving (tenants)	0.024	**0.03**	0.13	2	0.007	**0.00**	0.25	38
Satisfaction with several aspects of life								
Overall life satisfaction	0.061**	**0.00**	0.13	6	0.016	**0.00**	0.22	57
Health satisfaction	0.119***	**0.00**	0.17	3	0.043*	**0.00**	0.37	6
Satisf. with work	0.093**	**0.00**	0.08	2	0.070*	**0.00**	0.11	2
Satisf. with family life	0.014	**0.00**	0.08	21	−0.008	**0.00**	0.13	50

Notes: Own calculations based on SOEP–IS, wave 2017. The number of observations for the respective outcomes is as stated in Table 4. Columns 1–4 present results for specifications including the baseline controls (see note to Table 5), plus measures for the Big Five traits, risk tolerance, and patience (and three indicators for missing values that enter regressions as zero). In total, 40 right-hand side variables are considered in this specification. Columns 5–8 present results for specifications that include the former variables (baseline and personality trait controls) as well as indicators for the marital status (married, divorced, and widowed, with single as the reference category), body height, and fluid intelligence, plus sets of outcome-specific controls. Outcome-specific controls for health and health behaviors are: fluid intelligence, education indicators, labor force participation and employment indicators, and income (58 RHS variables in total); for education: fluid and crystallized intelligence as well as mental and physical health (52 RHS variables); for labor market performance: fluid and crystallized intelligence, education indicators, and mental and physical health (56 RHS variables); for savings and life satisfaction aspects: fluid and crystallized intelligence, education indicators, labor force participation and employment indicators, income, and mental and physical health (61 RHS variables). Columns 1 and 5 give the point estimates of self-control (standardized to mean 0 and standard deviation 1) on the outcome variable obtained from separate regressions. Columns 2 and 6 report the p-values of t-tests of equal self-control coefficients compared to their counterparts in the baseline specification in Table 5. p-values depicted in bold font are statistically different at the 5 percent significance level. Columns 3 and 7 give the R^2 of the model, while columns 4 and 8 give the R^2 rank of self-control. For legibility, LASSO results are not shown here but are generally similar to the pattern given by the R^2 rank. When controlling for personality traits in addition to the baseline controls, self-control is chosen as a predictor for PCS, overall life satisfaction, as well as satisfaction with health and work. After controlling for potentially endogenous factors, self-control is chosen by the LASSO for PCS and work satisfaction. Stars attached to the coefficients summarize the level of statistical significance according to conventional standard errors with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Parental self-control and offspring's outcomes

	(1) Point estimate	(2) Un-adjusted p-value	(3) Romano–Wolf p-value	(4) Vars chosen by LASSO	(5) Self-control chosen	(6) R^2	(7) R^2 rank
Baseline specification							
Log(BMI)	−0.005	0.61	0.62	1/30	no	0.54	27
High school	0.037	0.24	0.44	1/30	no	0.23	26
Overall SDQ	−0.386***	0.00	0.00	1/30	yes	0.11	1
Pro-social behavior	0.177**	0.03	0.07	0/30	no	0.07	3
+parental personality traits							
Log(BMI)	0.008	0.47	0.73	1/50	no	0.55	32
High school	**0.090****	0.02	0.07	1/50	no	0.26	19
Overall SDQ	**−0.250****	0.02	0.07	1/50	yes	0.14	1
Pro-social behavior	0.076	0.50	0.73	0/50	no	0.07	45
+endogenous controls for parent(s)							
Log(BMI)	0.010	0.43	0.61	1/82	no	0.55	38
High school	0.046	0.26	0.59	3/82	no	0.37	56
Overall SDQ	−0.229**	0.05	0.17	1/82	yes	0.27	1
Pro-social behavior	0.112	0.39	0.61	1/82	no	0.09	39

Notes: Own calculations based on SOEP–IS, wave 2017. Observations: 564 for body mass index (BMI), 343 for high school, and 325 for the overall as well as the pro-social Strengths and Difficulties Questionnaire (SDQ) score. The outcomes are assessed when offsprings were at age 2–55 (median age 13) for BMI, 10–55 (median 17) for high school, and 0–14 (median 8) for SDQ and pro-social behavior. For definitions of the outcome variables, see Table A2. Column 1 gives the coefficient for the effect of parental self-control on the respective outcomes. When self-control is available for both parents, we use the average of the mother's and the father's self-control. Going from the first to the second panel, the number of variables increases by 20 and now includes, for the mother and the father: the Big Five personality traits, risk preference, and patience measures, plus three variables indicating whether the former are missing (with the main variable set to zero in order to keep the observation). In the third panel we additionally control for indicators for the mother's and father's education, marital status, fluid and crystallized intelligence, labor market income, and employment status. Self-control coefficients depicted in bold font are statistically different from their counterparts in the baseline specification in the first panel of this table at the 5 percent significance level as assessed by a t-test of coefficient equality. The other columns are as defined as in Table 5 as well as in the text. Stars attached to the coefficients in column 1 summarize the level of statistical significance according to the unadjusted standard errors in column 2 with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figures

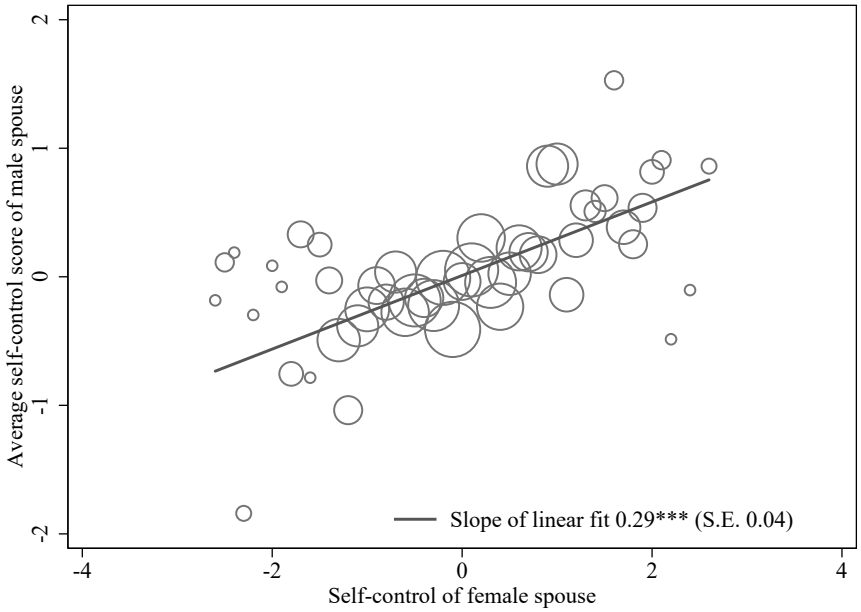

Figure 1: Correlation of self-control between partners

Notes: Own illustration based on SOEP–IS, wave 2017. Observations: 524 couples. Female self-control on the x-axis is standardized to mean 0 and standard deviation 1. The y-axis states the average self-control of the male spouse, again standardized, per 0.1-bin of female self-control. The size of the markers indicates the relative number of observations in the female self-control bin. Five of the 524 couples are same-sex relationships: in this case the self-control of the younger partner in stated in the x-axis. The linear fit is calculated using OLS regression and statistical significance is reported as: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

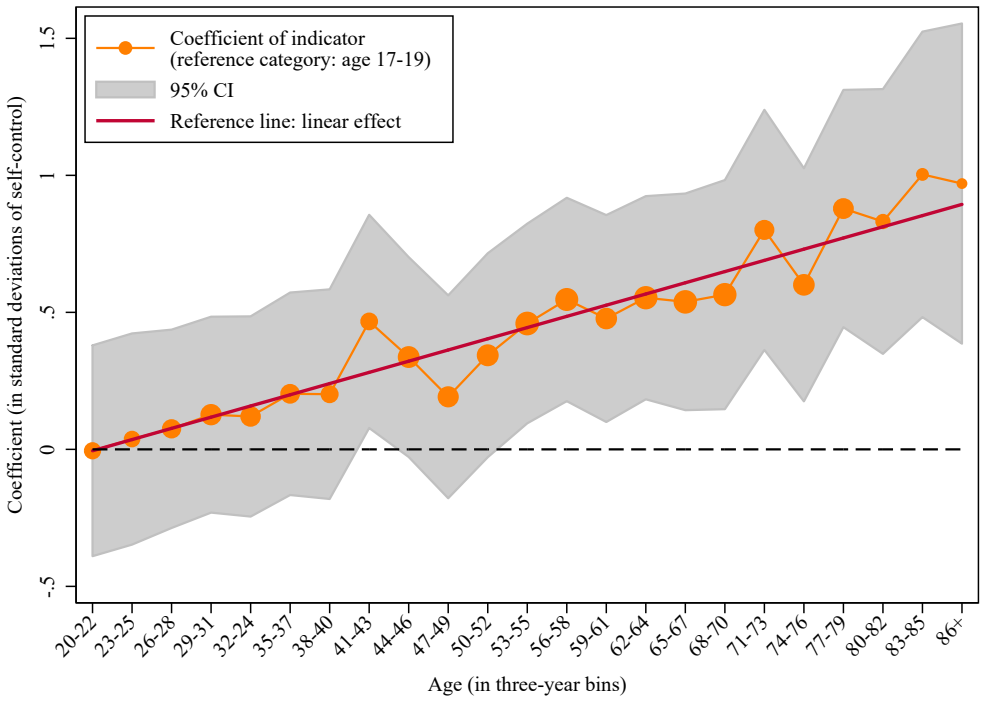

Figure 2: Linearity of self-control in age

Notes: Own illustration based on SOEP–IS, wave 2017. The plot shows the association between self-control and age for three-year age bins. The orange markers give coefficient estimates (in standard deviations of self-control) stated on the y-axis for each age bin on the x-axis. The coefficient is obtained by regressing self-control on the full set of three-year age-bin indicators and control variables for migration background, own education, a crystallized intelligence measure, employment status and wage, occupation indicators, mental and physical health measures, life satisfaction measures, religion, marital status, number of children, and interview-month fixed effects (cf. column 3 in Table 2). The size of the markers indicates the number of observations in the bin, ranging from 19 observations for the 86+ bin to 119 observations for the 53–55 bin. The 95 percent confidence interval is given in gray. The association between self-control and a linear term for age in years taken from Table 2 is plotted in red.

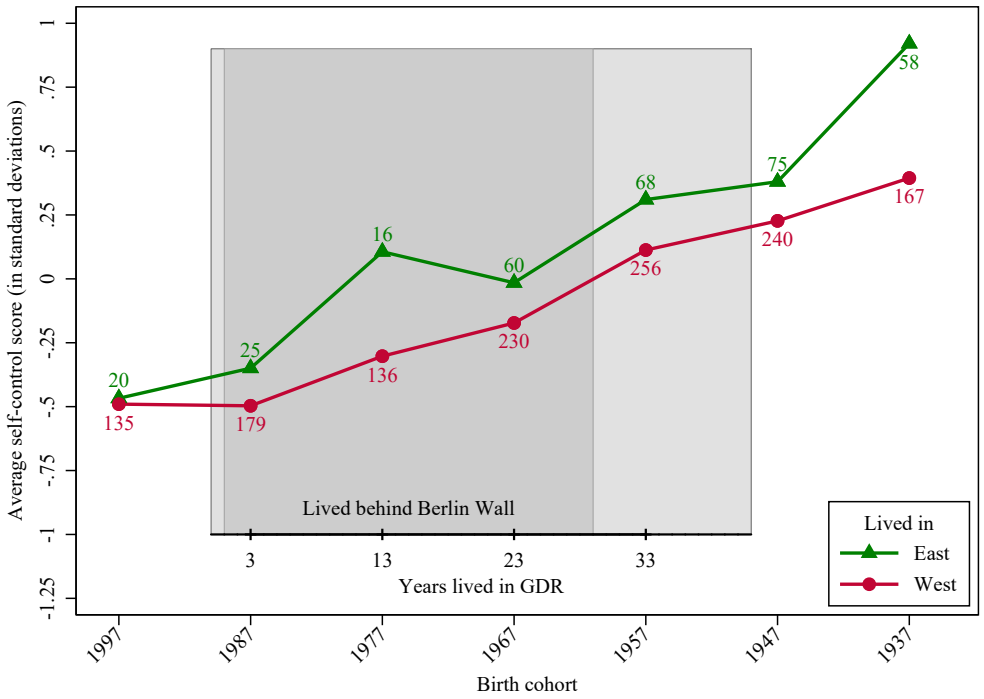

Figure 3: Trends in self-control in East and West Germans over time

Notes: Own illustration based on SOEP–IS, wave 2017. The plot presents the average self-control in standard deviations on the y-axis for ten-year birth-cohort bins on the x-axis, separately for East and West Germans. The year on the x-axis refers to the fifth birth cohort of the interval. The area shaded in light gray shows the time-span (1949–1990) when Germany was divided and East Germans were born in the German Democratic Republic (GDR). Within this time-span, area shaded in dark gray indicates the years the Berlin Wall was in place (1961–1989). The x-axis ranges from young birth cohorts on the left-hand side to older cohorts on the right-hand side. That is, the longer East German individuals lived in GDR the closer to the right the marker is plotted. The number adjacent to each marker shows the number of individuals born in this birth-cohort bin in East and West Germany of that we have information on self-control.

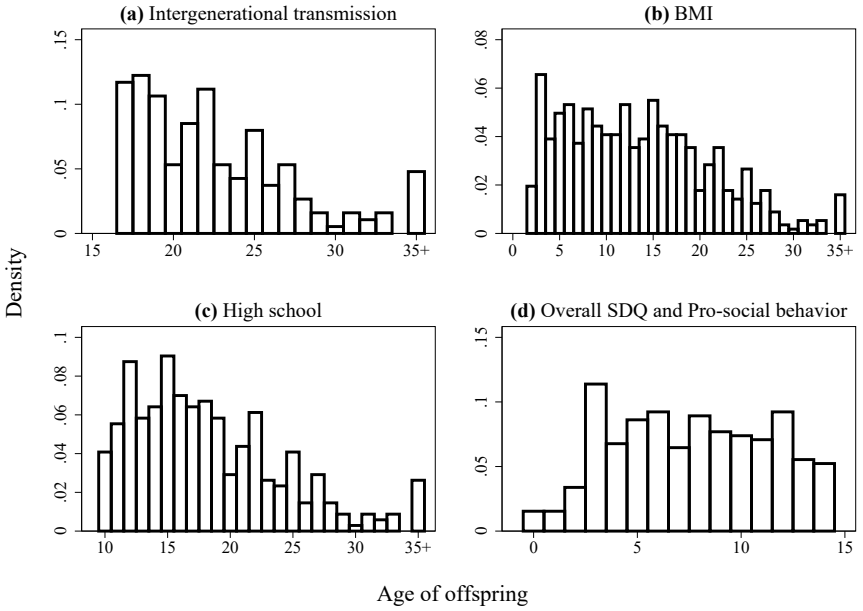

Figure 4: Offspring's ages at which we observe outcome variables

Notes: Own illustration based on SOEP–IS, wave 2017. The number of individual offspring observations is 625. The age of the offspring (on the x-axis) refers to the interview year in which the individual is last observed, usually 2017. For individuals that appear in the child-focused questionnaires and are themselves respondents (because they turn 17 during the panel period) we only use their age in 2017. The category 35+ summarizes ages 35–55. BMI information for children below age 2 is dropped. Whether children go to (academic) high school or another secondary school track is decided at age 10.

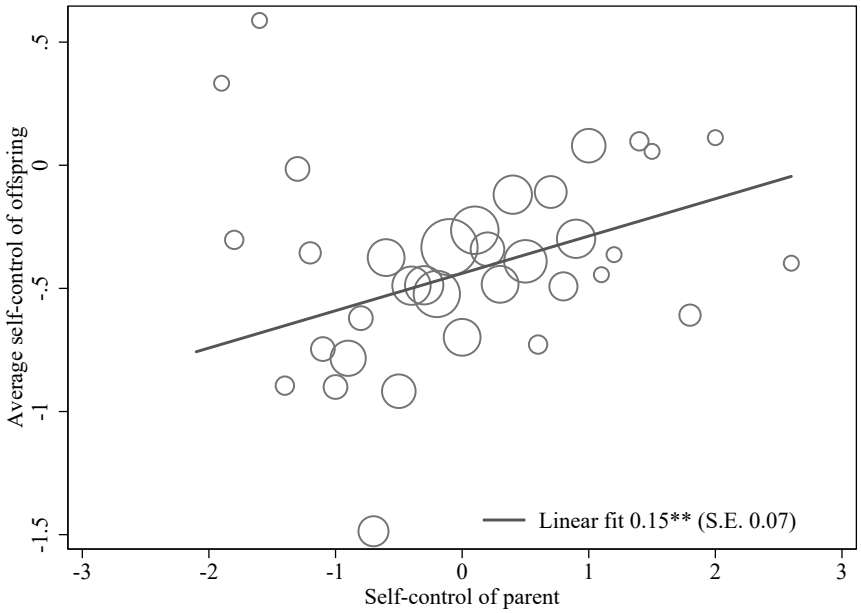

Figure 5: Intergenerational transmission of self-control scores between parents and their adult offspring

Notes: Own illustration based on SOEP–IS, wave 2017. The y-axis gives the average self-control of offspring given the parental self-control on the x-axis. Parental self-control is boiled down to 0.1 bins. The size of the markers refers to the number of parent-offspring pairs in the 0.1 bin on the x-axis. Bins with only one parent-offspring observation are not plotted to avoid outliers. The linear fit is calculated through OLS regression using all 298 parent-offspring pairs. The standard errors are clustered at the offspring level to account that self-control of some offsprings is considered twice; once in relation to the mother's self-control and once in relation to the father's self-control, if we observe both parents. The statistical significance is stated as: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

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Online Appendix A Data

Representativeness of sample

The SOEP–IS was designed to be a representative sample of households and individuals from a cross-sectional and longitudinal perspective (Richter and Schupp, 2015). Therefore, the SOEP–IS stands alone as a representative sample of the German population separate from the SOEP–Core. Our final sample, however, is smaller than the initial and full SOEP–IS for several reasons, which may introduce selection: (i) self-control was only measured for two sub-samples of the SOEP–IS; (ii) we have to drop observations with incomplete survey responses on self-control or essential background characteristics; and (iii) there is some sample attrition over time.

To test for the representativeness of our sample with respect to the German population, we conduct a careful analysis that investigates whether our final sample and the much larger SOEP–Core are balanced in terms of the most critical demographic characteristics. For this exercise, we consider the largest possible sample of SOEP–Core respondents among all initial and refreshment sub-samples that were first surveyed before the initiation of the Innovation Sample in 2012.[37] From this potential SOEP–Core sample, we consider all respondents with complete basic demographic information, totaling to 21,022 observations in 2016, and compute weighted averages based on the individual cross-sectional weights provided by the SOEP (for details, see Kroh et al., 2015) that are essential for representativeness of the German population.

Table A1 presents the sample averages, together with corresponding standard deviations, of our final SOEP–IS sample and the SOEP–Core sample (see columns 1 to 4). Column 5 contains the p-value to test for statistical differences between the two averages, and reveals that, generally, the samples are very well-balanced. In particular the most basic demographics are remarkably similar across the two samples, with no statistically significant differences in gender, age, migration background, geographical region, or religion. Also all variables related to education and labor market are similar, including own and parental education, labor force participation, unemployment, and income.

Most of the variables thus are very well balanced—with two exceptions related to family variables. In our sample slightly more individuals are married (53 percent compared to 49 percent). Also, individuals in our sample have, on average, slightly (0.087) more children, which may result from the higher marriage prevalence. The number of children in our sample (1.36), however, is closer to the national fertility rate computed from administrative statistics. The completed fertility for women born in 1963, which corresponds to the median year of birth in our sample, is 1.59 children (Pötzsch, 2010). Thus, the difference to the SOEP–Core strengthens the representativeness of our sample rather than posing a concern. Moreover, we do not observe any significant difference in the overall household structure, as neither the incidence of single parents in our sample is different from the SOEP–Core nor is the incidence of households with children.

Thus, overall, this investigation underlines the representativeness of our sample and strengthens the contribution of this paper, which is the first to explore self-control in a nationally representative sample.

[37] This way, only the most recent sub-samples entering the SOEP–Core in 2013 or later are excluded, which have an exclusive focus on migrants.

Table A1: Balancing table comparing our final SOEP–IS sample with SOEP–Core sample

	(1) Innovation Sample	(2)	(3) Core Sample	(4)	(5) p-value
	Mean	std.	Mean	std.	eq. means
Demographics					
Female	0.529	(0.499)	0.516	(0.500)	0.245
Age	52.261	(18.288)	52.775	(18.868)	0.247
Migration background (direct and indirect)	0.185	(0.388)	0.171	(0.377)	0.120
East (current)	0.218	(0.413)	0.215	(0.411)	0.719
East (in 1989)	0.193	(0.395)	0.190	(0.392)	0.734
Religion: catholic	0.272	(0.445)	0.272	(0.445)	0.992
Religion: protestant	0.313	(0.464)	0.304	(0.460)	0.449
Education					
Years of education†	12.477	(2.729)	12.382	(2.732)	0.152
Mother: intermediate schooling and above	0.317	(0.465)	0.311	(0.463)	0.626
Father: intermediate schooling and above	0.303	(0.460)	0.298	(0.457)	0.624
Labor market					
Labor force participation	0.637	(0.481)	0.649	(0.477)	0.301
Unemployed†	0.039	(0.194)	0.037	(0.189)	0.698
Gross monthly income (in Euros)†	2689.9	(2350.2)	2745.6	(2422.7)	0.485
Household and Family					
Married	0.530	(0.499)	0.492	(0.500)	0.001
Divorced	0.125	(0.331)	0.124	(0.330)	0.886
Number of children	1.363	(1.266)	1.276	(1.234)	0.003
Single parent†	0.061	(0.239)	0.060	(0.238)	0.959
Household with children	0.362	(0.481)	0.371	(0.483)	0.451
Observations	**1,961**		**21,022**		

Notes: Own calculations based on SOEP–IS, wave 2017, and SOEP–Core, wave 33 (1984–2016). Column 1 gives the unconditional mean of the variable stated on the left for Innovation Sample observations with complete self-control information. Column 2 gives the standard deviation of the variable. Columns 3 and 4 include the same information for the corresponding variables in the Core Sample of the SOEP. Column 5 states the p-value of a conventional t-test of equal means between the two sample. p-values above 0.05 indicate that the mean values are not statistically difference from each other. Variables marked with † have fewer observations than all others.

Variables and summary statistics

Table A2: Definitions of variables

Variable	Definition
Potential determinants	
Female	=1 if respondent is female, 0 else.
Age (in years)	Respondent's age in years in 2017.
East German	=1 if respondent's answer to the question "Where did you live before German reunification, that is, before 1989?" is "East Germany/East Berlin," 0 else.
Mom/Dad: > basic school	=1 if the highest school degree of respondent's mother/father is more than basic schooling (*Hauptschule*), 0 else.
Fluid intelligence	The respondent is asked to assign numbers from 1 to 9 as fast as possible to signs according to a key the respondent sees throughout the test. The test ends after a total of 93 items and the test score is the number correct assignments in 90 seconds. The test score is standardized to mean 0 and standard deviation 1.

Continued on next page

Table A2 – *continued*

Variable	Definition
Personality traits	
Big Five	Extraversion, Conscientiousness, Emotional stability, Openness, Agreeableness; measured via 15 items (3 items each, see Gerlitz and Schupp (2005) for questionnaire) answered on a 7-point Likert scale. Each standardized to mean 0 and standard deviation 1.
Risk tolerance	Answer on 11-point scale to "How do you rate yourself personally? In general, are you someone who is ready to take risks or do you try to avoid risks?" standardized to mean 0 and standard deviation 1.
Patience	Answer on 11-point scale to "Would you describe yourself as an impatient or a patient person in general?" standardized to mean 0 and standard deviation 1.
Life outcomes	
Health and health behaviors	
MCS and PCS	Mental Health and Physical Health Component Summary Score (MCS and PCS, respectively) are assessed through the SF12 questionnaire containing 12 items asking about an individual's health status (e.g., physical functioning and bodily pain as well as stress and emotional problems). Out of the 12 items principle component analysis assigns eight dimensions to physical and four to mental health. The final scores are standardized to mean 0 and standard deviation 1.
Log(BMI)	Log Body Mass Index calculated as body weight in kg divided by body height in meter squared.
Obesity (BMI>30)	=1 if a respondent's Body Mass Index exceeds 30, 0 else.
Sports ($\geq$ once a month)	=1 if a respondent reports to actively engage in sports at least once a month, 0 else.
Oversleep ($\geq$ once a week)	=1 if a respondent reports to oversleep at least once a week, 0 else.
Educational attainment	
Years of education	Years of education from primary to post-secondary education.
$\geq$High school	=1 if a respondent has at least graduated from a *Gymnasium* (academic track) secondary school, 0 else.
College	=1 if a respondent has any form of tertiary education, 0 else.
Labor market performance	
Log(Hourly wage)	Log hourly wage in Euro calculated as the monthly gross income divided by 4.3 times the weekly working hours (wages below 5 Euro were dropped as they indicate misreporting).
Labor force participation	=1 if a respondent is part of the labor force (i.e., working or unemployed and seeking for a job) at the time of the interview, 0 else.
Working hours	=1 if a respondent reports to be registered as unemployed at the time of the interview, 0 else.
Unemployment	=1 if a respondent is unemployed by the time of the interview, 0 else.
Unemp. last 10 years	=1 if a respondent reports to have been unemployed at least once in the 10 years before the interview, 0 else.

Continued on next page

Table A2 – *continued*

Variable	Definition
Months unemp. 10 yrs	Self-reported number of months spend in unemployment in the last 10 years before the interview (0 if the respondent was always employed).
Assets and savings	
Home owner	=1 if a household owns the dwelling of residence, 0 else.
Financial assets	=1 if a household reports of own financial investments, such as stocks, 0 else.
Saving	=1 if a household confirms to the question "Do you have normally some money left at the end of a month, which you can save or put aside? This can include regular savings deposits for asset formation [...], personal pension schemes, building savings contracts, cash-value life insurances, capital formation savings payment.", 0 else.
Satisfaction with several aspects of life	
Life satisfaction	Answer to the question "How satisfied are you with your life, all things considered?" on a 11-point Likert scale from 0 (low) to 10 (high) and standardized to mean 0 and standard deviation 1.
Health satisfaction	Answer to the question "How satisfied are you currently with the following areas of your life? Your health" on a 11-point Likert scale from 0 (low) to 10 (high) and standardized to mean 0 and standard deviation 1.
Satisf. w/ work	Answer to the question "How satisfied are you currently with the following areas of your life? Your work" on a 11-point Likert scale from 0 (low) to 10 (high) and standardized to mean 0 and standard deviation 1.
Satisf. w/ family life	Answer to the question "How satisfied are you currently with the following areas of your life? Your family life" on a 11-point Likert scale from 0 (low) to 10 (high) and standardized to mean 0 and standard deviation 1.
Child outcomes	
Kid: Log(BMI)	Log Body Mass Index calculated as body weight in kg divided by body height in meter squared.
Kid: high school	=1 if attending or having attended *Gymnasium* (academic track) secondary school, 0 else.
Kid: SDQ	Score assessed through the Strength and Difficulties Questionnaire (SDQ) with 4 dimensions (each containing 2–4 items on a 7-point Likert-type scale). Each dimension and their joint average (final score) is standardized to mean 0 and standard deviation 1.
Kid: Pro-social behavior	Average of 4 items on a 7-point Likert-type scale, standardized to mean 0 and standard deviation 1.

Notes: Questions are taken from https://www.diw.de/sixcms/detail.php?id=diw_01.c.583496.de.

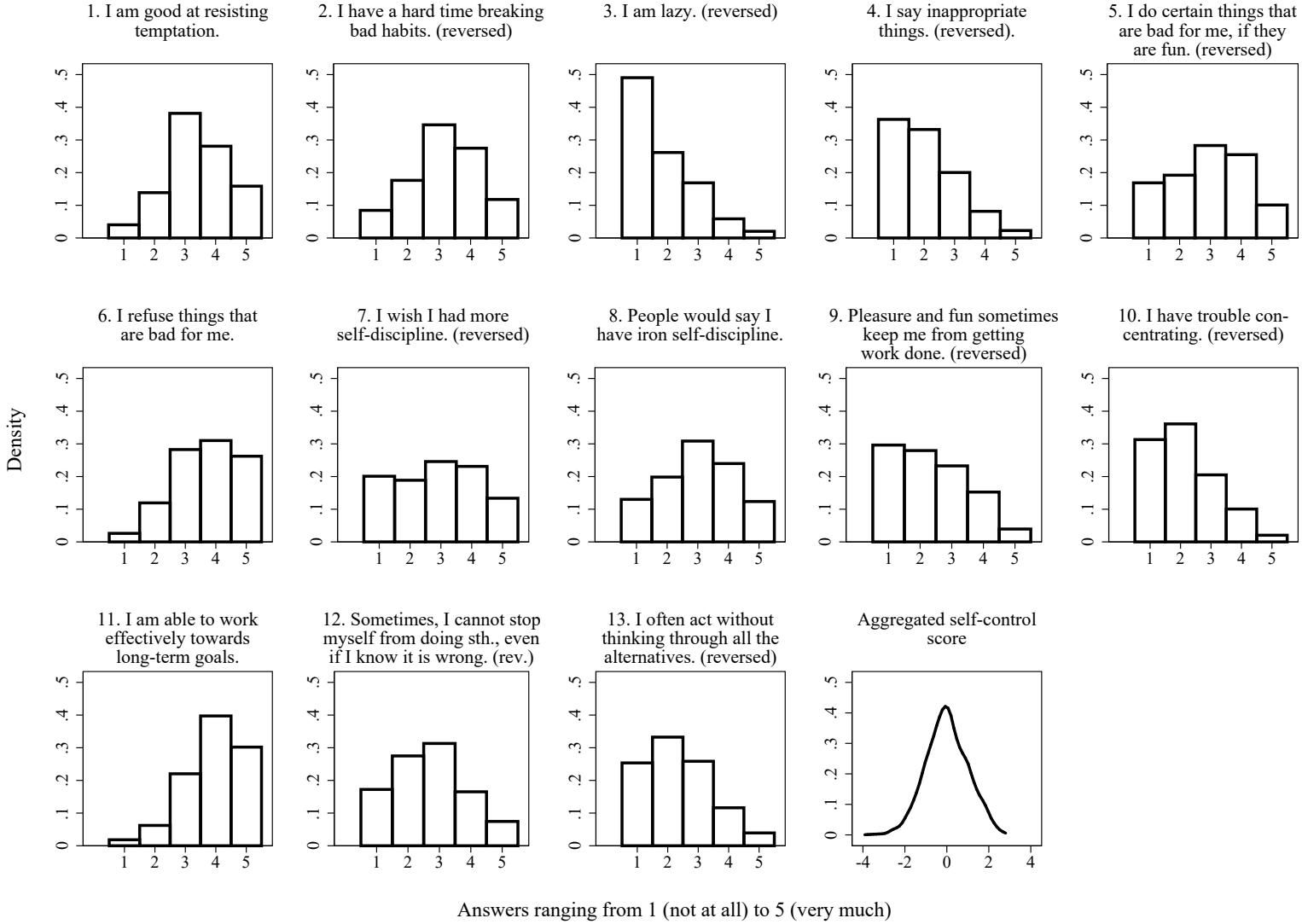

Figure A1: Tangney scale self-control questions and answers

Notes: Own illustration based on SOEP–IS. Questions marked as "reversed" enter the final self-control score as reversed items. The questions are asked in two blocks (block 1: questions 1–6 and 9–13; block 2: questions 7 and 8) separated by other questions. The average self-control distribution in the last panel refers to the average over the 13 single-item scores, i.e., the aggregated score. To account for possible different response behavior across items, we first standardize each item, take the average, and standardize the average, again.

Table A3: Pairwise Pearson correlation coefficients for self-control, other personality traits, and education

	(1) Self-control	(2) Years of education	(3) Extraversion	(4) Conscientiousness	(5) Emotional stability	(6) Openness	(7) Agreeableness	(8) Risk tolerance
Years of education	0.077							
	(0.001)							
Extraversion	0.088	−0.016						
	(0.000)	(0.501)						
Conscientiousness	0.533	−0.036	0.209					
	(0.000)	(0.121)	(0.000)					
Emotional stability	0.313	0.127	0.141	0.121				
	(0.000)	(0.000)	(0.000)	(0.000)				
Openness	0.066	0.150	0.374	0.200	0.025			
	(0.003)	(0.000)	(0.000)	(0.000)	(0.270)			
Agreeableness	0.348	−0.024	0.115	0.286	0.092	0.140		
	(0.000)	(0.298)	(0.000)	(0.000)	(0.000)	(0.000)		
Risk tolerance	−0.135	−0.049	0.110	−0.013	0.078	0.114	−0.135	
	(0.000)	(0.156)	(0.001)	(0.702)	(0.021)	(0.001)	(0.000)	
Patience	0.247	−0.007	−0.048	0.078	0.270	0.024	0.238	−0.022
	(0.000)	(0.769)	(0.043)	(0.001)	(0.000)	(0.311)	(0.000)	(0.547)

Notes: Own calculations based on SOEP–IS, wave 2017. p-values given in parentheses.

Online Appendix B Determinants

Table B1: Baseline results for potential determinants of self-control—full results

	(1)	(2)	(3)
	Dependent variable: self-control		
	without controls	with controls	plus personality traits
Age (in years)	0.018***	0.014***	0.008***
	(0.002)	(0.003)	(0.003)
Female	0.009	0.049	−0.018
	(0.046)	(0.068)	(0.057)
Dad: > basic school	0.025	−0.050	−0.034
	(0.061)	(0.060)	(0.050)
Mom: > basic school	−0.058	−0.083	−0.042
	(0.063)	(0.063)	(0.052)
Fluid intelligence	0.025	−0.017	−0.035
	(0.029)	(0.029)	(0.024)
Lived in 1989: East	0.277***	0.362***	0.194***
	(0.058)	(0.066)	(0.055)
Lived in 1989: abroad	0.228**	−0.080	0.072
	(0.096)	(0.143)	(0.117)
Lived in 1989: missing	0.128	0.089	0.203**
	(0.096)	(0.112)	(0.093)
Migration: first gen.		0.281**	0.116
		(0.128)	(0.105)
Migration: sec. gen.		−0.121	−0.041
		(0.082)	(0.068)
Migration: missing		−0.024	−0.036
		(0.132)	(0.111)
Num. of siblings		0.007	0.000
		(0.014)	(0.011)
Siblings missing		−0.712	0.292
		(0.652)	(0.536)
Height		0.008**	0.003
		(0.004)	(0.003)
Height: missing		0.995	0.706
		(1.146)	(0.971)
Weight (in kg)		−0.007***	−0.005***
		(0.002)	(0.001)
Weight: missing		−0.636***	−0.439**
		(0.225)	(0.185)
Religion: catholic		0.081	0.072
		(0.062)	(0.051)
Religion: protestant		0.074	0.069
		(0.058)	(0.047)
Religion: other/none		0.165	0.198*
		(0.134)	(0.110)
Educ.: secondary		0.034	−0.032
		(0.081)	(0.067)
Educ.: post-secondary		0.077	0.018
		(0.101)	(0.083)
Educ.: college		0.043	0.079
		(0.101)	(0.083)
Educ.: missing		0.676**	0.498**
		(0.300)	(0.247)
Cry. int. score		−0.039	0.027

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Table B1 – *continued*

	(1)	(2)	(3)
		(0.079)	(0.065)
Cry. int. missing		0.031	0.256
		(0.328)	(0.269)
Physical health scale		0.129***	0.072***
		(0.029)	(0.024)
Mental health scale		0.164***	0.052**
		(0.026)	(0.023)
PCS/MCS missing		−0.682***	−0.507**
		(0.255)	(0.211)
Num. of doctor visits		−0.001	0.001
		(0.005)	(0.004)
Life satisfaction: high		0.102*	−0.012
		(0.052)	(0.043)
Health satisfaction: high		0.181***	0.081*
		(0.052)	(0.043)
Not working: unempl.		0.046	0.067
		(0.162)	(0.133)
Not working: old age		−0.012	0.082
		(0.086)	(0.071)
Not working: other reason		−0.131	−0.229
		(0.181)	(0.149)
Not working: reason unknown		0.070	0.034
		(0.121)	(0.100)
Wage (in Euro, incl. 0)		0.002	0.002
		(0.003)	(0.002)
Working: full-time		0.939**	0.582
		(0.478)	(0.394)
Working: part-time		0.845*	0.593
		(0.480)	(0.395)
Working: voc. training		0.736	0.540
		(0.527)	(0.433)
Working: marginally		0.833*	0.647*
		(0.468)	(0.385)
Self-employed		0.089	0.122
		(0.126)	(0.103)
Married		0.126	0.096
		(0.081)	(0.067)
Divorced		0.041	0.010
		(0.097)	(0.079)
Widowed		0.173	0.119
		(0.119)	(0.098)
Single parent		−0.080	−0.017
		(0.107)	(0.088)
Num. children: 1		0.028	0.000
		(0.074)	(0.061)
Num. children: 2		0.036	0.010
		(0.073)	(0.060)
Num. children: 3+		0.105	0.049
		(0.083)	(0.068)
Extraversion (in std.)			−0.025
			(0.021)
Conscientiousness (in std.)			0.416***
			(0.020)
Emotional stability (in std.)			0.190***
			(0.022)
Openness (in std.)			−0.039*

Continued on next page

Table B1 – *continued*

	(1)	(2)	(3)
			(0.021)
Agreeableness (in std.)			0.130***
			(0.020)
Big Five missing			0.490**
			(0.242)
Risk tolerance (in std.)			−0.112***
			(0.033)
Risk missing			−0.184***
			(0.064)
Patience (in std.)			0.128***
			(0.025)
Patience missing			0.230**
			(0.107)
ISCO main cat.: 0		−0.999*	−0.267
		(0.538)	(0.442)
ISCO main cat.: 1		0.069	0.004
		(0.188)	(0.154)
ISCO main cat.: 2		0.054	0.070
		(0.142)	(0.117)
ISCO main cat.: 3		0.012	−0.044
		(0.129)	(0.106)
ISCO main cat.: 4		0.013	−0.026
		(0.144)	(0.118)
ISCO main cat.: 5		0.036	−0.087
		(0.140)	(0.115)
ISCO main cat.: 6		−0.061	−0.226
		(0.324)	(0.266)
ISCO main cat.: 7		−0.154	−0.075
		(0.145)	(0.119)
ISCO main cat.: 8		−0.303*	−0.188
		(0.169)	(0.139)
ISCO main cat.: missing		0.839*	0.594
		(0.468)	(0.385)
Constant	−1.043***	−2.795***	−1.302*
	(0.122)	(0.828)	(0.685)
SES controls		yes	yes
Personality controls			yes
Observations	1679	1679	1679
Adj. R^2	0.10	0.17	0.44

Notes: Missing information in key variables is kept as missing. SES controls include interview-month fixed effects (coefficients omitted from regression table). Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B2: Determinants of self-control—detailed parental education measures

	(1)	(2)	(3)
	Dependent variable: self-control		
	without controls	with controls	plus personality traits
Age (in years)	0.018***	0.014***	0.008***
	(0.002)	(0.003)	(0.003)
Female	0.010	0.051	−0.017
	(0.046)	(0.068)	(0.057)
Dad: 10 yrs schooling	0.047	−0.040	−0.057
	(0.072)	(0.071)	(0.058)
Dad: 12–13 yrs schooling	0.006	−0.059	−0.003
	(0.077)	(0.077)	(0.063)
Mom: 10 yrs schooling	−0.029	−0.061	−0.024
	(0.067)	(0.066)	(0.054)
Mom: 12–13 yrs schooling	−0.139	−0.154	−0.112
	(0.097)	(0.096)	(0.079)
Fluid intelligence	0.028	−0.015	−0.035
	(0.029)	(0.029)	(0.024)
Lived in 1989: East	0.275***	0.361***	0.197***
	(0.058)	(0.066)	(0.055)
Lived in 1989: abroad	0.240**	−0.069	0.084
	(0.096)	(0.144)	(0.118)
Lived in 1989: missing	0.137	0.096	0.207**
	(0.096)	(0.112)	(0.093)
SES controls		yes	yes
Personality controls			yes
Observations	1679	1679	1679
Adj. R^2	0.10	0.17	0.44

Notes: Own calculations based on SOEP–IS, wave 2017. Other control variables as in Table B1. The reference category of education is 8–9 years of schooling. Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B3: Determinants of self-control—fluid intelligence terciles

	(1)	(2)	(3)
	Dependent variable: self-control		
	without controls	with controls	plus personality traits
Age (in years)	0.017***	0.013***	0.008***
	(0.002)	(0.003)	(0.003)
Female	0.007	0.048	−0.021
	(0.046)	(0.068)	(0.056)
Dad: > basic school	0.029	−0.050	−0.034
	(0.060)	(0.060)	(0.049)
Mom: > basic school	−0.056	−0.081	−0.044
	(0.063)	(0.063)	(0.052)
Fluid intelligence: middle tercile	−0.058	−0.087	−0.144***
	(0.059)	(0.058)	(0.048)
Fluid intelligence: top tercile	−0.024	−0.117*	−0.142**
	(0.068)	(0.068)	(0.056)
Lived in 1989: East	0.272***	0.357***	0.189***
	(0.058)	(0.066)	(0.054)
Lived in 1989: abroad	0.221**	−0.087	0.066
	(0.096)	(0.143)	(0.117)
Lived in 1989: missing	0.114	0.081	0.190**
	(0.096)	(0.112)	(0.093)
SES controls		yes	yes
Personality controls			yes
Observations	1679	1679	1679
Adj. R^2	0.09	0.17	0.45

Notes: Own calculations based on SOEP–IS, wave 2017. Other control variables as in Table B1. The reference category is fluid intelligence in the bottom tercile. Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B4: Determinants of self-control—age and East interacted

	(1)	(2)	(3)
	Dependent variable: self-control		
	without controls	with controls	plus personality traits
Panel A: Linear interaction			
Age (in years)	0.016***	0.012***	0.006**
	(0.002)	(0.003)	(0.002)
Born in former East	0.125	0.113	0.114
	(0.113)	(0.112)	(0.092)
Age × East	0.003*	0.005**	0.002
	(0.002)	(0.002)	(0.002)
Panel B: Interaction of indicators			
Year of birth <1949	0.790***	0.424**	0.187
	(0.117)	(0.165)	(0.136)
Year of birth 1949–1961	0.626***	0.323**	0.085
	(0.113)	(0.141)	(0.116)
Year of birth 1962–1990	0.279***	0.090	−0.062
	(0.102)	(0.122)	(0.101)
Born in former East	0.202*	0.186*	0.133
	(0.110)	(0.109)	(0.089)
Birth <1949 × East	0.260*	0.365**	0.143
	(0.151)	(0.150)	(0.123)
Birth 1949–1961 × East	−0.023	0.059	0.004
	(0.151)	(0.150)	(0.124)
Birth 1962–1990 × East	0.130	0.248**	0.112
	(0.102)	(0.105)	(0.086)
SES controls		yes	yes
Personality controls			yes
Observations	1679	1679	1679

Notes: Own calculations based on SOEP–IS, wave 2017. Other control variables as in Table B1. The reference categories are "not having lived in the GDR in 1989" and "born after 1990". Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

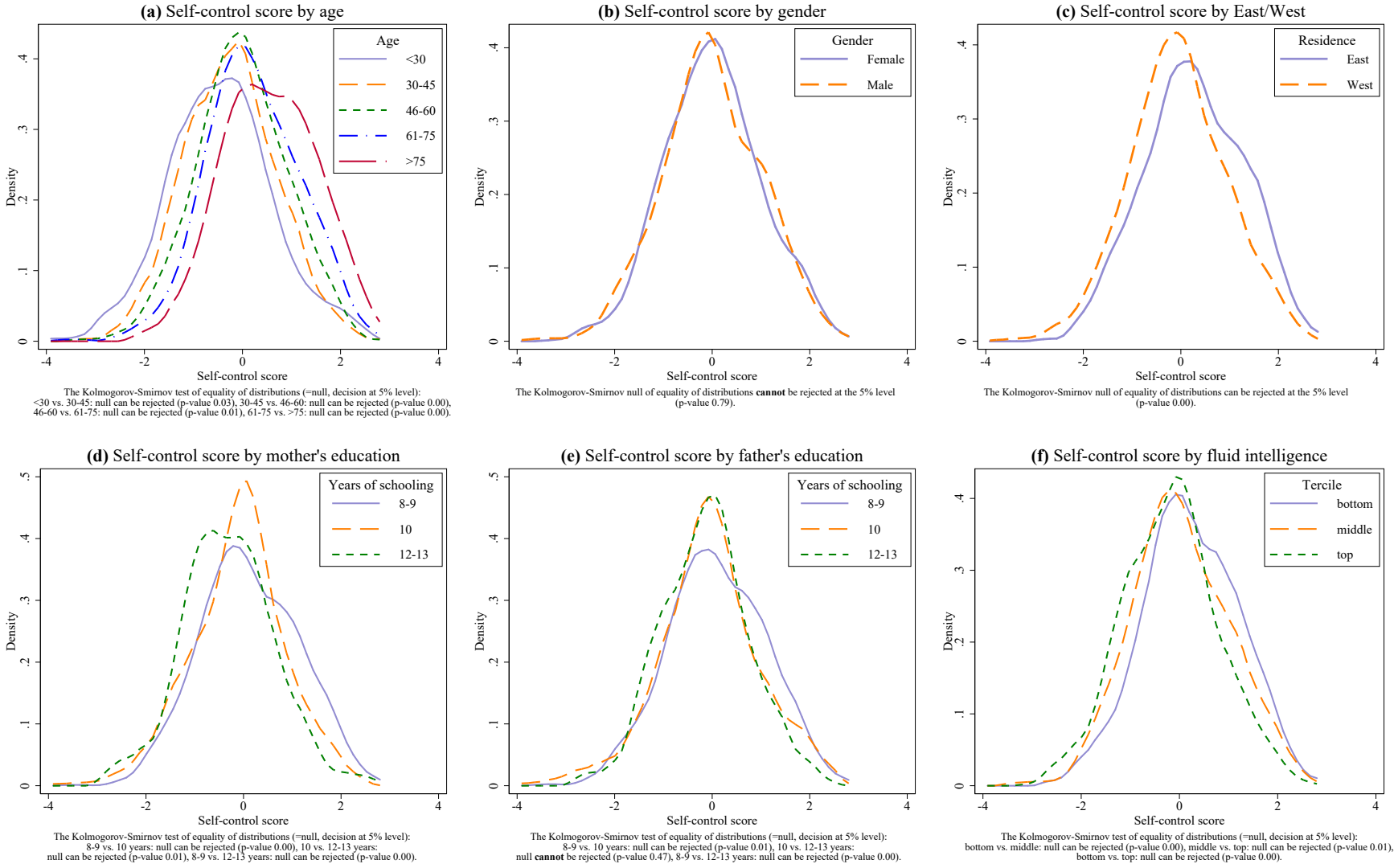

Figure B1: Self-control distributions by determinants

Notes: Own illustration based on SOEP–IS, wave 2017. The figure plots the densities using a Epanechnikov kernel with optimal bandwidth.

Online Appendix C Life Outcomes

Table C1: Self-control and health and health behaviors—full results

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable:					
	MCS	PCS	Log(BMI)	Obesity	Sports	Oversleep
Self-control (in std.)	0.137***	0.154***	−0.024***	−0.049***	0.055***	−0.052***
	(0.023)	(0.022)	(0.004)	(0.010)	(0.012)	(0.018)
	[2]	[2]	[3]	[2]	[2]	[2]
	{yes}	{yes}	{no}	{no}	{no}	{no}
Female	−0.200***	−0.140***	−0.049***	−0.026	0.028	0.031
	(0.043)	(0.042)	(0.008)	(0.019)	(0.022)	(0.034)
	[3]	[3]	[2]	[11]	[12]	[16]
	{yes}	{no}	{yes}	{no}	{no}	{no}
Age (in years)	FE	FE	FE	FE	FE	FE
	[1]	[1]	[1]	[9]	[8]	[1]
	{yes}	{yes}	{yes}	{no}	{no}	{yes}
Mom: > basic school	0.059	0.047	−0.025**	−0.061**	0.056*	0.047
	(0.060)	(0.058)	(0.012)	(0.026)	(0.031)	(0.048)
	[4]	[19]	[9]	[1]	[13]	[23]
	{no}	{yes}	{yes}	{yes}	{no}	{no}
Dad: > basic school	0.058	0.117**	−0.029***	−0.059**	0.162***	−0.076*
	(0.057)	(0.056)	(0.011)	(0.025)	(0.030)	(0.046)
	[9]	[5]	[4]	[5]	[1]	[18]
	{no}	{yes}	{yes}	{yes}	{yes}	{no}
Migration: first gen.	−0.054	0.003	0.001	0.033	−0.079*	−0.024
	(0.079)	(0.077)	(0.015)	(0.034)	(0.041)	(0.063)
	[5]	[27]	[27]	[10]	[9]	[15]
	{no}	{no}	{no}	{no}	{no}	{no}
Migration: sec. gen.	−0.038	0.017	−0.003	0.005	−0.056	−0.001
	(0.079)	(0.076)	(0.015)	(0.033)	(0.040)	(0.063)
	[21]	[30]	[26]	[27]	[19]	[26]
	{no}	{no}	{no}	{no}	{no}	{no}
Migration: missing	0.012	0.087	−0.047**	−0.030	−0.079	0.005
	(0.131)	(0.127)	(0.024)	(0.054)	(0.065)	(0.196)
	[8]	[22]	[6]	[16]	[18]	[30]
	{no}	{no}	{no}	{no}	{no}	{no}
Num. of siblings	−0.005	−0.015	0.004*	0.006	−0.004	−0.007
	(0.013)	(0.012)	(0.002)	(0.005)	(0.007)	(0.010)
	[18]	[15]	[10]	[13]	[24]	[28]
	{no}	{no}	{no}	{no}	{no}	{no}
Siblings missing	−0.163	−0.077	0.049	−0.056	0.025	0.837*
	(0.418)	(0.405)	(0.042)	(0.096)	(0.112)	(0.471)
	[28]	[23]	[28]	[6]	[15]	[4]
	{no}	{no}	{no}	{no}	{no}	{no}
Religion: catholic	−0.101	−0.064	0.007	0.019	0.027	−0.083*
	(0.062)	(0.060)	(0.012)	(0.026)	(0.032)	(0.049)
	[13]	[12]	[30]	[24]	[23]	[3]
	{no}	{no}	{no}	{no}	{no}	{no}
Religion: protestant	−0.092	0.012	0.011	0.000	0.036	0.024
	(0.057)	(0.055)	(0.011)	(0.024)	(0.029)	(0.044)
	[14]	[29]	[18]	[29]	[22]	[27]

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Table C1—*continued*

	(1)	(2)	(3)	(4)	(5)	(6)
	{no}	{no}	{no}	{no}	{no}	{no}
Religion: other/none	−0.199	−0.284**	0.018	0.021	−0.112*	−0.075
	(0.121)	(0.118)	(0.023)	(0.051)	(0.062)	(0.095)
	[7]	[7]	[16]	[19]	[5]	[19]
	{no}	{no}	{no}	{no}	{no}	{no}
Interview month	FE	FE	FE	FE	FE	FE
	[16]	[8]	[29]	[28]	[17]	[12]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Bavaria	−0.061	−0.068	0.024	0.039	−0.035	−0.179***
	(0.088)	(0.085)	(0.017)	(0.038)	(0.046)	(0.067)
	[20]	[18]	[22]	[22]	[26]	[9]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Berlin	−0.029	−0.246*	−0.006	0.032	−0.057	−0.251**
	(0.134)	(0.130)	(0.026)	(0.058)	(0.070)	(0.107)
	[26]	[11]	[14]	[23]	[20]	[13]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Brandenburg (East)	0.009	−0.480***	0.070***	0.242***	−0.219***	−0.125
	(0.133)	(0.129)	(0.025)	(0.057)	(0.070)	(0.115)
	[11]	[4]	[11]	[3]	[4]	[20]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Bremen	0.027	0.151	−0.041	−0.047	−0.025	−0.106
	(0.203)	(0.197)	(0.041)	(0.092)	(0.107)	(0.146)
	[17]	[21]	[12]	[12]	[30]	[25]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Hamburg	0.122	0.017	−0.044	0.046	0.083	−0.293**
	(0.194)	(0.188)	(0.037)	(0.083)	(0.101)	(0.129)
	[10]	[28]	[8]	[26]	[14]	[6]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Hesse	−0.104	−0.213**	0.032	0.058	−0.046	−0.096
	(0.111)	(0.108)	(0.021)	(0.048)	(0.058)	(0.095)
	[12]	[9]	[21]	[18]	[25]	[22]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Mecklenburg-Vorpommern (East)	0.021	−0.275*	0.111***	0.247***	−0.214**	−0.231*
	(0.168)	(0.163)	(0.032)	(0.072)	(0.087)	(0.118)
	[19]	[10]	[5]	[4]	[7]	[11]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Lower Saxony	−0.063	−0.013	0.024	0.062	−0.023	−0.072
	(0.094)	(0.091)	(0.018)	(0.041)	(0.049)	(0.073)
	[24]	[24]	[23]	[17]	[28]	[24]
	{no}	{no}	{no}	{no}	{no}	{no}
State: North Rhine-Westphalia	−0.069	−0.122	0.034**	0.070*	−0.011	−0.075
	(0.086)	(0.083)	(0.017)	(0.037)	(0.045)	(0.068)
	[22]	[14]	[20]	[14]	[29]	[21]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Rhineland-Palatinate	0.121	−0.002	0.028	0.078	0.012	−0.133
	(0.118)	(0.115)	(0.023)	(0.051)	(0.061)	(0.090)
	[6]	[26]	[25]	[21]	[27]	[14]

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Table C1—*continued*

	(1)	(2)	(3)	(4)	(5)	(6)
	{no}	{no}	{no}	{no}	{no}	{no}
State: Saarland	0.011	−0.145	−0.034	−0.025	−0.114	−0.400**
	(0.204)	(0.197)	(0.039)	(0.088)	(0.106)	(0.168)
	[30]	[17]	[15]	[30]	[16]	[10]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Saxony (East)	−0.109	−0.120	0.044*	0.098*	−0.126**	−0.211**
	(0.119)	(0.116)	(0.023)	(0.052)	(0.063)	(0.089)
	[25]	[16]	[17]	[15]	[10]	[8]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Saxony-Anhalt (East)	−0.144	−0.221	0.059**	0.162***	−0.172**	−0.375***
	(0.145)	(0.141)	(0.028)	(0.063)	(0.076)	(0.123)
	[15]	[13]	[19]	[8]	[6]	[5]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Schleswig-Holstein	−0.046	−0.030	0.028	0.045	−0.084	−0.262***
	(0.132)	(0.128)	(0.025)	(0.057)	(0.069)	(0.099)
	[27]	[25]	[24]	[20]	[21]	[7]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Thuringia (East)	−0.086	−0.471***	0.079***	0.187***	−0.269***	0.053
	(0.150)	(0.146)	(0.029)	(0.065)	(0.079)	(0.137)
	[23]	[6]	[7]	[7]	[3]	[29]
	{no}	{no}	{no}	{no}	{no}	{no}
State: missing	−0.123	−0.145	−0.008	0.034	−0.154**	−0.055
	(0.229)	(0.222)	(0.027)	(0.061)	(0.073)	(0.115)
	[29]	[20]	[13]	[25]	[11]	[17]
	{no}	{no}	{no}	{no}	{no}	{no}
Constant	2.425***	−1.490*	3.158***	−0.084	0.968*	1.051**
	(0.919)	(0.891)	(0.180)	(0.406)	(0.495)	(0.461)
Observations	1860	1860	1925	1925	1958	800
Adj. R^2	0.15	0.19	0.09	0.05	0.08	0.11
Mean outcome	0.04	-0.01	3.26	0.20	0.49	0.34
# RHS variables	30	30	30	30	30	30
# LASSO chosen	3	4	4	2	1	1

Notes: Own calculations based on SOEP–IS, wave 2017. Each column states the result of a separate regression. "FE" instead of the coefficient indicates that the variables enters the OLS regression model through a full set of fixed effects but the LASSO regression through a linear term. Standard errors are given in parentheses, the variables' R^2 rank is given in brackets, and whether the variable is chosen by the LASSO selection is stated in braces. Stars attached to the coefficients refer to the following statistical significance levels based on conventional p-values: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C2: Self-control and educational attainment—full results

	(1)	(2)	(3)
	Dependent variable:		
	Years of education	$\geq$ High school	College
Self-control (in std.)	0.218***	0.033***	0.021**
	(0.062)	(0.011)	(0.009)
	[4]	[3]	[10]
	{yes}	{no}	{no}
Female	−0.281**	−0.067***	−0.070***
	(0.117)	(0.021)	(0.018)
	[13]	[8]	[5]
	{no}	{no}	{no}
Age (in years)	FE	FE	FE
	[9]	[5]	[2]
	{no}	{no}	{yes}
Mom: > basic school	1.010***	0.130***	0.091***
	(0.162)	(0.030)	(0.025)
	[5]	[4]	[3]
	{yes}	{yes}	{yes}
Dad: > basic school	1.437***	0.211***	0.168***
	(0.154)	(0.028)	(0.024)
	[1]	[1]	[1]
	{yes}	{yes}	{yes}
Migration: first gen.	−0.840***	0.145***	0.004
	(0.212)	(0.039)	(0.032)
	[7]	[6]	[21]
	{yes}	{no}	{no}
Migration: sec. gen.	0.191	0.007	0.035
	(0.213)	(0.039)	(0.032)
	[28]	[19]	[22]
	{no}	{no}	{no}
Migration: missing	−0.875**	−0.139**	−0.124**
	(0.353)	(0.064)	(0.051)
	[6]	[2]	[6]
	{yes}	{yes}	{yes}
Num. of siblings	−0.207***	−0.022***	−0.021***
	(0.034)	(0.006)	(0.005)
	[2]	[7]	[4]
	{yes}	{yes}	{yes}
Siblings missing	−1.481	−0.080	0.050
	(1.115)	(0.205)	(0.088)
	[17]	[20]	[23]
	{no}	{no}	{no}
Religion: catholic	0.081	−0.001	0.023
	(0.166)	(0.030)	(0.025)
	[29]	[22]	[20]
	{no}	{no}	{no}
Religion: protestant	0.208	0.012	0.031
	(0.152)	(0.028)	(0.023)
	[22]	[21]	[19]

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Table C2—*continued*

	(1)	(2)	(3)
	{no}	{no}	{no}
Religion: other/none	−0.689**	−0.112*	−0.038
	(0.325)	(0.060)	(0.049)
	[11]	[12]	[17]
	{yes}	{no}	{no}
Interview month	FE	FE	FE
	[19]	[28]	[14]
	{no}	{no}	{no}
State: Bavaria	−0.131	0.021	−0.006
	(0.236)	(0.043)	(0.036)
	[18]	[26]	[30]
	{no}	{no}	{no}
State: Berlin	0.757**	0.113*	0.106*
	(0.359)	(0.066)	(0.055)
	[8]	[11]	[8]
	{no}	{no}	{no}
State: Brandenburg (East)	0.142	0.032	0.050
	(0.355)	(0.065)	(0.055)
	[24]	[27]	[16]
	{no}	{no}	{no}
State: Bremen	0.043	−0.009	0.000
	(0.562)	(0.101)	(0.085)
	[26]	[30]	[26]
	{no}	{no}	{no}
State: Hamburg	0.707	0.092	0.076
	(0.526)	(0.095)	(0.079)
	[16]	[18]	[15]
	{no}	{no}	{no}
State: Hesse	0.125	−0.023	−0.009
	(0.299)	(0.055)	(0.046)
	[30]	[16]	[25]
	{no}	{no}	{no}
State: Mecklenburg-Vorpommern (East)	−0.028	0.020	−0.012
	(0.450)	(0.083)	(0.069)
	[27]	[29]	[27]
	{no}	{no}	{no}
State: Lower Saxony	−0.272	−0.008	−0.063
	(0.253)	(0.046)	(0.039)
	[15]	[17]	[12]
	{no}	{no}	{no}
State: North Rhine-Westphalia	−0.022	0.038	0.002
	(0.230)	(0.042)	(0.035)
	[20]	[25]	[29]
	{no}	{no}	{no}
State: Rhineland-Palatinate	0.192	0.072	0.035
	(0.316)	(0.058)	(0.048)
	[21]	[13]	[18]
	{no}	{no}	{no}

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Table C2—*continued*

	(1)	(2)	(3)
State: Saarland	0.068	0.087	−0.001
	(0.544)	(0.100)	(0.083)
	[23]	[24]	[28]
	{no}	{no}	{no}
State: Saxony (East)	0.897***	0.123**	0.105**
	(0.319)	(0.058)	(0.049)
	[3]	[10]	[7]
	{yes}	{no}	{no}
State: Saxony-Anhalt (East)	0.291	0.019	0.030
	(0.397)	(0.072)	(0.060)
	[25]	[23]	[24]
	{no}	{no}	{no}
State: Schleswig-Holstein	−0.632*	−0.038	−0.088
	(0.357)	(0.065)	(0.055)
	[14]	[15]	[13]
	{no}	{no}	{no}
State: Thuringia (East)	−0.844**	−0.136*	−0.127**
	(0.402)	(0.074)	(0.063)
	[12]	[9]	[11]
	{no}	{no}	{no}
State: missing	−1.224**	−0.088	−0.127**
	(0.614)	(0.113)	(0.057)
	[10]	[14]	[9]
	{no}	{no}	{yes}
Constant	7.956***	−0.248	0.951**
	(2.455)	(0.452)	(0.390)
Observations	1845	1862	1961
Adj. R^2	0.22	0.14	0.12
Mean outcome	12.48	0.36	0.20
# RHS variables	30	30	30
# LASSO chosen	8	4	6

Notes: Own calculations based on SOEP–IS, wave 2017. Each column states the result of a separate regression. "FE" instead of the coefficient indicates that the variables enters the OLS regression model through a full set of fixed effects but the LASSO regression through a linear term. Standard errors are given in parentheses, the variables' R^2 rank is given in brackets, and whether the variable is chosen by the LASSO selection is stated in braces. Stars attached to the coefficients refer to the following statistical significance levels based on conventional p-values: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C3: Self-control and labor market performance—full results

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable:					
	Log(wage)	Labor force participation	Working hours	Unemployment currently	Unemployment last 10 years	Months unempl. last 10 years
Self-control (in std.)	0.050***	0.007	0.413	−0.016**	−0.050***	−1.980***
	(0.017)	(0.007)	(0.410)	(0.008)	(0.013)	(0.570)
	[7]	[25]	[6]	[4]	[3]	[4]
	{no}	{no}	{no}	{no}	{no}	{no}
Female	−0.216***	−0.072***	−10.641***	−0.016	−0.033	1.087
	(0.031)	(0.014)	(0.756)	(0.015)	(0.024)	(1.077)
	[1]	[4]	[1]	[13]	[14]	[17]
	{yes}	{no}	{yes}	{no}	{no}	{no}
Age (in years)	FE	FE	FE	FE	FE	FE
	[2]	[1]	[2]	[16]	[16]	[6]
	{yes}	{yes}	{no}	{no}	{no}	{no}
Mom: > basic school	0.079*	0.005	−0.214	−0.028	−0.068**	−2.459*
	(0.040)	(0.019)	(0.987)	(0.019)	(0.032)	(1.419)
	[12]	[8]	[23]	[15]	[17]	[14]
	{no}	{no}	{no}	{no}	{no}	{yes}
Dad: > basic school	0.113***	0.002	1.722*	−0.038**	−0.091***	−4.052***
	(0.039)	(0.019)	(0.957)	(0.019)	(0.031)	(1.365)
	[3]	[30]	[5]	[2]	[4]	[2]
	{no}	{no}	{no}	{no}	{no}	{yes}
Migration: first gen.	−0.179***	−0.042*	−1.748	0.077***	0.098**	−0.100
	(0.050)	(0.025)	(1.270)	(0.025)	(0.041)	(1.786)
	[9]	[16]	[10]	[3]	[8]	[30]
	{no}	{no}	{no}	{no}	{no}	{no}
Migration: sec. gen.	−0.047	0.000	0.422	0.030	0.024	−0.815
	(0.052)	(0.025)	(1.285)	(0.025)	(0.041)	(1.819)
	[17]	[23]	[29]	[14]	[25]	[20]
	{no}	{no}	{no}	{no}	{no}	{no}
Migration: missing	−0.134	−0.062	−0.158	0.025	−0.072	−0.468
	(0.092)	(0.040)	(2.229)	(0.040)	(0.065)	(2.843)
	[11]	[5]	[17]	[11]	[6]	[21]
	{yes}	{no}	{no}	{no}	{no}	{no}
Num. of siblings	−0.024**	0.001	0.184	0.010**	0.003	0.492
	(0.009)	(0.004)	(0.234)	(0.004)	(0.008)	(0.332)
	[6]	[20]	[9]	[5]	[30]	[12]
	{no}	{no}	{no}	{no}	{no}	{no}
Siblings missing	−0.024	−0.508***	−3.325	0.216*	−0.149	8.870
	(0.265)	(0.069)	(7.009)	(0.125)	(0.226)	(9.904)
	[28]	[2]	[21]	[10]	[23]	[26]
	{no}	{yes}	{no}	{no}	{no}	{no}
Religion: catholic	−0.019	−0.005	0.218	−0.027	0.031	1.204
	(0.042)	(0.020)	(1.035)	(0.020)	(0.034)	(1.475)
	[27]	[12]	[30]	[20]	[22]	[23]
	{no}	{no}	{no}	{no}	{no}	{no}
Religion: protestant	0.063	−0.019	0.863	−0.024	0.006	0.355
	(0.039)	(0.018)	(0.970)	(0.019)	(0.031)	(1.377)

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Table C3—*continued*

	(1)	(2)	(3)	(4)	(5)	(6)
	[14]	[6]	[16]	[19]	[26]	[28]
	{no}	{no}	{no}	{no}	{no}	{no}
Religion: other/none	−0.064	−0.085**	−3.254	−0.005	−0.023	3.433
	(0.086)	(0.038)	(2.271)	(0.043)	(0.068)	(3.001)
	[26]	[7]	[4]	[27]	[24]	[18]
	{no}	{no}	{no}	{no}	{no}	{no}
Interview month	FE	FE	FE	FE	FE	FE
	[30]	[15]	[7]	[21]	[18]	[27]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Bavaria	0.055	−0.006	1.842	−0.004	0.018	−2.766
	(0.061)	(0.028)	(1.519)	(0.030)	(0.050)	(2.198)
	[13]	[29]	[13]	[28]	[27]	[5]
	{no}	{no}	{no}	{no}	{no}	{yes}
State: Berlin	−0.076	−0.014	0.407	0.043	0.265***	6.463**
	(0.085)	(0.043)	(2.181)	(0.042)	(0.073)	(3.215)
	[24]	[27]	[25]	[8]	[5]	[13]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Brandenburg (East)	−0.444***	−0.042	2.949	−0.005	0.398***	14.068***
	(0.099)	(0.043)	(2.392)	(0.046)	(0.077)	(3.390)
	[4]	[24]	[3]	[30]	[2]	[3]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Bremen	−0.074	−0.059	3.219	−0.039	0.061	1.000
	(0.208)	(0.067)	(5.028)	(0.090)	(0.148)	(6.478)
	[22]	[11]	[18]	[26]	[29]	[29]
	{no}	{no}	{no}	{yes}	{no}	{no}
State: Hamburg	−0.133	0.019	−3.541	−0.032	0.088	−3.010
	(0.146)	(0.062)	(3.832)	(0.068)	(0.116)	(5.099)
	[23]	[28]	[19]	[29]	[20]	[16]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Hesse	0.058	−0.042	2.461	−0.035	0.074	1.806
	(0.076)	(0.036)	(1.920)	(0.038)	(0.062)	(2.730)
	[16]	[26]	[11]	[22]	[15]	[25]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Mecklenburg-Vorpommern (East)	−0.279**	0.003	−1.148	0.008	0.535***	19.149***
	(0.111)	(0.054)	(2.900)	(0.054)	(0.093)	(4.081)
	[8]	[22]	[28]	[18]	[1]	[1]
	{no}	{no}	{no}	{no}	{yes}	{no}
State: Lower Saxony	−0.110*	0.019	0.608	−0.030	0.112**	−1.472
	(0.064)	(0.030)	(1.616)	(0.031)	(0.054)	(2.352)
	[20]	[14]	[22]	[25]	[13]	[8]
	{no}	{no}	{no}	{no}	{no}	{no}
State: North Rhine-Westphalia	0.033	−0.055**	1.881	−0.029	0.140***	1.935
	(0.061)	(0.028)	(1.518)	(0.030)	(0.050)	(2.178)
	[15]	[9]	[12]	[24]	[11]	[24]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Rhineland-Palatinate	−0.020	0.030	−0.139	−0.052	0.011	−3.017
	(0.079)	(0.038)	(1.979)	(0.039)	(0.066)	(2.894)

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Table C3—*continued*

	(1)	(2)	(3)	(4)	(5)	(6)
	[25]	[13]	[24]	[7]	[21]	[7]
	{no}	{no}	{no}	{no}	{no}	{yes}
State: Saarland	−0.047	0.058	3.292	0.167**	0.378***	12.869**
	(0.168)	(0.066)	(4.013)	(0.068)	(0.123)	(5.548)
	[29]	[19]	[14]	[1]	[9]	[11]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Saxony (East)	−0.210**	−0.031	2.939	−0.063	0.203***	3.889
	(0.086)	(0.039)	(2.153)	(0.044)	(0.073)	(3.201)
	[10]	[10]	[15]	[23]	[12]	[22]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Saxony-Anhalt (East)	−0.180*	−0.011	3.756	0.060	0.280***	10.980***
	(0.105)	(0.047)	(2.656)	(0.050)	(0.085)	(3.728)
	[19]	[18]	[8]	[9]	[10]	[9]
	{no}	{no}	{no}	{no}	{no}	{no}
State: Schleswig-Holstein	−0.084	−0.026	1.259	−0.079*	0.100	−2.121
	(0.089)	(0.043)	(2.101)	(0.042)	(0.070)	(3.107)
	[21]	[21]	[26]	[6]	[19]	[15]
	{no}	{no}	{no}	{yes}	{no}	{no}
State: Thuringia (East)	−0.373***	−0.037	0.572	0.024	0.312***	9.029**
	(0.115)	(0.049)	(2.839)	(0.054)	(0.090)	(3.936)
	[5]	[17]	[27]	[12]	[7]	[10]
	{no}	{no}	{no}	{no}	{no}	{no}
State: missing	−0.227	−0.445***	0.281	−0.073	0.071	5.729*
	(0.148)	(0.045)	(3.311)	(0.067)	(0.076)	(3.330)
	[18]	[3]	[20]	[17]	[28]	[19]
	{no}	{yes}	{no}	{yes}	{no}	{no}
Constant	2.317***	−0.010	5.529	0.220**	0.001	−3.144
	(0.323)	(0.306)	(12.016)	(0.092)	(0.141)	(6.180)
Observations	901	1961	1036	1133	1367	1360
Adj. R^2	0.21	0.64	0.23	0.05	0.12	0.09
Mean outcome	2.73	0.58	35.84	0.06	0.32	7.05
# RHS variables	30	30	30	30	30	30
# LASSO chosen	3	3	1	3	1	4

Notes: Own calculations based on SOEP–IS, wave 2017. Each column states the result of a separate regression. "FE" instead of the coefficient indicates that the variables enters the OLS regression model through a full set of fixed effects but the LASSO regression through a linear term. Standard errors are given in parentheses, the variables' R^2 rank is given in brackets, and whether the variable is chosen by the LASSO selection is stated in braces. Stars attached to the coefficients refer to the following statistical significance levels based on conventional p-values: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C4: Self-control and assets and saving—full results

	(1)	(2)	(3)	(4)	(5)
	Dependent variable:				
	Home-owner	Financial assets	Saving (all)	Saving (owners)	Saving (tenants)
Self-control (in std.)	0.042***	0.012	0.026*	−0.029	0.055***
	(0.014)	(0.014)	(0.014)	(0.020)	(0.020)
	[8]	[27]	[7]	[6]	[2]
	{no}	{no}	{no}	{no}	{no}
Female	−0.053**	−0.038	−0.041	0.002	−0.067*
	(0.025)	(0.026)	(0.026)	(0.035)	(0.038)
	[12]	[11]	[13]	[18]	[14]
	{no}	{no}	{no}	{no}	{no}
Age (in years)	FE	FE	FE	FE	FE
	[2]	[2]	[15]	[9]	[11]
	{yes}	{no}	{no}	{no}	{no}
Mom: > basic school	0.053	0.064*	0.059*	−0.030	0.130**
	(0.035)	(0.037)	(0.036)	(0.048)	(0.053)
	[25]	[17]	[11]	[16]	[1]
	{no}	{no}	{no}	{no}	{yes}
Dad: > basic school	0.047	0.115***	0.096***	0.056	0.143***
	(0.034)	(0.035)	(0.034)	(0.046)	(0.050)
	[16]	[1]	[1]	[15]	[6]
	{no}	{no}	{no}	{no}	{no}
Migration: first gen.	−0.062	−0.042	−0.046	0.045	−0.072
	(0.047)	(0.048)	(0.047)	(0.076)	(0.062)
	[20]	[26]	[10]	[13]	[9]
	{no}	{no}	{no}	{no}	{no}
Migration: sec. gen.	0.062	0.016	0.034	−0.009	0.061
	(0.045)	(0.046)	(0.045)	(0.060)	(0.067)
	[17]	[30]	[24]	[29]	[30]
	{no}	{no}	{no}	{no}	{no}
Migration: missing	0.115*	−0.021	−0.033	−0.025	−0.137
	(0.069)	(0.071)	(0.069)	(0.102)	(0.101)
	[27]	[25]	[29]	[27]	[19]
	{no}	{no}	{no}	{no}	{no}
Num. of siblings	−0.015**	−0.017**	−0.018**	0.000	−0.038***
	(0.008)	(0.008)	(0.008)	(0.011)	(0.010)
	[9]	[8]	[6]	[19]	[4]
	{no}	{no}	{no}	{no}	{no}
Siblings missing	−0.113	0.032	0.097	0.067	0.187
	(0.121)	(0.125)	(0.122)	(0.179)	(0.169)
	[21]	[24]	[21]	[8]	[27]
	{no}	{no}	{no}	{no}	{no}
Religion: catholic	0.067*	0.064*	0.045	−0.028	0.129**
	(0.036)	(0.037)	(0.036)	(0.049)	(0.053)
	[14]	[7]	[12]	[17]	[13]
	{no}	{no}	{no}	{no}	{no}
Religion: protestant	0.114***	0.133***	0.103***	0.008	0.160***
	(0.033)	(0.034)	(0.034)	(0.046)	(0.050)
	[4]	[4]	[4]	[28]	[7]

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Table C4—*continued*

	(1)	(2)	(3)	(4)	(5)
	{no}	{no}	{no}	{no}	{no}
Religion: other/none	−0.014	−0.103	−0.004	−0.169	0.117
	(0.072)	(0.074)	(0.072)	(0.113)	(0.096)
	[24]	[12]	[23]	[11]	[20]
	{no}	{no}	{no}	{no}	{no}
Interview month	FE	FE	FE	FE	FE
	[22]	[29]	[22]	[21]	[25]
	{no}	{no}	{no}	{no}	{no}
State: Bavaria	−0.006	−0.061	0.073	0.075	0.032
	(0.052)	(0.053)	(0.052)	(0.066)	(0.081)
	[29]	[23]	[18]	[23]	[8]
	{no}	{no}	{no}	{no}	{no}
State: Berlin	−0.378***	−0.204**	−0.092	0.252	−0.125
	(0.077)	(0.079)	(0.077)	(0.211)	(0.095)
	[1]	[10]	[9]	[10]	[21]
	{yes}	{no}	{no}	{yes}	{no}
State: Brandenburg (East)	0.044	−0.089	−0.063	0.057	−0.185
	(0.082)	(0.084)	(0.082)	(0.104)	(0.128)
	[30]	[22]	[8]	[14]	[5]
	{no}	{no}	{no}	{no}	{no}
State: Bremen	0.231*	0.089	0.026	0.088	−0.411
	(0.129)	(0.133)	(0.130)	(0.138)	(0.353)
	[13]	[13]	[28]	[20]	[23]
	{yes}	{no}	{no}	{no}	{no}
State: Hamburg	−0.271**	−0.016	0.018	−0.321	0.102
	(0.113)	(0.117)	(0.114)	(0.213)	(0.142)
	[5]	[28]	[16]	[5]	[17]
	{no}	{no}	{no}	{no}	{no}
State: Hesse	−0.170***	−0.094	0.016	0.024	0.010
	(0.065)	(0.067)	(0.066)	(0.096)	(0.093)
	[7]	[19]	[27]	[25]	[16]
	{no}	{no}	{no}	{no}	{no}
State: Mecklenburg-Vorpommern (East)	−0.233**	0.043	0.011	0.121	0.013
	(0.102)	(0.106)	(0.103)	(0.204)	(0.129)
	[3]	[14]	[30]	[7]	[28]
	{no}	{no}	{no}	{yes}	{no}
State: Lower Saxony	0.025	0.003	0.028	0.049	−0.048
	(0.056)	(0.057)	(0.056)	(0.072)	(0.088)
	[28]	[9]	[26]	[24]	[26]
	{no}	{no}	{no}	{no}	{no}
State: North Rhine-Westphalia	−0.117**	−0.185***	−0.031	−0.011	−0.061
	(0.050)	(0.052)	(0.051)	(0.068)	(0.077)
	[6]	[3]	[3]	[3]	[22]
	{no}	{no}	{no}	{no}	{no}
State: Rhineland-Palatinate	0.106	0.080	0.075	0.185**	−0.301**
	(0.069)	(0.071)	(0.069)	(0.083)	(0.124)
	[11]	[6]	[19]	[1]	[10]
	{no}	{no}	{no}	{no}	{no}

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Table C4—*continued*

	(1)	(2)	(3)	(4)	(5)
State: Saarland	−0.089	−0.231*	−0.115	0.172	−0.316*
	(0.119)	(0.122)	(0.119)	(0.178)	(0.169)
	[18]	[16]	[14]	[12]	[15]
	{no}	{no}	{no}	{no}	{no}
State: Saxony (East)	−0.015	−0.102	0.065	0.050	0.053
	(0.072)	(0.074)	(0.072)	(0.095)	(0.110)
	[23]	[21]	[25]	[26]	[18]
	{no}	{no}	{no}	{no}	{no}
State: Saxony-Anhalt (East)	−0.174**	−0.151*	0.092	−0.011	0.134
	(0.087)	(0.090)	(0.087)	(0.128)	(0.122)
	[10]	[20]	[20]	[30]	[12]
	{no}	{no}	{no}	{no}	{no}
State: Schleswig-Holstein	0.097	−0.171**	0.091	0.114	−0.013
	(0.079)	(0.081)	(0.079)	(0.098)	(0.134)
	[15]	[18]	[17]	[22]	[29]
	{no}	{no}	{no}	{no}	{no}
State: Thuringia (East)	0.066	−0.294***	−0.221**	−0.133	−0.319**
	(0.088)	(0.091)	(0.089)	(0.110)	(0.144)
	[26]	[5]	[2]	[2]	[3]
	{no}	{no}	{no}	{no}	{no}
State: missing	−0.097	−0.171**	−0.096	−0.153	−0.059
	(0.075)	(0.077)	(0.075)	(0.108)	(0.109)
	[19]	[15]	[5]	[4]	[24]
	{no}	{no}	{no}	{no}	{no}
Constant	0.188	1.038**	−0.074	0.845*	0.097
	(0.484)	(0.499)	(0.486)	(0.461)	(0.497)
Observations	1442	1442	1442	723	719
Adj. R^2	0.13	0.05	0.05	0.03	0.12
Mean outcome	0.50	0.58	0.64	0.75	0.53
# RHS variables	30	30	30	30	30
# LASSO chosen	3	0	0	2	1

Notes: Own calculations based on SOEP–IS, wave 2017. Each column states the result of a separate regression. "FE" instead of the coefficient indicates that the variables enters the OLS regression model through a full set of fixed effects but the LASSO regression through a linear term. Standard errors are given in parentheses, the variables' R^2 rank is given in brackets, and whether the variable is chosen by the LASSO selection is stated in braces. Stars attached to the coefficients refer to the following statistical significance levels based on conventional p-values: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C5: Self-control and satisfaction with several aspects of life—full results

	(1)	(2)	(3)	(4)
	Dependent variable:			
	Satisfaction with:			
	life	health	work	family
Self-control (in std.)	0.200***	0.212***	0.192***	0.154***
	(0.023)	(0.023)	(0.033)	(0.024)
	[1]	[2]	[1]	[1]
	{yes}	{yes}	{yes}	{yes}
Female	−0.044	−0.104**	−0.111*	−0.086*
	(0.044)	(0.043)	(0.061)	(0.046)
	[16]	[7]	[5]	[7]
	{no}	{no}	{no}	{no}
Age (in years)	FE	FE	FE	FE
	[29]	[1]	[19]	[13]
	{no}	{yes}	{no}	{no}
Mom: > basic school	0.075	0.068	0.000	−0.063
	(0.062)	(0.061)	(0.080)	(0.064)
	[7]	[11]	[25]	[29]
	{no}	{yes}	{no}	{no}
Dad: > basic school	0.153***	0.194***	0.156**	0.118*
	(0.059)	(0.058)	(0.078)	(0.061)
	[2]	[3]	[3]	[4]
	{no}	{yes}	{no}	{no}
Migration: first gen.	−0.125	0.052	0.003	−0.031
	(0.081)	(0.079)	(0.102)	(0.084)
	[10]	[28]	[29]	[23]
	{no}	{no}	{no}	{no}
Migration: sec. gen.	−0.198**	0.004	−0.119	−0.209**
	(0.080)	(0.078)	(0.103)	(0.083)
	[8]	[30]	[22]	[5]
	{no}	{no}	{no}	{no}
Migration: missing	−0.119	0.171	0.213	−0.083
	(0.129)	(0.126)	(0.163)	(0.135)
	[30]	[9]	[15]	[30]
	{no}	{no}	{no}	{no}
Num. of siblings	0.015	−0.015	0.020	0.014
	(0.013)	(0.013)	(0.019)	(0.014)
	[15]	[13]	[12]	[9]
	{no}	{no}	{no}	{no}
Siblings missing	0.122	−0.172	0.160	0.075
	(0.220)	(0.215)	(0.290)	(0.228)
	[18]	[21]	[11]	[17]
	{no}	{no}	{no}	{no}
Religion: catholic	−0.066	−0.055	−0.037	0.007
	(0.063)	(0.062)	(0.083)	(0.065)
	[19]	[22]	[20]	[14]
	{no}	{no}	{no}	{no}
Religion: protestant	0.030	0.046	0.065	0.116*
	(0.057)	(0.056)	(0.079)	(0.060)
	[3]	[8]	[7]	[3]

Continued on next page

Table C5—*continued*

	(1)	(2)	(3)	(4)
	{no}	{no}	{no}	{no}
Religion: other/none	0.039	−0.406***	−0.207	0.229*
	(0.122)	(0.120)	(0.184)	(0.127)
	[23]	[4]	[9]	[6]
	{no}	{no}	{no}	{no}
Interview month	FE	FE	FE	FE
	[17]	[19]	[26]	[21]
	{no}	{no}	{no}	{no}
State: Bavaria	0.137	−0.082	0.048	−0.128
	(0.091)	(0.089)	(0.126)	(0.094)
	[22]	[24]	[27]	[15]
	{no}	{no}	{no}	{no}
State: Berlin	−0.220	−0.320**	−0.101	−0.539***
	(0.138)	(0.135)	(0.182)	(0.144)
	[5]	[10]	[8]	[2]
	{no}	{no}	{no}	{no}
State: Brandenburg (East)	−0.091	−0.409***	0.069	−0.212
	(0.137)	(0.134)	(0.203)	(0.142)
	[9]	[6]	[23]	[8]
	{no}	{no}	{no}	{no}
State: Bremen	0.281	−0.034	0.326	0.051
	(0.212)	(0.207)	(0.369)	(0.219)
	[12]	[29]	[13]	[12]
	{no}	{no}	{no}	{no}
State: Hamburg	0.142	−0.177	−0.136	−0.111
	(0.199)	(0.195)	(0.274)	(0.206)
	[25]	[25]	[17]	[24]
	{no}	{no}	{no}	{no}
State: Hesse	0.086	−0.213*	0.172	−0.056
	(0.114)	(0.112)	(0.159)	(0.118)
	[26]	[16]	[14]	[28]
	{no}	{no}	{no}	{no}
State: Mecklenburg-Vorpommern (East)	−0.168	−0.231	0.143	−0.241
	(0.172)	(0.168)	(0.244)	(0.178)
	[13]	[20]	[16]	[20]
	{no}	{no}	{no}	{no}
State: Lower Saxony	0.087	−0.076	0.023	−0.083
	(0.097)	(0.095)	(0.134)	(0.100)
	[24]	[23]	[24]	[25]
	{no}	{no}	{no}	{no}
State: North Rhine-Westphalia	0.130	−0.168*	−0.109	−0.108
	(0.088)	(0.087)	(0.126)	(0.092)
	[21]	[15]	[6]	[16]
	{no}	{no}	{no}	{no}
State: Rhineland-Palatinate	0.186	−0.030	0.331**	−0.105
	(0.121)	(0.118)	(0.168)	(0.126)
	[20]	[26]	[4]	[19]
	{no}	{no}	{no}	{no}

Continued on next page

Table C5—*continued*

	(1)	(2)	(3)	(4)
State: Saarland	0.136	−0.095	0.012	−0.239
	(0.209)	(0.204)	(0.322)	(0.220)
	[28]	[27]	[28]	[18]
	{no}	{no}	{no}	{no}
State: Saxony (East)	−0.067	−0.299**	0.016	−0.224*
	(0.124)	(0.121)	(0.183)	(0.128)
	[14]	[14]	[18]	[11]
	{no}	{no}	{no}	{no}
State: Saxony-Anhalt (East)	−0.115	−0.444***	0.145	−0.089
	(0.151)	(0.147)	(0.211)	(0.157)
	[6]	[5]	[21]	[26]
	{no}	{no}	{no}	{no}
State: Schleswig-Holstein	0.250*	0.000	0.510***	−0.095
	(0.136)	(0.134)	(0.178)	(0.142)
	[11]	[12]	[2]	[27]
	{no}	{no}	{yes}	{no}
State: Thuringia (East)	−0.334**	−0.267*	−0.218	−0.104
	(0.157)	(0.153)	(0.233)	(0.162)
	[4]	[18]	[10]	[22]
	{no}	{no}	{no}	{no}
State: missing	0.069	−0.229	0.039	−0.224
	(0.144)	(0.141)	(0.184)	(0.149)
	[27]	[17]	[30]	[10]
	{no}	{no}	{no}	{no}
Constant	−0.034	0.237	−1.013	−0.638
	(0.976)	(0.955)	(1.002)	(1.009)
Observations	1961	1961	1117	1942
Adj. R^2	0.07	0.13	0.04	0.04
Mean outcome	0.01	0.01	0.00	0.00
# RHS variables	30	30	30	30
# LASSO chosen	1	4	2	1

Notes: Own calculations based on SOEP–IS, wave 2017. Each column states the result of a separate regression. "FE" instead of the coefficient indicates that the variables enters the OLS regression model through a full set of fixed effects but the LASSO regression through a linear term. Standard errors are given in parentheses, the variables' R^2 rank is given in brackets, and whether the variable is chosen by the LASSO selection is stated in braces. Stars attached to the coefficients refer to the following statistical significance levels based on conventional p-values: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table C6: Conditional relationship between self-control and life outcomes, by household type

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Point estimate	Un-adjusted p-value	Diff. to singles: p-value	Num. of obs.	Vars chosen by Lasso	Self-control chosen	R^2	R^2 rank
Assets and savings (singles)								
Home owner	0.017	0.33		923	1/30	no	0.15	17
Financial assets	0.017	0.35		923	0/30	no	0.06	23
Saving	0.030*	0.08		923	0/30	no	0.05	8
Saving (owners)	−0.022	0.39		420	0/30	no	0.06	5
Saving (tenants)	0.058**	0.02		503	0/30	no	0.11	3
Assets and savings (max. of couples)								
Home owner	0.067**	0.02	0.10	519	1/30	no	0.15	8
Financial assets	0.006	0.84	0.74	519	0/30	no	0.06	28
Saving	0.028	0.31	0.94	519	0/30	no	0.06	21
Saving (owners)	−0.003	0.93	0.67	303	0/30	no	-0.01	26
Saving (tenants)	0.073	0.12	0.74	216	1/30	no	0.21	14

Note: Own calculations based on SOEP–IS, wave 2017. The point estimates give the relationship between self-control and the financial well-being indicators. Each point estimate stems from a separate regression. The specification is similar to Table 5. The assets and savings information are available on household level. The first panel in the table only considers single households. The second panel considers only two-person households, where we use the maximal self-control of both spouses as the household's self-control in the regression models. Stars attached to the coefficients summarize the level of statistical significance according to the unadjusted standard errors with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

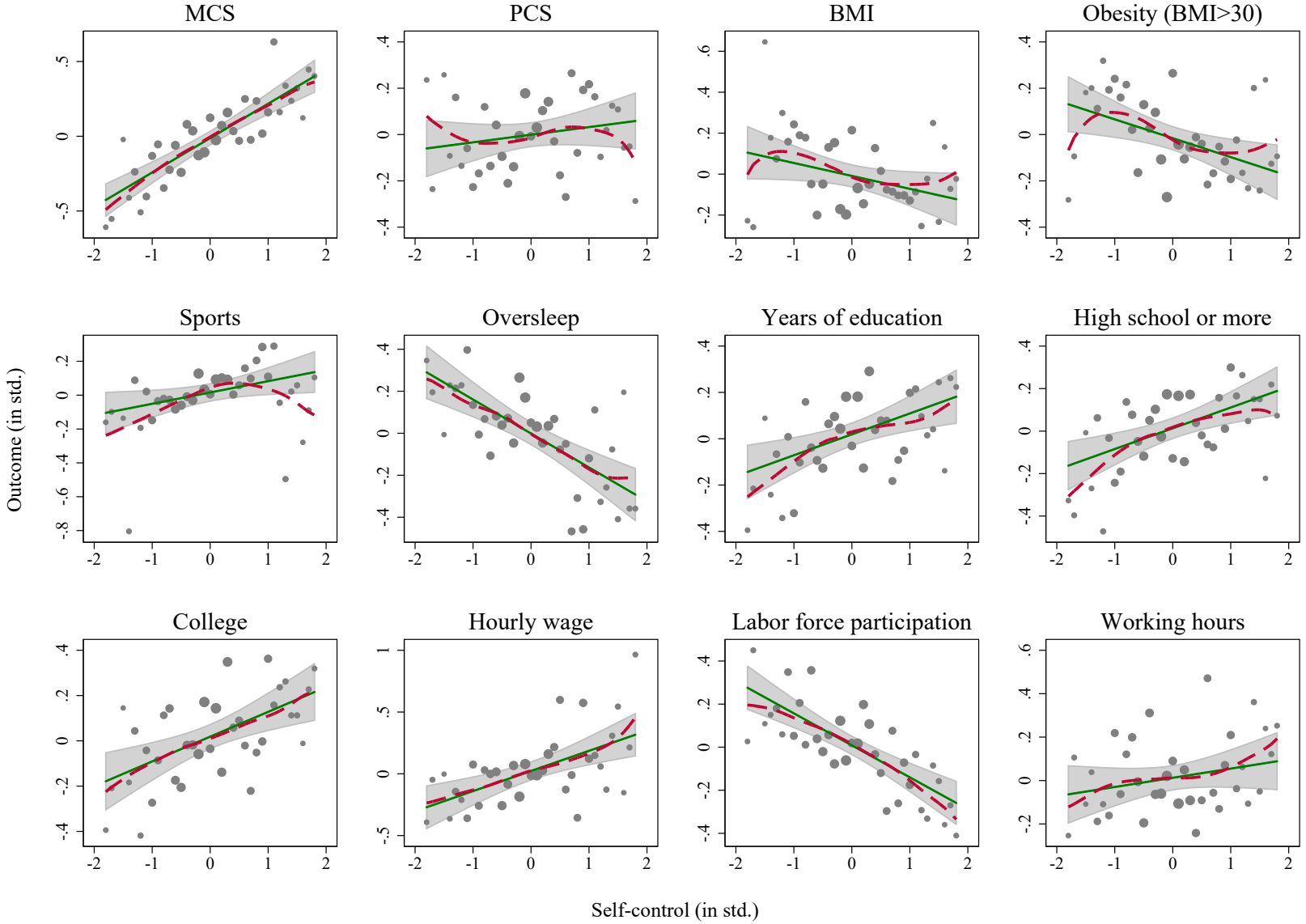

Figure C1: Comparing linear and non-parametric fits for the relationship between self-control and life outcomes

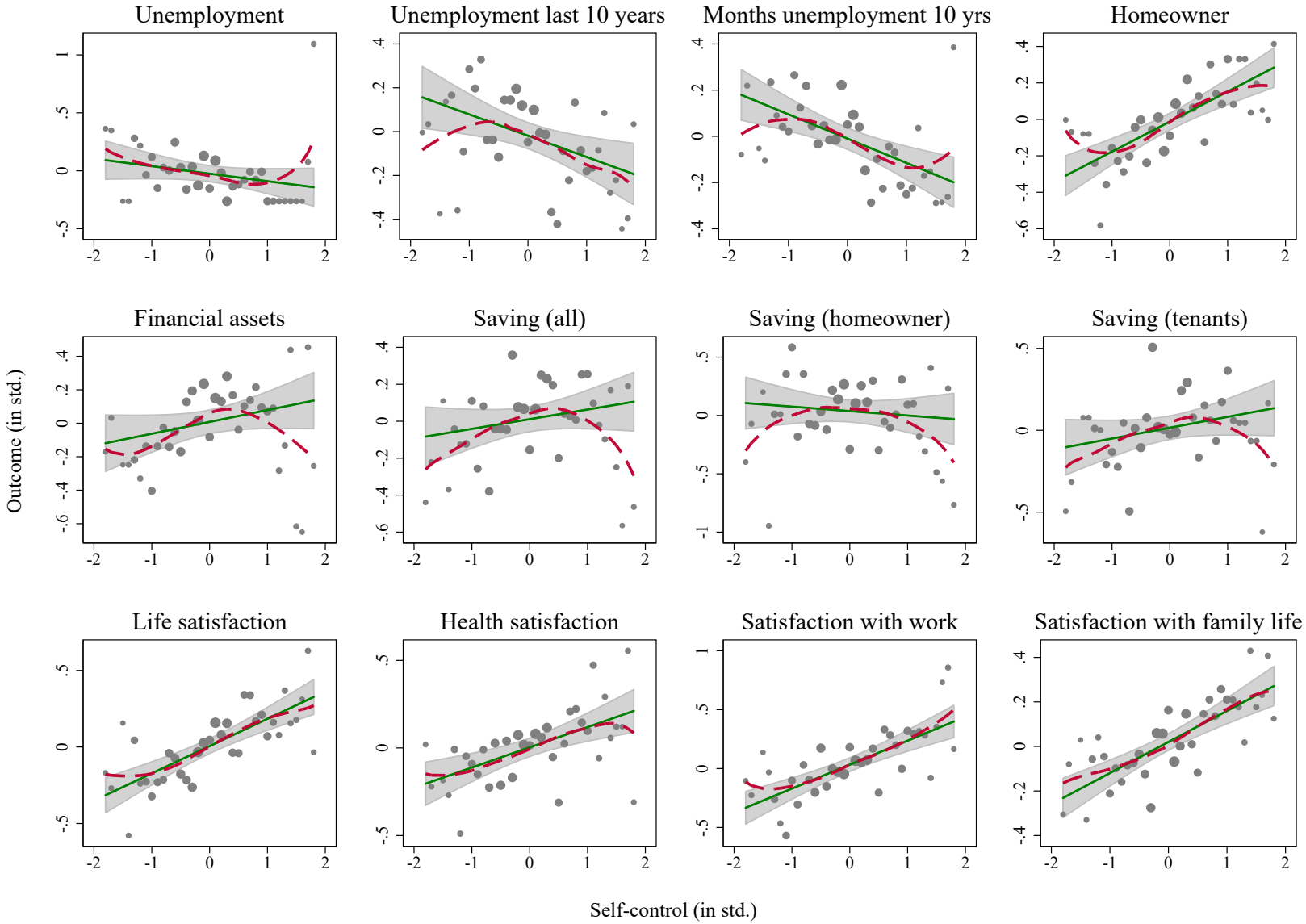

Figure C1: *cont.*

Notes: Own illustration based on SOEP–IS, wave 2017. Outcomes are standardized to mean 0 and std. 1. The dark gray dots represent average outcome values on the y-axis in each 0.1 std. self-control bin on the x-axis. Their size indicates the number of observations. The solid green line depicts linear fits and their 95 percent confidence band (in light gray). The dashed red line presents LOWESS (Locally Weighted Scatterplot Smoothing) fitted values with bandwidth 0.8. The non-parametric fit is nearly always within the confidence band of the linear fit, suggesting that the linear fit is a good approximation of the relation between self-control and life outcomes.

Online Appendix D Intergenerational Implications

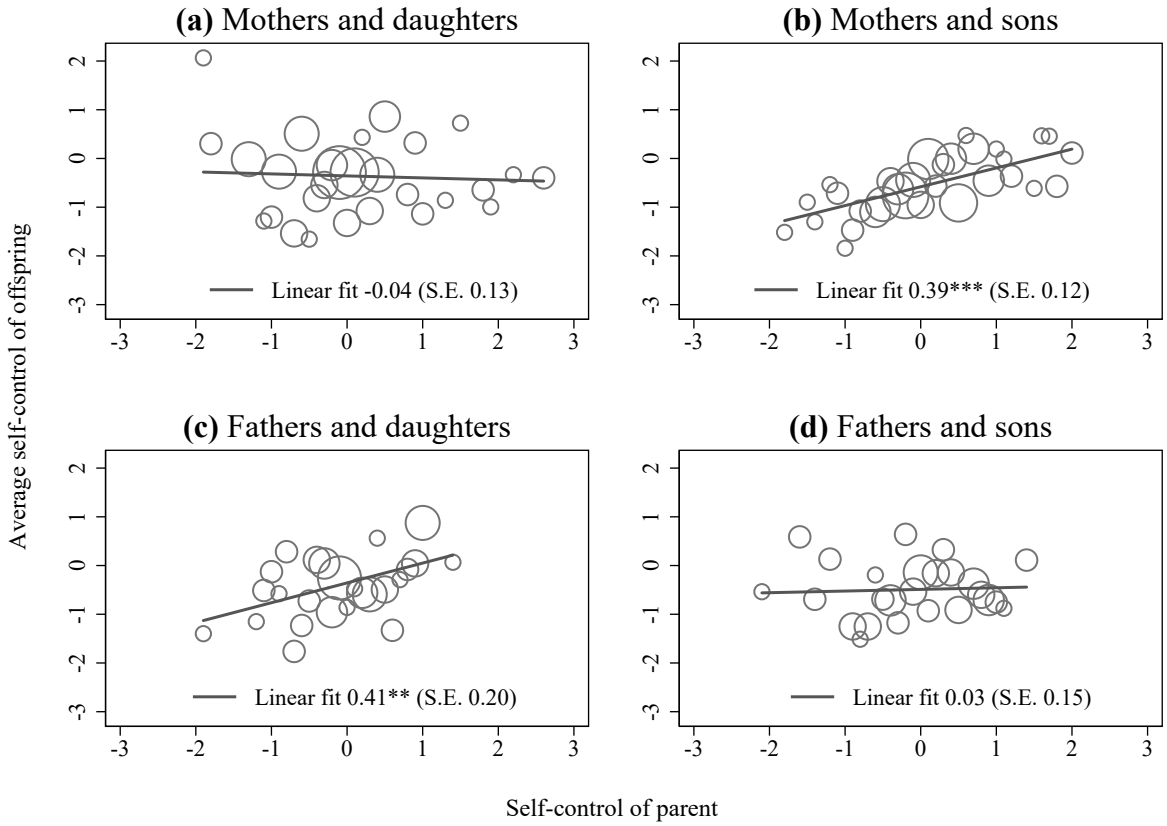

Figure D1: Intergenerational transmission of self-control scores between parents and their adult offspring

Notes: Own illustration based on SOEP–IS, wave 2017. The number of mother-daughter observations in panel (a) is 88, mother-son observations in panel (b) 85, father-daughter observations in panel (c) 63, and father-son observations in panel (d) 62. Parental self-control on the x-axis is standardized to mean 0 and standard deviation 1. The y-axis states the average self-control of the offspring, again standardized, per 0.1-bin of parental self-control. The size of the markers (within and across panels) indicates the relative number of observations in the parental self-control bin. The linear fit is calculated through OLS regression and significance is stated as: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D1: Parental self-control and offspring's outcomes, by gender

	(1)	(2)	(3)	(4)	(5)	(6)
	Coefficient of self-control of the:					
	mother on:			father on:		
	all	daughters	sons	all	daughters	sons
Baseline specification						
Log(BMI)	−0.014*	−0.037***	0.001	0.012	0.023	0.002
High school	0.022	−0.045	0.043	0.045	0.089	0.080
Overall SDQ	−0.316***	−0.323***	−0.225**	−0.134	0.006	−0.293**
Pro-social behavior	0.202***	0.252**	0.261**	0.089	−0.099	0.224
+parental personality traits						
Log(BMI)	−0.005	**−0.008**	0.008	0.024*	0.047*	0.003
High school	**0.068***	**0.028**	**0.116***	0.047	**−0.119**	0.023
Overall SDQ	−0.197**	**−0.091**	−0.213	−0.036	**0.305**	−0.347
Pro-social behavior	**0.061**	0.180	0.050	0.171	−0.025	0.352
+endogenous controls for parent(s)						
Log(BMI)	−0.002	**0.007**	0.014	0.011	0.040	−0.001
High school	0.009	−0.026	**0.156****	0.021	**−0.424***	**−0.054**
Overall SDQ	**−0.110**	**0.385***	−0.094	−0.228	−0.525	2.649
Pro-social behavior	**0.032**	0.285	−0.061	**0.440****	**−1.284**	−0.321

Notes: Own calculations based on SOEP–IS, wave 2017. Each cell gives the coefficient of parental self-control on the offspring's outcomes stated on the left, based on a separate regression. Observations: 523 for body mass index (BMI), 319 for high school, and 303 for the Strengths and Difficulties Questionnaire (SDQ) scores and pro-social behavior in column 1 (mother–offspring pairs); 241, 146, and 138 in column 2 (mother–daughter pairs); and 282, 173, and 165 in column 3 (mother–son pairs); 371, 219, and 215 in column 4 (father–offspring pairs), and 182, 106, and 107 in column 5 (father–daughter pairs); 189, 113, and 108 in column 6 (father–son pairs). Control variables are added in the panels as described in the text. Self-control coefficients depicted in bold font are statistically different from their counterparts in the baseline specification in the first panel of this table at the 5 percent significance level as assessed by a t-test of coefficient equality. Stars attached to the coefficients summarize the level of statistical significance according to the unadjusted standard errors with * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.