I Z A Institute of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 18270

The Stability of Self-Control in Unstable Times

Deborah A. Cobb-Clark
Anthony Lepinteur
Giorgia Menta

NOVEMBER 2025

DISCUSSION PAPER SERIES

IZA DP No. 18270

The Stability of Self-Control in Unstable Times

Deborah A. Cobb-Clark
University of Sydney and IZA

Anthony Lepinteur
University of Luxembourg and IZA

Giorgia Menta
LISER and IZA

NOVEMBER 2025

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

The Stability of Self-Control in Unstable Times*

This paper examines the stability of self-control over time using nationally-representative longitudinal data from Australia. We track the same individuals between 2019 and 2023, a period encompassing one of the most disruptive global crisis in recent history: the COVID-19 pandemic. Despite these extraordinary circumstances, self-control remained remarkably stable: its mean and distribution were unchanged, and individuals largely preserved their relative positions. Within-person changes were small, and unrelated to variations in state-level exposure to both the spread of the virus and the policy responses that ensued. The evidence we report suggests that self-control is a deeply rooted, trait-like characteristic that persists even under extreme societal stress.

JEL Classification: D91, D01

Keywords: self-control, HILDA, stability, COVID-19

Corresponding author:
Giorgia Menta
Luxembourg Institute of Socio-Economic Research (LISER)
11 Porte des Sciences
4360 Esch-sur-Alzette
Luxembourg
E-mail: giorgia.menta@liser.lu

* Sura Majeed provided excellent research assistance. This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either DSS or the Melbourne Institute. The authors are grateful for research support from the Australian Research Council (ARC) (grant numbers DP200100979, CE200100025).

1. Introduction

Self-control is central to people's capacity to lead productive, healthy, and satisfying lives. It enables them to resist short-term temptations in favor of actions with long-term benefits. There is extensive evidence that the capacity for self-control is closely linked to people's overall social and economic well-being. It has been shown to predict academic achievement above and beyond cognitive ability (Duckworth and Seligman, 2005), for example, as well as a wide range of adult outcomes including physical health, substance dependence, financial stability, and criminal offending (Moffitt *et al.*, 2011). More recent evidence links self-control to body weight (Cobb-Clark *et al.*, 2023a) and to gambling (Santos *et al.*, 2025). While correlated with other personality traits, such as the Big Five, self-control has substantial predictive power above and beyond these traits (Cobb-Clark *et al.*, 2022). Self-control even seems to be transmitted across generations, with a relatively high degree of correlation between the levels of self-control reported between parents and children (Cobb-Clark *et al.*, 2022; Cobb-Clark and Tayeb, 2024).

Despite the consensus over its importance, there is still an ongoing debate about the extent to which self-control is a stable psychological trait versus a malleable skill responsive to individual events, environmental shocks and policy interventions. Most existing evidence on the development and stability of self-control comes from studies of children and adolescents (e.g. Burt *et al.*, 2006; Beaver and Wright, 2007; Beaver *et al.*, 2008; Beaver *et al.*, 2013; Burt *et al.*, 2014; Coyne and Wright, 2014; Jo and Bouffard, 2014; Jo, 2015; Diamond, 2016; Diamond *et al.*, 2017; Forrest *et al.*, 2019). Evidence for adults, in contrast, is far more limited and, with the recent exception of Cobb-Clark *et al.* (2023b), typically derived from selective samples rather than population-representative data (e.g. Arneklev *et al.*, 1998; Mitchell and Mackenzie, 2006; Billen *et al.*, 2019).

This paper makes an important contribution by providing new evidence on the stability of self-control during one of the most significant global disruptions in recent history: the COVID-19 pandemic. We exploit detailed, time-varying measures of the pandemic's intensity – combining average COVID-19 cases, deaths, and government response indices over the full duration of the crisis – to disentangle its epidemiological and institutional dimensions. This allows us to study whether self-control remains stable not only at the onset of the shock, but throughout a prolonged period of uncertainty, policy intervention, and economic disruption.[1]

Conceptualizing self-control as a personality trait does not necessarily imply that it is entirely fixed or immune to change. For instance, rank-order stability is considered a defining feature of a trait in psychology, whereas within individual mean-level stability over time is not (Golsteyn and Schildberg-Hörisch, 2017; Schildberg-Hörisch, 2018). Here we assess stability across three complementary dimensions: i) mean-level stability, capturing aggregate changes in the population; ii) rank-order stability, measuring the preservation of individuals' relative positions; and iii) individual-level stability, reflecting within-person variation over time (Bleidorn *et al.*, 2019; Fitzenberger *et al.*, 2022). Together, these tests provide a comprehensive assessment of whether self-control exhibits the typical features of a stable psychological trait.

We implement this approach using the population-representative panel data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey over the four-year period spanning the pandemic. Specifically, we exploit responses to the 13-item Brief Self-Control Scale (Tangney *et al.*, 2004) collected in 2019 and again in 2023 to examine whether the experience of individual shocks, the pandemic intensity and the public health policies that followed affected individuals' capacity for self-control. Our analysis reveals that self-control remained remarkably stable in Australia throughout this turbulent period.[2] The average level of self-control was virtually unchanged between 2019 and 2023, the distribution of self-control scores was statistically indistinguishable across the two waves, and rank-order stability was high (Spearman correlation of 0.65 between the distributions of 2019 and 2023). Moreover, individual-level changes in self-control were modest and mostly uncorrelated with both individual and pandemic-related shocks. Self-control appears to be deeply rooted, and is unresponsive to even large-scale, sustained environmental disruptions.

We contribute to the literature by extending the findings of Cobb-Clark *et al.* (2023b), who documented the stability of self-control in Germany between 2017 and the onset of the COVID-

[1] Cobb-Clark *et al*. (2023b) also incorporate the very onset of the pandemic in their analysis, but proxy exposure using only the number of days between the outbreak and the interview date. Our approach extends this by using richer, time-varying indicators of COVID-19 intensity and policy response, over the full duration of the pandemic.

[2] This is in contrast to other papers that have documented adverse effects of the pandemic and containment policies on a number of psychological outcomes, both in Australia (e.g. Butterworth *et al*., 2023) and elsewhere (e.g. Clark and Lepinteur, 2022; Jabakhanji *et al*., 2022; Rebechi *et al*., 2024).

19 crisis using the Socio-Economic Panel Innovation Sample (SOEP-IS; $N \approx 1{,}200$). Their study provided the first population-representative evidence of self-control's trait-like nature, encompassing the very onset of the pandemic with their observation window (2017 – 2020). In contrast, the HILDA data allow us to test the same hypothesis in a much larger national sample ($N \approx 11{,}200$) and over a period that fully encompasses both the onset and aftermath of the pandemic (2019 – 2023). This broader time window, together with richer measures of pandemic intensity – including cumulative cases, deaths, and policy response indices – allows us to study whether self-control remained stable not just at the shock's arrival, but throughout a prolonged period of health, economic, and institutional disruption. Importantly, by separately measuring pandemic intensity (via case numbers or deaths) and the government's policy responses, we are able to disentangle the direct effects of policy measures from the underlying progression of the pandemic. Lastly, our results also provide an external validity test of the German findings in a different welfare regime and cultural setting. Despite the larger sample, extended horizon, and stronger exposure variation, we continue to find no significant shifts in average self-control, reinforcing the view that it is remarkably stable among adults.

Our findings also relate to a broader literature on the stability of psycho-social characteristics and economic preferences. Contrary to risk attitudes, which display moderate individual-level variation over the life course (Dohmen *et al.*, 2017; Schildberg-Hörisch, 2018; Schurer, 2015), we show that self-control is rather stable to both individual and aggregate shocks – similar to other aspects of personality (e.g. Cobb-Clark and Schurer, 2012; Cobb-Clark and Schurer, 2013).

Lastly, our findings speak to the growing body of economic research that models self-control as a determinant of behavior and life outcomes. Showing that self-control remains stable through periods of substantial social and economic disruption strengthens the empirical foundation for treating it as an exogenous, person-specific construct in both applied and theoretical work. More broadly, our results help bridge theoretical models of self-control with empirical evidence on its real-world stability, complementing recent efforts to link psychosocial characteristics to economic preferences and decision-making (Almlund *et al.*, 2011; Borghans *et al.*, 2008; Chavez *et al.*, 2025; Heckman *et al.*, 2021).

2. Data

Our analysis draws on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is an annual, nationally-representative household panel study that has followed Australian residents since 2001. The survey collects detailed information on individuals' demographic characteristics, economic activities, health, and well-being. Importantly, HILDA includes a comprehensive self-completion questionnaire designed to capture psychological traits and attitudes, making it well suited for studying self-control at the population level. In the remainder of this section, we describe the main variables used in the analysis and provide descriptive statistics for the estimation sample. We first discuss our main outcome, self-control, and then define the individual-level shocks we use to study variation in self-control.

Self-control. In 2019 and 2023, HILDA administered the 13-item Brief Self-Control Scale (BSCS; Tangney *et al.*, 2004), the same measure used in Cobb-Clark *et al.* (2023b). The BSCS provides a validated, domain-general measure of individuals' capacity to resist short-term impulses in pursuit of long-term goals. Responses are recorded on a five-point Likert scale ranging from 1 ("does not apply at all") to 5 ("very well"), with total scores ranging from 13 to 65. The BSCS has been shown to possess high internal consistency and short-term test-retest reliability over periods of three to seven weeks (Tangney *et al.*, 2004; Bertrams and Dickhäuser, 2009), as well as strong predictive validity (de Ridder *et al.*, 2012).

The availability of repeated BSCS measures in 2019 and 2023 allows us to assess the stability of self-control before and after the COVID-19 pandemic. Importantly, these two waves bookend both the pandemic itself and the extended policy responses that followed, including strict lockdowns, school and workplace closures, and large-scale fiscal support measures. This provides a unique opportunity to examine whether such an unprecedented public health and economic crisis left any measurable imprint on people's trait self-control.

Life events. We consider the following major events: job loss, separation/divorce and death of a relative. Each of these events is measured using respondents' retrospective reports in the annual HILDA survey. In every wave, individuals are asked whether they have experienced each event in the preceding 12 months. We exploit these reports over the relevant years of the pandemic period to construct binary indicators measuring whether a respondent experienced the corresponding shock between 2020 and 2023.

Policy response indices. To build measures of the Australian government's policy response to the COVID-19 pandemic, we draw on the sub-national version of the widely used Oxford COVID-19 Government Response Tracker's Government Response Index (GRI) and its sub-components (the Containment and Health Index and the Economic Support Index). The GRI aggregates sixteen indicators capturing the scope and strictness of government responses to the pandemic, including school and workplace closures, travel restrictions, public information campaigns, economic support policies, and health-system interventions (Hale *et al*., 2021). The index is rescaled to range from 0 to 100, with higher values indicating a more stringent or expansive policy response. The GRI can be decomposed into two conceptually distinct sub-indices: the Containment and Health Index (CHI) and the Economic Support Index (ESI). The CHI comprises fourteen items reflecting the intensity of public-health and other containment measures, such as lockdowns, restrictions on gatherings, and international travel controls. In contrast, the ESI captures the extent of economic assistance provided to workers and households, including direct cash transfers and moratoria on financial obligations. Decomposing the GRI is useful because the two sub-indices may have opposing implications at the individual level: while stricter containment measures (higher CHI) restricted mobility and personal freedom, greater economic support (higher ESI) may have freed up cognitive resources by alleviating financial stress. Using the two sub-indices separately avoids conflating these potentially offsetting effects, a strategy also adopted in previous work (e.g., Borga *et al.*, 2022; Clark and Lepinteur, 2022; Jabakhanji *et al.*, 2022; Lepinteur *et al.*, 2023; Rebechi *et al.*, 2024).

We use information on respondents' region of residence in 2020, 2021, 2022, and 2023 to reconstruct their exposure to COVID-19 policy responses over the course of the pandemic.[3] For people who reported living in the same region across all four waves, we assume continuous residence in that region and compute their exposure as the average of the daily GRI, CHI, and ESI values observed in that jurisdiction between March 2020 and December 2022. For those who reported moving between regions, we approximate the timing of the move as occurring midway between the two interview dates and calculate exposure as the weighted average of the indices in

[3] Region of residence here follows the Australian Bureau of Statistics definition of Major Statistical Regions (MSRs). The five largest states (New South Wales, Victoria, Queensland, South Australia, and Western Australia) are split into two MSRs: one for the capital-city area and one for the remainder of the state. Smaller jurisdictions (Tasmania, the Northern Territory, the Australian Capital Territory, and the Other Territories) each form a single MSR due to population size.

each state accordingly. While this approach simplifies the timing of residential moves, results remain unchanged when alternative assumptions are used – for example, assigning the move at the start or end of the inter-wave period.[4]

COVID-19 exposure. To isolate the effect of policy changes on self-control, we control for the evolution of the COVID-19 pandemic individual exposure. We use COVID Live data, which are collected from media releases and verified against state and federal health departments, to measure the daily number of cases and deaths linked to the virus at the state level – a more aggregate statistical unit than region.[5] The daily flows are then rescaled to the pre-pandemic region-level population size (in hundreds of thousands), for comparability across states. As with the policy indices, we compute the average daily case rate and average daily death rate for each state over the 2020–2022 period, which serve as indicators of the local intensity of the pandemic exposure.

Estimation sample. To build our estimation sample, we begin with all respondents interviewed in the 2023 wave of the HILDA Survey (15,978 participants) and exclude those who did not participate in 2019 or have missing responses on any of the 13 BSCS items in either wave, leaving 11,572 participants. Most of those excluded were not part of the 2019 wave or were too young to have reported self-control in 2019. We also drop individuals with missing information on basic demographics or state of residence during the pandemic, as these variables are required for our analysis of individual-level shocks and regional policy exposure. Our final estimation sample includes 11,219 respondents with valid self-control scores in both 2019 and 2023. Appendix Table A1 reports the 2023 descriptive statistics for this sample. Respondents are on average 51 years old, slightly more likely to be female (54 percent), and have 13 years of education. Mean annual disposable income is around $125,000 (AUD). Approximately 9 percent of respondents experienced a job loss or separation/divorce during the pandemic years, while 36 percent reported the death of a relative.

[4] Another modelling choice concerns how we aggregate exposure over time. Our baseline uses the simple average of each index across the pandemic, giving equal weight to early and late months. Since one could argue that early policies were more disruptive or later ones more salient, we also re-estimate the models using exposure measures focused on 2020 and on 2022. The results (available on request) are nearly identical, confirming that our findings are not sensitive to how policy indices are weighted over time.

[5] Due to the lack of centralized regional daily statistics on COVID-19 case numbers and deaths, we rely on the more aggregated state-level statistics provided by COVID Live Data. These include the six federated states (New South Wales, Victoria, Queensland, South Australia, Tasmania, and Western Australia) and two federal territories (Northern Territory, the Australian Capital Territory).

The average value of the CHI in our estimation sample is 52.5 (SD = 2.6), with values ranging from 46.1 to 59.0 across regions. At the bottom of the distribution are respondents who spent the entire pandemic in the Northern Territory, where restrictions were comparatively light and short-lived. At the upper end are those residing in Victoria, particularly Melbourne, who faced the most stringent and prolonged lockdowns in the country. Note that the gap between the least and most exposed regions corresponds to roughly five standard deviations of the CHI in our sample, a spread that underscores the extent of sub-national heterogeneity in containment policies.

3. Empirical analysis

3.1. Mean-level and rank-order stability

We begin by examining whether the mean and rank ordering of self-control in the population changed between 2019 and 2023. Mean-level stability captures changes in the average level of self-control across the adult population, while rank-order stability assesses the relative ordering of individuals' self-control over time.

The distributions of the BSCS scores in 2019 and 2023 are almost perfectly aligned (Figure 1). The mean score increased only marginally – from 45.26 in 2019 to 45.35 in 2023 – and the difference of 0.09 points is statistically insignificant. A two-tailed Kolmogorov-Smirnov test fails to reject the null hypothesis that the two distributions are identical ($p = 0.157$), confirming that the pandemic did not alter significantly the level or shape of the distribution of self-control. We also find a Pearson correlation coefficient of 0.70 between the level of self-control reported in 2019 and 2023 (which would likely be higher if corrected for attenuation due to measurement error, as shown by Cobb-Clark *et al.*, 2023b).

Turning to rank-order stability, Figure 2 provides an alluvial diagram (self-control quartiles in 2019 flowing to self-control quartiles in 2023) that visualizes this persistence. Roughly 51 percent of respondents remain in the same quartile across waves, with the thickest bands of 'non-movers' at the top and bottom quartiles. Most mobility consists of adjacent, one-quartile moves (38 percent); transitions of two quartiles or more are rarer (11 percent). The flows are broadly symmetric, indicating minimal net re-ranking of the distribution. These patterns are robust to alternative cut-points (e.g., terciles or quintiles). We also find a Spearman correlation of 0.65 between BSCS scores in 2019 and 2023.

That self-control remained so stable over a four-year period that included both the outbreak and aftermath of the COVID-19 pandemic is striking. Despite prolonged disruptions to work, education, and social life, the average Australians' self-control remained essentially unchanged. A useful benchmark for interpreting these results comes from Cobb-Clark *et al.* (2023b), who first provided population-representative evidence on the stability of self-control over time in the German SOEP-IS. Remarkably, the key statistics from the two settings are almost identical – see Appendix Table A2 for a summary. In both Germany and Australia, the average level of self-control barely moved, the rank ordering of individuals remained highly stable, and most of the population experienced little or no change in self-control. This convergence is striking given the differences between the two countries – in culture, institutions, and their experience of the COVID-19 crisis. The SOEP-IS covered the early phase of the pandemic in a European context; HILDA spans the full pandemic cycle in Australia, where policy responses were both prolonged and geographically uneven. Yet the estimated correlations, quartile transitions, and distributional tests all tell the same story: self-control is stable. The replication of this pattern across such distinct contexts provides compelling evidence that the stability of self-control is not a dataset-specific finding.

3.2. Individual-level stability during the COVID-19 pandemic

Even if population averages and rank orderings appear stable, people might still experience temporary gains or losses in self-control. To explore this possibility, we examine within-person changes in self-control between 2019 and 2023, defined as:

$$\Delta SC_i = SC_{i,2023} - SC_{i,2019},$$

and study the distribution and correlates of these individual differences. The cumulative distribution function of within-person changes in ΔSC rises steeply around zero (Figure 3), indicating that the vast majority of respondents experienced only minor changes. Approximately 6.8 percent report no change, nearly two-thirds (64.7 percent) remain within one standard deviation of ΔSC, 23.7 percent fall between one and two standard deviations, and only 4.8 percent exceed two standard deviations in absolute value. Large shifts in self-control at the individual level are exceptionally uncommon.

We further examine whether these modest individual changes vary systematically with age. The pattern, displayed in Figure 4, is flat: younger and older adults are equally likely to experience small increases or decreases in self-control. The magnitude of change is similar across the life cycle, suggesting that the stability of self-control extends to all age groups.

We next ask whether ΔSC can be explained by life events or differences in the policy environment during the pandemic. To do so, we estimate models of the form

$$\Delta SC_i = \alpha + \beta Shock_i + \boldsymbol{X}_i'\gamma + \varepsilon_i,$$

where $Shock_i$ corresponds to two different types of shocks: i) individual-level life-shocks during the pandemic years, and ii) state-level policy exposures to COVID-19 response measures. As described in Section 2, we construct binary indicators that capture people's experiences of job loss, separation/divorce, and death of a relative during the study period (2019 – 2023). As for policy exposure, we rely on the GRI and its subcomponents (Containment and Health; Economic Support). In order to disentangle the effect of policy responses from that of the pandemic itself, we always keep constant the evolution of the pandemic – as proxied by the average daily number of COVID-19 deaths per hundreds of thousands inhabitants.[6] Both the policy response indices and the COVID-19 deaths and cases are standardized to have mean zero and standard deviation one, to facilitate interpretation and comparability across indices.

The vector $\boldsymbol{X}_i'$ includes respondents' region of residence, age, gender, years of education, and net household income in 2023. In the regressions relating changes in self-control to the policy indices, standard errors are clustered at the level of policy exposure, meaning that individuals facing the same GRI value are clustered together to account for their shared exposure to government response strategies. All results are robust to alternative sets of controls and clustering strategies.

Although establishing causality is not our primary objective, several features of our research design lend credibility to a quasi-causal interpretation. By focusing on within-person changes in self-control, we net out all time-invariant individual characteristics, removing a major source of confounding that typically undermines cross-sectional analyses. Moreover, while individual life events are unlikely to be strictly exogenous, state-level variation in COVID-19 policy exposure

[6] In robustness checks, we use the number of COVID-19 cases instead of deaths. Our results are unchanged.

can be regarded as plausibly orthogonal to individuals' underlying self-control trajectories, as it was largely driven by epidemiological and political factors beyond individual influence.

Table 1 reports the estimates from regressions of within-person changes in self-control on individual-level life events and differential geographical exposure to COVID-19 policy responses. Starting with individual-level events, the estimated effects of job loss, separation or divorce, and the death of a relative are all close to zero. The point estimates are negative, suggesting at most a slight decline in self-control following adverse shocks. However, our estimated magnitudes are extremely small and far from being statistically significant. This pattern holds when demographic and socioeconomic controls are added sequentially across columns (1) to (5).

Turning to state-level COVID-19 exposure and policy responses, we find a consistent absence of effects. Neither the average COVID-19 death rate, the overall GRI, nor its two subcomponents (i.e. the CHI and the ESI) are significantly related to changes in self-control. The coefficients are close to zero and remain so after controlling for individual demographics and baseline socioeconomic status. Focusing on the relationship between exposure to containment policies and changes in self-control, a one-standard-deviation increase in the CHI is associated with a 0.011-point drop in the BSCS score.

To put this into perspective, the average gap in containment intensity between the Northern Territory and Melbourne corresponds to roughly five standard deviations of the CHI. Thus, holding all else constant, someone who spent the pandemic in Melbourne would be predicted to score only about 0.06 points lower on the BSCS than someone in the Northern Territory. Given that the standard deviation of a change in self-control in our estimation sample is 6.6 points, this difference is negligible. In other words, even the stark contrast between the most and least restrictive policy environments in Australia translates into a change in self-control that is statistically and economically trivial.

4. Conclusion

Our research investigates whether people's capacity for self-control changes over time. Using longitudinal data from the Household, Income and Labour Dynamics in Australia Survey, we tracked the same individuals before and after the pandemic, comparing their self-control scores in 2019 and 2023. This period encompasses both the onset and the aftermath of the most significant public health and economic crisis in modern times, namely that of the COVID-19 pandemic. Our approach combined repeated measures of the Brief Self-Control Scale with detailed information on life events and state-level exposure to COVID-19 policy responses, providing a comprehensive assessment of the stability of self-control in the face of extreme societal disruption and individual shocks.

We find that self-control remained remarkably stable. At the mean level, the average score in 2023 is statistically indistinguishable from that in 2019, and the overall distribution of self-control did not shift. At the rank-order level, individuals maintained their relative positions in the self-control distribution, with most respondents remaining in the same quartile. At the individual level, changes in self-control were small. Moreover, regressions relating within-person changes in self-control to major life events (i.e. job loss, separation, or bereavement) and to geographical variation in COVID-19 exposure and policy response indices reveal no systematic associations. In short, the pandemic left no discernible mark on the population's self-control.

Taken together, these results indicate that self-control's persistence is not due to a canceling-out of opposite changes but rather to its inherent stability. Most individuals maintained their pre-pandemic level of self-control, even amid profound societal disruption and policy upheaval. The rarity of large within-person shifts, combined with the lack of systematic correlates, supports the interpretation of self-control as a trait-like characteristic, highly resistant to even the most severe external shocks.

This has important implications for both theory and policy. If self-control in adulthood is indeed highly stable, interventions aimed at permanently increasing it may have limited scope for success. Instead, policies that support individuals in exercising their existing self-control, by shaping environments, incentives, and defaults, may prove more effective in promoting well-being and economic resilience.

References

Almlund, M., Duckworth, A. L., Heckman, J., & Kautz, T. (2011). Personality psychology and economics. In Hanushek E.A., Machin S., Woessmann L. (Eds.), *Handbook of the Economics of Education* (Vol. 4, pp. 1-181). Elsevier.

Arneklev, B. J., Cochran, J. K., & Gainey, R. R. (1998). Testing Gottfredson and Hirschi's "low self-control" stability hypothesis: An exploratory study. *American Journal of Criminal Justice*, *23*(1), 107-127.

Beaver, K. M., Connolly, E. J., Schwartz, J. A., Al-Ghamdi, M. S., & Kobeisy, A. N. (2013). Genetic and environmental contributions to stability and change in levels of self-control. *Journal of Criminal Justice*, *41*(5), 300-308.

Beaver, K. M., & Wright, J. P. (2007). The stability of low self-control from kindergarten through first grade. *Journal of Crime and Justice*, *30*(1), 63-86.

Beaver, K. M., Wright, J. P., DeLisi, M., & Vaughn, M. G. (2008). Genetic influences on the stability of low self-control: Results from a longitudinal sample of twins. *Journal of Criminal Justice*, *36*(6), 478-485.

Bertrams, A., & Dickhäuser, O. (2009). High-school students' need for cognition, self-control capacity, and school achievement: Testing a mediation hypothesis. *Learning and Individual Differences*, *19*(1), 135-138.

Billen, E., Garofalo, C., Vermunt, J. K., & Bogaerts, S. (2019). Trajectories of self-control in a forensic psychiatric sample: Stability and association with psychopathology, criminal history, and recidivism. *Criminal Justice and Behavior*, *46*(9), 1255-1275.

Bleidorn, W., Hill, P. L., Back, M. D., Denissen, J. J., Hennecke, M., Hopwood, C. J., ... & Roberts, B. (2019). The policy relevance of personality traits. *American Psychologist*, *74*(9), 1056.

Borga, L. G., Clark, A. E., D'Ambrosio, C., & Lepinteur, A. (2022). Characteristics associated with COVID-19 vaccine hesitancy. *Scientific Reports*, *12*(1), 12435.

Borghans, L., Duckworth, A. L., Heckman, J. J., & Ter Weel, B. (2008). The economics and psychology of personality traits. *Journal of Guman Resources*, *43*(4), 972-1059.

Burt, C. H., Simons, R. L., & Simons, L. G. (2006). A longitudinal test of the effects of parenting and the stability of self-control: negative evidence for the general theory of crime. *Criminology*, *44*(2), 353-396.

Burt, C. H., Sweeten, G., & Simons, R. L. (2014). Self-control through emerging adulthood: Instability, multidimensionality, and criminological significance. *Criminology*, *52*(3), 450-487.

Butterworth, P., Schurer, S., Atalay, K., Glozier, N., Vera-Toscano, E., & Wooden, M. (2023). Quantifying the human impact of Melbourne's 111-day hard lockdown experiment on the adult population. *Nature Human Behaviour*, *7*(10), 1652-1666.

Chavez, C., Feng, S., Heckman, J. J., & Yang, Z. (2025). *Relating Cognitive Skills and Personality Traits to Economic Preferences: A Study of Chinese Children*. Mimeo.

Clark, A. E., & Lepinteur, A. (2022). Pandemic policy and life satisfaction in Europe. *Review of Income and Wealth*, *68*(2), 393-408.

Cobb-Clark, D. A., Dahmann, S. C., Kamhöfer, D. A., & Schildberg-Hörisch, H. (2022). The predictive power of self-control for life outcomes. *Journal of Economic Behavior & Organization*, *197*, 725-744.

Cobb-Clark, D. A., Dahmann, S. C., Kamhöfer, D. A., & Schildberg-Hörisch, H. (2023a). Self-control and unhealthy body weight: The role of impulsivity and restraint. *Economics & Human Biology*, *50*, 101263.

Cobb-Clark, D. A., Kong, N., & Schildberg-Hörisch, H. (2023b). The stability of self-control in a population-representative study. *Journal of Economic Psychology*, *95*, 102599.

Cobb-Clark, D. A., & Schurer, S. (2012). The stability of big-five personality traits. *Economics Letters*, *115*(1), 11-15.

Cobb-Clark, D. A., & Schurer, S. (2013). Two economists' musings on the stability of locus of control. *Economic Journal*, *123*(570), F358-F400.

Cobb-Clark, D. A., & Tayeb, H. (2024). *Family Stress and the Intergenerational Correlation in Self-Control*. IZA Institute of Labor Economics DP No. 17265.

Coyne, M. A., & Wright, J. P. (2014). The stability of self-control across childhood. *Personality and Individual Differences*, *69*, 144-149.

de Ridder, D. T., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review*, *16*(1), 76-99.

Diamond, B. (2016). Assessing the determinants and stability of self-control into adulthood. *Criminal Justice and Behavior*, *43*(7), 951-968.

Diamond, B., Morris, R. G., & Piquero, A. R. (2017). Stability in the underlying constructs of self-control. *Crime & Delinquency*, *63*(3), 235-266.

Dohmen, T., Falk, A., Golsteyn, B. H., Huffman, D., & Sunde, U. (2017). Risk attitudes across the life course. *Economic Journal*, *127*(605), 95-116.

Duckworth, A. L., & Seligman, M. E. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, *16*(12), 939-944.

Fitzenberger, B., Mena, G., Nimczik, J., & Sunde, U. (2022). Personality traits across the life cycle: Disentangling age, period and cohort effects. *Economic Journal*, *132*(646), 2141-2172.

Forrest, W., Hay, C., Widdowson, A. O., & Rocque, M. (2019). Development of impulsivity and risk-seeking: Implications for the dimensionality and stability of self-control. *Criminology*, *57*(3), 512-543.

Golsteyn, B., & Schildberg-Hörisch, H. (2017). Challenges in research on preferences and personality traits: Measurement, stability, and inference. *Journal of Economic Psychology*, *60*, 1-6.

Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., & Tatlow, H. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour*, *5*(4), 529-538.

Heckman, J.J., Jagelka, T.S., & Kautz, T.D. (2021). Some contributions of economics to the study of personality. In John, O.P., Robins, R.W. (Eds.), *Handbook of personality – theory and research* (4th ed.).

Jabakhanji, S. B., Lepinteur, A., Menta, G., Piper, A., & Vögele, C. (2022). Sleep quality and the evolution of the COVID-19 pandemic in five European countries. *PLoS One*, *17*(12), e0278971.

Jo, Y. (2015). Stability of self-control: Hirschi's redefined self-control. *International Journal of Offender Therapy and Comparative Criminology*, *59*(1), 51-67.

Jo, Y., & Bouffard, L. (2014). Stability of self-control and gender. *Journal of Criminal Justice*, *42*(4), 356-365.

Lepinteur, A., Borga, L. G., Clark, A. E., Vögele, C., & D'Ambrosio, C. (2023). Risk aversion and COVID-19 vaccine hesitancy. *Health Economics*, *32*(8), 1659-1669.

Mitchell, O., & MacKenzie, D. L. (2006). The stability and resiliency of self-control in a sample of incarcerated offenders. *Crime & Delinquency*, *52*(3), 432-449.

Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... & Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, *108*(7), 2693-2698.

Rebechi, A., Lepinteur, A., Clark, A. E., Rohde, N., Vögele, C., & D'Ambrosio, C. (2024). Loneliness during the COVID-19 pandemic: Evidence from five European countries. *Economics & Human Biology*, *55*, 101427.

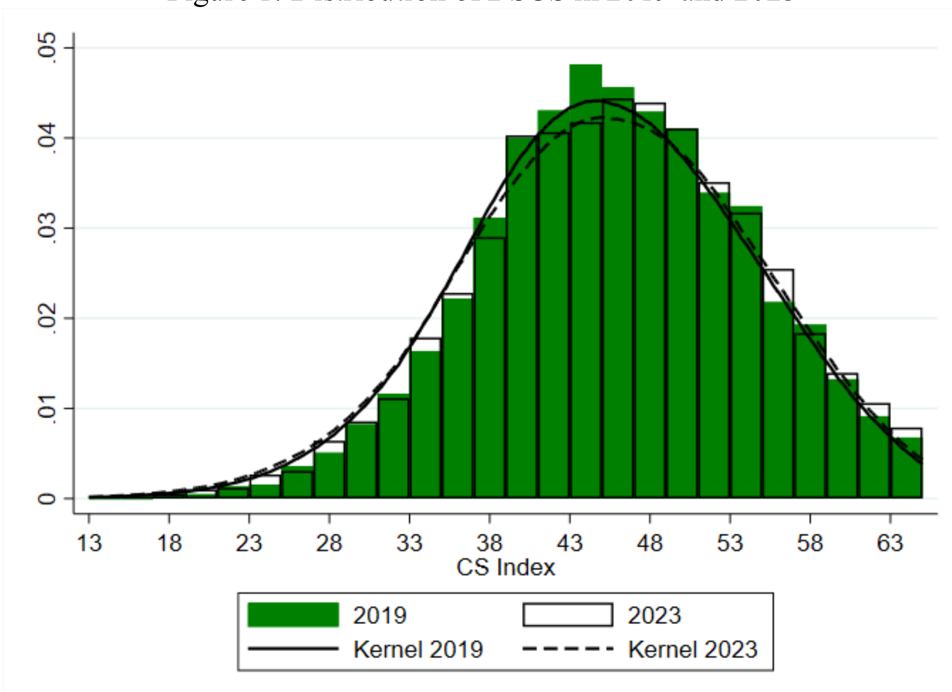
Santos, T., Heirene, R. M., Cobb-Clark, D., Tymula, A., & Gainsbury, S. M. (2025). Electronic Gaming Machine Consumers' Understanding of Past & Future Spending: Associations with Risk, Impulsivity, Self-Control, & Problematic Gambling. *Journal of Gambling Studies*, forthcoming.

Schurer, S. (2015). Lifecycle patterns in the socioeconomic gradient of risk preferences. *Journal of Economic Behavior & Organization*, *119*, 482-495.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271–324.

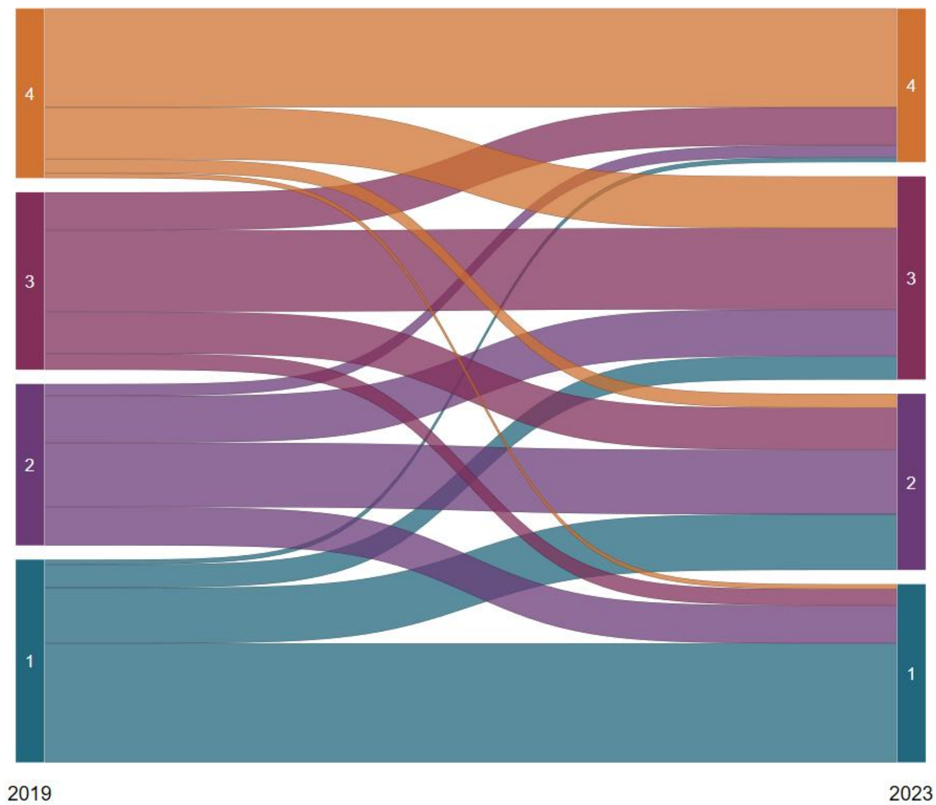
Figures and Tables

Figure 1: Distribution of BSCS in 2019 and 2023



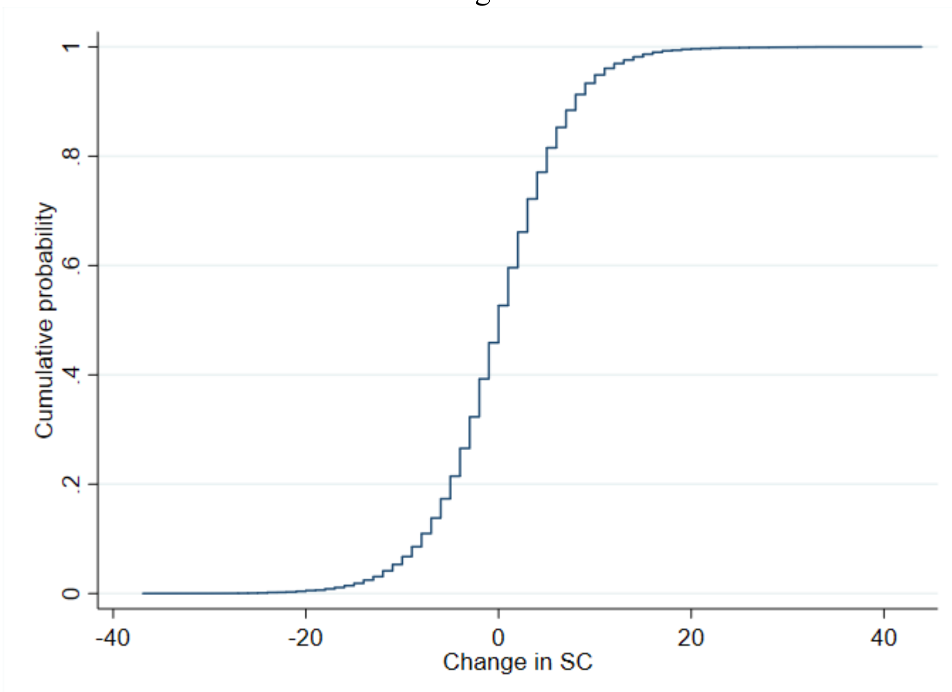
Notes: The figure shows the distribution of the Brief Self-Control Scale (BSCS) index in the HILDA sample for 2019 (green bars) and 2023 (white bars). The solid and dashed lines represent kernel density estimates for 2019 and 2023, respectively. The BSCS index ranges from 13 to 65, with higher values indicating greater self-control. The two distributions are nearly identical (KS test $p = 0.157$), and the mean difference between years is small and statistically insignificant (45.26 in 2019 vs. 45.35 in 2023).

Figure 2: Quartile Transitions in Self-Control Between 2019 and 2023



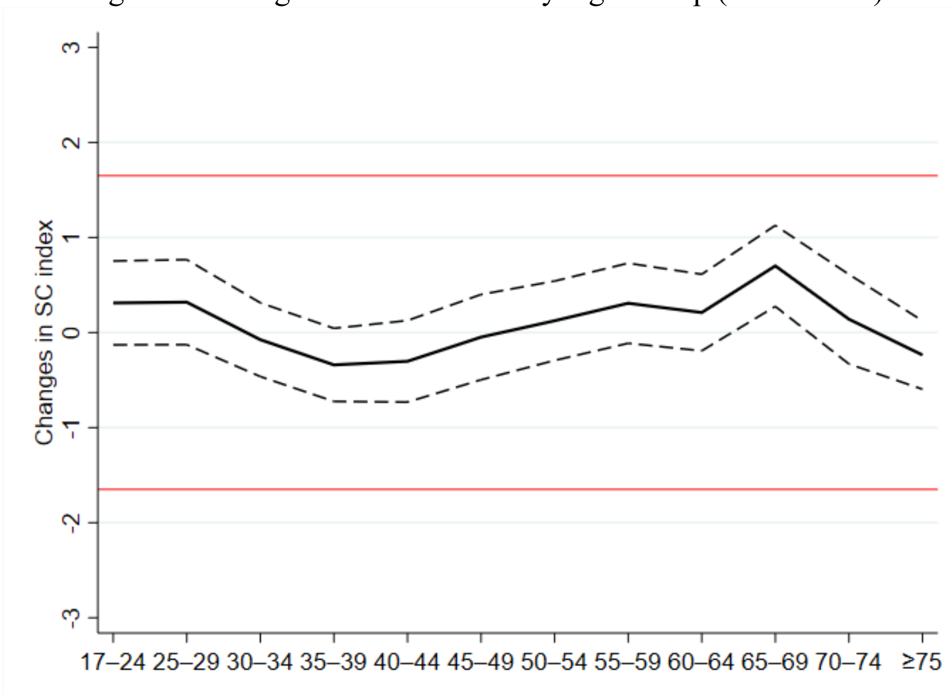
Notes: The figure depicts an alluvial diagram showing transitions across quartiles of the BSCS between 2019 and 2023 in the HILDA sample. Each color represents a quartile of the self-control distribution in 2019, with flows indicating individuals' movements across quartiles by 2023. Nearly half of respondents remain in the same quartile over the four-year period, and persistence is particularly strong at both the bottom and top of the distribution.

Figure 3: Cumulative Distribution of Changes in Self-Control Between 2019 and 2023



Notes: The figure displays the cumulative distribution function of within-person changes in the BSCS between 2019 and 2023 in the HILDA sample. The distribution is centered around zero, indicating that most individuals experienced little or no change in their self-control over this four-year period.

Figure 4: Changes in Self-Control by Age Group (2019–2023)



Notes: The figure plots average within-person changes in the BSCS between 2019 and 2023 across age groups in the HILDA sample. The solid black line represents mean changes, and the dashed lines denote 95 percent confidence intervals. Horizontal red lines mark ±0.2 standard deviations of the overall change distribution. Changes in self-control are small and statistically indistinguishable from zero across almost all age groups

Table 1: Individual Life Events, COVID-19 Policies and Changes in Self-Control (2019–2023)

	Change in BSCS				
	(1)	(2)	(3)	(4)	(5)
Individual-level Events					
Job loss	-0.101	-0.098	-0.096	-0.096	-0.077
	(0.222)	(0.223)	(0.223)	(0.223)	(0.224)
R^2	0.001	0.001	0.001	0.001	0.001
Separation/Divorce	-0.104	-0.101	-0.083	-0.084	-0.089
	(0.218)	(0.221)	(0.221)	(0.222)	(0.222)
R^2	0.001	0.001	0.001	0.001	0.001
Death of a relative	-0.142	-0.145	-0.137	-0.137	-0.146
	(0.130)	(0.130)	(0.131)	(0.131)	(0.131)
R^2	0.001	0.001	0.001	0.001	0.001
COVID-19 Policy Responses and Evolution					
Government response index	-0.024	-0.022	-0.050	-0.050	-0.048
	(0.354)	(0.353)	(0.358)	(0.358)	(0.359)
Average daily deaths, by 100,000 inhabitants	0.052	0.050	0.075	0.075	0.073
	(0.183)	(0.179)	(0.195)	(0.195)	(0.197)
R^2	0.001	0.001	0.001	0.001	0.001
Containment and health index	0.009	0.012	-0.015	-0.015	-0.011
	(0.335)	(0.333)	(0.338)	(0.338)	(0.339)
Average daily deaths, by 100,000 inhabitants	0.041	0.039	0.064	0.064	0.061
	(0.186)	(0.182)	(0.199)	(0.199)	(0.201)
R^2	0.001	0.001	0.001	0.001	0.001
Economic support index	-0.107	-0.107	-0.112	-0.112	-0.117
	(0.259)	(0.259)	(0.260)	(0.260)	(0.260)
Average daily deaths, by 100,000 inhabitants	0.045	0.044	0.060	0.060	0.059
	(0.197)	(0.196)	(0.207)	(0.207)	(0.208)
R^2	0.001	0.001	0.001	0.001	0.001
Change in self-control:					
Average	0.093	0.093	0.093	0.093	0.093
SD	6.599	6.599	6.599	6.599	6.599
Controls:					
Age	.	✓	✓	✓	✓
Years of education	.	.	✓	✓	✓
Annual disposable income	.	.	.	✓	✓
Gender	.	.	.	.	✓

Notes: The table reports OLS estimates of the association between within-person changes in BSCS index and major life events or regional policy indices and state-level COVID-19 deaths. The estimation sample for all regression is our analysis sample of 11,219 observations. All regressions include region fixed effects and are estimated using the HILDA sample. Standard errors are shown in parentheses.

Online Appendix

Table A1: Descriptive Statistics in Estimation Sample

	Mean	SD	Min	Max
Self-control (BSCS)				
In 2019	45.26	8.39	13	65
In 2023	45.35	8.67	13	65
Sociodemographics				
Age	50.55	18.18	19	99
Female	0.54		0	1
Years of education	13.10	2.52	0	18.5
Annual disposable income (in ’000 AUD)	125.01	99.65	-176.26	1232.84
Individual-level Events				
Job Loss	0.09		0	1
Separation/Divorce	0.09		0	1
Death of a relative	0.36		0	1
COVID-19 Policy Responses (Region-Level)				
Government response index	51.69	2.47	45.16	57.86
Containment and health index	52.50	2.62	46.08	59.03
Economic support index	46.00	2.92	33.51	58.30
COVID-19 Intensity (State-Level)				
Average daily deaths, by 100,000 inhabitants	0.05	0.16	0.00	2.43
Average daily cases, by 100,000 inhabitants	38.44	83.26	0.01	1080.84

Note: This table refers to the 11,219 HILDA respondents observed in 2023 and used in the empirical analysis.

Table A2: Comparison of Self-Control Stability: Germany (SOEP) vs. Australia (HILDA)

Dimension	Measure	Cobb-Clark *et al.* (2023b)	This paper
Mean-level stability	Mean BSCS score, first wave	45.56	45.26
	Mean BSCS score, second wave	45.55	45.35
	Difference	-0.01 (p=0.92)	+0.09 (p=0.13)
	Kolmogorov–Smirnov test p-value	0.51	0.16
	Pearson correlation	0.68	0.70
Rank-order stability	Percent in same quartile	48.8%	51.1%
	Spearman correlation	0.67	0.65
Context	Sample size	1,237	11,219
	Country	Germany	Australia
	Observation window	2017 – 2020	2019 – 2023

Note: This table compares key measures of self-control stability between Cobb-Clark *et al.* (2023b) – using the German SOEP Innovation Sample (2017–2020) – and the present analysis based on the Australian HILDA Survey (2019–2023).

Table A3: Individual Life Events, COVID-19 Policies and Changes in Self-Control (2019–2023)

	Change in BSCS				
	(1)	(2)	(3)	(4)	(5)
Individual-level Events					
Job loss	-0.101	-0.098	-0.096	-0.096	-0.077
	(0.222)	(0.223)	(0.223)	(0.223)	(0.224)
R^2	0.001	0.001	0.001	0.001	0.001
Separation/Divorce	-0.104	-0.101	-0.083	-0.084	-0.089
	(0.218)	(0.221)	(0.221)	(0.222)	(0.222)
R^2	0.001	0.001	0.001	0.001	0.001
Death of a relative	-0.142	-0.145	-0.137	-0.137	-0.146
	(0.130)	(0.130)	(0.131)	(0.131)	(0.131)
R^2	0.001	0.001	0.001	0.001	0.001
COVID-19 Policy Responses and Evolution					
Government response index	0.071	0.073	0.061	0.061	0.062
	(0.368)	(0.368)	(0.368)	(0.368)	(0.368)
Average daily cases, by 100,000 inhabitants	-0.223	-0.223	-0.227	-0.227	-0.226
	(0.216)	(0.216)	(0.220)	(0.220)	(0.220)
R^2	0.001	0.001	0.001	0.001	0.001
Containment and health index	0.112	0.114	0.104	0.104	0.106
	(0.354)	(0.354)	(0.354)	(0.354)	(0.354)
Average daily cases, by 100,000 inhabitants	-0.236	-0.236	-0.240	-0.240	-0.240
	(0.221)	(0.221)	(0.225)	(0.224)	(0.224)
R^2	0.001	0.001	0.001	0.001	0.001
Economic support index	-0.160	-0.160	-0.166	-0.166	-0.171
	(0.263)	(0.263)	(0.264)	(0.264)	(0.264)
Average daily cases, by 100,000 inhabitants	-0.247	-0.247	-0.255	-0.255	-0.255
	(0.206)	(0.206)	(0.210)	(0.210)	(0.210)
R^2	0.001	0.001	0.001	0.001	0.001
Change in self-control:					
Average	0.093	0.093	0.093	0.093	0.093
SD	6.599	6.599	6.599	6.599	6.599
Controls:					
Age	.	✓	✓	✓	✓
Years of education	.	.	✓	✓	✓
Annual disposable income	.	.	.	✓	✓
Gender	.	.	.	.	✓

Notes: The table reports OLS estimates of the association between within-person changes in BSCS index and major life events or regional policy indices and state-level COVID-19 deaths. The estimation sample for all regression is our analysis sample of 11,219 observations. All regressions include region fixed effects and are estimated using the HILDA sample. Standard errors are shown in parentheses.