# **Appendix A: Ethics Statement**

The individual-level participant data was collected through a collaboration between the TIME Magazine and the supervisors of this dissertation, Dr Friedrich M Götz and Dr P Jason Rentfrow, and was approved by the University of Cambridge Psychology Research Ethics Committee (PRE.2017.044). A waiver for parental consent was included in the ethics approval which allowed the collection of responses from participants under the age of 18. Participants provided consent when opting in to complete the internet-based survey, which gave participants full information on the confidentiality arrangement of their survey response data. The dataset where national aggregates of survey responses were calculated contained fully anonymised individual entries that are not able to trace back to individual respondents. The author of this dissertation signed the confidentiality agreement with TIME Magazine prior to receiving data, which stated that any dissemination and unauthorised use of the individual-level data is prohibited. The nature of the internet-based survey meant that no psychological or physical stress were incurred for the participants. Since this study did not collect additional individual-level data, further ethics approval was not required.

# **Appendix B: Supplementary Materials**

Pre-registration (January 2022) and analysis R scripts are available on Open Science Foundation through [this view-only link](https://osf.io/g5wjt/files/?view_only=2aaa699d1c984587864f46b9659c3b10). Note: Analysis scripts 1.X are the preliminary data processing scripts irrelevant to the main analyses.

# **Appendix C: Supplementary Method**

**Table C1**

*Dependent and Control Measures: Record Code, Description, and Sample Size*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Record Code** | **Description** | **Source** | **Construct** | ***N*** |
|  |  |  |  |  |
| IDV.Hofstede | Individualism measure from Hofstede et al., 2010 | Hofstede et al | Individualism | 68 |
| IDV.IPUMS | Individualism measure from IPUMS-I dataset following Santo et al., 2014 | IPUMS-I | Individualism | 50 |
| INO.GII.17\_21 | Innovation measure from the Global Innovation Index - 5 year average between 2017 and 2021 | GII | Innovation | 76 |
| INO.III2009 | Innovation measure from the International Innovation Index in 2009, provided by the Boston Consulting Group | BCG | Innovation | 67 |
| MAS.Hofstede | Masculinity measure from Hofstede et al., 2010 | Hofstede et al | Masculinity | 68 |
| TER.GTI.18\_20 | Terrorism measure from the global terrorist index - 3 year average between 2018 and 2020 | GTI | Terrorism | 75 |
| X.EDU.IPUMS.Literacy | Control measure of Education, from IPUMS-I database, literacy rate in most recent data (different number of years) | IPUMS-I | Education | 48 |
| X.EDU.IPUMS.Ter.Attain.Rate | Control measure of Education, from IPUMS-I database, tertiary attain rate in most recent data (different number of years) | IPUMS-I | Education | 48 |
| X.EDU.OECD.Ter.Attain.Rate.17 | Control measure of Education, from OECD, tertiary attain rate in 2017 | OECD | Education | 42 |
| X.EDU.UN.Pri.Comp.Rate.18 | Control measure of Education, from UN, primary completion rate in 2018 | UN | Education | 58 |
| X.EDU.UN.Pri.Enrl.Rate.18 | Control measure of Education, from UN, primary enrolment rate in 2018 | UN | Education | 60 |
| X.EDU.UN.Sec.Enrl.Rate.18 | Control measure of Education, from UN, secondary enrolment rate in 2018 | UN | Education | 52 |
| X.EDU.UN.Ter.Enrl.Rate.18 | Control measure of Education, from UN, tertiary enrolment rate in 2018 | UN | Education | 53 |
| X.EDU.WB.Pri.Enrl.Rate.15 | Control measure of Education, from the world bank, primary enrolment rate in 2015 | WB | Education | 69 |
| X.EDU.WB.Sec.Enrl.Rate.15 | Control measure of Education, from the world bank, secondary enrolment rate in 2015 | WB | Education | 63 |
| X.EDU.WB.USc.Enrl.Rate.15 | Control measure of Education, from the world bank, upper secondary enrolment rate in 2015 | WB | Education | 62 |
| X.GDP.percap.UN.16\_20 | Control measure of GDP per capita, from UN, average of the 5 years between 2016 and 2020 | UN | Economics | 78 |
| X.GDP.percap.UN.PPP.16\_20 | Control measure of GDP per capita, from UN, calculated by price purchasing parity, average of the 5 years between 2016 and 2021 | UN | Economics | 78 |
| X.GDP.percap.WB.17\_19 | Control measure of GDP per capita, from the world bank, average of the 3 years between 2017 and 2019 | WB | Economics | 79 |
| X.URB.IPUMS | Control measure of urbanisation from IPUMS-I database | IPUMS-I | Urbanisation | 48 |
| X.URB.UN.Metro.Pop.17\_20 | Control measure of urbanisation, from UN, as large-city (>1mil) population percentage, average of 2017-2020 | UN | Urbanisation | 65 |
| X.URB.UN.Urban.Pop.17\_20 | Control measure of urbanisation, from UN, as urban population percentage, average of 2017-2020 | UN | Urbanisation | 79 |
| X.URB.WB.Urban.Pop.18 | Control measure of urbanisation, from the world bank, as urban population percentage, in 2018 | WB | Urbanisation | 79 |
|  |  |  |  |  |

*Note.* The record code of all alternative measure option used in the main SCA procedure, as denoted in the SCA visualisation panels (periods removed). *WB* denotes The World Bank (2019), *UN* denotes the United Nations Statistics Division (2020), *IPUMS-I* denotes the International Public-Use Micro-Series – International dataset (Minnesota Population Center, 2019), *OECD* denotes the Organisation for Economic Cooperation and Development (2017), *N* denotes the number of countries where the data is available, out of the 80 countries included in the main analyses.

**Supplementary SCA Bootstrapping Methods**

The SCA Bootstrapping Significance Test performed in the main analyses follows the procedure of Simonsohn et al. (2020). Analysis scripts can be accessed in *Appendix B: Supplementary Materials.* The overall procedure of the bootstrapping test is as follows:

1. Create a “null frame” pseudo dataset of *N* rows and *K* columns, where *N* is the sample size and *K* is the number of specifications. For each column (the *k*th specification), simulate under the null by ­, where is the standardised regression coefficient estimated from the *k*th specification. Note that since is the standardised coefficient, the *x* and *y* data that this step is conducted on must be standardised as Normal *z-*scores around mean, in order for the observed effect to be removed in generating the pseudo dataset.
2. Make a randomised draw (with replacement, of size *N*) from the *N* rows of the null frame, this gives 1 array of and *K* arrays of corresponding to the *K* specifications. Note that when performing each draw, the same draw must also be performed on the control variables.
3. Perform linear regression for each of the *K* specifications on the randomised null frame. For the *k*th specification, compute by . Where the refers to the regression model at specification *k,* such as using AAA for controlling M, BBB for controlling P, *etc.* Extract . Calculate the SCA statistics {n(), n(Dominant Sign), }.
4. Repeat step 2 and 3 for *R* number of times (where R 100) and store the extracted estimates, count how many of them have more extreme than that observed in the real dataset. *Bootstrapped P*-value can be calculated by