Supplementary Material

Varieties of Indoctrination: The politicization of education and the media around the world

Contents

A Appendix: Existing cross-national datasets in education and the media

Table A-1: Existing cross-national datasets in education

Dataset	*Coverage*	*Description*
Angrist et al. (2021)	164 countries in 2000–2017	*Harmonized Learning Outcomes (HLO) Database*: a harmonized dataset of international student test results. Source: World Bank.
Altinok, Angrist and Patrinos (2018)	163 countries in 1965–2015	*Global Data Set on Education Quality*: a harmonized dataset of international student test results. Source: World Bank EdStats on Achievement.
World Bank Education Indicators	147 countries, 1975–2021	Contains a series of indicators on (1) the quantity of education such as completion rates, years of compulsory education, school enrollment rates, government expenditures on education, literacy rats, % of children out of school, pupil-teacher ratio, % of trained teachers, etc.; (2) the quality of education (learning outcomes), such as mean performance on the reading / mathematics scale, etc. Source: World Bank EdStats.
UNESCO Education Indicators	156 countries, 2000–2021	Contains a series of indicators similar to the World Bank Education Indicators above. A notable difference is that this database also contains e.g., the extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in student assessment (over 50 countries in 2020 only). Source: UNESCO Institute for Statistics.
Lee and Lee (2016) (combined with Barro and Lee (2013))	146 countries in 1820–2010	*Long-run Education Dataset*: measures of the quantity of education, e.g., enrollment rates in primary and secondary education. Source: https://barrolee.github.io/BarroLeeDataSet/DataLeeLee.html (last accessed on Jan 24, 2023).
Ansell and Lindval (2013), updated in Ansell and Lindvall (2020)	1800–1939, 18 countries in 1939	Centralization of primary education. Source: https://www.johanneslindvall.org/public-services-and-the-modern-state.html.
Paglayan (2021)	33 countries in 1720–1946	This dataset includes: the timing of first education laws; when the state – begins to fund primary schools, establishes universal / compulsory / free education, begins to regulate teacher training requirements, begins to regulate the official curriciulum, etc. Source: https://doi.org/10.7910/DVN/X2VJJX.
Bromley et al. (2022)	183 countries in 1970–2020	*World Education Reform Database*. This dataset contains short descriptions and dates of the world education reforms (WERD). Source: https://www.werd.world.
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Table A-1 – continued from previous page

Dataset	*Coverage*	*Description*
Del Río, Knutsen and Lutscher (2023)	140 countries in 1789–2021	*Education Policies and Systems across Modern History* measures variables related to: "a) existence and nature of compulsory education, b) ideological guidance and content of education, c) autonomy or political control of education institutions, and d) training of teachers" (Del Río, Knutsen and Lutscher, 2023, 1). Source: "Emergence, Life, and Demise of Autocratic Regimes" (ELDAR) project (data collection is ongoing).
TALIS surveys (Ainley and Carstens, 2018)	48 countries (in 2018): three waves – 2003, 2008, 2018	*Teaching and Learning International Survey* (TALIS) is conducted by the OECD. The teacher questionnaire included questions asking teachers to what extent they control areas of planning and teaching, such as determining course content and teaching methods. Source: https://www.oecd.org/education/talis/. *Notes*: (i) We model the indicator of pluralism after the existing question from TALIS (Q47 TALIS, 2018, p.24) diversity-related teaching practices. (ii) We model the indicator of critical discussion in the classroom after the ICCS question on promoting critical and independent thinking and "capacity to defend one's own point of view".
CIVED survey	29 countries: one wave in 1999	*Civic Education Study* (CIVED). This survey is focused on civic and citizenship education and surveyed students to measure their civic knowledge, as well as teachers of civics. Source: https://www.iea.nl/data-tools/repository/cived.
ICCS surveys (Schulz et al., 2018)	24 countries (in 2016): two waves – 2009, 2016	*The International Civic and Citizenship Education Study* (ICCS). This survey is focused on civic and citizenship education and surveyed students to measure their civic knowledge, as well as teachers of civics. Source: IEA, https://www.iea.nl/studies/iea/iccs. *Notes*: We model the indicator of political rights and duties promoted in the curriculum after the ICCS question on "promoting knowledge of citizens' rights and responsibilities" (ICCS, 2018, pp.36-39).
Benavot (2004)	118 countries in the 1980s and the 2000s	This dataset provides the emphasis on curriculum categories as a % of median yearly instructional hours at the primary (average grades 1-6) and secondary (average grades 7-8). *Notes*: aggregated data for the 1980s and the 2000s. The dataset is shared with us by Aaron Benavot.
		Continued on next page

Table A-1 – continued from previous page

Dataset	*Coverage*	*Description*
Buckner and Russell (2014) (similar data also used in Bromley, Meyer and Ramirez (2011); Bromley (2014); Lerch, Russell and Ramirez (2017))	68 countries in 1973–2007. Note: another version of the data extends back to the 1950s: 78 countries in 1955–2011 (this textbook dataset was shared with us by Patricia Bromley).	*Globalization and Global Citizenship in Textbooks*: the textbook-level dataset based on information from 550 textbooks in history, civic and social studies. The attributes of textbooks were hand-coded and recorded as variables, e.g., whether a textbook mentions citizen rights. Source: replication data for Buckner and Russell (2014), https://elizabethbuckner.com/datasets.

Table A-2: Existing cross-national datasets in political communication and the media

Dataset	*Coverage*	*Description*
Djankov et al. (2003), extended in Guriev and Treisman (2020)	cross-section of 97 countries	The state ownership of the media, based on the top-five broadcast outlets in each country. Source: Table A1, Appendix of Guriev and Treisman (2020). *Notes:* We model the indicators of state ownership of the print/broadcast media after the cross-sectional media concentration variable from Djankov et al. (2003); Guriev and Treisman (2020) (broadcast only) and extend its coverage over time.
Baggott Carter and Carter (2023)	58 countries, time period is unclear	The content of authoritarian pro-regime propaganda coded from the corpus of the news articles published in state-owned newspapers. Baggott Carter and Carter (2021) use data from 30 countries in 1997–2017 (over 6 mln newspaper articles in six languages).
Mechkova et al. (2021); Coppedge et al. (2022)	202 countries, 2000–2021	The *Digital Society Project* (DSP) includes indicators of government dissemination of false information, Internet filtering and shut down capacity, government social media shut down, government social media censorship, etc. Source: https://v-dem.net/data (ver 12).
Coppedge et al. (2022)	202 countries, 1900–2021	The *V-Dem Dataset* includes indicators of the media: government censorship, media bias, print / broadcast media perspectives, print / broadcast media being critical, etc. Source: http://digitalsocietyproject.org, https://v-dem.net/data (ver 12).
Freedom House	195 countries in 2019	Freedom and the Media index: "Are there free and independent media?". Source: https://freedomhouse.org/freedom-and-media-research-methodology.

B Appendix: Historical development in the academic use of the term indoctrination

The term indoctrination has been used since the Middle Ages. Under the Roman Catholic Church, European education was synonymous with the "implanting of Christian doctrine" (Gatchel, 1959, 304). However, in the late 19th century, the term became broader and essentially a synonym for education (Puolimatka, 1996, 109). According to the 1901 New England Dictionary indoctrination is "instruction, formal teaching" (Raywid, 1980, 2). After WWI, the term indoctrination acquired a derogatory connotation similar to propaganda and brainwashing and came to be regarded as the "antithesis of education for life in a democracy" (Gatchel, 1959, 206). "As early as 1915, Dewey accused authoritarian education of engendering attitudes of "obedience," "docility," "submission," and "passivity." (John Dewey and Evelyn Dewey, *Schools of Tomorrow*, 1915 cited in Raywid (1980, 3)).

However, indoctrination was still an ambiguous concept in the 1940s: in 1941, Benjamin Floyd Pittenger published Indoctrination for American Democracy: his main argument was that indoctrination was necessary, especially during the war years, to create "nationalistic loyalty" (as cited in Gatchel, 1959, 307-8) in the form of democratic patriotism. However, after the end of WWII, the debate on the meaning of the term was revived: "depending upon the definition of the word and the educational philosophy of the educators, [indoctrination] is either desirable or not" [ibid., p. 308]. Throughout the 1950s and 1960s "Indoctrination (. . .) came into popular currency in the United States" (Brandenberger, 2012, 7) with the aim that the youth should be indoctrinated with the core ideas of democracy (Moore, 1966, 398).

The rise of dictatorships in Europe and the WWII period contributed a lot to shaping the negative meaning of the term in the subsequent decades. Indoctrination became more and more associated with authoritarian rule, whereby political education in democracies was described as 'education' or more specifically 'civic education', while in autocracies similar teaching methods are described as 'indoctrination' (Gatchel, 1959, 397) by Western analysts, a position which many would still subscribe to today.[1]

By the end of the 1980s, the interest to the concept subsided. Woods and Barrow (2006, 70) observed that around this time, "consideration was given to cutting out [their book] chapter [on indoctrination] altogether, on the grounds that the word 'indoctrination' was no longer in common use and the practice perhaps not as significant as had once been thought." Their observations were based on newspapers. However, is this true for academic research as well? In order to explore this question, we conducted a full-text search of the number of journal articles, books and book chapters that mention the stemmed term "indoctrinat*" at least once, using the JStor database since 1900.[2] Figure B-1 plots the total of 33,071 documents by decade.[3] Even taking into account that over time, more and more research is getting published (Figure B-1), there is no doubt that indoctrination is still a widely used term in the academic literature, with about 15,000 works mentioning the term in the past 20 years.

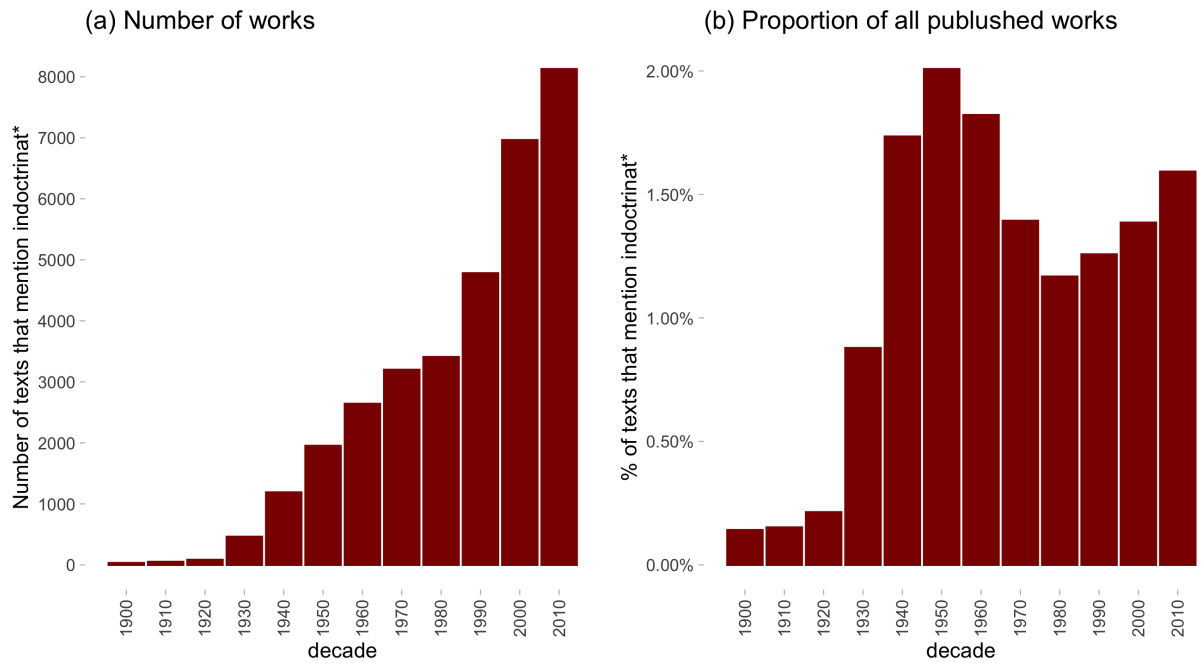
We can further zoom into the corpus of these selected documents that refer to indoctrination to investigate whether these texts also refer to other relevant concepts. Figure B-2 plots the proportion of documents that mention "democracy" or "authoritarian." First of all, we note that democracy is still the most likely connection

[1] "With the derogation of the term [indoctrination] American educators and educationists have been obliged to devise a word to describe the process of cultural transmission in a pluralistic society. 'Socialization' was and might have continued to be the answer" (Gatchel, 1959, 309).

[2] The fields included are: Economics, history, political science, philosophy, education, and other social sciences. The database was accessed 21/01/21, using https://tdm-pilot.org.

[3] It should be noted that the 2010 decade is partially truncated, as JStor only includes full-text searches of journal articles until 2017.

Figure B-1: Number and proportion of journal articles, books and book chapters that mention the term *"indoctrinat*"* at least once on JStor



to indoctrination. We do see the normalization of the term in the pre-WWI period to describe indoctrination generally as education, with a slight decline in the 1920s, as observed by Gatchel (1959). The graph also picks up the revival of the term in democracies as described by Pittenger (1941). After that, we do see a decline in the use of the term in democracies until the 1990s, when it starts to raise again. On the other hand, Figure B-2 also confirms that the use of indoctrination in connection with authoritarianism is also on a steady rise throughout the 20th century, with about 20% of works that refer to indoctrination also referring to "authoritarian."

We explicitly expand the use of the concept of indoctrination beyond education, which is the traditional focus of indoctrination research. This is confirmed by Figure B-4, which demonstrates that education is key to the concept of indoctrination. Between 60-75% of academic texts that mention indoctrination also refer to education or schools. This confirms the close (historical) connection between the two concepts, as outlined above. However, the figure also illustrates the relative importance of the media and propaganda in connection to indoctrination, with historically about 30% of academic works mentioning propaganda, with the most recent academic work on indoctrination 50% mentioning the media.

Apart from the contested history of the term, there is an ongoing debate in the philosophy of education on indoctrination as a concept (e.g., Armstrong, 2022; Taylor, 2017; Callan and Arena, 2009). This normative debate directly follows from the negative connotation of the term indoctrination. Indoctrination is considered a synonym for 'bad' or 'harmful' education (Taylor, 2017, 38). Woods and Barrow (2006, 71) refer to the intended objective of indoctrination as citizens' "blind unshakable commitment" and Gatchel (1959, 309) describes indoctrination as an attempted "uncritical implantation of beliefs." Taylor (2017, 40) defines indoctrination as "a complex system of teaching in which actors with authority contribute to the production and reinforcement of closed-mindedness." Armstrong (2022, 273) notes that the component "uncritical implantation of beliefs" is a common aspect of the definitions of indoctrination in the philosophy of education.

Figure B-2: Proportion of mentions of “democracy” and “authoritarian” in academic works that mention the term “indoctrinat*”

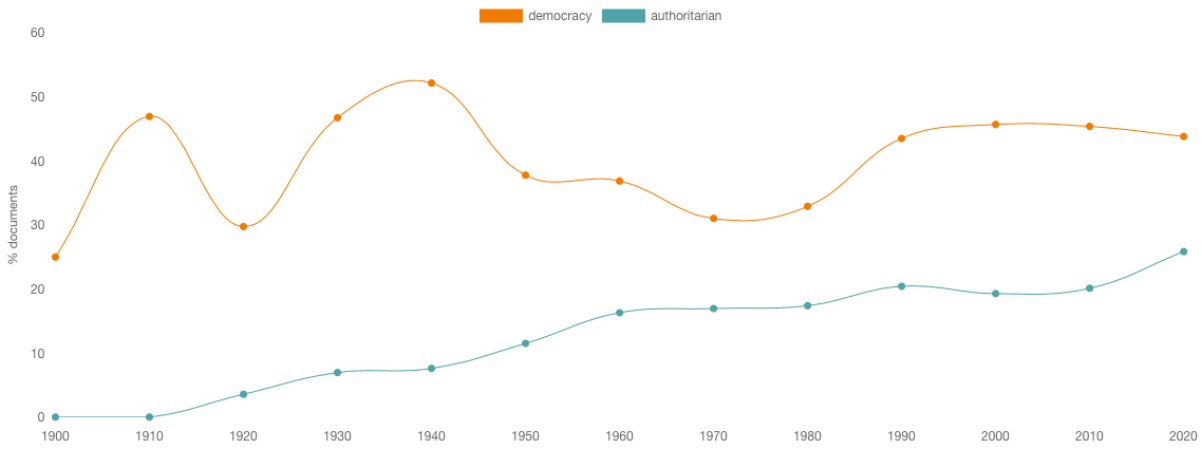


Figure B-3: Proportion of mentions of “Communism”, “Fascism”,“Nationalism”, “Legitimacy” in academic works that mention the term “indoctrinat*”

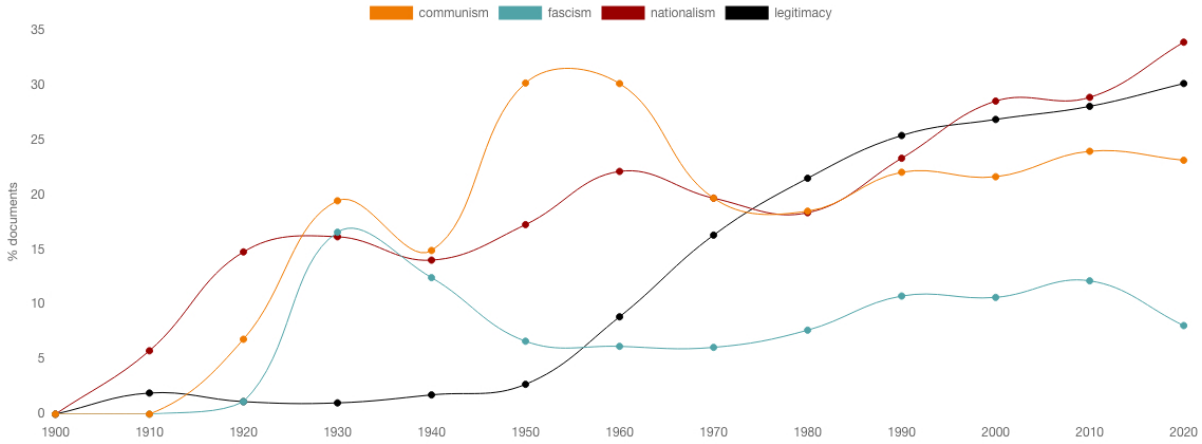
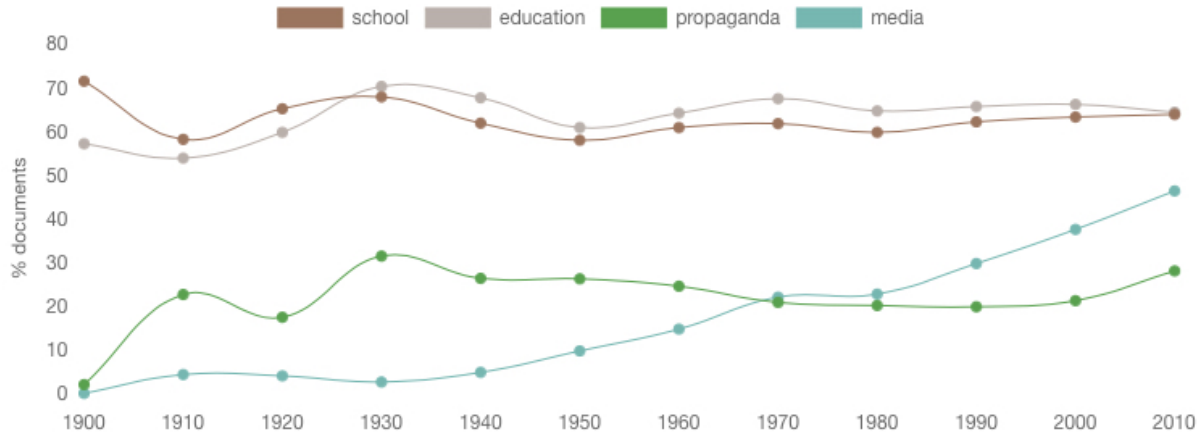


Figure B-4: Proportion of academic works that mention indoctrination and also mention indoctrination channels



To define indoctrination, recent scholarship focuses on the following dimensions of the indoctrination process: (i) the content (is there a coherent doctrine?), (ii) contestation (is there an "unshakable commitment" to the doctrine?), and (iii) teaching methods and intentions (do teachers act as agents of indoctrination?) (e.g., Taylor, 2017; Woods and Barrow, 2006). We generalize the concept of indoctrination as an enculturation *process* that aims to influence citizens' beliefs and attitudes (Gatchel, 1959, 309). Indoctrination aims to achieve voluntary compliance by encouraging individuals to internalize views and values that are consistent with those of the ruling regime and helps build shared identities and norms across society.

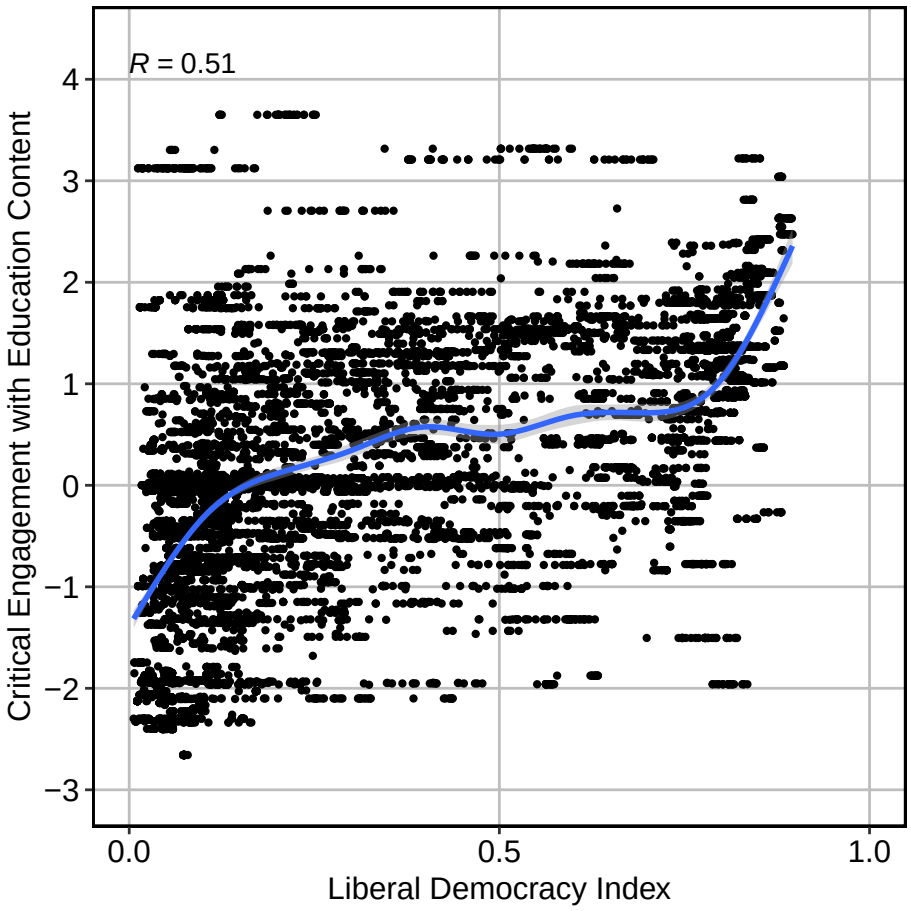
How can we define indoctrination in democracies? In 1972, William H. Kilpatrick writes on indoctrination and education for democracy in *Indoctrination and Respect for Persons* (Snook ed. *Concepts of Indoctrination*, 1972, pp. 50 and 52):

> "To teach democracy ... [so as] to foster uncritical acceptance would seem an odd way of fostering democracy. To indoctrinate a belief in democracy *without including the reasons for democracy*, and without building the ability to *think critically* about it, is to make blindfolded adherents of democracy. Such people would not know the why of their practices or dogmas and consequently could not be trusted to apply the doctrines intelligently." (our emphasis added)

In our view, it is a theoretical as well as an empirical question about which role critical thinking plays in democracies and autocracies and how this relates to the concept of indoctrination. Our data allow us to explore this question empirically. Figure B-5 plots our indicator that measures the promotion of critical thinking in the school curriculum against the level of liberal democracy in the country. The figure confirms that closed autocracies (scoring very low on the democracy index) do not promote critical thinking, while established liberal democracies (with a high score) are most likely to include critical thinking in their curricula. However, the graph also demonstrates that apart from these two extreme ends of the spectrum, there is no clear relationship between the level of democracy in a country and the importance of critical thinking.

We consider the main advantage of our novel V-Indoc data set is that it would allow scholars to test various conceptualizations of indoctrination and measure them empirically. As we outline in the paper, we assume critical thinking to be a crucial part of democratic indoctrination and therefore included this item in the composite index. However, those not agreeing with our definition and concept can also use the indicator for critical thinking as a stand-alone proxy to represent indoctrination whereby the absence of critical engagement with education content constitutes the presence of indoctrination.

Figure B-5: Levels of democracy and critical engagement with education content



Note: Lines and confidence intervals are produced by LOESS smoothing.

C Appendix: Pilot surveys, expert vetting, and ethical considerations

C.1 Pilot surveys and expert vetting

In Spring 2021, we conducted a pilot expert survey on country cases that represent different regime types and levels of economic development (Chile, China, Russia, Tanzania, Turkey, and the United States). Based on the results of this survey and the feedback we received, we revised our questions and fielded a secondary pilot survey (Spain, and the United Kingdom).

After making another round of revisions and finalizing our survey, we used Qualtrics to distribute an online expression of interest form to experts.[4] In this form, we asked experts to provide basic information: their email, institutional affiliation, list of publications, information about their website (if any), highest educational degree, current position, as well as the area(s) of their expertise in education (e.g., the main country of expertise and the second country of expertise, the time period(s) they focus on).

We used three main channels to recruit potential experts. First, with the help of research assistants, we consulted the ratings of top universities in each country and collected emails of all faculty members (research and teaching focused), postdoctoral scholars, and graduate students whose research expertise is in the field of education. Second, we used Google Scholar to find academic journals, books and book chapters, policy reports, as well as regional conferences on education, and collected emails of the authors/participants. Third, we contacted education-related NGOs and policy experts outside of academia, asking them to circulate our call among their network.

From July 2021 to February 2022, we reached out to 24,000 education experts from around the world. More than 1,400 experts responded to our call and expressed interest in participating in the expert survey. With the help of research assistants who possessed a background in comparative education, the list of experts was vetted according to modified V-Dem expert criteria. More specifically, we used the following scheme to assign scores to individual experts who signed up and expressed interest in the call for experts:

- 1 = our top 1 choice, should be contacted first, e.g. an established academic expert or an expert with many years of experience in policy-making (in addition, ideally, they would be able to code back in time, e.g. since 1945)
- 2 = have a clear profile in education but could be a less established expert compared to (1), e.g. a postdoctoral scholar with a degree in education, have been teaching for many years so they would know the context very well (at least for the most recent years)
- 3 = background in education but their specialization is not in basic education (e.g. they work on higher education, special education, arts education, etc.)
- 4 = (i) a general expert (evidence of general knowledge about the country but they do not specialize in education) or (ii) we do not have enough information to make a decision about their expertise (e.g. they have a master degree in education but apart from the degree we cannot infer if they have relevant expertise)
- irr = irrelevant (claim they have expertise in education but they don't from what we can tell; any other irrelevant categories)

[4] We used two separate email templates for experts residing in democratic and autocratic countries.

One caveat is that we could not completely control experts' impartiality. We checked whether they currently work is for the government. We filtered out cases when experts explicitly stated that they work for 'Government offices' in the expression of interest form. We also double-checked if they work for the government or consult the government at present, and filter out such cases. We decided to keep cases when experts have research funded by the government or if they consulted the government or worked on government reports on education in the past. In addition, we also decided to invite experts who might have worked for the government in the past but not at present.

C.2 Ethical considerations

This research relies on the contribution of human participants and adheres to the APSA Principles and Guidance for Human Subjects Research. All contact with country experts, data collection, and data processing is done by the Varieties of Democracy (V-Dem) Institute at the University of Gothenburg. The data collection for V-Indoc is hence covered by the V-Dem IRB approval.

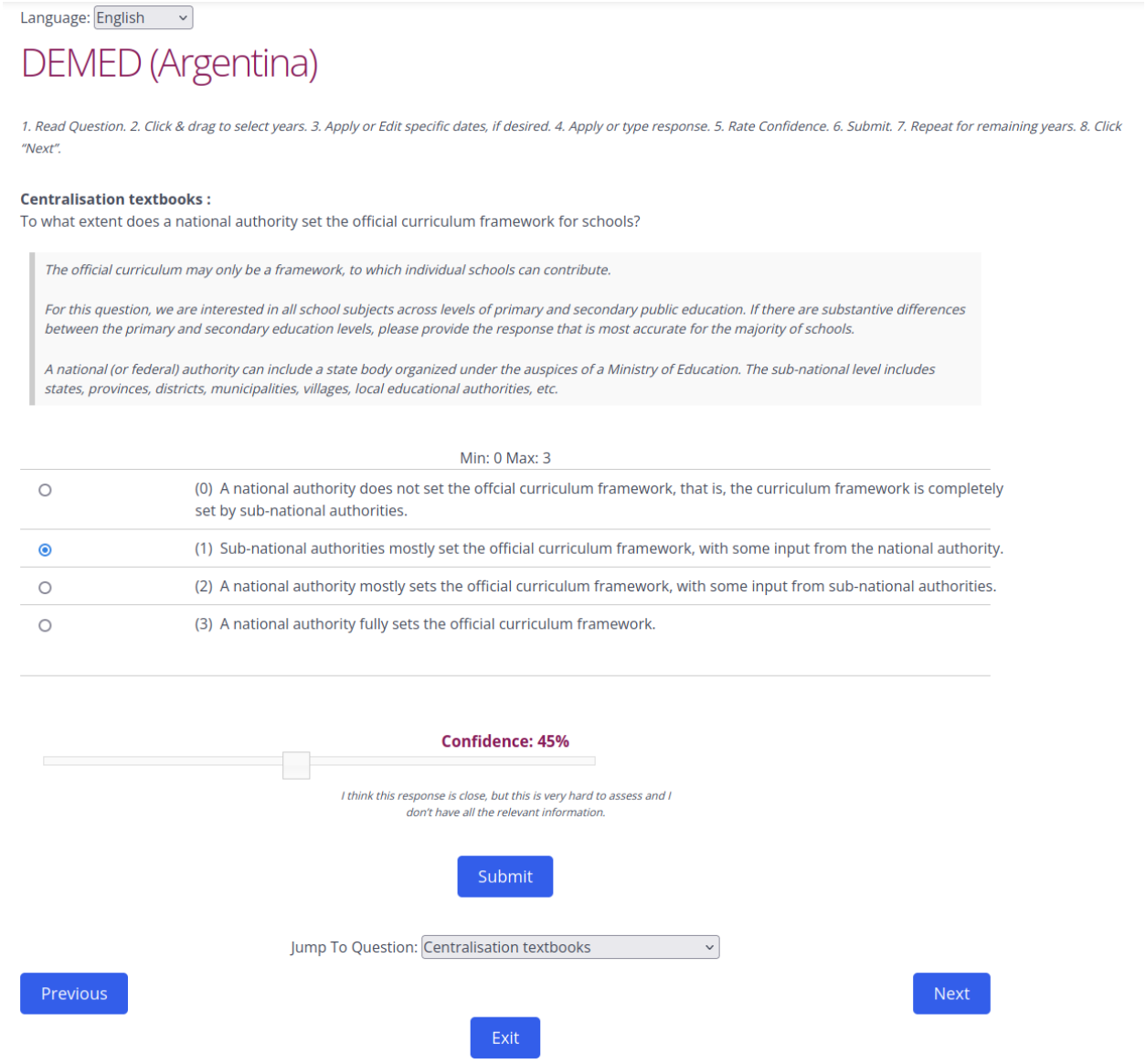
Firstly, participants fully understood that they were taking part in a research study and were required to read and accept a consent agreement prior to submitting country ratings. The consent form includes information on how personal identifying information (PII) is handled, the right to withdraw, payments for their work, and contact details for the University's data protection officer. The process is fully compliant with GDPR.

Secondly, experts have a right to access information and to rectify or erase their data. All data is made public (without PII) and so available to all contributors at any time. Requests for the removal of data submitted are possible via an online form. Removal of the data is a simple, manual process. Requests to remove submitted ratings are processed annually by V-Dem, prior to the production of the updated data set is publicly released. Coders are similarly able to rectify submitted data prior to the production of the data set, either during the normal coding period or via email request. Removal of PII is possible vie email request, again clearly outlined in the Consent Agreement. This is processed in a separate server and involves the deletion of a coder-specific database record.

Thirdly, country experts were fairly compensated for their participation in the study, using the standard rate that V-Dem also uses for experts on other surveys. The rate is further comparable to other expert surveys.

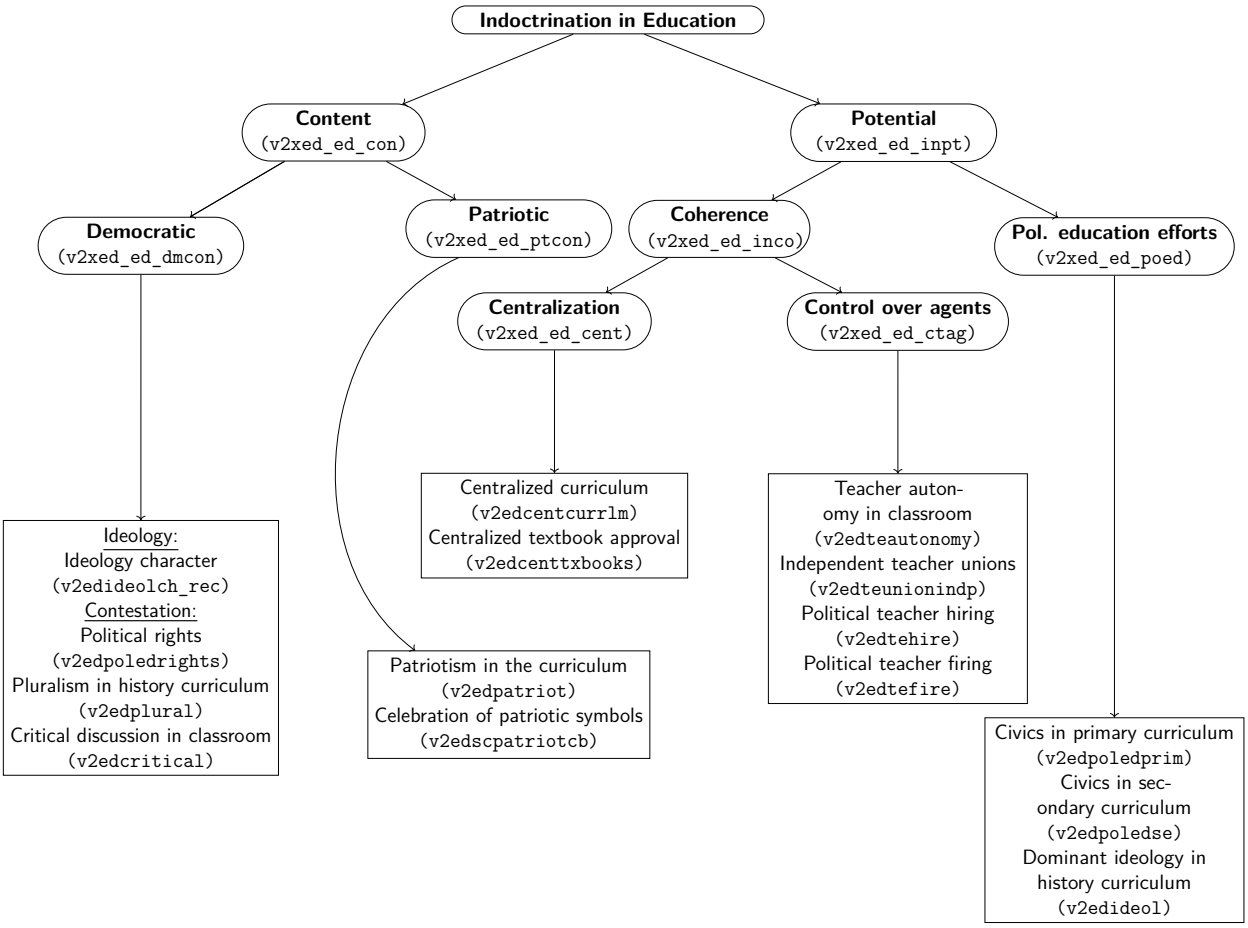
D Appendix: Coder response form

Figure D-6: V-Dem Coder Response Form



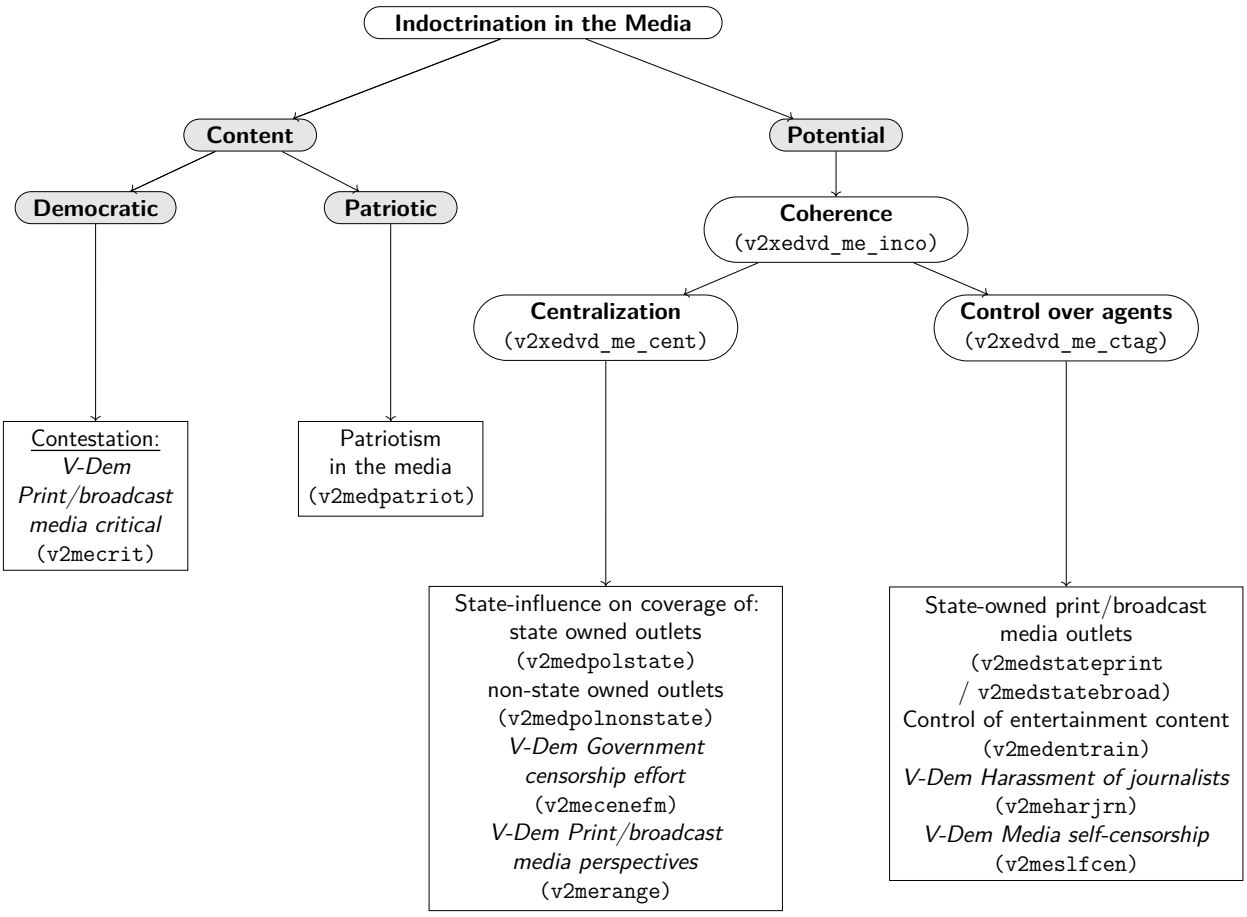
E Appendix: Mapping our concepts

Figure E-7: Mapping our concepts: Indoctrination in education (variable labels included)



Note: The rounded boxes indicate V-Indoc indices, and plain boxes indicate measured variables (V-Indoc indicators). V-Indoc variable (index or indicator) labels are included in parentheses.

Figure E-8: Mapping our concepts: Indoctrination in the media (variable labels added)



Note: The rounded boxes indicate V-Indoc indices and the plain boxes indicate variables (V-Indoc indicators). We do not have indices of the media *content* (the boxes are greyed out). The *democratic* and *patriotic content* are measured as separate indicators. The index of indoctrination *potential* in the media is equivalent to the index of *coherence* (the box with *potential* is greyed out). For the index of indoctrination *coherence*, we combine the existing V-Dem indicators (higlighted in italics) with the novel V-Indoc indicators. V-Indoc variable (index or indicator) labels are included in parentheses.

F Appendix: Measurement model, measurement uncertainty, and coder confidence

F.1 Measurement model

In this section, we provide a brief overview of how the V-Dem measurement model accounts for potential sources of biases to promote the cross-national comparability of its estimates (Pemstein et al. (2020); Marquardt and Pemstein (2018)).

To summarize, the two main challenges that come with using expert surveys to measure latent concepts are differential item functioning (i.e., differences in how experts perceive ordinal scales when responding to questions regarding the latent concept) and differences in expert reliability (i.e., some experts may have more accurate knowledge of the concepts being estimated). Ignoring such issues can lead to biased estimates that may not be comparable across countries.

Nonetheless, the V-Dem measurement model has multiple built-in features that account for differential item functioning issues to strengthen the cross-national comparability of the indicators and minimize bias. More specifically, the measurement model adjusts coder thresholds by drawing on several sources of information to directly estimate differences between experts in their perceptions of the ordinal responses. In particular, the V-Indoc expert survey made extensive use of anchoring vignettes—which present and ask experts to code hypothetical cases—to identify potential idiosyncratic interpretations of questions/responses (King and Wand 2007). In total, experts coded 10,625 anchoring vignettes, which were subsequently used to adjust coder thresholds in the measurement model. In addition, 147 experts also acted as bridge coders who provided responses for an additional one or two countries over multiple years. These bridge coders accounted for around a third of the total country-year responses, and these overlapping responses were used in the measurement model to adjust thresholds and make responses more comparable across cases.

In addition to adjusting response thresholds, the measurement model also considers the possibility that not all experts possess the same level of knowledge regarding the concepts being measured. In other words, there are likely to be differences in the reliability of the information provided by the experts, and not accounting for such differences could lead the model to mistake systematic for non-systematic error. As such, the measurement model assigns a reliability rating to each expert based on the size of their typical measurement errors (i.e., the extent to which their responses are different from the "true" values of the latent concepts, which is a function of the extent to which experts provide ratings that consistently align with those provided by other experts). Responses coded by experts whose measurement errors are relatively low (i.e., closely map to the “true” value of the latent concept) are assigned a higher weight when generating the estimates. On the other hand, responses from experts whose measurement errors are consistently high (e.g., those with response bias) are likely to be treated as noise in the construction of the estimates.[5]

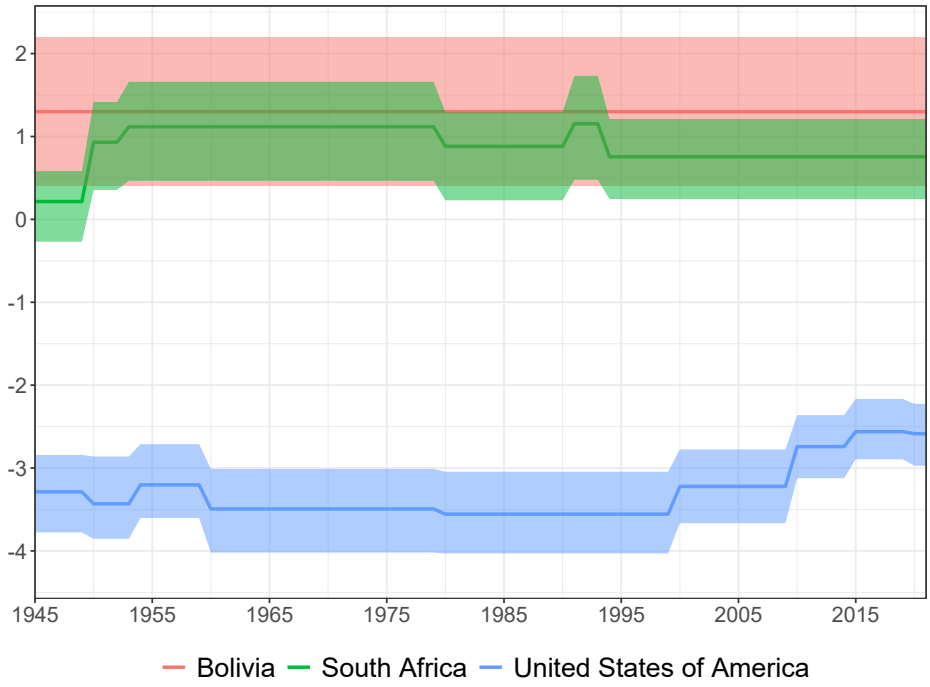
In sum, the V-Dem measurement model has numerous features to address estimation issues related to differential item functioning and expert reliability. We encourage readers to review Pemstein et al. (2020) and Marquardt and Pemstein (2018), who offer a detailed discussion of the specific setup and features of the measurement model.

[5]We note that such reliability does not ensure validity. For instance, experts could consistently agree on a response that is invalid. While such issues are difficult to directly address through the measurement model, we engaged in an extensive expert process to select experts who would be more likely to provide valid responses (see Appendix C). We also conduct numerous post-estimation tests to examine the validity of the estimates, which are presented in the manuscript.

F.2 Measurement uncertainty

The figure below plots the point estimates of the centralized curriculum indicator and the accompanying 68% credible intervals for Bolivia, South Africa, and the United States in Figure F-9. Bolivia only has one unique coder, whereas South Africa and the United States have 13 and 20 coders, respectively. Since estimates for Bolivia are based on just one coder, the credible interval is relatively wide.[6] Here we lack the information to make confident inferences about the indicator's true latent value. Conversely, the credible interval is much narrower for South Africa and the United States since we have many more responses to draw from.[7] Furthermore, even though the point estimates for Bolivia are consistently higher than that of South Africa, it is not possible to conclude with any certainty that Bolivia does in fact have a more centralized curriculum than South Africa given the overlapping uncertainties of the estimates for each country. Nonetheless, we can be quite confident that the United States has a more decentralized curriculum compared to both Bolivia and South Africa.

Figure F-9: Centralized curriculum (model estimates)



Note: Higher values are associated with a more centralized curriculum.

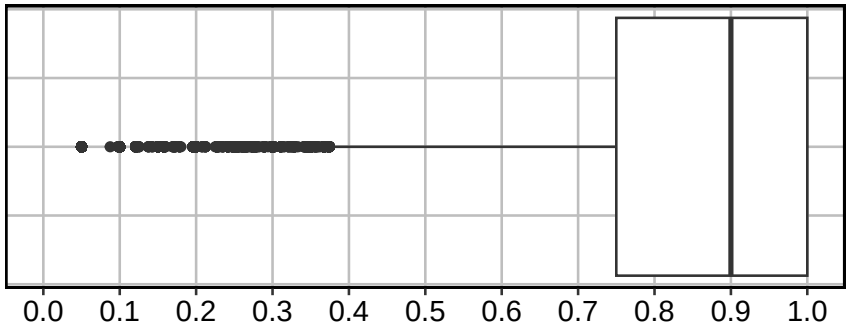
[6] Considering that the standard deviation of the point estimates of the indicator is 1.2730.

[7] Experts also seem to generally agree that South Africa's curriculum is relatively centralized and the United States' curriculum is relatively decentralized.

F.3 Coder confidence

In the expert survey, expert coders were asked to code responses for all indicators on a yearly basis within their designated country. In addition, they were also asked to rate their level of confidence in each of their responses on a scale of 0 to 1 with higher values indicating greater confidence. The measurement model accounts for such ratings and—ceteris paribus—greater coder confidence is associated with lower levels of measurement uncertainty regarding the estimates. As Figure F-10 indicates, the overall levels of coder confidence rating is quite high (mean=0.84, median=0.9). It is possible that specific confidence ratings may be impacted by certain factors. However, given the extensive expert vetting process, we expect that experts will be able to draw on their in-depth knowledge of their designated countries and topics at hand to effectively handle difficult-to-code cases. Nonetheless, we explore coder confidence in this section to offer more transparent information about the data.

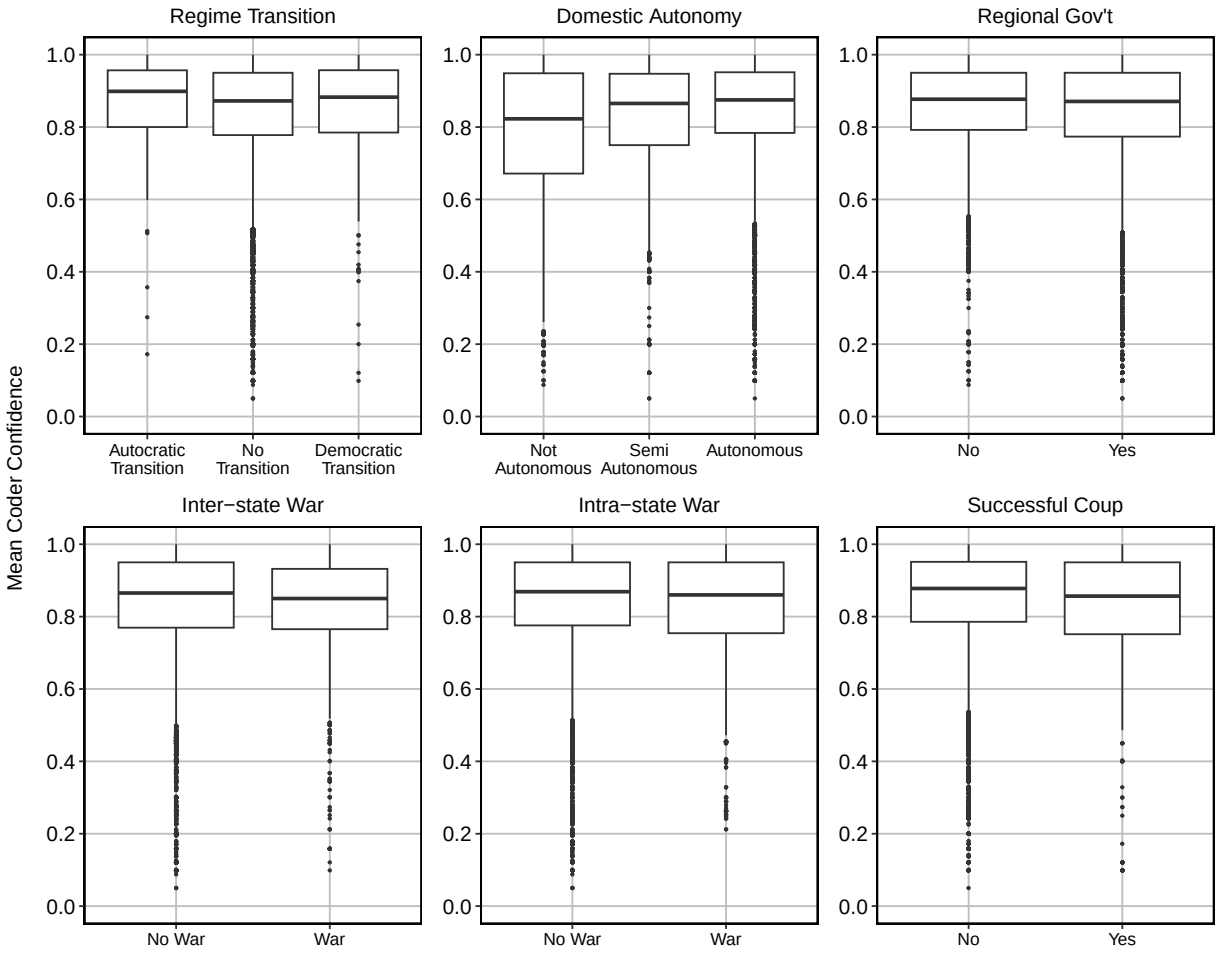
Figure F-10: Distribution of coder confidence ratings



We first calculate mean coder confidence ratings at the coder-year level. Figure F-11 plots these ratings against various factors that could influence the state's ability to consistently, uniformly, and effectively implement policies and thus indirectly shape coder confidence: regime transition (Edgell et al., 2021), extent to which the state is autonomous from the control of other states with respect to the conduct of domestic policy (Coppedge et al., 2020), existence of a regional government (Coppedge et al., 2020), occurrence of an inter-state or intra-state war (Sarkees and Frank, 2010), and occurrence of a successful coup (Powell and Thyne, 2011).

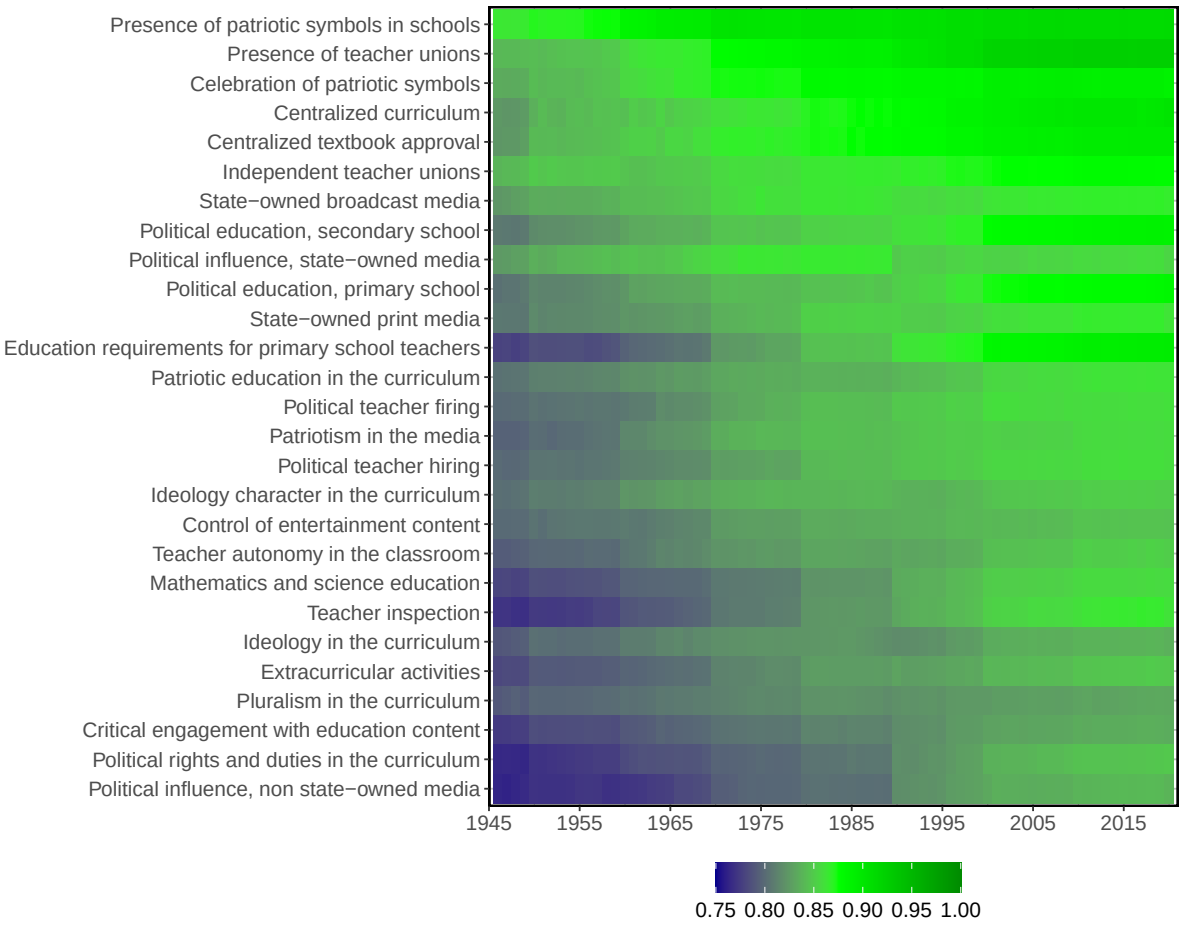
In general, the plots do not reveal any significant patterns as any differences that exist are substantively minor (i.e., a few percentage points). Cases in which foreign states wield dominant influence over domestic policies seem to be linked to relatively greater reductions in coder confidence—which makes sense given the division of policymaking authority—though the average coder confidence still remains fairly high in such cases. In sum, this exploratory exercise suggests that expert coders are able to navigate potentially ambiguous cases by leveraging their knowledge and judgement.

Figure F-11: Mean coder-year confidence ratings across variables



On the other hand, pilot surveys, as well as a brief survey of experts at the recruitment stage, indicated that experts tended to be more confident in their responses for more recent years. In Figure F-12, we calculate mean coder confidence ratings at the indicator-year level, and generate a heat map of these values for all indicators across time. Although the plot illustrates that coder confidence also appears to increase over time in the coding of the V-Indoc indicators, the overall level of confidence is still quite high across all indicators and years. In addition, the indicators are arranged in descending order based on mean coder confidence values calculated at the indicator-level. Generally speaking, indicators related to the implementation of specific teaching practices in the classroom tend to exhibit lower mean coder confidence, although this is somewhat expected since these indicators are more likely to be ambiguous compared to more factual or broader indicators. Nonetheless, mean coder confidence for all indicators range from 0.8 to 0.9 and thus remains high.

Figure F-12: Mean indicator-year confidence ratings across time



Note: The indicators are arranged in descending order based on mean coder confidence values.

G Appendix: Media plots

Figure G-13: Indoctrination potential in the media (2021)

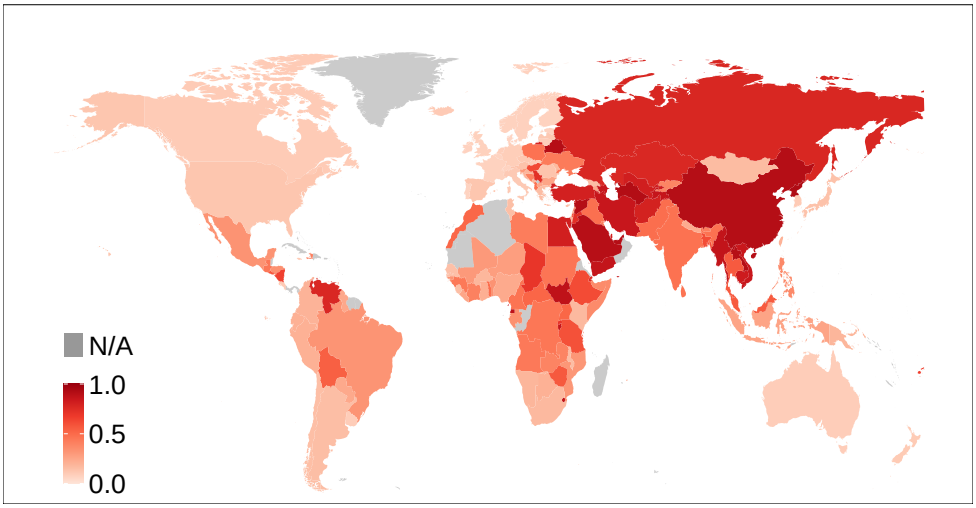


Figure G-14: Indoctrination potential in the media across regimes

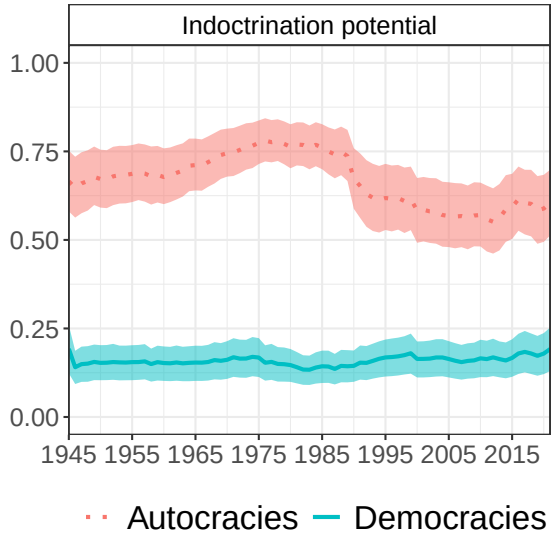
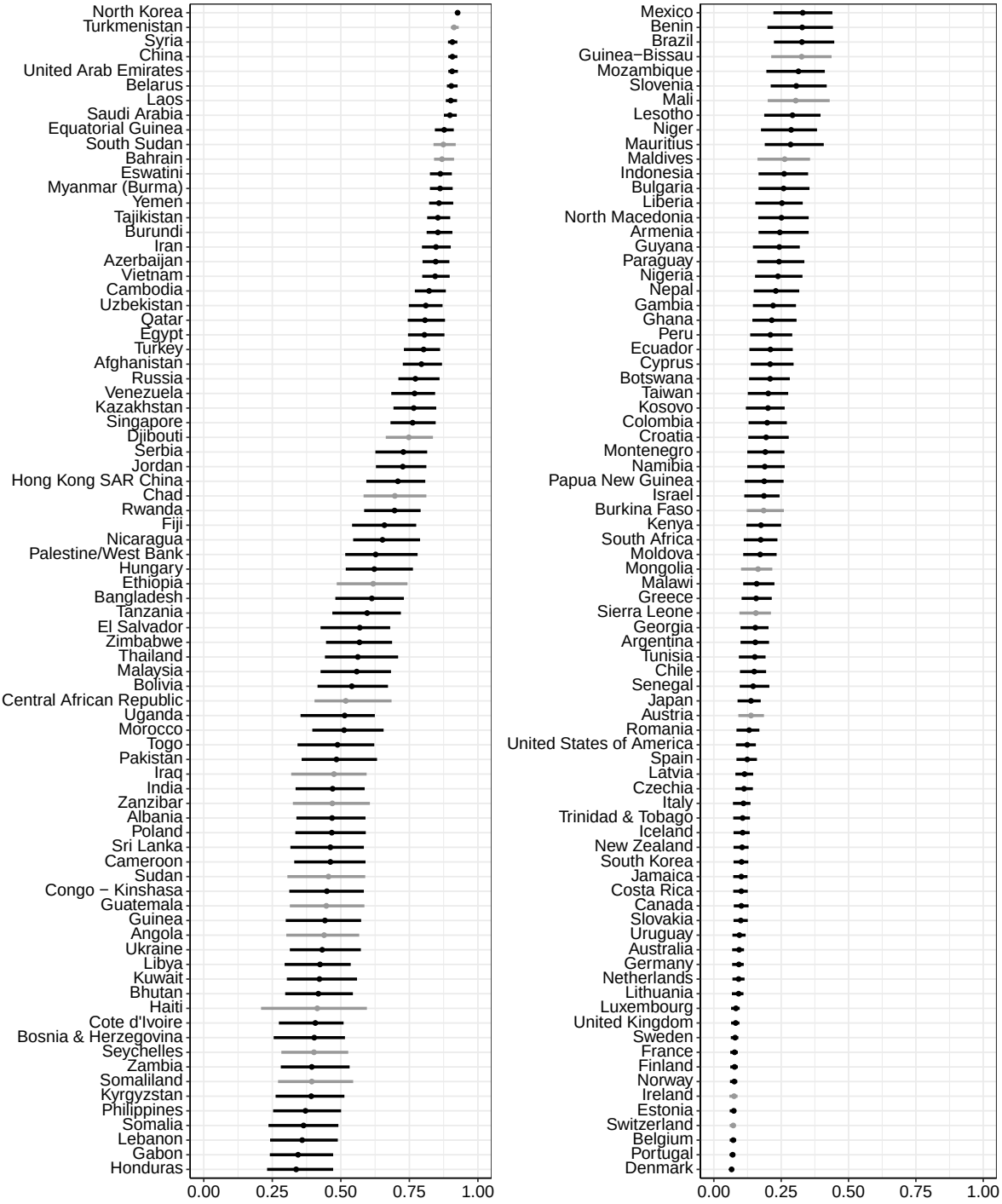


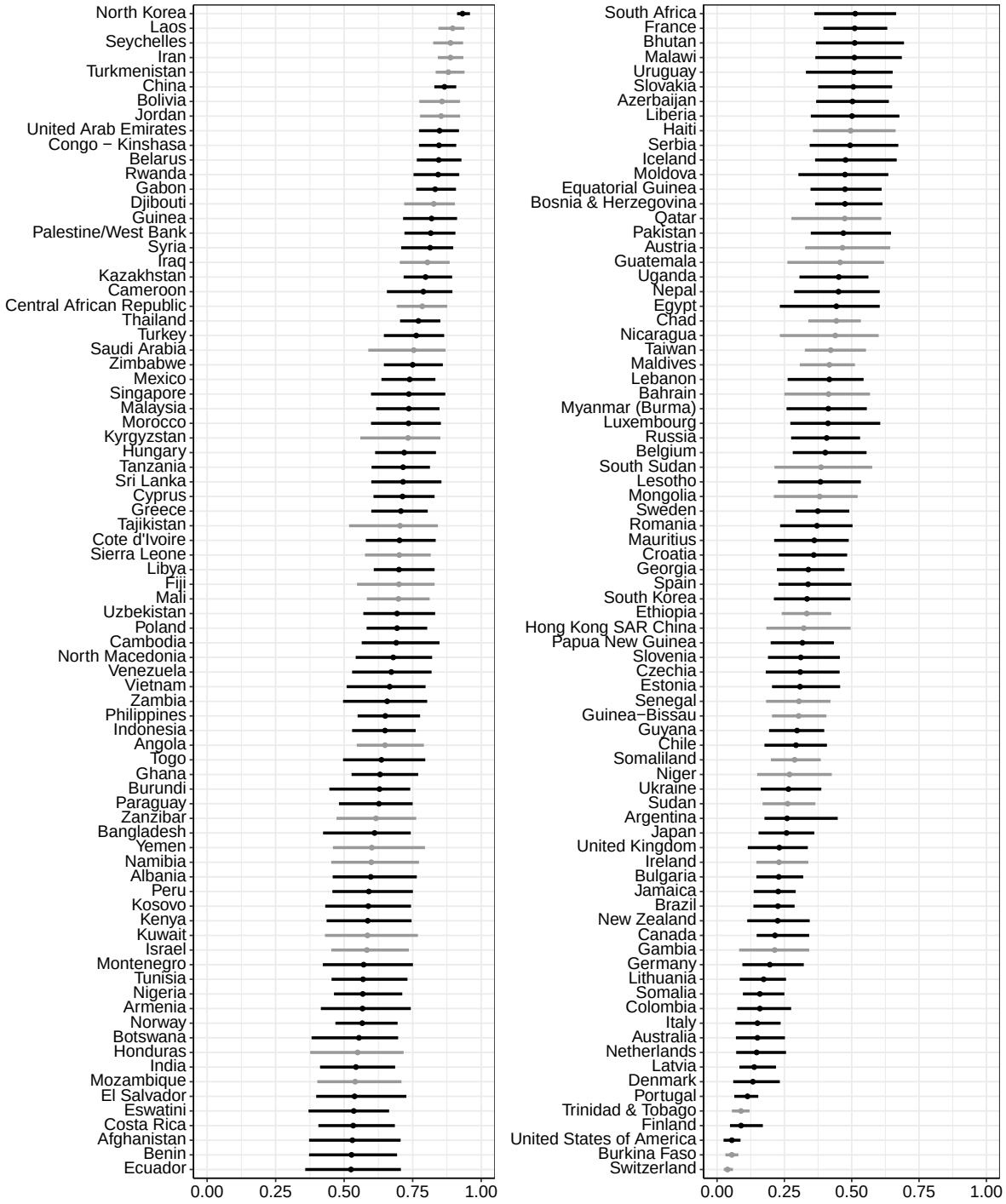
Figure G-15: Indoctrination potential in media (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey.

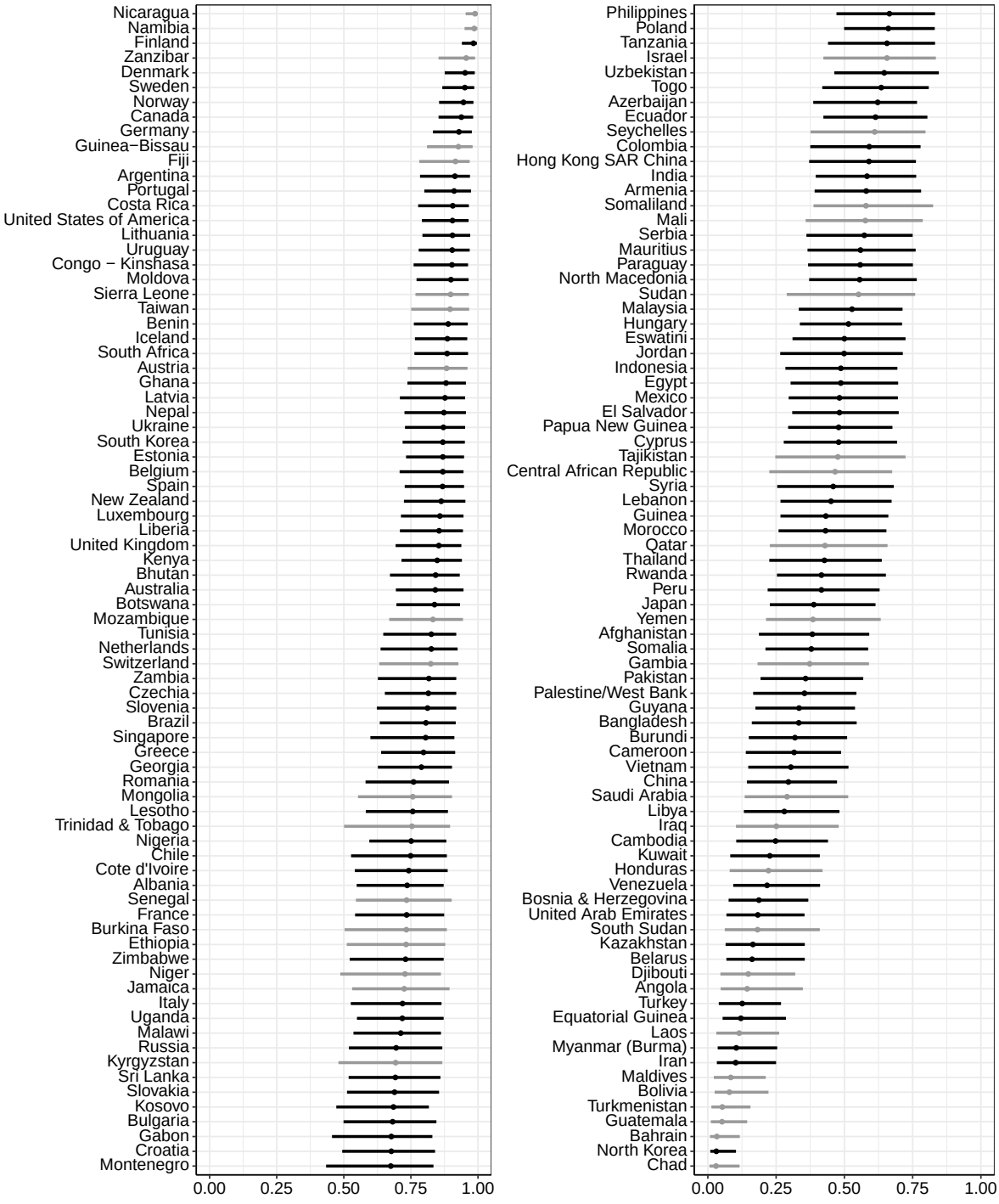
H Appendix: Indoctrination indices in education (2021)

Figure H-16: Indoctrination potential in education (2021)



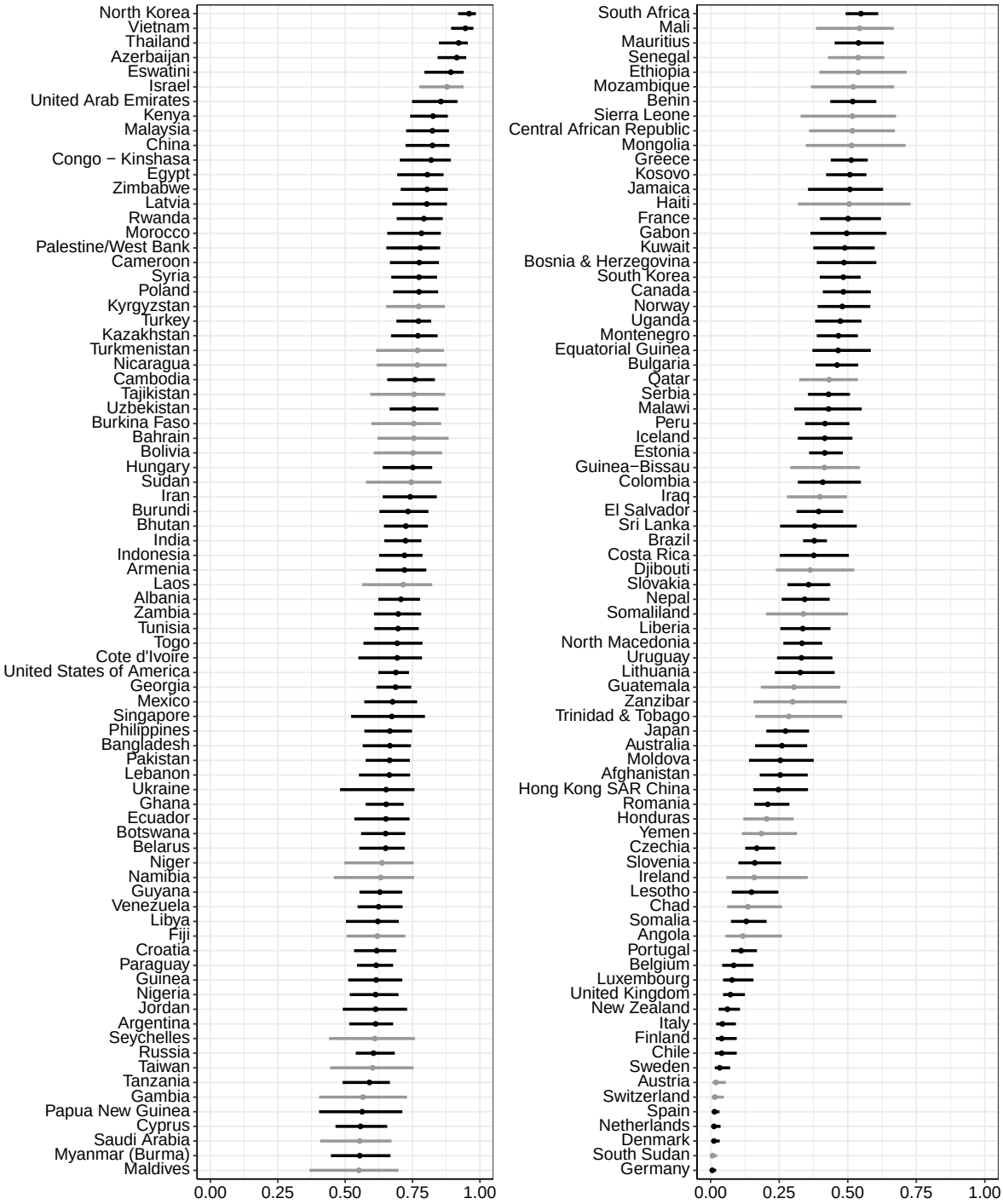
Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

Figure H-17: Democratic indoctrination content in education (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

Figure H-18: Patriotic indoctrination content in education (2021)



Note: Point estimates and confidence intervals for observations that have less than 3 coders are shaded in grey. The confidence intervals represent the lower and upper bounds of the 68% credible intervals.

I Appendix: Democracy and V-Indoc education indices

Figure I-19: Levels of democracy and indoctrination potential in 2021

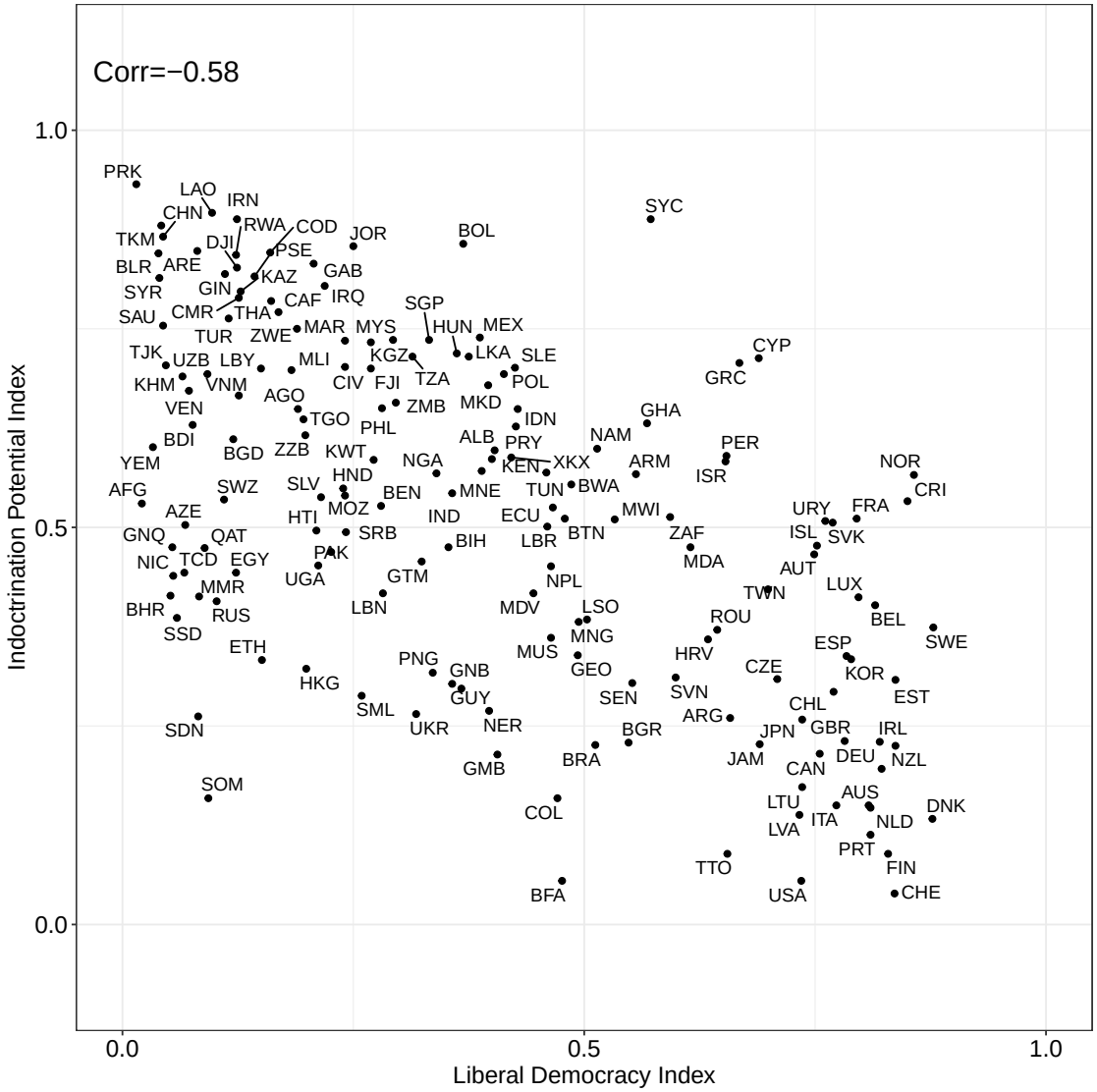


Figure I-20: Levels of democracy and democratic content in 2021

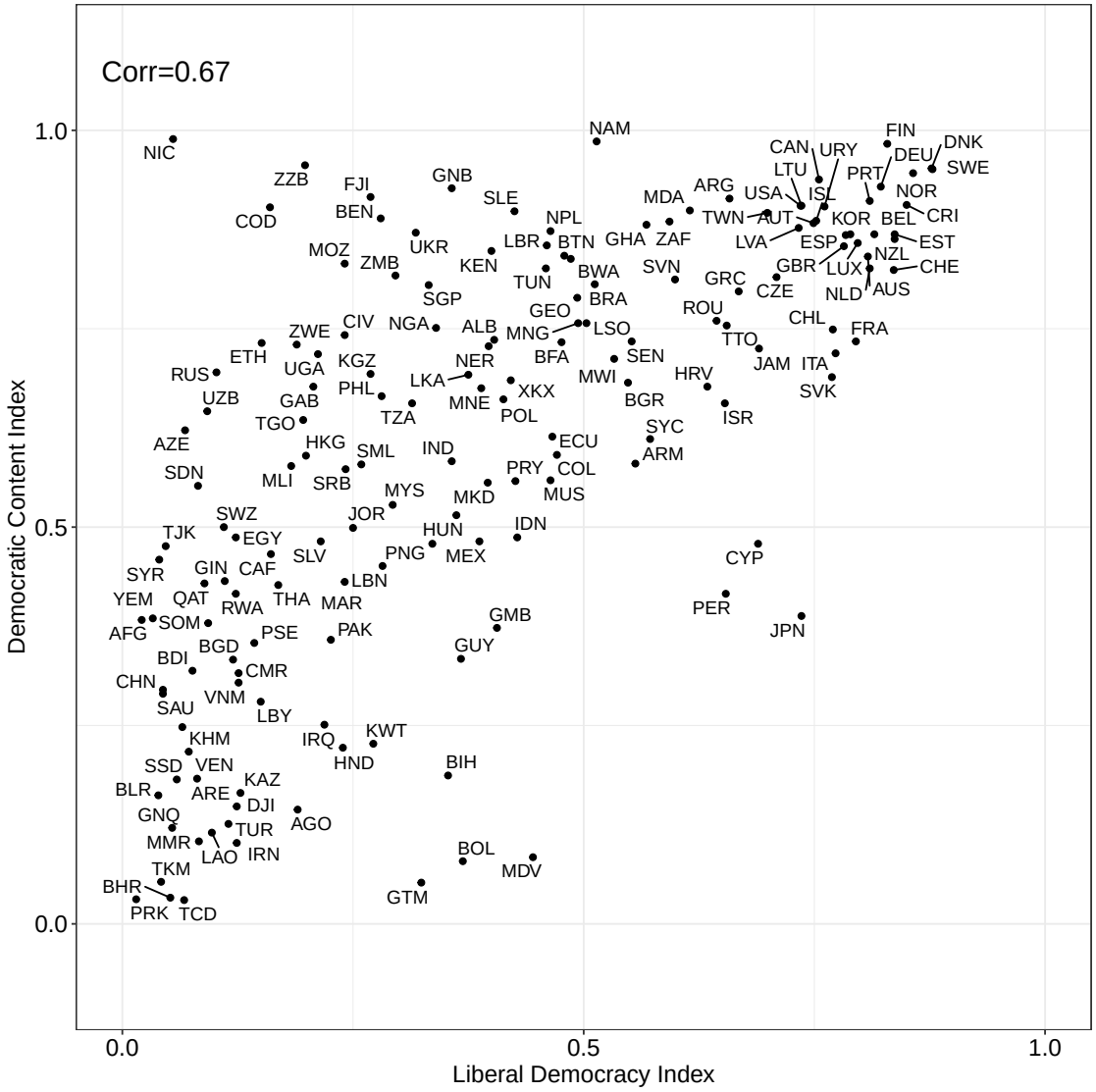


Figure I-21: Levels of democracy and patriotic content in 2021

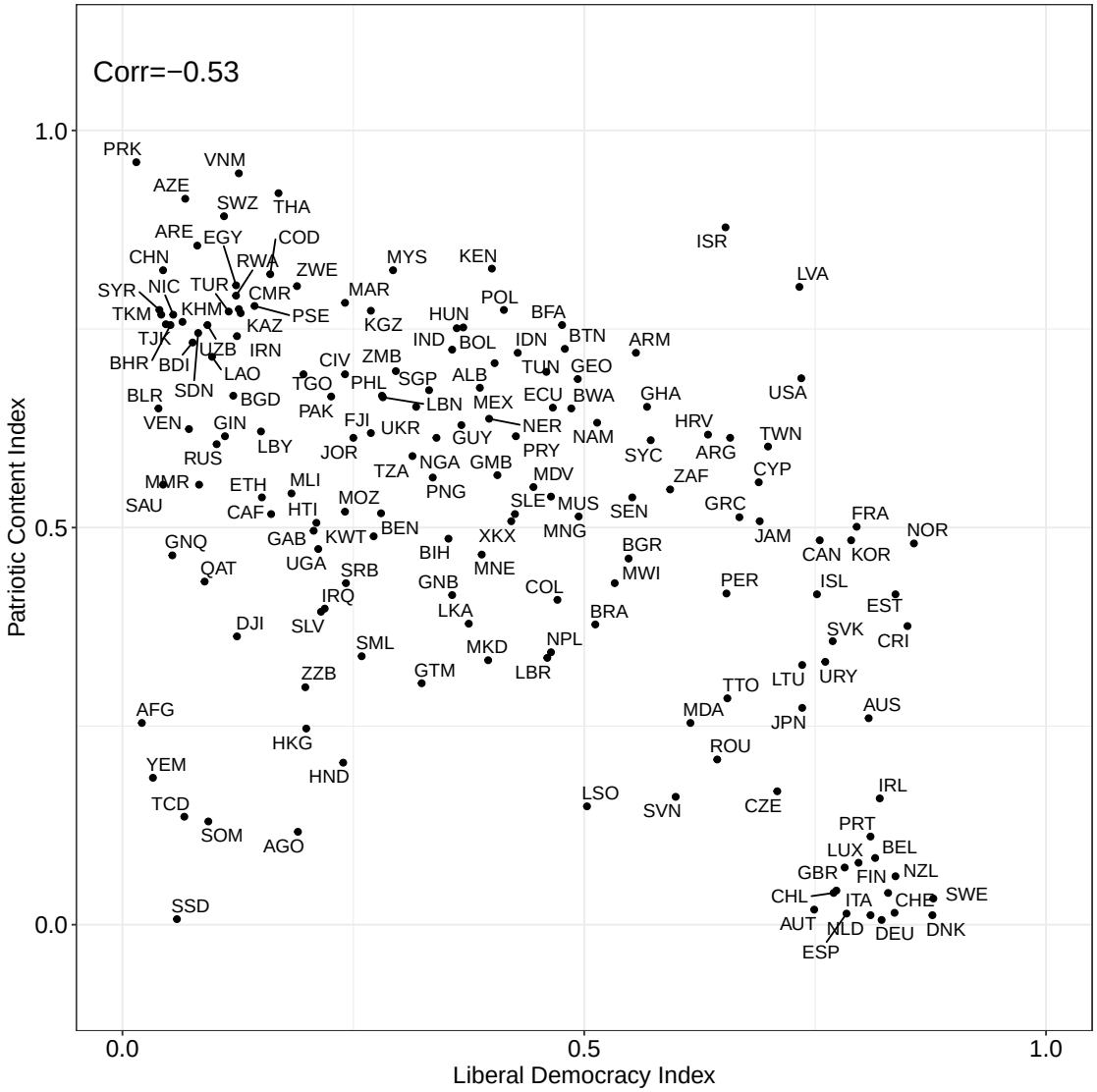
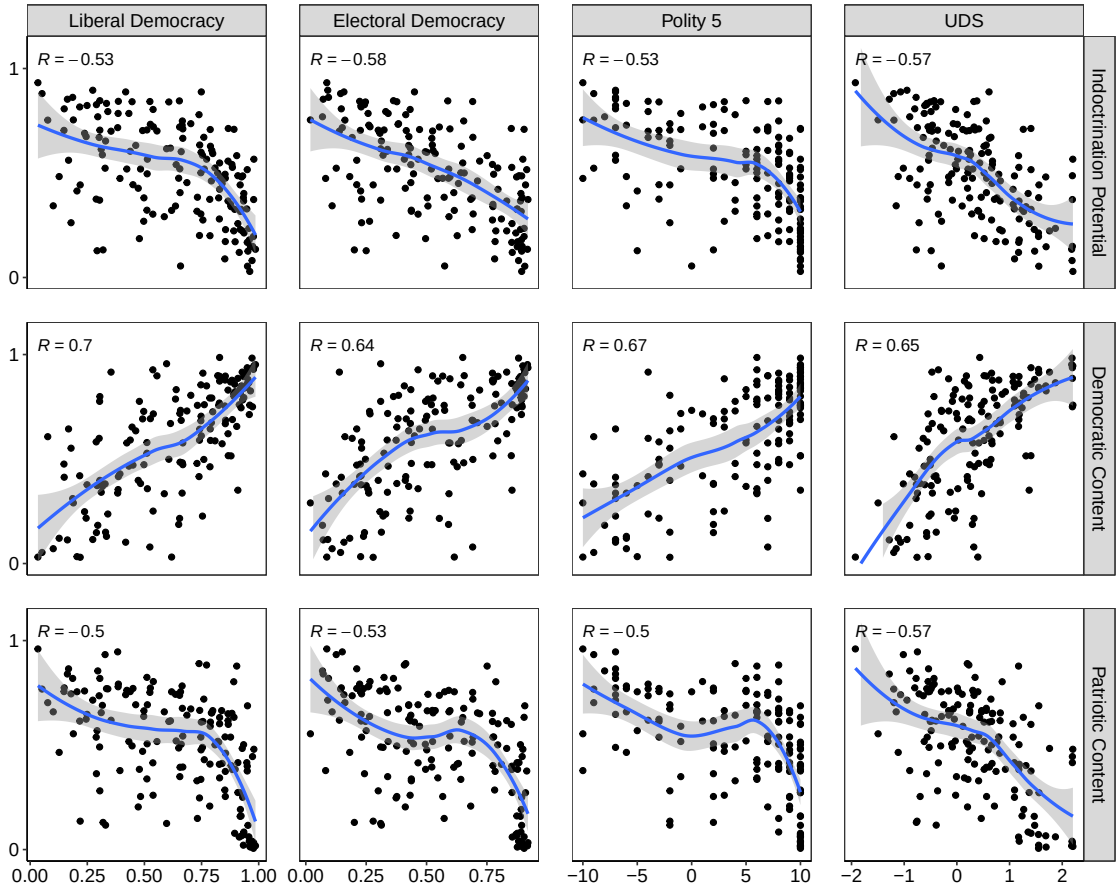


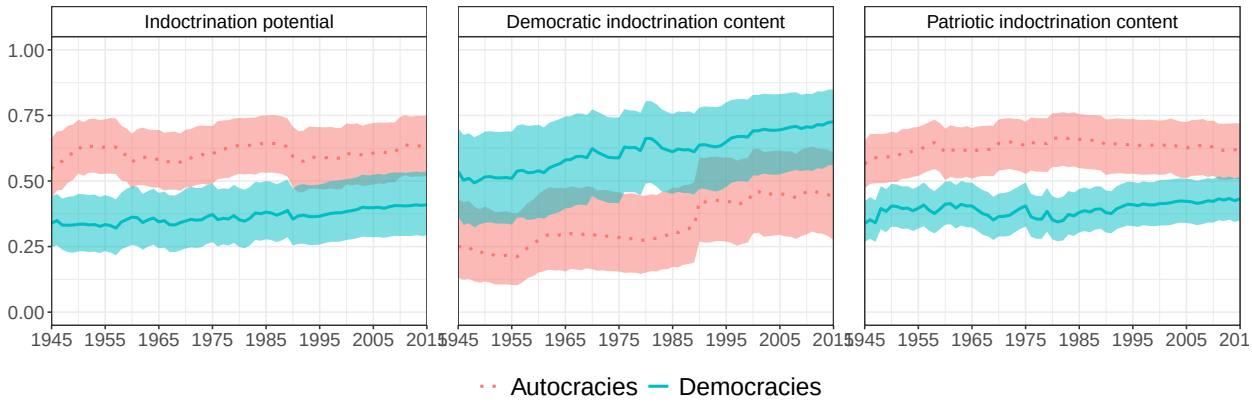
Figure I-22 shows scatterplots and correlations between various measures of democracy—V-Dem's Liberal Democracy and Electoral Democracy indices (Coppedge et al., 2020), Polity 5 (Marshall and Jaggers, 2020) , and Universal Democracy Scores (Pemstein, Meserve and Melton, 2010)—and the V-Indoc indoctrination indices. Since recent data are not available for all these measures of democracy, the plots use data from 2010 to facilitate comparison. In addition, Figure I-23 plots temporal trends across the three education indices using the Boix, Miller and Rosato (2013) coding of regime type. These plots indicate that the observed relationship between democracy and the V-Indoc indices in the main text is generally replicated when using alternative measures of democracy.

Figure I-22: Democracy and the indoctrination indices in 2010



Note: Lines and confidence intervals are produced by LOESS smoothing.

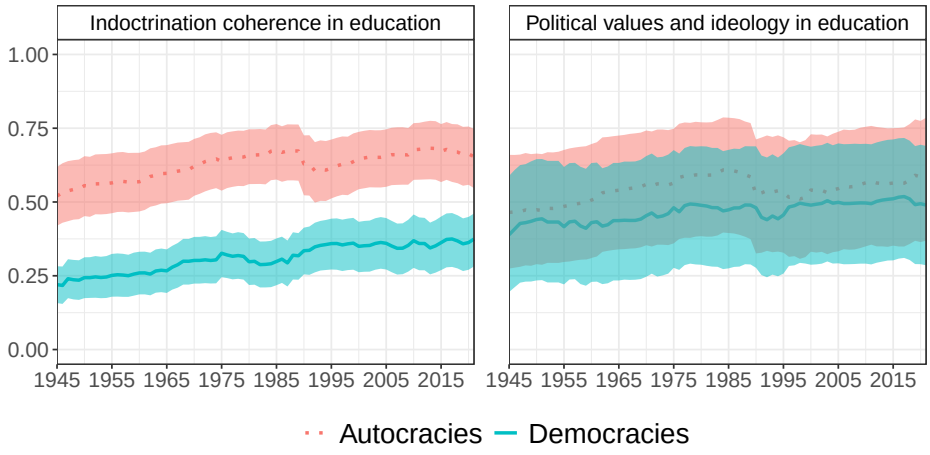
Figure I-23: Indoctrination potential and content in education across regimes (BMR regime classification)



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

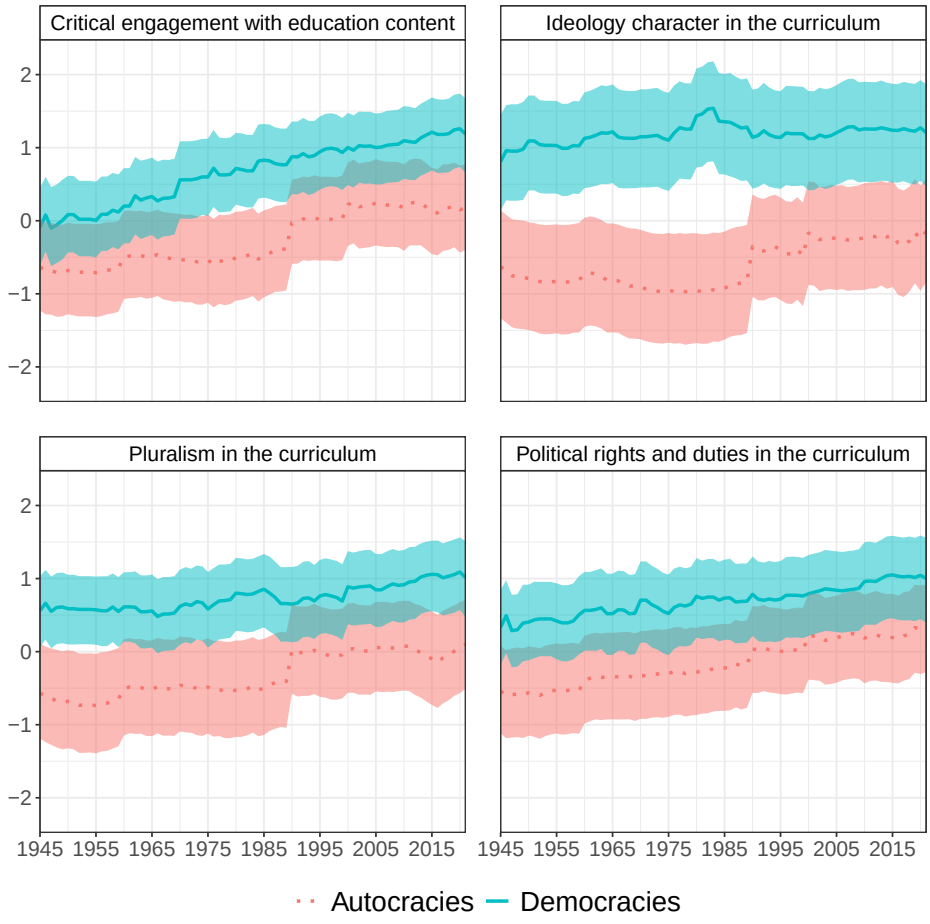
J Appendix: Components of indices across regimes and time

Figure J-24: Components of the indoctrination potential index



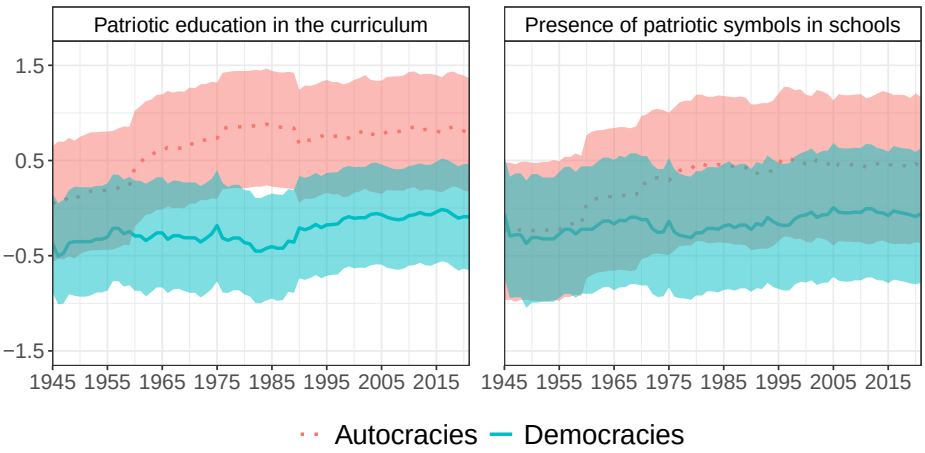
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-25: Components of the democratic indoctrination content index



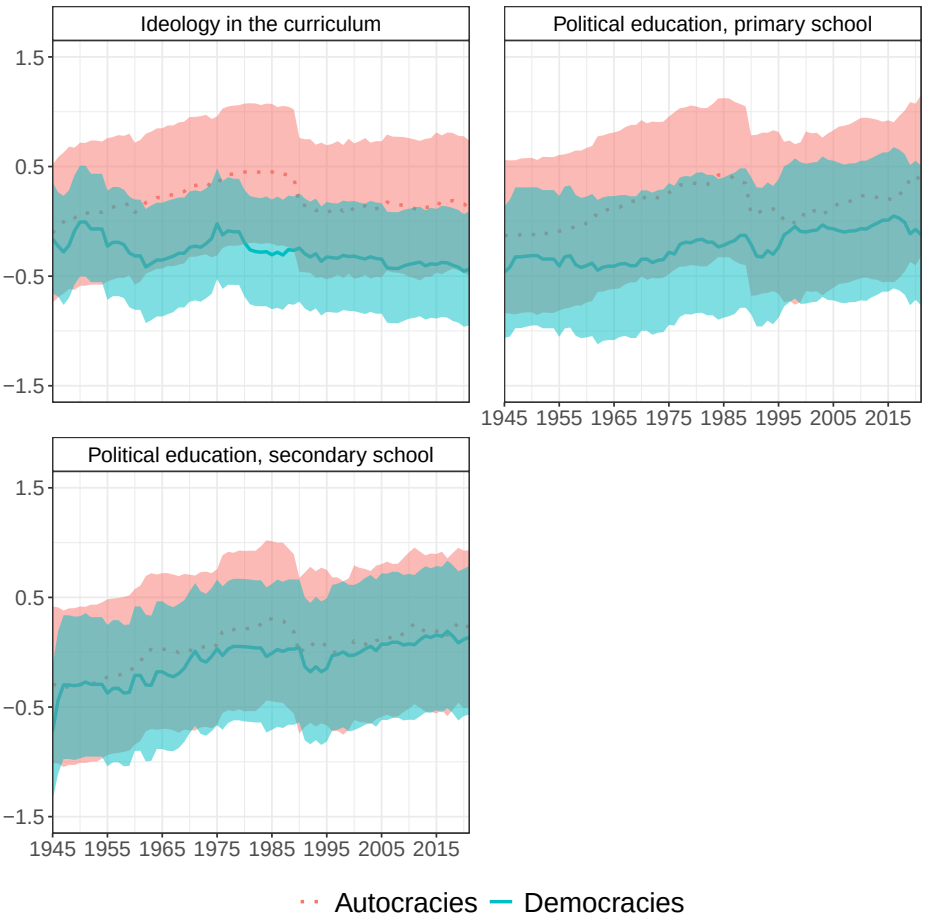
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-26: Components of the patriotic indoctrination content index



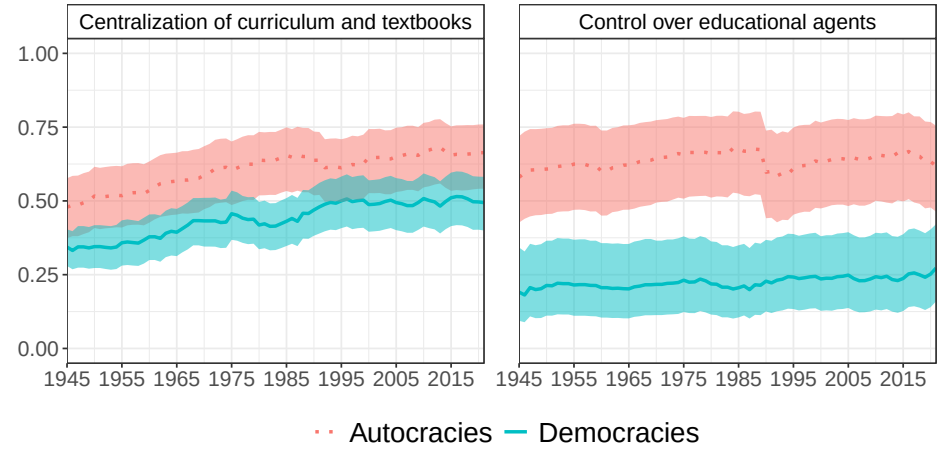
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-27: Components of the political education efforts in education index



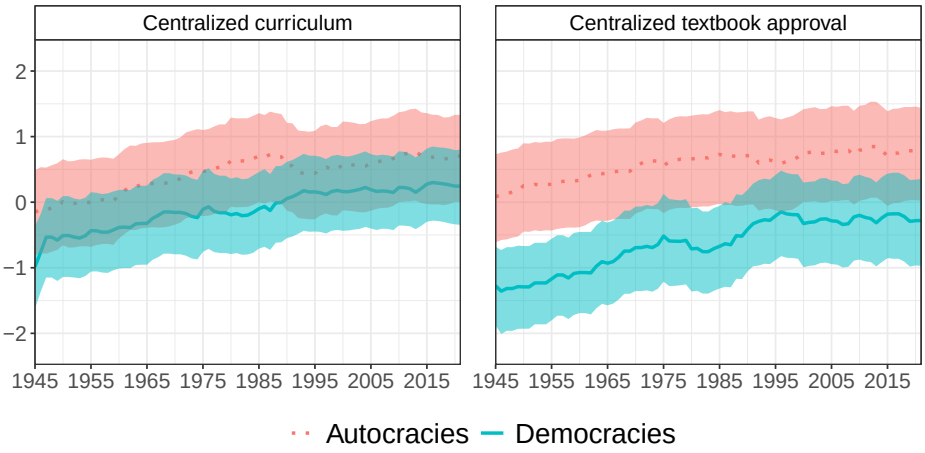
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-28: Components of the indoctrination coherence in education index



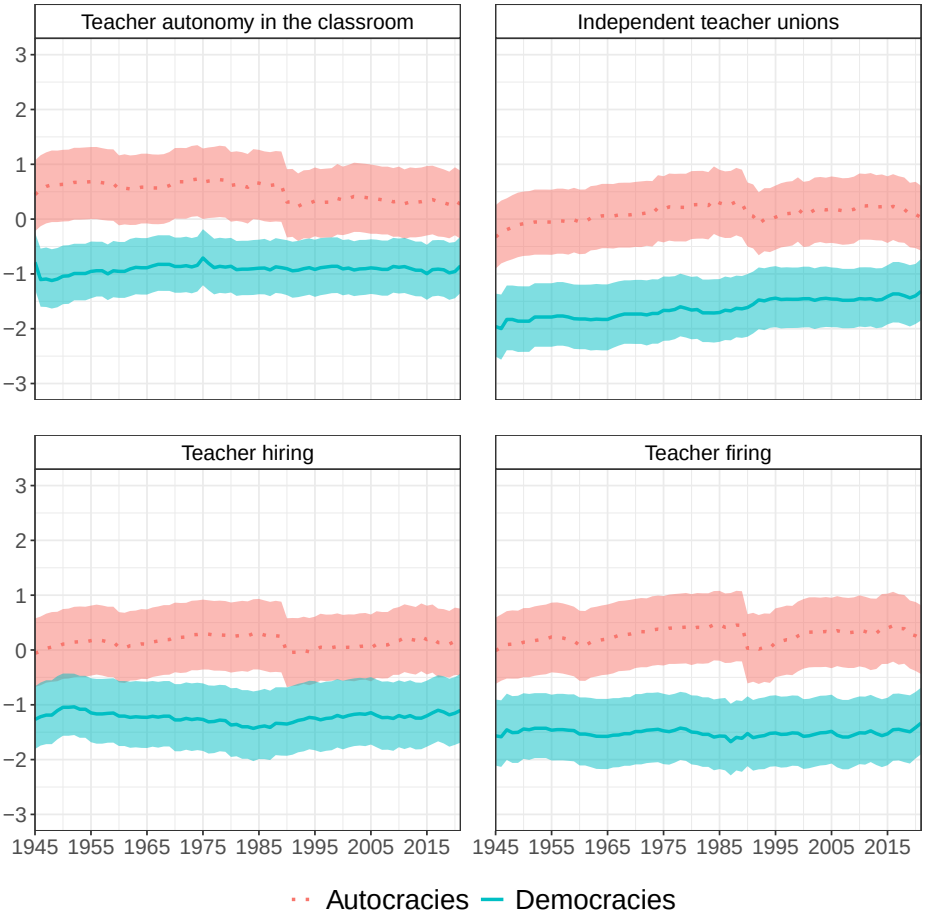
Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-29: Components of the centralization of curriculum and textbooks index



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

Figure J-30: Components of the control over educational agents index



Note: The figure plots point estimates along with the lower/upper bounds of the 68% credible intervals.

K Appendix: Composite indoctrination index

The indoctrination potential and democratic content indices in education could be aggregated, for example, using the formula:

$$\text{Indoctrination potential index} \times (\text{Democratic content index} - 0.5)$$

This index ranges from 0.5 to -0.5, where scores closer to 0.5 (-0.5) represent observations that have both high indoctrination potential with strong democratic (autocratic) content, and scores that are closer to 0 are those with weak indoctrination (weak potential and/or ideological content).

Figure K-31: Composite indoctrination index in 2021

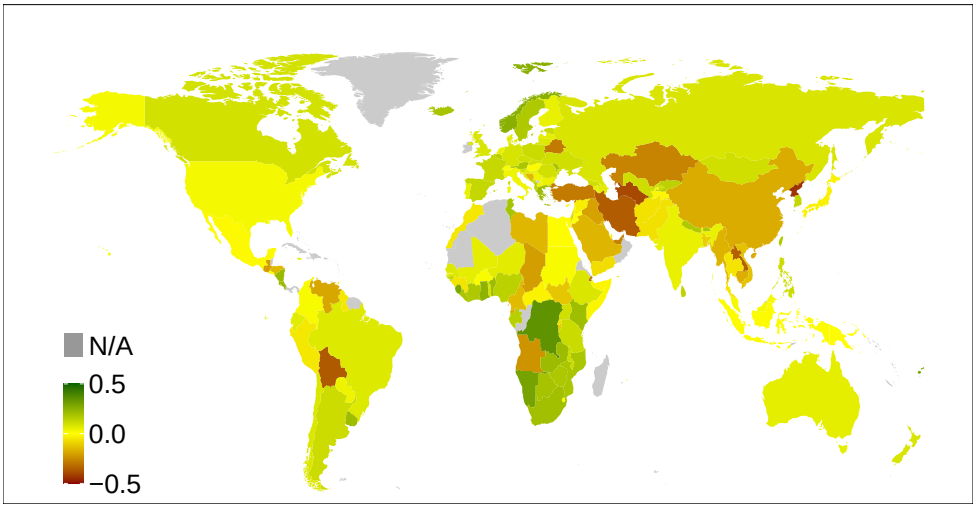
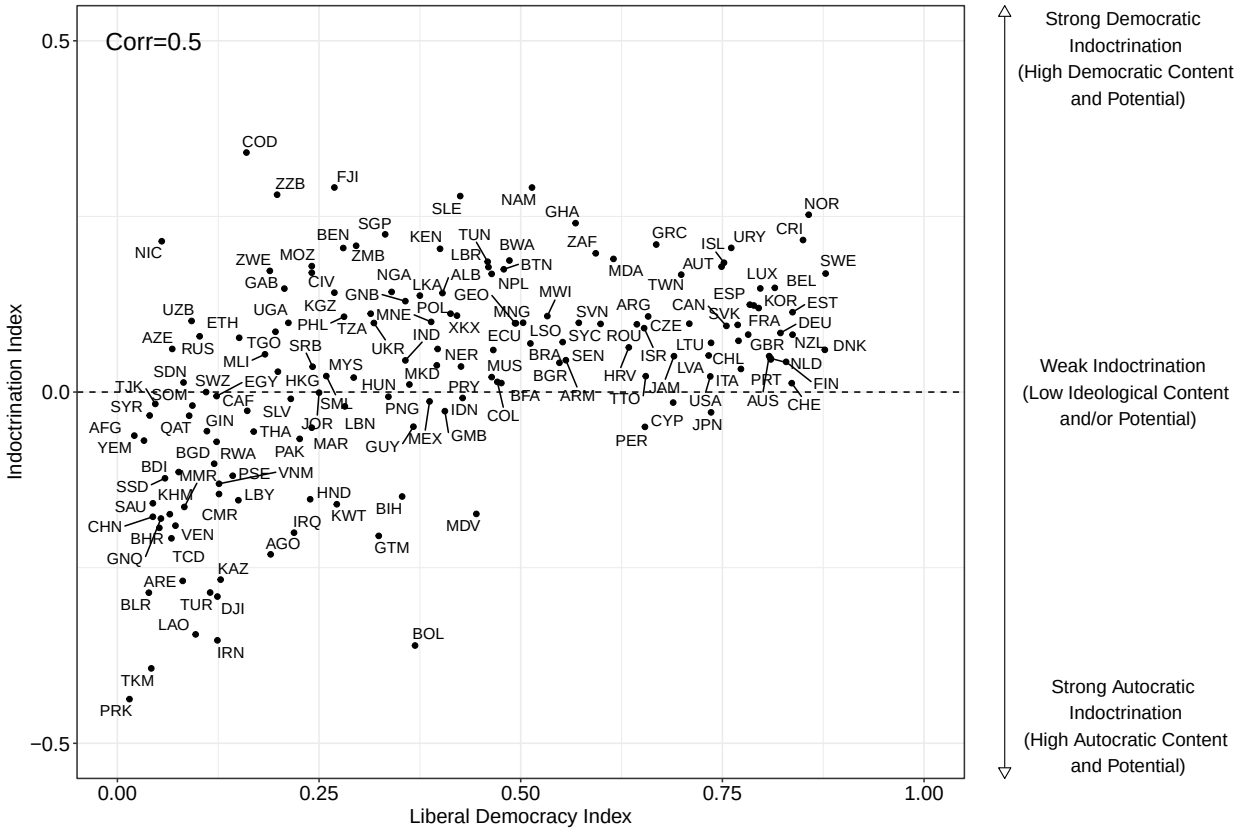


Figure K-32: Levels of democracy and indoctrination in 2021



L Appendix: Correlations and classifications

Centralized curriculum (v2edcentcurrlm)
NA

Centralized textbook approval (v2edcenttxbooks)
Validation Variable: Is there evidence that the textbook has been developed to meet official curriculum requirements? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0=No.
1=Yes.
Classification: 0.74.
Countries: 83.
Years: 1945-2012.
Observations: 785.
Notes: Unit of observation is textbook-year. v2edcenttxbooks_ord is recoded as 2 when 1.

Political education, primary school (v2edpoledprim)
NA

Political education, secondary school (v2edpoledsec)
NA

Political rights and duties in the curriculum (v2edpoledrights)
Validation Variable: To what extent does the textbook discuss rights/freedoms/liberties? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0=No/rarely.
1=Some.
2=A lot.
Classification: 0.45.
Countries: 83.
Years: 1945-2012.
Observations: 779.
Notes: Unit of observation is textbook-year. v2edpoledrights_ord is recoded as 1 when 2.

Validation Variable: To what extent does the textbook discuss duties/responsibilities/obligations of citizenship? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0: No/rarely.
1: Some.
2: A lot.
Classification: 0.36.
Countries: 83.
Years: 1945-2012.

Observations: 780.
Notes: Unit of observation is textbook-year. v2edpoledrights_ord is recoded as 1 when 2.

Patriotic education in the curriculum (v2edpatriot)
Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0=No.
1=Yes.
Classification: 0.59.
Countries: 83.
Years: 1945-2012.
Observations: 772.
Notes: Unit of observation is textbook-year. v2edpatriot_ord is recoded as 0 when 1 and 3 when 2.

Ideology in the curriculum (v2edideol)
Validation Variable: To what extent does the current government promote a specific ideology or societal model (an officially codified set of beliefs used to justify a particular set of social, political, and economic relations; for example, socialism, nationalism, religious traditionalism, etc.) in order to justify the regime in place? (Source: Coppedge et al. 2022).
Correlation: 0.42.
Countries: 159.
Years: 1945-2021.
Observations: 10637.

Ideology character in the curriculum (v2edideolch_rec)
Validation Variable: To what extent is the ideal of electoral democracy in its fullest sense achieved? (Source: Coppedge et al. 2022).
Correlation: 0.72.
Countries: 159.
Years: 1945-2021.
Observations: 10674.

Pluralism in the curriculum (v2edplural)
Validation Variable: Are there open-ended questions (meaning questions without right-wrong answers that require students to form their own opinion) in the textbook? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0: No questions.
1: There are questions, but none are open-ended.
2: Some/a few questions are open-ended.
3: A lot/nearly all questions are open-ended.
Classification: 0.49.
Countries: 74.
Years: 1945-2012.
Observations: 426.
Notes: Unit of observation is textbook-year. v2edplural_ord is recoded as 0 when 1 and the validation variable is recoded as 0 when 1. Textbook observations limited to history textbooks.

Validation Variable: Does the textbook generally assume that the student should develop his/her own point of view, or interpretation, of history or social issues? (Source: Bromley, Meyer and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.62.

Countries: 74.

Years: 1945-2012.

Observations: 426.

Notes: Unit of observation is textbook-year. v2edplural_ord is recoded as 0 when 1 and 3 when 2. Textbook observations limited to history textbooks.

Critical engagement with education content (v2edcritical)

Validation Variable: Are there open-ended questions (meaning questions without right-wrong answers that require students to form their own opinion) in the textbook? (Source: Bromley, Meyer and Ramirez 2011).

Responses:

0: No questions.

1: There are questions, but none are open-ended.

2: Some/a few questions are open-ended.

3: A lot/nearly all questions are open-ended.

Classification: 0.5.

Countries: 74.

Years: 1945-2012.

Observations: 426.

Notes: Unit of observation is textbook-year. v2edcritical_ord is recoded as 0 when 1 and the validation variable is recoded as 0 when 1. Textbook observations limited to history textbooks.

Validation Variable: Does the textbook generally assume that the student should develop his/her own point of view, or interpretation, of history or social issues? (Source: Bromley, Meyer and Ramirez 2011).

Responses:

0=No.

1=Yes.

Classification: 0.67.

Countries: 74.

Years: 1945-2012.

Observations: 426.

Notes: Unit of observation is textbook-year. v2edcritical_ord is recoded as 0 when 1 and 3 when 2. Textbook observations limited to history textbooks.

Teacher autonomy in the classroom (v2edteautonomy)

NA

Mathematics and science education (v2edmath)

Validation Variable: Percent of median yearly instructional hours in math and science the primary level. (Source: Benavot 2004).

Classification: 0.57.
Countries: 115.
Years: 1980, 2000.
Observations: 168.
Notes: The validation variable is averaged over the 1980s and 2000s and dichotomized using a threshold of 0.25.

Presence of patriotic symbols in schools (v2edscpatriot)
Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0=No.
1=Yes.
Classification: 0.57.
Countries: 82.
Years: 1945-2012.
Observations: 770.
Notes: Unit of observation is textbook-year.

Patriotic symbols celebrated (v2edscpatriotcb)
Validation Variable: Does the textbook celebrate a distinctive national state or national society and culture? (Source: Bromley, Meyer and Ramirez 2011).
Responses:
0=No.
1=Yes.
Classification: 0.6.
Countries: 82.
Years: 1945-2012.
Observations: 770.
Notes: Unit of observation is textbook-year. v2edscpatriotceleb_ord is recoded as 0 when 1 and 3 when 2.

Extracurricular activities (v2edscextracurr)
NA

Education requirements for primary school teachers (v2edtequal)
Validation Variable: Trained teachers in primary education are the percentage of primary school teachers who have received the minimum organized teacher training (pre-service or in-service) (Source: The World Bank 2022).
Correlation: 0.34.
Countries: 100.
Years: 1998-2021.
Observations: 1084.

Teacher inspection (v2temonitor)
NA

Presence of teacher unions (v2edteunion)
Validation Variable: Does the government attempt to repress civil society organizations (CSOs)? (Source: Coppedge et al. 2022).
Correlation: 0.49.
Countries: 158.
Years: 1945-2021.
Observations: 10678.

Independent teacher unions (v2edteunionindp)
Validation Variable: Does the government attempt to repress civil society organizations (CSOs)? (Source: Coppedge et al. 2022).
Correlation: -0.65.
Countries: 150.
Years: 1945-2021.
Observations: 9443.

Teacher hiring for political reasons (v2edtehire)
Validation Variable: To what extent are appointment decisions in the state administration based on personal and political connections, as opposed to skills and merit? (Source: Coppedge et al. 2022).
Correlation: -0.47.
Countries: 159.
Years: 1945-2021.
Observations: 10067.

Teacher firing for political reasons (v2edtefire)
Validation Variable: If a citizen posts political content online that would run counter to the government and its policies, what is the likelihood that citizen is arrested? (Source: Mechkova et al. 2021).
Correlation: -0.68.
Countries: 158.
Years: 2000-2021.
Observations: 3413.

State-owned print media (v2medstateprint)
NA

State-owned broadcast media (v2medstatebroad)
Validation Variable: Share of top 5 TV stations owned by the state. (Source: Guriev and Treisman 2020).
Correlation: 0.64.
Countries: 81.
Years: 1980-2016.
Observations: 81.

Political influence, state-owned media (v2medpolstate)
Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).

Correlation: -0.64.
Countries: 156.
Years: 1945-2021.
Observations: 9337.

Validation Variable: To what extent can citizens, organizations and the mass media express opinions freely? (Source: Donner et al. 2022).
Correlation: -0.63.
Countries: 122.
Years: 2005-2019.
Observations: 901.

Validation Variable: The Press Freedom index measures the amount of freedom journalists and the media have in each country and the efforts made by governments to see that press freedom is respected. (Source: Reporters sans Frontières 2020).
Correlation: 0.59.
Countries: 146.
Years: 2003-2019.
Observations: 2420.

Political influence, non state-owned media (v2medpolnonstate)
Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).
Correlation: -0.57.
Countries: 156.
Years: 1945-2021.
Observations: 9849.

Validation Variable: To what extent can citizens, organizations and the mass media express opinions freely? (Source: Donner et al. 2022).
Correlation: -0.54.
Countries: 120.
Years: 2005-2019.
Observations: 891.

Validation Variable: The Press Freedom index measures the amount of freedom journalists and the media have in each country and the efforts made by governments to see that press freedom is respected. (Source: Reporters sans Frontières 2020).
Correlation: 0.54.
Countries: 148.
Years: 2003-2019.
Observations: 2465.

Patriotism in the media (v2medpatriot)
NA

Control of entertainment content (v2medentrain)
Validation Variable: Of the major print and broadcast outlets, how many routinely criticize the government? (Source: Coppedge et al. 2022).
Correlation: -0.7.
Countries: 159.
Years: 1945-2021.
Observations: 10690.

M Appendix: Indoctrination potential in education across autocratic regime types

Table M-3: Summary Statistics: Entire Sample

Variable	Obs	Mean	SD	Min	Max
Indoctrination Potential	4,018	0.6245	0.2204	0.006	0.957
Party Regime	4,018	0.5047	0.5	0	1
Personal Regime	4,018	0.2432	0.429	0	1
Military Regime	4,018	0.1205	0.3255	0	1
Monarchy Regime	4,018	0.1317	0.3382	0	1
log(GDPpc)	4,018	1.137	0.9769	-0.6482	5.0539

Table M-4: Summary Statistics: Sample with at Least 3 Coders

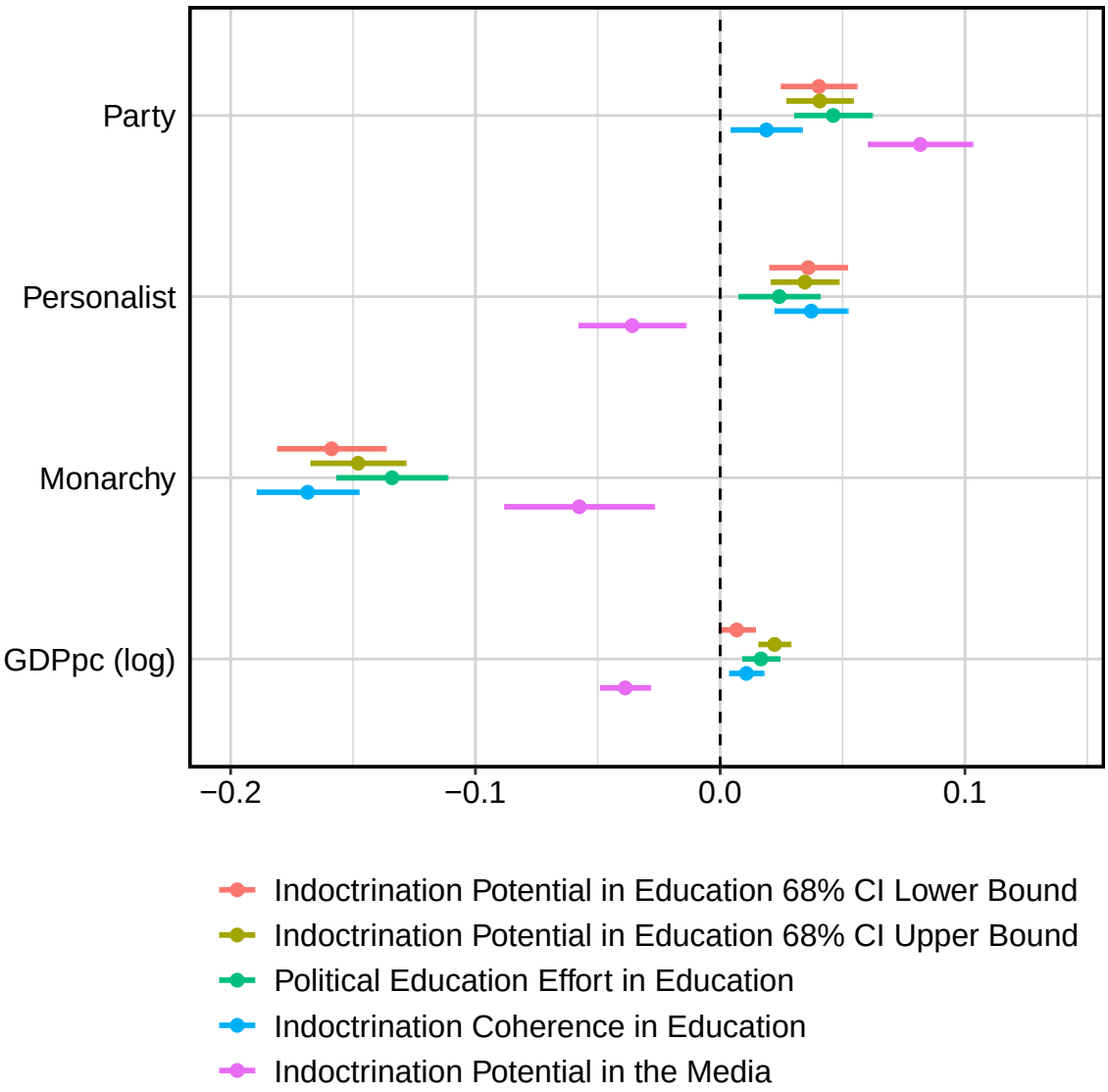
Variable	Obs	Mean	SD	Min	Max
Indoctrination Potential	2563	0.6699	0.1775	0.149	0.932
Party Regime	2563	0.5771	0.4941	0	1
Personal Regime	2563	0.2368	0.4252	0	1
Military Regime	2563	0.1198	0.3248	0	1
Monarchy Regime	2563	0.0663	0.2489	0	1
log(GDPpc)	2563	1.1607	0.8593	-0.6199	4.0551

Table M-5: Indoctrination Potential and Autocratic Regime Type

	DV: Indoctrination Potential in Education			
	All observations	At least 3 coders	All observations	At least 3 coders
	(1)	(2)	(3)	(4)
Party	0.0405***	0.0528***	0.0541***	0.0590***
	(0.0072)	(0.0100)	(0.0072)	(0.0100)
Personalist	0.0365***	0.0398***	0.0341***	0.0349***
	(0.0074)	(0.0105)	(0.0075)	(0.0106)
Monarchy	−0.1576***	−0.1574***	−0.1183***	−0.1304***
	(0.0104)	(0.0150)	(0.0108)	(0.0153)
GDPpc (log)	0.0155***	0.0232***	−0.0195***	0.0007
	(0.0035)	(0.0040)	(0.0046)	(0.0055)
Observations	4,018	2,563	4,018	2,563
Countries	103	72	103	72
Country FE	✓	✓	✓	✓
Year FE			✓	✓

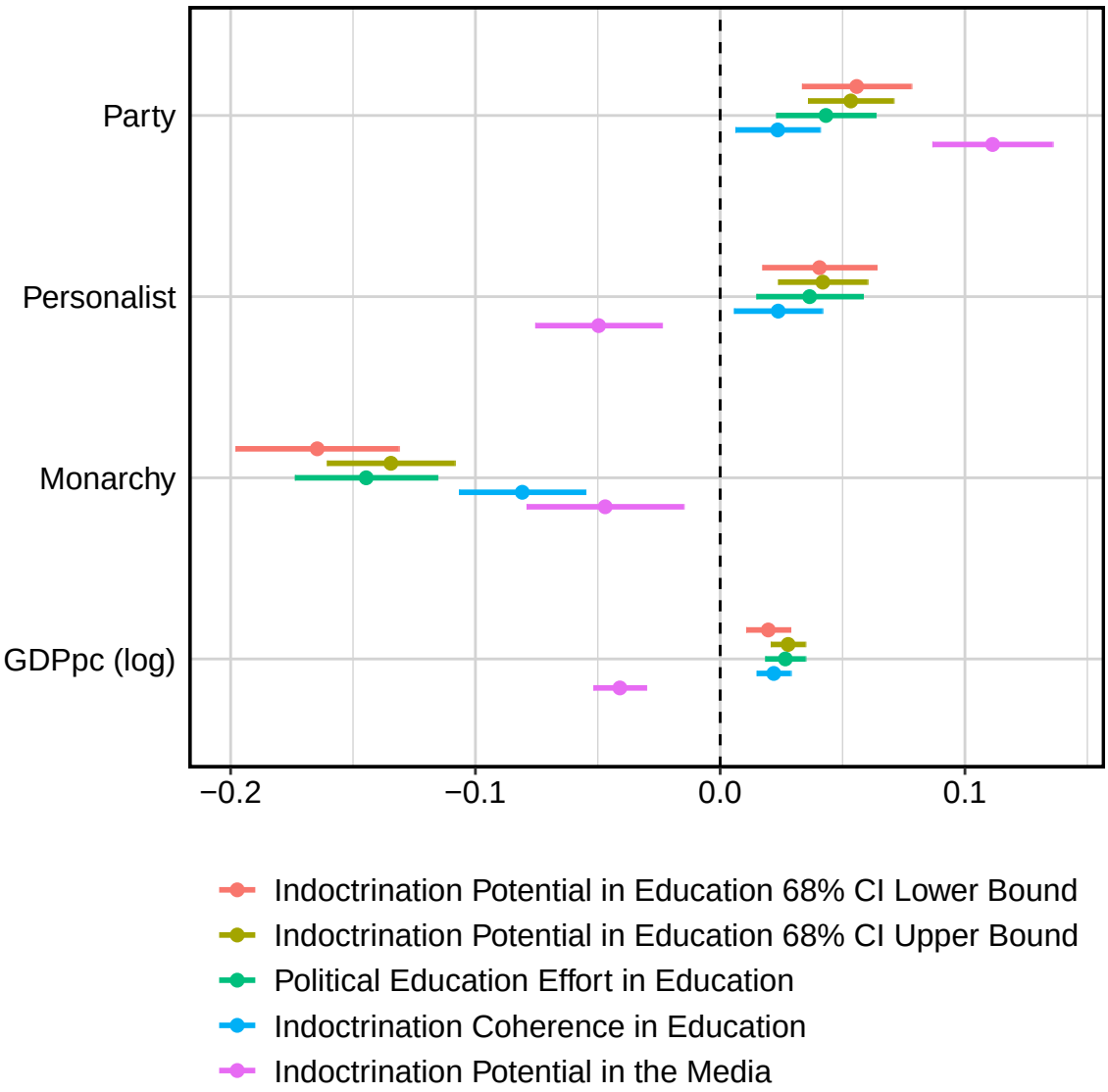
Note: Military regimes are excluded as the reference category. *** p<0.01, ** p<0.05, * p<0.1.

Figure M-33: Replicating Model 1 in Table M-5 using Alternative Indices as the Dependent Variable



Note: Military regimes are excluded as the reference category. The figure plots coefficient estimates along with the lower/upper bounds of the 95% confidence intervals.

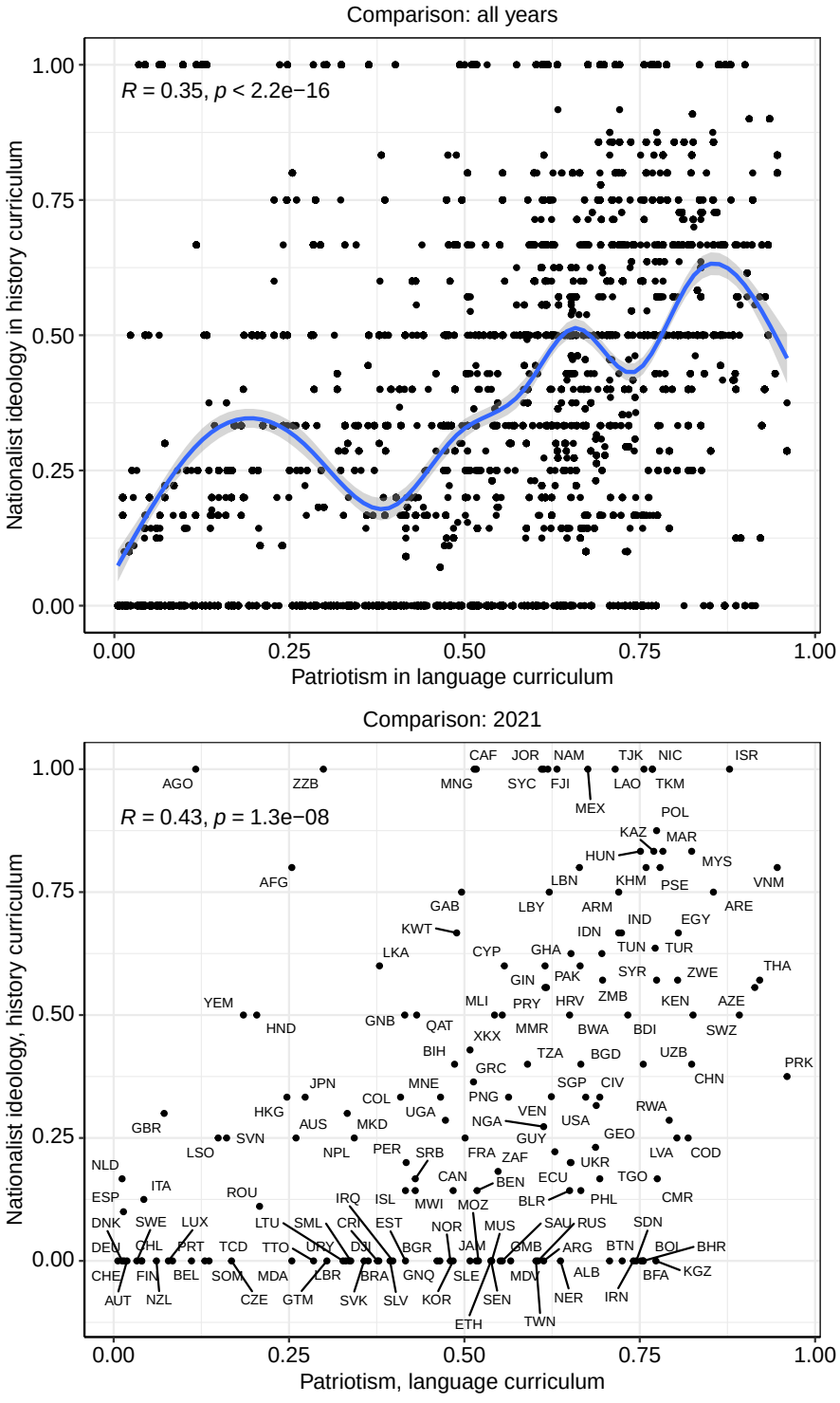
Figure M-34: Replicating Model 2 in Table M-5 using Alternative Indices as the Dependent Variable



Note: Military regimes are excluded as the reference category. The figure plots coefficient estimates along with the lower/upper bounds of the 95% confidence intervals.

N Appendix: Additional results on patriotism

Figure N-35: Patriotism and nationalism in the curriculum



Note: Nationalist ideology on the Y-axis is the proportion of expert coders who consider nationalism as one of the top two ideologies or dominant models promoted in the history curriculum.

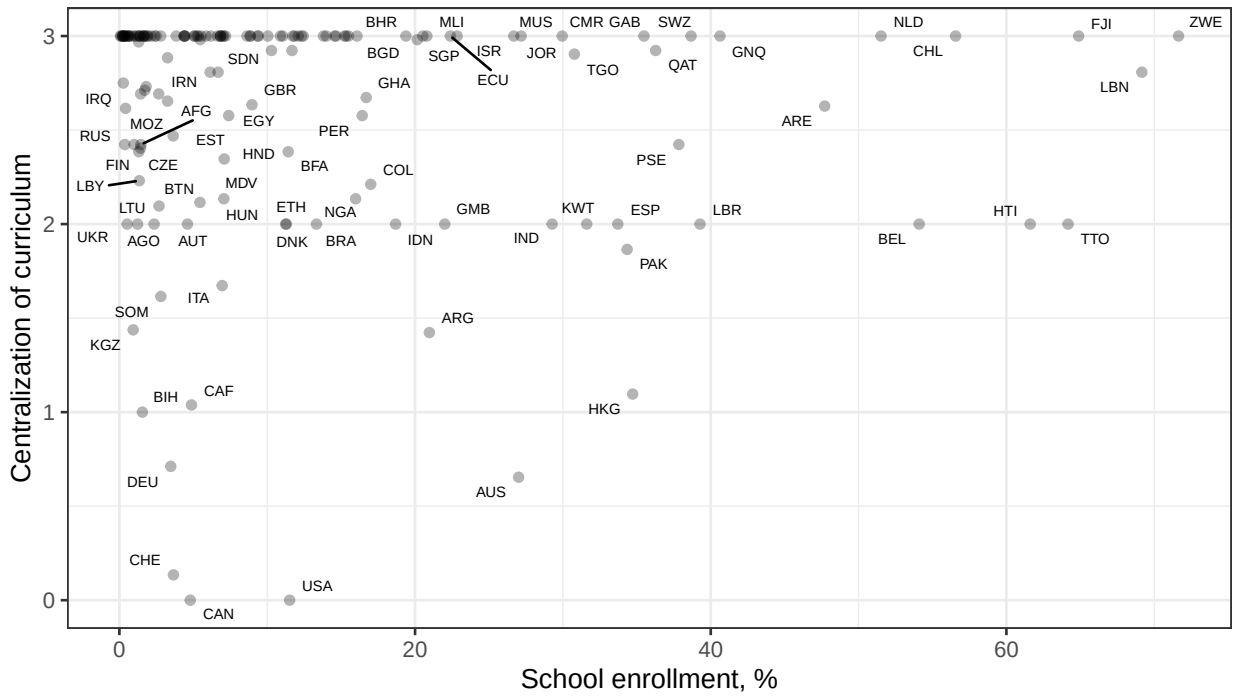
O Appendix: Private schools

We focus on the regime's indoctrination efforts, i.e., what happens in public or publicly-funded schools. This is how we define public education for the purposes of the expert survey, provided to the experts: "We are interested in formal public or publicly-funded education: that is, schools that are controlled, managed and funded by the public sector (a relevant national / sub-national / local public authority), as well as schools that are partially funded or subsidized by the public sector but operated by a private body (for example, schools that charge tuition but also receive some public funds or subsidies). We are not interested in schools fully controlled, managed and funded by a private body (for example, a non-governmental organisation, a religious body, a special interest group, a foundation, a business enterprise). This means, for example, that religious schools will be included in our definition only if they are operated by a public authority or publicly-funded or subsidized by the public sector" (V-Indoc Codebook, p. 87).

We do not have consistent (over time) cross-national data on how schools are operated or funded. Del Río, Knutsen and Lutscher (2023) are in the process of compiling this dataset, which would greatly advance this research agenda. We do acknowledge, however, that in some contexts our focus on formal public education means we do not capture non-formal, as well as private education. We are interested in the regime-led efforts, which limited the scope of our project to public schools. The related concern is whether the regime has capacity to indoctrinate. Part of the capacity question is related to the reach of the regime and the enrollment in public schools. In countries with high private enrollment rates we might expect the regimes fail to promote their narrative via education. However, even if schools are privately funded, the state can retain significant control over the school curriculum that these private schools have to follow. One example is Chile, where Pinochet's regime in the 1980s decentralized the operation and management of schools and introduced the voucher system of funding but the curriculum remained highly centralized and controlled by the Ministry of Education (Matear, 2007; Vargas and Peirano, 2002). However, this is not the case, for example, in Pakistan with private schools and Madrassas, where the curriculum is not the same as in public schools (Raheem, 2015).

The World Bank provides data on school enrollment in private schools. We can compare private enrollment rates in primary schools and our indicator of curriculum centralization in public and publicly-funded schools since 1970. We can see from the figure below that countries with substantively high private school enrollment (over 40 percent of total enrollment) have a highly centralized curriculum (values 2 and 3). In line with our expectations, Chile has a high score of curriculum centralization (the value of 3) and the private school enrollment of 63 percent in 2020. Of course, our indicator of curriculum centralization is limited to public and publicly-funded schools by design. However, one implication for the data users is that in some of the contexts with highly centralized curriculum the regime's control is not necessarily limited to public schools.

Figure O-36: Average private school enrollment in primary education, 1970–2021 (percentage of total primary enrollment)



Note: Source: World Bank, https://data.worldbank.org/indicator/SE.PRM.PRIV.ZS (last accessed on Aug 27, 2023). Definition: "Private enrollment refers to pupils or students enrolled in institutions that are not operated by a public authority but controlled and managed, whether for profit or not, by a private body such as a nongovernmental organization, religious body, special interest group, foundation or business enterprise." Centralization of curriculum varies from 0 (completely decentralized) to 3 (completely centralized at the national level).

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