University of Pretoria
Department of Economics Working Paper Series

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Carla Peyper
University of Pretoria
Reneé Van Eyden
University of Pretoria
Sansia Blackmore
University of Pretoria

Working Paper: 2021-10
February 2021

Department of Economics
University of Pretoria
0002, Pretoria
South Africa
Tel: +27 12 420 2413

Fostering human empowerment through education: the road to progressive political institutions

Carla Peyper*, Reneé Van Eyden* & Sansia Blackmore**

Abstract

This paper investigates the role of human empowerment and state capacity in forging political institutions that are progressive and democratic. The education-democracy nexus has been thoroughly examined in the literature, but the empirical literature on the effect of the right *kind* and *quality* of education remains sparse. Generalised method of moments and probit methodology are employed for a sample of 105 countries over the period 1981 to 2015 to address these shortcomings. The results indicate that education is a necessary condition for democracy, but by itself, not sufficient. The analyses show that education of the right kind and quality, one that fosters emancipative mindsets and critical-liberal orientations, is a strong driver of progressive or democratic political institutions in a society. Trade openness (as a sub-index of formal rules), that signals societies' openness to outside influence, also seems to matter, but when a more encompassing measure of regime-independent formal rules is used, formal institutions become an insignificant determinant of liberal democracy. Other avenues that are explored include an investigation into the role of geography and spatial democracy in political institutions. The evidence suggests that geographical and biological factors do not matter, but that spatial democracy does. This study, furthermore, finds that the probability of a more democratic regime outcome increases with increased levels of human empowerment and trade openness. A parliamentary democracy is the most probable when a society has high levels of human empowerment and openness.

Keywords: Liberal democracy, emancipative value system, human empowerment.

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* Department of Economics, University of Pretoria
** African Tax Institute, University of Pretoria

1. Introduction

The 2005 Education Strategy of USAID opens with this quote from George W. Bush: "Education is the foundation of democracy and development – in every culture, on every continent" (USAID, 2005:1). This popular quote resonates amongst many acclaimed academic scholars including the likes of John Dewey, Robert Barro, and Edward Glaeser (Dewey, 1916; Barro, 1999, 2015; Glaeser, 2007, 2009). This then begs the question, why do some countries that outperform others on international education standards have seemingly low democracy scores? Singapore ranked first overall in both the Trends in International Mathematics and Science Study (TIMSS) tests while Hong Kong also consistently ranked in the top five countries for these assessments (Mullis & Martin, 2015). Both these countries, however, rank notably low on the liberal democracy index (Coppedge et al., 2020). Similarly, Taiwan and South Korea also ranked within the top five for both the mathematics and science tests, yet it seems that the quality of democracy is questionable. On the contrary, some countries perform poorly on educational testing yet relatively well on the democracy index. South Africa and Botswana both ranked in the bottom five countries in the TIMSS assessments (although showing some steady improvement), however, both perform above average on the liberal democracy index (Robinson & Torvick, 2016; Coppedge et al., 2020). This may direct one to think that quality education on its own is not an adequate signal of the quality of democracy.

Education can, however, serve as a vehicle for the fostering of emancipative values, which values have been shown to strongly predict liberal democracy (Runk et al., 2020; Kirsch & Welzel, 2019). The right kind and quality of education, one that cultivates empowered societies through modern individualism and a critical-liberal mindset, may thus advance democratic political institutions in a society. The ongoing debate on the education-democracy link has thoroughly examined the impact of the level or distribution of education on democracy, but empirical literature on the effect of the kind and quality of education that fosters human empowerment remains sparse. This paper aims to offer some empirical validity to this theoretical notion through the method of general methods of moments (GMM) and probit analysis. These findings are important, since they show how shifts in the quality of education or mass societal value orientations could either advance or threaten the quality of political institutions. It may also give direction to how school and tertiary curricula may be conceptualised to support progressive and liberal political institutions.

In addition, the study explores other interesting avenues such as the effect of trade openness, general formal rules independent of regime type, and geographical conditions on political institutions. The relevance of neighbouring regimes for the degree of progressiveness of the government regime within a specific country is also tested to determine whether countries are inclined to change their political regime to be in line with their neighbouring countries. Furthermore, the probability of different government regimes occurring, such as parliamentary or presidential democracy, given various levels of human empowerment and trade openness, is investigated. This may indicate whether openness and human empowerment have a significant impact on, or at least signal, the degree of progressiveness of countries' political institutions.

The outline of the rest of the paper is as follows: section 2 provides a review of the relevant literature, while section 3 contains a theoretical model exposition. Section 4 discusses the data and methods that are used, sections 5 presents the empirical results, section 6 comments on South Africa as an interesting case study, while section 7 concludes.

2. Literature Review

This paper builds upon many seminal works. The ongoing discussion regarding the education-democracy link stretches as far back as the early 1900s. The debate gained significant prominence following the release of path-breaking research by Lipset (1959) that offers support to the modernisation theory. Lipset (1959) postulates some structural requisites that are crucial for a democracy to develop, with education foremost among them. He hypothesises that education serves as a mechanism to create favourable circumstances that produce and sustain belief in a democratic system. Education may promote democracy by introducing individuals to cross-pressures, reducing the probability that radical ideologies will gain support. It enables citizens to broaden their views and deepen their understanding of politics as well as empowers them to critically evaluate conventional systems and norms.

Some initial studies attempt to provide some empirical evidence for the hypothesis introduced by Lipset (1959). Barro (1999) considers over 100 countries in his panel study and uses the Freedom House Political Rights Index and average years of schooling as measures of democracy and education. The study employs a seemingly unrelated regression method to show that education promotes democracy. The analysis also indicates that a larger gap between male and female educational attainment decreases the level of democracy within a society (Sanborn & Thyne, 2014). Based on their research focusing on political institutions and development, Przeworski et al. (2000) state that individuals with high levels of educational attainment have an increased likelihood of supporting democratic values. Glaeser et al. (2004), coming to the same conclusion, argue that individuals with improved education become empowered citizens; being educated enables them to participate effectively in governmental issues and leads to greater support for democratic values.

In a paper by Acemoglu et al. (2005), the authors disturbed the *status quo* by stating that there is no significant empirical evidence to infer a causal relationship between education and democracy. They argue that the results obtained by Glaeser et al. (2004) do not account for time effects thus erroneously reflect an increase of both education and democracy over time. When Acemoglu et al. (2005) replicate the regressions of the Glaeser study, but with time-effects included, they find that the once causal relationship between education and democracy becomes insignificant. They supplement their argument of a non-existent empirical relationship by employing fixed effect ordinary least squares and first-difference generalised method of moments (GMM) estimators that include both country and time effects.

Acemoglu et al. (2005) offer some explanations of why they did not find a causal relationship between education and democracy. They argue that changes in education may not be observed in shorter time frame analyses due to the long-run effects that education seems to have. They also state that omitted factors affecting both variables may be the driving force of the cross-sectional relationship and emphasise the need to explore what these are. The study by Acemoglu et al. (2005) nonetheless precipitated much research activity to challenge the findings of their contesting paper.

Bobba and Coviello (2007), using the same dataset as Acemoglu et al. (2004), correct for both weak instruments and weak identification. They find that a positive, universally robust and statistically significant relationship between education and democracy does exist; they add some insight into why the preceding studies obtained divergent results. The Glaeser (2004) and Acemoglu (2005) studies assume education to be exogenous by using previous levels of education in their regressions. Bobba and Coviello (2007), on the contrary, explain that education must be considered as weakly exogenous since investment in human capital is assumed to be forward-looking (Acemoglu et al., 2014; Kangur, 2016).

The method used by Acemoglu et al. (2005) is also questioned in the literature (Kangur, 2016; Castelló-Climent, 2008). Bobba and Coviello (2007) conduct a system GMM analysis, describing it as the more appropriate GMM model to employ based on the high persistence that is detected in both education and democracy. By correcting the problem of weak instruments through system GMM technology, the authors avoid obtaining estimators that are biased towards the fixed effects estimator (Castelló-Climent, 2008).

Castelló-Climent (2008) uses a similar methodology and echoes the conclusion of Bobba and Coviello (2007), although the author makes her novel contribution by modifying the measure of education. The study, unlike forerunners, does not consider the average years of schooling, but rather the distribution of schooling. The distribution of education is proxied for, by using the cumulative third quintile of education, explained by the author as the share of education that was obtained by at least 60% of the population. The reasoning behind this is that the former measure does not offer adequate information on whether a substantial group of somewhat educated individuals and a faction of well-educated individuals would hold similar sway to influence the likelihood of democracy. She finds that the equal distribution of education matters more than merely the average years of schooling in determining both the implementation and the sustainability of democracy, and that this effect is amplified in developing countries. Dahlum and Knutsen (2017) support the view that average years of schooling is a weak proxy for human capital and emphasise the importance of identifying more suitable proxies.

Papaioannou and Siourounis (2008) follow a different technique than their predecessors by utilising cross-sectional probabilistic models that determine the likelihood of democracy in a society. They learn that educated nations are more likely to transition to democracies as a result of human capital, which fosters deeper political reforms. Due to the difficulty of interpreting probit coefficients, the authors report the marginal effect of schooling on the probability to transition to democracy to demonstrate their results

quantitatively. Papaioannou and Siourounis (2008) also contribute to the body of literature by exploiting different measures of democracy. As opposed to the abovementioned studies that use the Freedom House Political Rights Index to quantify democracy, the authors describe the Polity index of the Polity IV Project as the most comprehensive measure among those available. The main critique against the former is that it has been shown to be biased against not only socialist regimes and non-US aligned countries, but also against countries that are closed to international trade (Munck & Verkuilen, 2002). The authors continue by arguing that the use of a dependent variable that is inaccurately measured could reduce the statistical model's power.

Although academics and researchers mainly undertake macro studies in the continuous debate around education and democracy, some take the less conventional path by conducting studies that examine the micro-foundations. Mattes and Mughogho (2009) utilise the Afrobarometer survey data[1] of 18 Sub-Saharan African countries to conduct such a micro-study. They perform a multivariate ordinary least squares analysis to show the effect of formal education and various aspects of cognitive awareness on the support for democracy. The evidence shows that the effect of higher education on democracy is positive yet limited, since formal education enhances only certain elements of democratic citizenship.

In a related study by Evans and Rose (2012), the authors likewise study the Afrobarometer survey using logit models. They analyse the importance of education to influence the attitude of citizens towards democracy. This is done through computing the predicted probability of democratic support by considering different social factors such as education. Similar to studies by Bratton et al. (2005) and Mattes and Bratton (2007), they confirm that education is indeed the social factor that contributes most towards a pro-democratic attitude through its influence on political awareness. By accounting for different levels of education, they also show that the effect of schooling on pro-democratic attitudes increases linearly with the level of education that is obtained.

Empirical studies have explored many aspects of the relationship between education and democracy extensively. Sanborn and Thyne (2014), however, critique the absence of a proper explanation in prior studies of *why* education would promote democracy; they attempt to fill that gap. They do this by testing various hypotheses, using a similar methodology as Evan and Rose (2012), but in a macro panel study. They too focus specifically on the different levels of education but analyse additionally the effect of education while controlling for wealth, former colonisation, level of neighbour democratisation and urbanisation. They find that poorer societies and those with higher globalisation tend to benefit more from education in terms of the democratisation of society. Although both significant, the authors show that tertiary education, through developing critical and higher-order thinking, seems to impact democracy more than primary

[1] Afrobarometer Data, Round 3, 2005-2006, available for download at http://www.afrobarometer.org.

education through cultivating democratic social values (Apergis, 2018). The authors also confirm earlier findings of Barro (1999) by showing that gender equality in the educational sphere is crucial for democracy.

Throughout the vast literature, the analyses assume that the ceteris-paribus effect of education on democracy is time-invariant. Apergis and Payne (2017) criticise standard cointegration estimation in the context of the education-democracy discussion. They argue that this method, as used in previous research, does not allow the long-run relationship between the variables to evolve over time. It therefore does not consider the fact that, over time, sound educational reforms lead to progressively higher attainment that in turn influences democracy even more. The authors obtain a time-variant, statistically significant and positive coefficient of education by employing time-varying cointegration method developed by Bierens and Martins (2010). They continue by conducting the analysis by income group to highlight the difference in the time-varying coefficient by income category. They show a larger effect in low-income countries compared to high-income countries. A paper by Karis and Tandogan (2019) studying only high-income countries, shows that education continues to affect democracy positively in wealthier nations.

Aspergis (2018) uses an Autoregressive Distributed Lag (ARDL) model in his paper, to show that the speed of adjustment differs across the various levels of education; specifically, educational reforms materialise more slowly in higher education and faster when considering primary education. The author, furthermore, emphasises the bidirectional causality – both in the short and the long run – that exists between democracy and education by using panel causality testing. As opposed to reverse causality, some studies argue a unidirectional movement from political institutions to education (Tavares & Wacziarg, 2001; Galor & Moav, 2006; Galego, 2010, Harding & Stasavage, 2014). Bittencourt's (2013) analysis of the Southern African Development Community provides evidence that democracy has been crucial to the expansion of *access* to education. Dahlum and Klunsen (2017) consider mathematics, science and reading scores of students and agree that democracy affects the quantity of educated individuals but argue that it does not necessarily provide an indication that democracy leads to *improved quality* of education.

Contrary to this, Glaeser et al. (2004, 2007) show that education causes democracy and not the other way round. They argue that if democracy causes education then lagged values of democracy should influence changes in human capital, which they find is not the case. They did, however, show that lagged values, or initial values, of human capital influence changes in the political-institution variable, implying that causation runs from education to democracy. They argue that education impacts democracy by increasing the gains of political engagement and civic participation. This conclusion was reinforced by the analyses of Chong and Mark (2009), Murtin and Wacziarg (2014) as well as Kangur (2016), all of which could not find evidence of reverse causality, confirming that causality indeed runs from education to democracy.

Previous studies demonstrate that the specific measures used for variables are consequential and that the model specification and modelling approach must be selected with circumspection. These studies predominantly consider the level and the distribution of schooling to determine whether education matters

for democracy. Although, as Dore (1976) puts it, "not all schooling is education". He argues that schooling serves as an instrument that produces human capital by means of skill attainment, but that not all schooling aims to promote social values and enable scholars to reason critically. In a recent study of European countries, Sommers and Marian (2019) claim that while past trends indicate that education influences the openness of societies, it is not true for recent times. Various countries have seen a rise in education levels while becoming less open or democratic. They state that although education is a necessary condition for democracy, as advocated by Lipset (1959), it is insufficient. More specifically, education by itself, in broad and unqualified terms, does not offer enough support to liberal democratisation; the "right kind" of education however, might. Easterlin (1996) agrees that not all education will lead to economic growth, the content will determine whether education will aid development (Morson & Schapiro, 2018). Davids (2019, p.89) states that "Schools, therefore, are the only formal spaces, which can provide the discourses and practices, which serve to promote democratic citizenship education. The purpose and responsibility of ensuring the necessary context and ethos for the cultivation of democratic citizenship has to do with renewed understandings of what best serves the collective of a public good in a democracy."

Liberal democracy, as explained by Brunkert et al. (2019), is a system that allows individuals to determine the course of their own lives and the societies they live in through freedom and choice. It envisages a regime with a capable and strong state, with an independent judiciary and separation of powers, and with citizens enforcing constraints on the executive. It gives citizens a voice and a vote to ensure that the governing bodies are kept accountable and transparent to society. In fact, the word democracy translates from the Greek words *demos* and *kratos*, which quite literally mean 'rule by the people'. There are many different conceptualisations of democracy, but this seems to be the prime meaning for most individuals (Welzel, 2014). For society to be people-powered, citizens need to be adequately empowered to practice control over their own lives as well as develop the ability to influence public affairs and society. Citizens that develop emancipative values are orientated in such a way that they prioritise and value freedom of choice and equality of freedom and opportunities (Welzel, 2014, 2019).

Societies that are transformed and empowered through progressive, emancipative value orientations are crucial for individuals to effectively partake in politics by electing and challenging ruling parties, as well as to develop, sustain and improve democratic freedom. In *Freedom Rising*, Welzel (2014) explains what he calls the "utility ladder of freedom", demonstrating how emancipative values emerge during social-cultural transformation in the human empowerment sequence. As existential pressures recede, citizens are released from the chokehold of survivalism and may begin prioritising universal freedoms. This shift in mass value orientations is characterised by emancipative values that emerge as part of human empowerment and may precipitate the development of formal institutions associated with liberal democracy. Prior to Welzel (2014), various studies used "self-expressive values" to demonstrate the effect, or lack thereof, of human empowerment on democracy (Inglehart & Welzel, 2005, 2006; Abdollahian, 2012; Dahlum & Knutsen, 2017). Welzel (2014) however, argues that this variable is inferior to emancipative values since it has lower

measurement quality, is less consistently operationalised and less efficient in explaining human empowerment.

Welzel (2014) uses a multilevel regression model to show that emancipative values play a positive and significant role in the critical-liberal desire for democracy. He specifically uses the critical-liberal desire for democracy variable since it not only accounts for the way in which citizens define liberal democracy but also the ability of citizens to critically assess the quality of democracy. In nearly all societies, even under authoritarian regimes and irrespective of the prevailing level of emancipative values, a strong universal desire for democracy exists (Klingemann, 1999; Inglehart, 2003; Welzel, 2014). Citizens with stronger emancipative values, however, typically define democracy in a more unequivocal manner in liberal terms but also have high assessment standards that enable them to critically evaluate the quality of democracy. Welzel (2014, p.308) further notes that "When one couples people's desires for democracy with emancipative values, one enhances the predictive power with respect to a society's actual level of democracy from 30 to 70 percent." This is only the case when a qualified critical-liberal measure of democracy is used (Qi & Shin, 2011), indicating that widely shared emancipative values are crucial to develop, sustain, and improve liberal democracy.

A recent study by Runk et al. (2020) explores this finding and, using a panel of 109 countries, shows empirically that cultural values predict and lead to the development and sustainability of a democratic society.[2] The authors note that this finding implies that a change in societal values could either be beneficial or pose a threat to currently stable democracies as well as developing democracies (Welzel, 2020). Brunkert et al. (2019) show graphically that liberal democracy as measured by the V-Dem Liberal Democracy index, an advanced democracy variable, is positively correlated with emancipative values.[3] The authors also show that the global trend of democratisation has slowed down since the 2000s and points to some recent indications of partial reversal as democratic trends start to backslide (Crouch, 2016; Loughlin, 2019).

Bluhdorn (2020) corroborates and even goes as far as to state that the development of democracy takes the form of a parabola. He notes that "an illiberal, anti-egalitarian and authoritarian transformation of democracy evolves at an apparently unstoppable pace" (Bluhdorn, 2020, p.391). Classifying a society as democratic does not necessarily imply that sound liberal democratic institutions are implemented. Being classified as a democracy does not guarantee that the state will be capable, accountable, and transparent, that citizens can enforce constraints on the executive, nor does it ensure that the judiciary will be

[2] The Runk et al. (2020) study focusses on the effect of cultural values on democracy whereas this study determines the effect of the right kind of education, that fosters emancipative values and critical-liberal orientations, on liberal democracy.

[3] The results are shown according to the cultural zones as categorised by the World Value Survey. For more information on the World Value Survey cultural zones, please refer to http://www.worldvaluessurvey.org/WVSContents.jsp?CMSID=Findings as well as to Appendix A Table A.1 of this paper for the classification of countries by cultural zones.

independent. He attributes the recent partial reversal of the democratic trend to these dysfunctionalities of democracy that led societies to lose confidence in democratic institutions.

Kirsh and Welzel (2017, 2019) show that the understanding of what democracy entails remains ambiguous even in societies that support democracy. He explains that the general understanding of democracy comprises a contradictory mix of authoritarian and liberal notions. The former leads to a reversal in the support for democracy and strengthen the support for autocracy. A citizenry with an embedded emancipative mindset is crucial to avert such reversals; they would define democracy in a more unequivocal manner in liberal terms and have high assessment standards to critically evaluate the quality of democracy (Welzel, 2014). This also emphasises the importance of measuring democracy so that it distinguishes societies that develop and sustain representative, liberal democracy from those that under the guise of democracy practise institutions that are not necessarily in line with its intent and values.

From the literature, we can conclude that although education is a necessary condition for liberal democracy, it is insufficient. Education by itself does not offer enough support to liberal democratisation, but the kind and quality of education that improves human empowerment by fostering emancipative values does seem to matter for liberal democracy. Just how the *kind* or *quality* of education may affect the political institutions that emerge in a society is, however, mostly lacking in the literature, at least in the empirical sense (Sandborn & Thyne, 2014; Sommers & Marian, 2019). This paper attempts to provide some empirical validity to the theoretical notion that education thus qualified is a crucial element in the human empowerment mix that drives – if not guarantees – liberal democracy.

3. Theoretic model description

Even though the focus of this paper is to establish the effect of human empowerment on political institutions, specifically democracy, other interesting avenues are also explored. The model is constructed systematically in three stages in which different hypotheses are tested. The first hypothesis is that the extent of human empowerment, also regarded as representative of a society's informal institutions inasmuch as it represents prevailing norms and values, will positively affect the quality of democracy in a society. As a society becomes more empowered (that is, educated and emancipatively minded), we expect citizens to have higher assessment standards that enable them to critically evaluate and improve the quality of democracy (Welzel, 2014; Kirsh & Welzel 2017, 2019). Furthermore, the study tests whether the degree of freedom that citizens have to trade with foreigners, which signals how open the trade conduit and legislators are for influence from outside countries' borders, will improve the progressiveness of political institutions. The rationale behind exploring freedom to trade is that it translates into how open the channel of influence or transmission is (Bittencourt, 2013). A high degree of openness may thus permit the transmission or diffusion of various institutions between trade partners to again improve the quality of democracy (Sanborn & Thyne, 2014).

Olsson and Hibbs (2005) find strong evidence for Jared Diamond's (1997) thesis that countries' geographical and biological traits have a direct, significant effect on economic development, measured as the log of GDP per capita, if not on democracy per se. Spolaore and Wacziarg (2013) then show that it is in fact geography that matters more than biological factors for economic development; the study however adds the qualification that the human traits of a society also matter.

Welzel (2014) similarly relies on countries' geographic traits in what he calls the source theory but links these traits with the likelihood that emancipative values and democracy would have emerged from them. He proposes that certain exogenous environmental conditions summarised in what he calls the Cool Water Index were instrumental in the early evolution of human empowerment, which spurred lasting advancements in cool-water regions over regions less favourably endowed in terms of water autonomy and disease security. He argues that these two cool-water traits – water autonomy and disease security – are "two natural forms of existential security and existential autonomy, both of which bestow freedoms and initial utility that is otherwise lacking" (Welzel, 2014, p.335). Both traits choke off possible channels of dependency and exploitation, cultivating the egalitarian type of society compatible with democratic ideals. It therefore follows that these environmental controls should be included in the model. The second part of this study focuses on testing whether geographic traits have a significant effect on the quality of democracy. The analysis incorporates indices that control for geographic traits to determine the effect of these, together with informal institutions and trade openness, on the government regime.

Third, the analysis tests whether the regime types prevailing in neighbouring countries affect the quality of the government regime within a specific country. Brinks and Coppedge (2006) show that diffusion takes place as countries are inclined to change their political regime to be in line with their neighbouring countries in what they call neighbouring emulation. Houle et al. (2016), however, show that this is only the case with democratisation. Nonetheless, studies agree that this spill-over effect, or democratic domino theory, demands the inclusion of spatial variables in any analysis that attempts to model democratisation or regime type to avoid under specification (Chun et al., 2016; Coppedge et al., 2016; Goldring & Greitens, 2020).

This study also aims to determine the probability of different regime types occurring given various levels of human empowerment and trade openness. In the analysis, a distinction is made between parliamentary and presidential democracy instead of aggregating the different forms of democratic constitutions into a single category.

4. Research Method

4.1 Dataset and country description

This analysis uses data from the V-Dem Institute, Penn World Table (PWT), World Values Survey (WVS), World Development Indicators (WDI), Fraser Institute, Olsson and Hibbs data index as well as the Bjørnskov-Rode regime data. Since the WVS was first introduced only in 1981 this study makes use of data

ranging from 1981 to 2015[4]. The study furthermore includes 105 countries of which 47 are high-income countries, 33 upper-middle countries, 18 lower-middle, and 7 low-income countries[5]. All variables used in the system GMM estimation are standardised with a mean of zero and a standard deviation of 1 for ease of interpretation and comparison.

4.2 Variable selection

4.2.1 Government regime

The Liberal Democracy Index (*libdem*) from the V-Dem Institute is used as the measure of effective, liberal democracy in a society and is defined as follows: "The V-Dem Liberal Democracy Index scores the strength of democratic institutions from weak to strong (0-1). The index aggregates variables across several dimensions, including suffrage rights, clean elections, equality before the law, constraints on the executive, and freedom of association and expression" (Our World in Data).[6] The Liberal Democracy Index is multidimensional and constructed by employing advanced methodology rendering it more comprehensive and sophisticated than previous indicators by Freedom House and the Polity Project of the Center for Systemic Peace. The measure does not only extensively account for electoral, participatory, and liberal components but is constructed such that these elements are represented equally by not allowing the strength of one element to balance out the weakness of another (Brunkert et. al, 2019).

The Bjørnskov-Rode regime data follows the methodology of Cheibub, Ghandi, and Vreeland (2010) to classify countries according to their regime type (*regime*)[7]. The regime-category variable classifies each country as either a parliamentary democracy, mixed democracy, presidential democracy, civilian autocracy, military dictatorship, or a royal dictatorship.

4.2.2 Human empowerment

Previous studies have shown that merely using school enrolment to proxy education is insufficient and that a measure that encapsulates the quality of education will be more suitable to test whether education supports liberal democracy (Dahlum & Knutsen, 2017; Sommers & Marian, 2019). The measure that will be representing education in this study is the Human Capital Index (*hci*) from the Penn World Table 9.1.[8] The Human Capital Index is considered a comprehensive measure since it incorporates a qualitative dimension through not only providing information on the average years of schooling but also encompassing the returns on education.

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[4] The seventh wave of the World Value Survey commenced in mid-2017 and will be concluded in 2021 and does therefore not form part of this analysis.
[5] Refer to Appendix Table A.1 for a list of countries included.
[6] Refer to the Center for Systemic Peace; V-Dem Institute; Our World in Data; Inglehart *et al.* (2014) and Welzel (2014) for details on the composition of the variable. The Liberal Democracy Index data is available for download at https://doi.org/10.23696/vdemds20.
[7] Regime type data is available for download at http://www.christianbjoernskov.com/bjoernskovrodedata/
[8] The Human Capital Index data is available for download at www.ggdc.net/pwt

The emancipative value index will be sourced from the World Value Survey database that studies (in waves) how values change and the impact thereof. Wave 1 was conducted from 1981 to 1984; Wave 2 from 1990 to 1994; Wave 3 from 1995 to 1998; Wave 4 from 1999 to 2004; Wave 5 from 2005 to 2009, and Wave 6 from 2010 to 2015. Wave 7 has commenced in 2017 and will be concluded in 2021. The findings for the 105 WVS countries included in this study were interpolated as far as possible and sensible to populate time series across the entire WVS time range and the first six waves, from 1981 to 2015.

Welzel (2014) describes emancipative values as "the mindset that arises as human empowerment proceeds" (Welzel, 2014, preface p.xxv) and these orientations improve as individuals not only gain control over the skills and tools they acquire but also the opportunities and choices that they encounter. The 12-item emancipative value index (*evi*) aims to represent both freedom of choice as the liberal aspect of emancipation, as well as equality of this freedom and opportunity as the egalitarian aspect. The index is constructed based on four main categories, each comprising three subsections to incorporate all facets of emancipative orientations. The first category is *autonomy* that speaks to how highly individuals value independence; second, the index considers *choice*, which measures the degree of freedom and acceptability of making one's own decisions. The index thirdly includes an *equality* category that specifically focuses on an individual's emphasis on gender equality and lastly, *voice,* which speaks to freedom of speech and whether citizens consider the voice of the people as valuable to steer the course of society (Welzel, 2014).[9]

The human empowerment index (*hum_emp*) is constructed by multiplying the human capital and emancipative value indices to represent the education-augmented, critical and independent mindsets that are associated both with empowered individuals and with liberal democracy; it therefore reflects both the cognitive and cultural resources that would support modern individualism and empowerment.

4.2.3 Trade openness

The notion of trade openness is represented by the Fraser Institute measure, Freedom to Trade Internationally (*fit*). This index is one component of a broader index comprising five elements that collectively represent state capacity. The Freedom to Trade sub-index represents the degree of freedom that citizens have to trade with foreigners, hence also how open the trade conduit is for influence from outside countries' borders. It includes tariffs and other trade barriers such as the cost of exporting or importing, but it also contains information on black-market exchange rates. Lastly, it reflects the control of movement of not only capital but also of people. The index ranges between 0 and 10 with a high index value indicative of a high level of freedom to trade or openness.

[9] Refer to Welzel (2014) Online Appendix p. 20-29 for a detailed description of the index composition available at http://www.cambridge.org/cl/download_file/473755/. The Emancipative Values Index is available for download at http://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp

4.2.4 Geographical conditions

Three different variables are considered to control for the physical characteristics of a country. First, the time-invariant cool-water index (*coolwi*) is obtained from the World Value Survey (Inglehart et al., 2014; Welzel, 2014). The cool-water index contains information such as colder temperature that positively affects disease control, land productivity, and labour productivity. The index also includes rainfall patterns which again affect land productivity and influence the quality of water sources as well as the accessibility of navigable waterways which leads to the democratisation of market access and enables easier exchange. These scores, therefore, reflect the degree of geographic advantage afforded by the disease security and water autonomy associated with cool-water conditions. The cool-water advantage is thus associated with existential security and hence individual agency and existential autonomy that may have cultivated technological advancements, which in turn support human empowerment.

Since accelerated progress associated with the cool-water index is transmitted through the human empowerment fostered by these favourable conditions, it may be useful to also investigate whether there is direct transmission from the environmental conditions of a country to its rapid advancement in the manner proposed by Diamond (1997). To explore this, various geographical and biological traits from the Olsson and Hibbs dataset are used to create time-invariant indices that represent the geographical (*geo_cond*) and biological (*bio_cond*) conditions of each country. The biological traits include information about the preneolithic country endowment of domesticable animals and plants whereas the geographical traits include information about the country size, axis, latitude, and climate.[10]

4.2.5 Spatial government regimes

The Bjørnskov-Rode regime dataset includes information on the regime type of a country's geographical neighbours. The spatial democracy variable measures the average of the democracy score of the country of interest's neighbouring countries, where the democracy score is a binary variable classifying a country as either democratic or autocratic based on a simplified criterion.[11] The spatial democracy variable ranges between 0 and 1 with 1 indicating that the neighbouring countries are predominantly democratic. An alternative measure to spatial democracy included in this study is spatial electoral that measures the average of the neighbouring countries electoral, where electoral captures to what degree multi-party competition exists.

[10] Biological traits include the number of annual or perennial wild grasses and the number of domesticable big mammals and the geographical traits include absolute latitude; climate suitability to agriculture; the rate of East–West orientation; the size of the landmass in millions of square km. Traits are obtained from the Olsson and Hibbs (2005) dataset available for download at https://sites.google.com/site/econolaols/data. The biological and geographical indices are constructed from these traits using Principle Component Analysis (PCA) following Olsson and Hibbs (2005) and Spolaore and Wacziarg (2013).

[11] According to Bjørnskov-Rode: "A country is defined as democratic, if elections were conducted, these were free and fair, and if there was a peaceful turnover of legislative and executive offices following those elections." Electoral is measured in the following way: "No elections=0, Single-party elections=1, non-democratic multi-party elections=2, democratic elections= 3". Data available at http://www.christianbjoernskov.com/bjoernskovrodedata/.

4.2.6 Control variables

Following previous studies, all the regressions control for both income and population size (Acemoglu et al., 2005; Castelló-Climent, 2008; Apergis & Payne, 2017; Dahlum & Knutsen, 2017). GDP per capita is in constant 2011 prices, based on purchasing power parity and converted to international dollars and represented by *gdppc*, while the size of the population is denoted by *pop*. Both control variables were sourced from the World Development Indicators database.[12]

4.3. Descriptive statistics

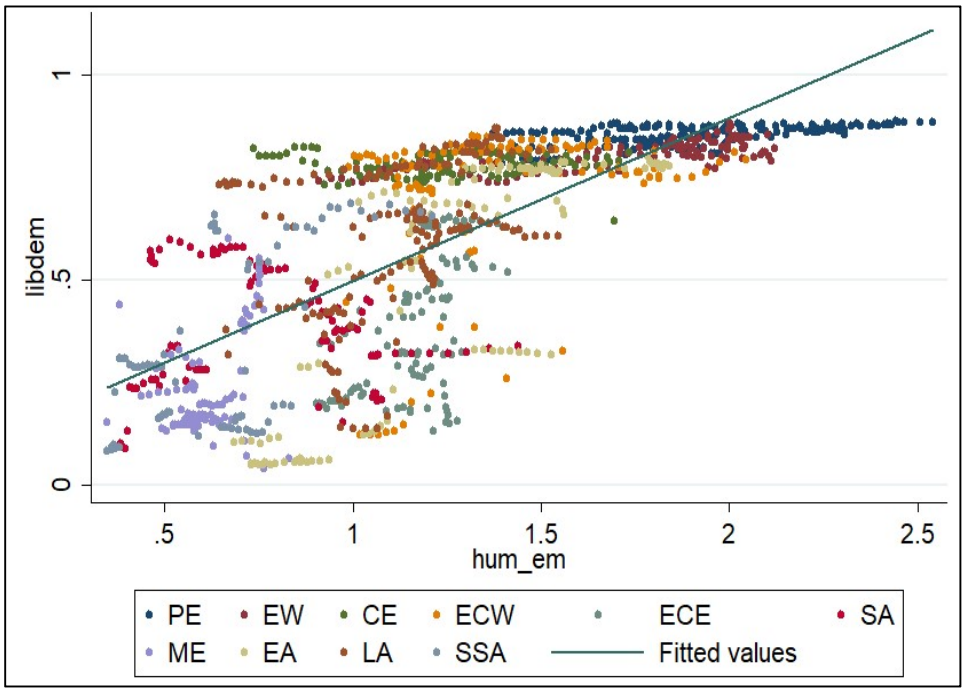
Table 1 Summary of descriptive statistics, all countries, 1981 to 2015

Variable	Obs	Mean	Std. Dev.	Min	Max
libdem	3 504	0.45	0.29	0.02	0.90
hci	3 169	2.50	0.68	1.03	3.81
hum_emp	1 235	1.25	0.47	0.35	2.54
ftt	2 905	6.86	1.87	0	9.85
geo_cond	2 941	0.27	1.03	-1.50	2.18
bio_cond	2 942	0.38	0.98	-0.90	1.26
coolwi	3 636	0.31	0.17	0.04	0.72
spatial_democracy	3 672	0.53	0.37	0	1
spatial_electoral	3 672	2.16	0.80	0	3

Table 1 depicts the summary statistics for the variables of interest. The Liberal Democracy Index, *libdem*, by construction, ranges between 0 and 1 with an average of 0.45 over the sample period. Clustered in the upper tail is the Protestant European and English Western countries with mean values of 0.85 and 0.81, according to the World Values Survey Cultural Zones. The Middle Eastern and Sub-Saharan African countries can predominantly be found grouped at the lower tail with mean values of 0.17 and 0.27, respectively. The human empowerment variable, *hum_emp*, with a mean value of 1.25 over the sample period, echoes this pattern. The Protestant European and English Western countries are clustered in the upper tail with mean values of 1.88 and 1.71. The Middle Eastern and Sub-Saharan African countries are grouped at the lower tail with mean values of 0.62 and 0.65 correspondingly. This is illustrated in Figure 1 that graphs the Liberal Democracy and the Human Empowerment variable by the World Values Survey Cultural Zone over the sample period.

[12] WDI data is available for download at https://databank.worldbank.org/source/world-development-indicators

Figure 1 **Liberal Democracy and Human Empowerment, by World Values Survey Cultural Zones for all sample countries, 1981 to 2015**



The freedom to trade, spatial democracy, and spatial electoral variables, taking mean values of 6.86, 0.53, and 2.16, again reiterate this pattern. Protestant European and English Western countries are clustered at the upper end of the spectrum and Middle Eastern and Sub-Saharan countries are predominantly less open and surrounded by neighboring countries with primarily low democracy scores. The geographical and biological conditions have mean values of 0.27 and 0.38 with no indication of clustering by cultural zones. The cool-water index, however, again shows the same clustering pattern observed with the other variables. This may be due to the cool-water advantage that may have cultivated individual autonomy and agency, accelerating both technological advancements and human empowerment.

4.4. Pairwise correlation analysis

Table 2 depicts the pairwise correlation analysis to determine the relationship between all the variables included in this study. We would expect the correlation coefficient of the lagged dependant variable, the natural logarithm of liberal democracy, to be persistent over time. Since the correlation coefficient, ρ = 0.9863, tends to unity we can infer that liberal democracy shows a high level of persistence over time. We would expect both the variables representing informal institutions and the component of formal rules reflecting societies' openness to outside influence, namely the human empowerment (*lhum_emp*) and freedom to trade (*lfit*) indices, to be positively correlated with liberal democracy. The two correlation coefficients (ρ = 0.6671 and ρ = 0.5032) are in line with this hypothesis.

Table 2 Pairwise correlation results for the variables of interest

	llibdem	*L_ llibdem*	*lhci*	*lhum_emp*	*lftt*	*geo_cond*	*bio_cond*	*coolwi*	*spatial democracy*	*spatial electoral*
libdem	1.0000									
L_llibdem	0.9863 0.0000	1.0000								
lhci	0.6204 0.0000	0.6180 0.0000	1.0000							
lhum_emp	0.6671 0.0000	0.6591 0.0000	0.9124 0.0000	1.0000						
lftt	0.5032 0.0000	0.5090 0.0000	0.5736 0.0000	0.5471 0.0000	1.0000					
geo_cond	0.0573 0.0000	0.0595 0.0000	0.2260 0.0000	0.1398 0.0000	0.2334 0.0000	1.0000				
bio_cond	0.0767 0.0000	0.0792 0.0000	0.2605 0.0000	0.0745 0.0000	0.2239 0.0000	0.6589 0.0000	1.0000			
coolwi	0.5818 0.0000	0.5829 0.0000	0.7409 0.0000	0.7536 0.0000	0.4446 0.0000	0.3123 0.0000	0.4600 0.0000	1.0000		
spatial democracy	0.6415 0.0000	0.6346 0.0000	0.5557 0.0000	0.6159 0.0000	0.3484 0.0000	-0.0070 0.7088	-0.0158 0.4008	0.5631 0.0000	1.0000	
spatial electoral	0.6365 0.0000	0.6285 0.0000	0.5593 0.0000	0.5506 0.0000	0.4072 0.0000	-0.0377 0.0445	-0.0814 0.0000	0.4877 0.0000	0.9121 0.0000	1.0000

The correlation analysis between the physical traits of a country, *geo_cond* and *bio_cond*, and liberal democracy yields correlation coefficients of $\rho = 0.0573$ and $\rho = 0.0767$. This aligns with the expectation that exogenous physical traits should not affect the quality of democracy. The cool water index does, however, seem to be correlated with liberal democracy ($\rho = 0.5818$); this may be attributed to the link between the index and existential autonomy, which in turn is associated with human empowerment. Both spatial variables are strongly positively correlated with liberal democracy ($\rho = 0.6415$ and $\rho = 0.6365$) as anticipated and are consistent with expectations. Even though pairwise correlation analysis might give initial insights into the direction and strength of the relationship between the variables, more sophisticated analyses are needed to establish whether there is evidence to suggest causal relationships.

4.5. Empirical model specification

The initial dynamic model specification is depicted in equation 1:

$$llibdem_{it} = \beta_0 + \beta_1 llibdem_{i,t-1} + \beta_2 (lhum\_emp)_{it} + \beta_3 lftt + \beta_4 pop + \beta_5 gdppc + \mu_i + \lambda_t + v_{it} \quad (1)$$

The model is subsequently augmented by first adding the physical traits variables, and secondly the spatial variable:

$$llibdem_{it} = \beta_0 + \beta_1 llibdem_{i,t-1} + \beta_2 (lhum\_emp)_{it} + \beta_3 lftt_{it} + \beta_4 geo\_cond_{it}$$

$$+ \beta_5 bio\_cond_{it} + \beta_6 spatial\_democracy_{it} + \beta_7 pop + \beta_8 gdppc + \mu_i + \lambda_t + v_{it} \quad (2)$$

The dynamic term is included in the specification to model the persistence of democracy over time. Liberal democracy is a function of human empowerment represented by *hum_emp*. The human empowerment variable embodies the notion of quality of education augmenting and fostering the emancipated, critical thinking needed for and associated with liberal democracy. Freedom to trade internationally (*ftt*) is added to the regression as it reflects the openness to trade and influence of a country that may affect the level of democracy in a society. Similar to preceding studies, all the regressions control for both the population size as well as income, indicated by *pop* and *gdppc* respectively.

In equation 2, the model is estimated in a stepwise fashion by systematically adding the physical conditions variables *geo_cond* and *bio_cond* to test whether these conditions affect the level of democracy in a society. The spatial variable is then added to test the effect of neighbouring countries' political regimes on a specific country. μ_i represents the unobservable country-specific effect, λ_t the time-effect, and v_{it} represents the stochastic disturbance term. As an alternative to *geo_cond* and *bio_cond*, to account for the geographical conditions, *coolwi* is also considered. In addition to using *spatial_democracy* to measure the government regime in neighbouring countries, the study also tests the impact of *spatial_electoral*.

Table 3 Hausman Test Results

Null Hypothesis	Dynamic Model	Static Model
H_0: $E(X_{it} \mid u_{it}) = 0$	$\chi^2(5) = 347.99$	$\chi^2(4) = 14.81$
Inference	Reject H_0, p-value < 0.0000	Reject H_0, p-value < 0.0051

Table 3 depicts the Hausman (1978) test for endogeneity for both the dynamic and the static model represented by equation 1. From table 3 we cannot reject the null of exogeneity and therefore conclude that endogeneity is present, originating not only from the dynamic term. This implies that there is a correlation between at least one of the regressors and the unobserved country effect which may result in biased and inconsistent estimators. Given that the average number of observations per group does not exceed 30 due to the limited data availability of the variables included, the analysis will have to utilise instrumental variables to ensure unbiased and efficient estimators. Finding effective and appropriate external instruments may prove unfeasible; resorting to methods proposed by Arellano and Bond (1991) and Blundell and Bond (1998) may be more viable options.

Arellano and Bond (1991) propose a first difference model (difference GMM) to counter the problem of endogeneity by using the lags, in their level form, as internal instrumental variables. The differencing

procedure does not only get rid of individual effects but effectively deals with endogeneity. When the lagged dependent variable is persistent, however, the lagged levels will have little explanatory power and variation resulting in weak-instrument bias. Arellano and Bover (1995) continue to show that there are indeed more moment conditions for the dynamic model than previously proposed. Blundell and Bond (1998) refine and extend this idea by formalising these assumptions and using Monte Carlo simulation experiments. They show that in addition to using lagged levels of the variables for the model in the first difference, the lagged differences of the variables can be used as instruments for the model in levels. They show that this system GMM procedure not only produces efficiency gains over the difference GMM in the case of persistence in the lagged dependent, but also deals effectively with time-invariant variables such as *geo_cond*, *bio_cond* and *coolwi*.

Judson and Owen (1999), through the use of Monte Carlo experiments, compare the efficiency, bias and RMSE for various estimators and find that for unbalanced panels with a relatively short time span, the system GMM model performs the best. Hence, due to the problem of endogeneity, the persistence of liberal democracy, the inclusion of time-invariant variables in the model, and the relatively small timeframe relative to the sample size, the system GMM estimator is considered most appropriate for this analysis.

Two-step system GMM estimates are known to have standard errors that are downward biased, therefore robust standard errors are reported in all regressions by invoking the Windmejier (2005) correction. Post-estimation diagnostics are reported to investigate the presence of first-order serial correlation. The failure to reject the null of no first-order serial correlation may result in consistent but inefficient estimates and biased standard errors from which inference cannot be made with confidence. The robust Hansen and Difference-in-Hansen tests for overidentification restrictions are also reported to test the validity of the instrument sets. In this case, failure to reject the Hansen statistic may suggest too many instruments which, although it increases the efficiency of the estimates, introduces bias. Time effects are jointly statistically significant and are included in all regressions but are not reported due to space limitations.

A probit analysis then concludes the section, in which the post-estimation marginal effect results are tabulated and discussed. This provides some insight into the probability of observing a specific government regime type, given different levels of the various explanatory variables.

5. Empirical results

5.1 The role of human empowerment and trade openness

Table 4 contains estimated results for the model specified in equation (1). The first model in Table 4, reported in column (1) is in line with the contesting findings of Acemoglu et al. (2005, 2008) that education (by itself) is not a strong determinant of democracy. This is evident from the weak significance of *hci* and by the insignificance of *hci* once any additional explanatory variables are included. The analysis, however, finds that that education-augmented emancipative mindsets do matter for liberal democracy. This is in

agreeance with the outcomes of Runk et al. (2020), Brunkert et al. (2019) and Welzel (2014) showing that cultural values indeed have a crucial role to play. It can be seen in regression (2), which depicts a positive relationship between *hum_emp* and *libdem* at a 1% level of statistical significance.

A 1 per cent increase in human empowerment leads to a 0.46 per cent increase in liberal democracy.[13] This result suggests that an educated, emancipatively-minded society with a critical-liberal mindset is both cognitively and culturally empowered to mobilise towards more representative government and better quality of democracy. Thus the right kind and quality of education, which fosters emancipative values and individual empowerment, matters crucially for the political institutions that emerge in a society. This finding implies that sustained shifts in the quality of education or mass societal values could either advance or threaten liberal democracy.

Regression (3) includes the variable representing freedom to trade, together with human empowerment, to determine the effect of openness to outside influences, in addition to informal institutions, on liberal democracy. The relationship between both human empowerment and freedom to trade with liberal democracy is both positive and statistically significant. The coefficient of freedom to trade can be interpreted as a 1 per cent increase in freedom to trade leads to a 0.19 per cent increase in liberal democracy. This implies that countries with an open channel of transmission, of both capital and labour and hence presumably also technology and ideas, experience a higher degree of influence and of diffusion of various institutions among trade partners to again aid the diffusion of democracy (Sanborn & Thyne, 2014). Hence, opening the channel of transmission in addition to cultivating human empowerment through the right kind of education may have a significant impact on the political institutions of a society. It can be noted, that the ratio of the coefficients of human empowerment to trade is approximately three to two implying that human empowerment seems to bear more weight in explaining liberal democracy than openness to trade. This also implies that the informal rules of society that emerge from education and cultural values overshadow the impact of formal rules of society like the freedom to trade internationally.

[13] The standard deviation for *lhum_emp* and *llibdem* is 0.4149 and 0.8955 respectively, the following steps were followed to translate a *standard deviation* change into a *unit* change:
1 standard deviation increase in *lhum_emp* → 0.213 standard deviation increase in *llibdem*
0.4149 units increase in *lhum_emp* → 0.213 * 0.8955 units increase in *llibdem*
1 unit increase in *lhum_emp* → 0.213 * 0.8955/0.4149 units increase in *llibdem*
1 unit increase in *lhum_emp* → 0.4597 units increase in *llibdem*
Given that both variables are expressed in natural logarithmic terms, this translates to:
1% increase in *hum_emp* → 0.46% increase in *libdem*.

Table 4 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS-GMM	(2) SYS-GMM	(3) SYS-GMM
L.llibdem	0.900***	0.544***	0.699***
	(17.33)	(5.65)	(5.51)
lhci	0.0580*		
	(1.78)		
lhum_emp		0.213***	0.121**
		(3.82)	(2.02)
lftt			0.088*
			(1.81)
pop	-0.005	-0.005	-0.002
	(-0.36)	(-0.08)	(-0.06)
gdppc	-0.010	-0.002	-0.024
	(-0.97)	(-0.06)	(0.93)
constant	0.158***	0.071	-0.001
	(3.54)	(0.47)	(-0.01)
N	2303	1027	989
AB(2)	0.853	0.719	0.463
Hansen	0.036	0.110	0.149
Diff-in-Hansen	0.037	0.044	0.203

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.
t-statistics based on robust standard errors.
Time effect are included in all estimations; all variables are standardised with mean zero and standard deviation of one.
l preceding a variable indicates the natural logarithmic transformation.

Freedom to trade is an important ingredient but represents only one aspect of formal rules. Therefore, formal rules, independent of any specific regime type and which translate into state capacity, are another determinant of liberal democracy worth exploring. Roberts (2005) finds that improved formal institutions strengthen state capacity and keep the state accountable to adhere to rules, which is expected to translate into improved quality of democracy. O'Donnell (1996) however argues that informal institutions outperform formal institutions, especially in emerging democracies, since laws and rules do not always materialise through enforcement (Bratton, 2007). To test this hypothesis, a number of more comprehensive indicators representing formal rules, independent of the regime type, were alternatively included in the analysis to examine the effect of state capacity, together with human empowerment, on liberal democracy.[14] Interestingly, both the Fraser Institute indices and the World Governance Indicators, as well as the Heritage Foundation indices (and various combinations thereof) pertaining to state capacity were not significant while human empowerment remains a strong determinant. According to results reported in Appendix B, there is no evidence that state capacity per se (the formal rules of society) is a statistically significant causal

[14] Refer to Appendix B, Tables B.1 to B.3 for regression results including comprehensive measures of state capacity.

factor for democratic outcomes. This seems unexpected, but a closer scrutiny of the data may shed some light on why this may be the case.

When one considers some of the Fraser Institute indices such as legal system and property rights, sound money or regulatory quality, one finds that Hong Kong ranks first and Singapore second on measures of state capacity despite not being considered liberal democracies. South Korea is another noteworthy example of a country that ranks high on the state capacity scale yet is not perceived as a liberal democracy. When the analysis is repeated without these clear outliers, however, state capacity remains insignificant. The Heritage Foundation indices and the World Governance Indicators again tell a similar story. Countries with weak state capacity however tend to consistently perform poorly on the liberal democracy scale. From this, we deduce that weak state capacity is detrimental for democracies, but that sound formal institutions and rules (state capacity) do not necessarily translate into progressive political institutions, or liberal democracy. The strong driver for progressive and liberal political institutions seems to be human empowerment comprising the cognitive characteristics and internalised cultural values of individuals in a society.

5.2 The role of geographical conditions

In Table 5, the model gets extended beyond only including informal institutions and freedom to trade, by adding physical conditions of countries as control variables. Regression (1) is a replication of regression (3) in Table 4, included as reference. Regression (2) isolates geographical conditions, regression (3) biological conditions, and regression (4) includes both. All three estimation results allude to a similar finding; that is, physical conditions, whether it is geographical or biological or both, do not matter for the progressiveness of political institutions whilst informal institutions and openness remain significant determinants. In regression (5), the cool water index is included as an alternative control for geographical conditions. The analysis shows that the cool water index is also insignificant while human empowerment and openness remain significant. This implies that, although physical conditions may have an impact on income as shown by Spolaore and Wacziarg (2013) and reiterated by Welzel (2014), there is no evidence that suggests that physical conditions directly and independently of society's human traits influence the political institutions of a country.

Table 5 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS-GMM	(2) SYS-GMM	(3) SYS-GMM	(4) SYS-GMM	(5) SYS-GMM
L.llibdem	0.699***	0.574***	0.554***	0.564***	0.692***
	(5.51)	(3.84)	(3.63)	(3.72)	(5.35)
lhum_emp	0.121**	0.183**	0.188**	0.184**	0.114*
	(2.02)	(2.47)	(2.52)	(2.48)	(1.90)
lfit	0.088*	0.118*	0.129*	0.125*	0.0884*
	(1.81)	(1.96)	(1.97)	(1.96)	(1.79)
geo_cond		-0.025		-0.012	
		(-0.88)		(-0.41)	
bio_cond			-0.029	-0.021	
			(-1.04)	(-0.76)	
coolwi					0.010
					(0.47)
pop	-0.002	-0.004	-0.007	-0.005	-0.025
	(-0.06)	(-0.07)	(-0.12)	(-0.09)	(-0.07)
gdppc	-0.024	-0.044	-0.046	-0.042	-0.025
	(-0.93)	(-1.02)	(-1.08)	(-0.96)	(-0.91)
constant	-0.001	-0.078	-0.009	-0.071	-0.0709
	(-0.01)	(-0.52)	(0.05)	(-0.48)	(-0.56)
N	989	876	876	876	970
AB(2)	0.463	0.494	0.513	0.506	0.445
Hansen	0.149	0.468	0.445	0.421	0.160
Diff-in-Hansen	0.203	0.418	0.346	0.401	0.470

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.
t-statistics based on robust standard errors.
Time effect are included in all estimations; all variables are standardised with mean zero and standard deviation of one.
p-values for post-estimation diagnostics are reported.
l preceding a variable indicates the natural logarithmic transformation.

5.3 The role of spatial government regime trends

Table 6 studies the effect of the spatial government regime trends on the progressiveness of political institutions in a society by building on the previous results. It may be the case that the neighbouring countries have democratic political institutions, but that the country of interest may or may not have an open channel of influence or transmission, or it can be possible for neighbouring countries to have weak political institutions but because the country of interest is open to influence, they experience a spill-over effect from non-neighbouring countries. It therefore makes sense to include both freedom to trade and the spatial variable simultaneously in the regression even though both relate to the notion of democratic contagion or transmission, whether from trading partners or from neighbouring states. The stance of neighbouring countries' government regime positively and significantly affects the quality of democracy of a country. This may be due to the spill-over effect or inclination of countries to change their political regime to be in line with their neighbours. As countries become more open to trade and to influence, they may tend to adopt various institutions and labour practices from their neighbouring countries, which results in

what is called the 'democratic domino effect'. It can be noted that the results remain consistent irrespective of whether *spatial_democracy* or the alternative measure, *spatial_electoral*, is used. The human empowerment and openness to trade variables also remain positive and statistically significant in all the regressions, while the physical conditions variables consistently remain statistically insignificant.

Table 6 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS-GMM	(2) SYS-GMM	(3) SYS-GMM	(4) SYS-GMM	(5) SYS-GMM
L.llibdem	0.699***	0.544***	0.523***	0.669***	0.658***
	(5.51)	(3.69)	(3.50)	(5.05)	(4.92)
lhum_emp	0.121**	0.145**	0.162**	0.088*	0.094*
	(2.02)	(2.19)	(2.37)	(1.75)	(1.80)
lfit	0.088*	0.125**	0.126**	0.095*	0.094*
	(1.81)	(2.18)	(2.07)	(2.01)	(1.97)
geo_cond		-0.002	-0.003		
		(-0.07)	(-0.10)		
bio_cond		-0.018	-0.012		
		(-0.62)	(-0.44)		
coolwi				0.004	0.006
				(0.16)	(0.25)
spatial_democracy		0.100*		0.081*	
		(1.76)		(1.64)	
spatial_electoral			0.110*		0.093*
			(1.98)		(1.82)
pop	-0.002	-0.006	0.000	-0.003	0.003
	(-0.06)	(-0.11)	(0.00)	(-0.07)	(0.07)
gdppc	-0.024	-0.043	-0.040	-0.021	-0.014
	(-0.93)	(-0.92)	(-0.77)	(-0.70)	(-0.44)
constant	-0.001	0.007	0.037	-0.112	-0.125
	(-0.01)	(0.05)	(0.29)	(-0.70)	(-0.77)
N	989	856	856	926	926
AB(2)	0.463	0.432	0.610	0.406	0.535
Hansen	0.149	0.633	0.656	0.346	0.242
Diff-in-Hansen	0.203	0.765	0.524	0.449	0.219

t-statistics in parentheses: * p<0.11, ** p<0.05, *** p<0.01.
t-statistics based on robust standard error.
Time effect are included in all estimations; all variables are standardised with mean zero and standard deviation of one.
p-values for post-estimation diagnostics are reported.
l preceding a variable indicates the natural logarithmic transformation.

Following previous studies, all the regressions control for both the population size as well as income, but these controls remain insignificant. Standard errors are robust, and the post estimation analysis indicates that the regressions of interest do not suffer from first-order serial correlation, as indicated by the AB(2) test statistic. Furthermore, the robust Hansen test for overidentification restrictions with a null hypothesis of exogenous or valid instruments, cannot be rejected. There is therefore no evidence of instrument proliferation, except for model (1) in Table 4, where we reject the Hansen's null hypothesis that the over-

identifying restrictions are valid. From the Diff-in-Hansen test results it can be inferred that exclusion restrictions are also correctly applied and that instrument subsets are valid.

The analysis has established that human empowerment, freedom to trade and spatial regimes matter for the progressive development of political institutions, while geographical conditions do not, and the effect of formal rules remains ambiguous. The question that now arises is, what is the likelihood of specific political institutions or government regimes occurring given various levels of these drivers? All the countries in the sample are classified as either a parliamentary democracy, mixed democracy, presidential democracy, civilian autocracy, military dictatorship, or a royal dictatorship.[15] The next section focuses on the regime-categories of interest and to determine the probability of either a parliamentary democracy, presidential democracy or civilian autocracy occurring given different levels of human empowerment and openness to trade.

5.4 Probit estimation and marginal effects

Robinson and Torvick (2016) investigate 27 Sub-Saharan African countries to determine the occurrence, as well as the reasons and consequences, of parliamentary and presidential institutions in a society. They find that at the time of independence, 21 countries adopted parliamentarism whilst only 6 countries started as presidential constitutions. Following independence however, parliamentary constitutions have overwhelmingly been switched to presidentialism. The only remaining parliamentary systems in Sub-Saharan Africa are Botswana, Mauritius and South Africa. The other 24 countries in the study either remained presidential (6 countries) or switched to presidentialism (18 countries). The authors argue that presidentialism can lead to reduced checks and balances ("presidential imperialism"), compromise the independence of the judiciary as well as increase corruption (Gerring & Thacker, 2004; Kunicova & Rose-Ackerman, 2005; Gerring et al., 2009). It is, therefore, in the interest of countries that practise parliamentarism to strengthen their political institutions and guard against the common tendency of a constitutional switch to presidentialism in order to protect the quality of the democracy.

Probit coefficients by themselves do not present obvious interpretation, hence marginal effects are commonly reported and analysed. Ordinal probit models are estimated whereafter post-estimation analysis yielded the marginal effects of interest. Table 7 shows these marginal effects at both the mean level of human empowerment and trade openness as well as at the 75th percentile of these explanatory variables. The probability that the stance of the government regime is a parliamentary democracy, given that the levels of human empowerment and trade openness are at their mean values, is 36%. When these explanatory variables are at the 75th percentile level, the probability of a parliamentary democracy increases significantly to 56%.

[15] The probit analysis considers the same 105 countries classified according to the 6 regime categories, the sample size is 1116. Refer to Appendix C, Table C.1 for the ordered probit regression results as only the marginal effects are reported here.

Similarly, the probability of a presidential democracy given that the explanatory variables are at their mean values is 27%. This probability decreases to 17% when the explanatory variables are at the more advanced 75th percentile. The probability of a civil autocracy can be interpreted in the same manner. From the results, it can be inferred that higher levels of human empowerment and increased open channels of trade result in a higher probability of parliamentary democracy and a lower probability of presidential democracy and civil autocracy present in a society.[16] Hence, a country's human empowerment and openness may also have a significant impact on, or at least signal, whether it may lean towards more egalitarian parliamentary democracy, or less egalitarian presidential democracy.

Table 7 Probit post-estimation marginal effects with human empowerment and openness to trade at the mean and 75th percentile.

(Dependent variable: *regime*)

regime	Margins at the means	Margins at the 75th percentile
Parliamentary democracy	0.357***	0.559***
	(22.01)	(30.63)
Presidential democracy	0.268***	0.173***
	(18.01)	(13.86)
Civil autocracy	0.117***	0.050***
	(12.80)	(9.00)

z-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.
z-statistics based on robust standard errors.

6. The South African case

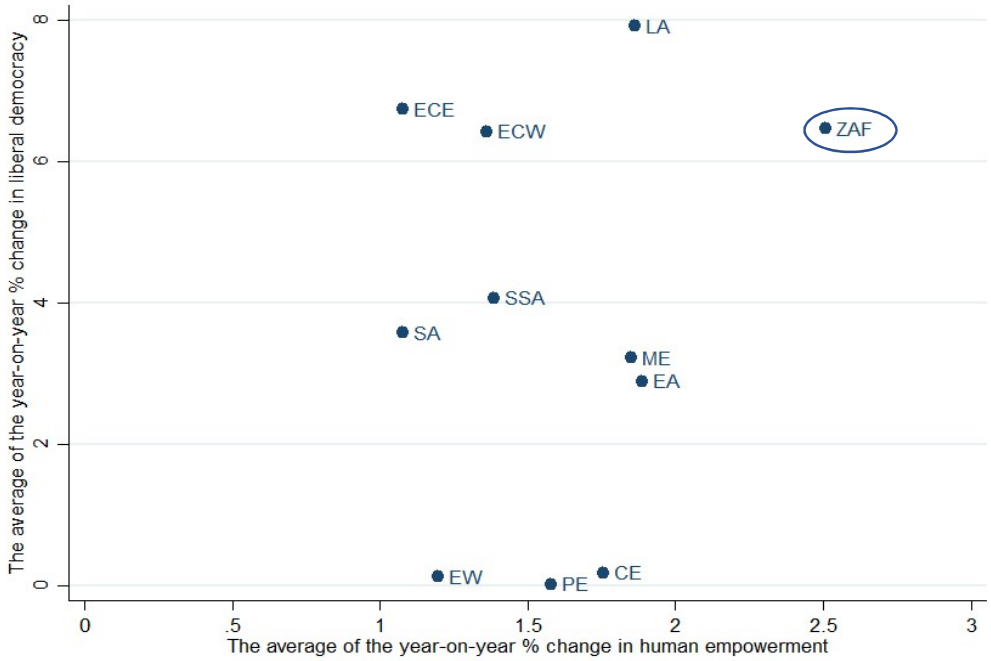
South Africa, as a Sub-Saharan African country that transformed to democracy within the sample period (in 1994) and one of only three Sub-Saharan democracies to remain parliamentary of the 27 in the Robinson and Torvick (2016) study, merits further investigation. Figure 2 shows the average of the annual percentage change in Liberal Democracy and Human Empowerment of South Africa against the World Values Survey Cultural Zones over the sample period. South Africa has evidently made remarkable progress in both the democracy and human empowerment scores when compared to the cultural zone clusters of countries, albeit off a low base.[17]

In 1981, at the start of the sample period when South Africa was still practising the apartheid-regime, the country had a liberal democracy score of barely 0.1 out of 1. After the constitutional transition to a

[16] When the various combinations of *geo_cond, bio_cond,* and *coolwi* as well as *spatial_democracy* and *spatial_electoral* variables are added to the probit analysis, the results are notably similar, and the conclusion remains the same.
[17] It is expected that the English Western, Protestant European, and Catholic European cultural zones show low growth in both the Liberal Democracy Index as well as the Human Empowerment Index as these countries started from high base values.

parliamentary democracy, the index shows a structural break after 1994 when the score jumps to 0.54. During the same period, from 1981 to 1994, South Africa's scores on both the Human Capital Index and the Emancipative Value Index (and hence human empowerment) also increased gradually and proportionally (although from a low base), but not nearly at the rate of change on the Liberal Democracy Index. After the transition to democracy, the Liberal Democracy Index progressively increases up until 2007 when the index value reaches 0.68.

Figure 2 **Average of the annual percentage change in Liberal Democracy and Human Empowerment, by WVS Cultural Zones for all sample countries, 1981 to 2015**



Education appears to be prioritised in South Africa's public policy given the comparatively high proportion of its budget spent on education, yet it offers no assurance of quality. A study by the Centre of Development and Enterprise examining the South African education system from 1994 to 2011 for instance reveals that the educational outcomes are not commensurate with the high levels of education expenditure. Not only did South Africa continuously perform well below average on all international testing, but the study also concludes that most South African scholars cannot properly read, write, or compute at the appropriate levels. Testing of the content knowledge of teachers shows that is not just pupils that struggle, but that many teachers have below-basic knowledge of the curriculum they must teach (Spaull, 2013). If the quality of education is severely compromised on foundation level, it will likely reflect not only in low-quality secondary and tertiary education, but also constrain human-capital development and hence the contribution of education to human empowerment.

Young democracies, such as South Africa, are more vulnerable to corruption, clientelism, and social fragmentation and hence government failure (Keefer & Vlaicu, 2002; Keefer, 2005, 2007). The steady decline of the liberal democracy index after the pinnacle point in 2007 to a low of 0.58 in 2019 may be a forewarning that South Africa's democratic project is under threat. The education system too remains segregated, dysfunctional, and inadequate to properly meet the educational needs of the youth of South Africa (Spaull, 2015). There is a dire need for more well-educated and trained educators with the necessary resources and support to not only transfer content knowledge effectively but cultivate emancipatively-minded, critical-liberal orientated individuals. David (2019, p.90) states that "(i)n assuming the roles and function of the custodians of democracy, schools can position themselves as an embodiment of democracy in context and practice." In the long-run, this will be crucial to sustain liberal democracy; that is, to ensure properly defined and enforced suffrage rights, regulated clean elections, equality before the law, constraints on the executive, and freedom of association and expression. Without detracting from the strides that have been made towards liberty, the inadequacy of the education system to support individual empowerment among the previously excluded majority of South Africans poses a significant threat to the democracy project as the recent decline in the quality of democracy confirms.

7. Conclusion

Lipset (1959) claims that "The higher one's education, the more likely one is to believe in democratic values and support democratic practices. All the relevant studies indicate that education is far more significant than income or occupation…If we cannot say that a "high" level of education is a sufficient condition for democracy, the available evidence does suggest that it comes close to being a necessary condition in the modern world". Although education can be perceived as a necessary condition for democracy, the evidence shows that it is not sufficient (Sandborn & Thyne, 2014; Sommers & Marian, 2019). This study adds to the body of literature by investigating how education may serve as a mechanism for human empowerment on the road to liberal and progressive political institutions. It also explores how sustained shifts in the quality of education *or* mass societal values affect liberal democracy. Not all schooling qualifies as democracy-advancing education; that would be the role of the right *kind* and quality of education, which fosters mind-broadening, independent thinking, and emancipative values. A citizenry with embedded emancipative values is culturally well resourced to develop, sustain, and improve democratic freedom and has high assessment standards allowing them to critically evaluate the quality of democracy.

Nuraan Davids (2019, p.90) states that, "schools, therefore, cannot exist and stand on the side-lines of a democracy; they cannot lay claim to the privileges and rights of a democracy, if they are not prepared to fulfil their collective responsibilities in sustaining and holding that democracy accountable". The purpose of education should not be to reinforce narrow, traditional mindsets that may have outlived their reality-coping value. Education that focuses on expanding world views and broad social integration in a dynamic global environment cultivates critical-liberal, emancipatively-minded individuals that are able to mobilise

towards and sustain progressive, liberal political institutions in a society. Davids (2019, p.90) advises strongly that education should be "bound to democracy - in terms of cultivating it, defending it, and questioning it, when it neglects to serve a public good".

The analyses further determine that the trade openness, a sub-index of formal rules, proves significant in impacting the quality of democracy. When more encompassing regime-independent measures of state capacity are used, formal rules become an insignificant determinant of liberal democracy. From the analysis, it can be concluded that while weak formal institutions (state capacity) are harmful for democracies, sound formal institutions and rules do not necessarily translate into more progressive political institutions, or liberal democracy. This suggests that the informal rules of society that emerge from the interaction between education and cultural values, jointly viewed as human empowerment, dominate the impact of societies' formal rules such as constitutions and regulations. Liberal democracy, it would seem, emerges from the embedded convictions and commitments of the individuals in a society, not by statute.

While geographical conditions seem to matter for income, the study finds no evidence that geographical or biological conditions have a lasting influence on the progressiveness of political institutions. The progressiveness of neighbouring regimes however does seem to influence the quality of democracy of a country. A spill-over effect occurs as countries tend to gauge their political institutions against and align with neighbouring regimes.

The debate regarding what it is that drives progressive political institutions, in particular the education-democracy nexus, has attracted many acclaimed researchers' and academics' attention and the progress has been astounding. There remain various ambiguities, however; further investigation, such as an extensive analysis of the relationship between specific formal rules and the degree of progressivity of political institutions, may yield interesting results. It should also be informative to explore the specifics of what high-quality education entails and to understand more accurately which existing educational approaches effectively promote and develop human empowerment. An analysis after the current Covid-19 pandemic could reveal some fault lines in the foundation of modern democracy and educational systems which may be an avenue worth exploring. Is education "the foundation of democracy and development – in every culture, on every continent" (Bush, USAID, 2005)? Perhaps not all kinds, but mind-broadening, empowering education goes a long way.

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Appendix A

Table A.1 WVS countries according to the ten cultural zones and World Bank income categories

Protestant Europe (PE)	English West (EW)	Catholic Europe (CE)	Ex-Communist West (ECW)	Ex-Communist East (ECE)
All high income	*All high income*	*All high income*	*All high income*	*Upper-middle income*
Denmark	Australia	Andorra	Croatia	Albania
Finland	Canada	Austria	Czech Republic	Armenia
W Germany	Ireland	Belgium	Estonia	Azerbaijan
Iceland	New Zealand	Cyprus	Hungary	Belarus
Netherlands	United	France	Latvia	Bosnia
Norway	Kingdom	Greece	Lithuania	Bulgaria
Sweden	United States	Israel	Poland	Georgia
Switzerland		Italy	Slovakia	Kazakhstan
		Luxembourg	Slovenia	Macedonia
		Malta		Romania
		Portugal		Russia
		Spain		Serbia
				Montenegro
				Lower-middle income
				Kyrgyzstan
				Moldova
				Ukraine
				Uzbekistan

South Asia (SA)	Middle East (ME)	East Asia (EA)	Latin America (LA)	Sub-Saharan Africa (SSA)
High income	*High income*	*High income*	*High income*	*Upper-middle income*
Singapore	Bahrain	Japan	Chile	South Africa
Upper-middle income	Kuwait	South Korea	Trinidad and	*Lower-middle income*
Malaysia	Qatar	Taiwan	Tobago	Ghana
Thailand	Saudi Arabia	Hong Kong	Uruguay	Nigeria
Lower-middle income	*Upper-middle income*	*Upper-middle income*	*Upper-middle income*	Zambia
Bangladesh	Algeria	China	Argentina	Zimbabwe
India	Iran	*Lower-middle income*	Brazil	*Low income*
Indonesia	Iraq	Vietnam	Colombia	Burkina Faso
Pakistan	Jordan		Dominican	Ethiopia
Philippines	Lebanon		Republic	Rwanda
	Libya		Ecuador	Tanzania
	Turkey		Guatemala	Uganda
	Lower-middle income		Mexico	
	Egypt		Peru	
	Morocco		Venezuela	
	Tunisia		*Lower-middle income*	
	Low income		El Salvador	
	Mali			
	Yemen			

Source: World Bank and World Values Survey (Inglehart *et al.* 2014)

Appendix B

The role of state capacity (together with human empowerment, geographical conditions, and spatial trends) on liberal democracy

The notion of state capacity, which is unrelated to a specific political regime, needs to be represented by constructing a formal institutions measure. Four institutional variables are obtained (and combined using equal weights) from the Fraser Institute's Economic and Freedom of the World (EFW) database (*lpr_ftt_reg_sm*). These variables, representing the capability and adherence of the state to rules, are quality of Legal Systems and Property Rights (*lpr*), Freedom to Trade Internationally (*ftt*), Regulatory Quality (*reg*) and Sound Money (*sm*)[18]. A high index value is indicative of a capable state or improved institutional quality. Provided that these rules materialise through enforcement, they would promote state capacity and quality governance independent of regime type. Various combinations of the Economic and Freedom of the World indicators were tested as well as indicators from the World Governance Indicators as well as the Heritage Foundation indices – all remain statistically insignificant.

Table B.1 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS- GMM	(2) SYS- GMM	(3) SYS- GMM
L.llibdem	0.900*** (17.33)	0.544*** (5.65)	0.713*** (5.60)
lhci	0.0580* (1.78)		
lhum_emp		0.213*** (3.82)	0.124** (1.99)
lpr_ftt_reg_sm			0.045 (1.38)
pop	-0.005 (-0.36)	-0.005 (-0.08)	-0.008 (-0.20)
gdpcd	-0.010 (-0.97)	-0.002 (-0.06)	-0.040 (-1.45)
constant	0.158*** (3.54)	0.071 (0.47)	0.032 (0.31)
N	2303	1027	981
AB(2)	0.853	0.719	0.442
Hansen	0.036	0.110	0.334
Diff-in-Hansen	0.037	0.044	0.220

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.
t-statistics based on robust standard errors.

[18] Data from the Fraser Institute's Economic and Freedom of the World (EFW) database is available for download at https://www.fraserinstitute.org/economic-freedom/dataset

Table B.2 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS-GMM	(2) SYS-GMM	(3) SYS-GMM	(4) SYS-GMM	(5) SYS-GMM
L.llibdem	0.713***	0.611***	0.602***	0.607***	0.703***
	(5.60)	(4.26)	(4.15)	(4.20)	(5.43)
lhum_emp	0.124**	0.182**	0.184**	0.182**	0.122*
	(1.99)	(2.47)	(2.50)	(2.48)	(1.94)
lpr_ftt_reg_sm	0.045	0.047	0.052	0.050	0.044
	(1.38)	(1.16)	(1.22)	(1.20)	(1.26)
geo_cond		-0.015		-0.006	
		(-0.60)		(-0.21)	
bio_cond			-0.017	-0.013	
			(-0.78)	(-0.57)	
coolwi					0.007
					(0.31)
pop	-0.008	-0.011	-0.013	-0.012	-0.008
	(-0.20)	(-0.21)	(-0.24)	(-0.23)	(-0.21)
gdpcd	-0.040	-0.058	-0.060	-0.058	-0.040
	(-1.45)	(-1.44)	(-1.58)	(-1.48)	(-1.40)
constant	0.032	0.040	-0.062	-0.065	-0.068
	(0.31)	(0.27)	(-0.41)	(-0.44)	(-0.49)
N	981	872	872	872	962
AB (2)	0.442	0.455	0.464	0.461	0.429
Hansen	0.334	0.586	0.591	0.601	0.438
Diff-in-Hansen	0.220	0.359	0.546	0.356	0.352

t-statistics in parentheses: * p<0.10, ** p<0.05, *** p<0.01.
t-statistics based on robust standard errors.

Table B.3 Two-step system GMM estimation results, 1981 to 2015

(Dependent variable: *llibdem*)

	(1) SYS-GMM	(2) SYS-GMM	(3) SYS-GMM	(4) SYS-GMM	(5) SYS-GMM
L_llibdem	0.713***	0.600***	0.576***	0.693***	0.678***
	(5.60)	(4.39)	(4.21)	(5.38)	(5.21)
lhum_emp	0.124**	0.135**	0.151**	0.091*	0.097*
	(1.99)	(2.24)	(2.38)	(1.88)	(1.89)
lpr_ftt_reg_sm	0.045	0.062	0.063	0.055	0.057
	(1.38)	(1.44)	(1.36)	(1.49)	(1.48)
geo_cond		0.005	0.004		
		(0.18)	(0.15)		
bio_cond		-0.012	-0.006		
		(-0.49)	(-0.27)		
coolwi				-0.003	-0.001
				(-0.11)	(-0.04)
spatial_democracy		0.093*		0.078*	
		(1.73)		(1.64)	
spatial_ electoral			0.108**		0.093*
			(2.02)		(1.86)
pop	-0.008	-0.013	-0.007	-0.009	-0.003
	(-0.20)	(-0.27)	(-0.31)	(-0.23)	(-0.07)
gdpcd	-0.040	-0.064	-0.061	-0.040	-0.034
	(-01.45)	(-1.53)	(-1.31)	(-1.37)	(-1.09)
constant	0.032	-0.067	-0.076	-0.109	-0.121
	(0.31)	(-0.47)	(-0.52)	(-0.68)	(-0.75)
N	981	852	852	918	918
AB (2)	0.442	0.383	0.553	0.382	0.512
Hansen	0.334	0.746	0.629	0.557	0.421
Diff-in-Hansen	0.220	0.698	0.571	0.569	0.333

t-statistics in parentheses: * p<0.11, ** p<0.05, *** p<0.01.
t-statistics based on robust standard error.

Appendix C

The regime-category variable classifies each country as either a parliamentary democracy (0), mixed democracy (1), presidential democracy (2), civilian autocracy (3), military dictatorship (4), or a royal dictatorship (5).

Table C.1 Ordinal probit regression results, 1981 to 2015

(Dependent variable: *regime,* Reference regime: Parliamentary democracy (0))

	Coefficient	Std. Err	z-statistic	Prob*
hum_emp	-1.399	0.104	-13.48	0.000
ftt	-0.098	0.027	-3.68	0.000
N	1116		Wald χ^2	281.47
Pseudo R^2	0.121		Prob>χ^2	0.0000

z-statistics based on robust standard error.