

What Countries Select More Experienced Leaders? The PolEx Measure of Political Experience

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How can we assess which countries select more experienced leaders for the highest office? There is a wide variation in prior career paths of national leaders within, and even more so between, regime types. Obtaining a truly comparative measure of political experience is therefore a challenge and empirical studies have to rely on proxies instead. We propose *PolEx*, a measure of political experience that abstracts away from the details of the career paths and generalises based on duration of experience in politics, its quality, and its breadth. We draw on a novel data set of around 2,000 leaders from 1950 to 2017 and use a Bayesian latent variable model to estimate *PolEx*. We illustrate how the new measure can be used comparatively by addressing the question whether democracies select more experienced leaders. We find that while on average they do, this century the difference with non-democracies has declined dramatically. Future research may leverage *PolEx* to investigate the role of prior political experience in, for example, policy-making and crisis management.

Key Words: political leaders; political selection; political experience; political careers; democracy and dictatorship

One of the central concepts in the study of political leadership, particularly in international relations, is that of individual experience (Bak and Palmer, 2010; Horowitz et al., 2005; Potter, 2007). More experienced leaders are less likely to be tested by adversaries and are often found to handle international crises more competently (e.g., Gelpi and Grieco, 2001). If the July 25, 2019 controversial phone conversation between Donald Trump and Ukrainian President Volodymyr Zelensky—both political outsiders prior to assuming office—is any evidence, less experienced leaders may also be found wanting in their knowledge of diplomatic practice.¹ As the former foreign minister of Russia (1998–2004) Igor Ivanov noted, “a ‘newcomer’ in international politics is usually harder to work with: the lack of experience often translates into inconsistent and unpredictable behavior; it leads to subjective, emotional and at times erroneous decisions ...” (cited in Englund, 2016).

We propose a new empirical measure of political experience at the time of selection into office. Our statistical approach differs from expert qualitative assessments of an outsider status as well as from studies that rely on particular proxies to account for experience, such as leaders’ age (Bak and Palmer, 2010; Horowitz et al., 2005), time in office (Gelpi and Grieco, 2001; Potter, 2007), type of prior career (Horowitz et al., 2005), or that equate specific experience with competence (Yu and Jong-A-Pin, 2016). Instead, we fit a Bayesian latent variable model on a range of experience-related indicators to estimate a new measure of political experience: the *PolEx* (together with associated measures of uncertainty). We provide our estimates for 1,949 national leaders across the world from 1950 to 2017. Our measure accounts for length (years in politics), breadth (experience in formal and informal posts), and quality (types of positions).

Finally, we demonstrate the use of this new measure by addressing the question whether democracies select more experienced leaders than dictatorships. This is not only intrinsically interesting but it also has implications for international security, if we contrast an apparent rise of outsiders across the democratic world with more experienced leadership in such countries as China or Russia.

¹See www.whitehouse.gov/wp-content/uploads/2019/09/Unclassified09.2019.pdf, September 28, 2019.

What Makes a Political Leader Experienced?

Generally speaking, experience is a multifaceted and nebulous term, because it does not only depend on age or positions occupied, but also on various activities and events, as well as the individual's ability to learn from such events. A political leader may be competent across a wide range of activities, including negotiation, mentoring, organisation, persuasion, strategy, and public relations. These skills are acquired in a wide range of different contexts, including social and professional, political and non-political contexts. Different leaders will therefore have built up their arsenal of skills across different experiences in life, moderated by their ability to learn and other innate traits.

Can political experience be measured? We believe that all things being equal, important political skills should be *on average* more developed among individuals who have held senior political posts, or held them longer. For instance, to underline President George Bush (1989–93)'s level of experience, Horowitz et al. (2005, 668) point out that this leader was a “director of the Central Intelligence Agency, an ambassador, and a vice president.” We can look at an individual's political biography and make an informed guess about that individual's level of experience in politics.

A key challenge in identifying the relevant prior experience is to ensure that a measurement remains valid across different regimes. The manner in which one acquires political experience might be very different in a parliamentary democracy than it is in a military junta, but we nevertheless want to be able to compare the levels of experience across all regimes. Democracies may attract more educated leaders (Besley and Reynal-Querol, 2011), while dictatorships may be led by leaders with non-political backgrounds, such as from the military. Clearly, individuals with traits conforming to the norms of their regime will find it easier to progress their political careers. In order to be able to generalise, however, we specifically focus on *political* experience, experience that took place explicitly and primarily in formal politics, not general life experience or leadership experience in the military, corporate sector, and so forth.

While we rely on a *prior-experience* approach to political experience, other perspectives exist. In the international relations literature, scholars often take age as a proxy for experience (Bak and

Palmer, 2010), which we refer to as *age-experience*. Horowitz et al. (2005, 664, 667) point out that older leaders have more experience and more credibility. Nevertheless, the youngest leader of an EU country (32 in 2019), Sebastian Kurz of Austria, had served as Foreign Minister and member of parliament for four years prior to his chancellorship. In contrast, Donald Trump of the US, 70 years old at the time of entering the White House, had no prior political experience.

Another common proxy is *education-experience*. For example, Besley and Reynal-Querol (2011) argue that better education leads to more competent leaders, and demonstrate that democracies select more educated leaders than non-democracies. However, a leader with little education but years of active engagement in the party will have significantly more relevant experience than one who has a professor background, with limited experience outside of academia.

More commonly than age or education, time in office may be used as an explicit proxy for political experience (Gelpi and Grieco, 2001; Horowitz et al., 2005; Potter, 2007). However, a focus on *tenure-experience* ignores prior experience and cannot explain why different regimes select leaders of different levels of experience in the first place.

While the approaches discussed above may account for the general levels of experience, experience may also be more domain-specific (Yu and Jong-A-Pin, 2016). For example, a minister of finance might have *domain-experience* in the finance sector. When making a generic comparison between countries, across regimes, and over decades, a formulation of political experience that is less idiosyncratic is required, however.

In summary, there exists a significant amount of conceptual stretching and proxy-ing for experience and related concepts of age, competence, and tenure in office. Instead, we focus on the experience in actual politics, *prior-experience*, prior to becoming a national leader.

The Data on Political Experience of Leaders

To measure the political experience of leaders across the world, we begin with the *Cursus Honorum* data (Baturu, 2016). We expand the coverage to include more than 450 additional political leaders in office before and after the range of these data, in 1950–59 and 2010–17. The resulting data set includes 1,949 individuals in office from 1 January 1950 to 31 December 2017.

Our goal is to account for both the length of involvement in politics, the breadth, and the quality of such involvement. A key indicator for the length of experience is the number of years in formal politics. This includes years of public service as, among other, a member of parliament, minister, governor, and mayor. Years in politics in democratic regimes are relatively straightforward to measure, provided relevant biographical data are available. For the majority of non-democratic leaders it requires judgement as to what constitutes service in formal politics and what the positions of relevance are in a particular dictatorship. For illustration, consider Hu Jintao of China (2003–12) with 21 years of experience. In 1982 Hu was selected a promising young cadre for rapid promotion and became an alternate member of the Central Committee, as well as the Secretary of the Communist Youth League Central Committee (Ewing, 2003, 21). Prior to 1982 he held a series of engineering jobs and also served as party secretary in regional construction departments (Ewing, 2003, 20). However, in the context of a party regime, his career prior to 1982 was more akin to that of a civil servant. Only when he became the Secretary of the Communist Youth League his political career proper began. Subsequently, he served as a provincial party secretary in two regions, and then joined the Politburo Standing Committee. It is true that Hu's experience is different from that of his peers in democracies. At the same time, being a provincial party secretary is akin to regional governor, and sitting on a Politburo Standing Committee, functionally, resembles a powerful ministerial post in a democracy.

Not all politically relevant experience is that in formal posts. Future leaders participate in politics as political party organisers, they participate in electoral campaigns, and acquire political experience in non-political posts. Therefore, the second key variable, total years in politics, relaxes the requirement of serving in formal posts and additionally includes years in political campaigns, years as one of the opposition leaders, of active party membership or any other politics-related activity.

Experience in politics is not only about the length of service. The quality and breadth of such experience matter too. Figure 1 displays descriptive statistics about politically relevant posts the leaders have had in the past, separately for democracies and dictatorships. Democratic leaders are more likely to hold portfolios of the minister of environment, the economy or local government, or intergovernmental bodies. Dictators are more likely to have served as ministers of trade or

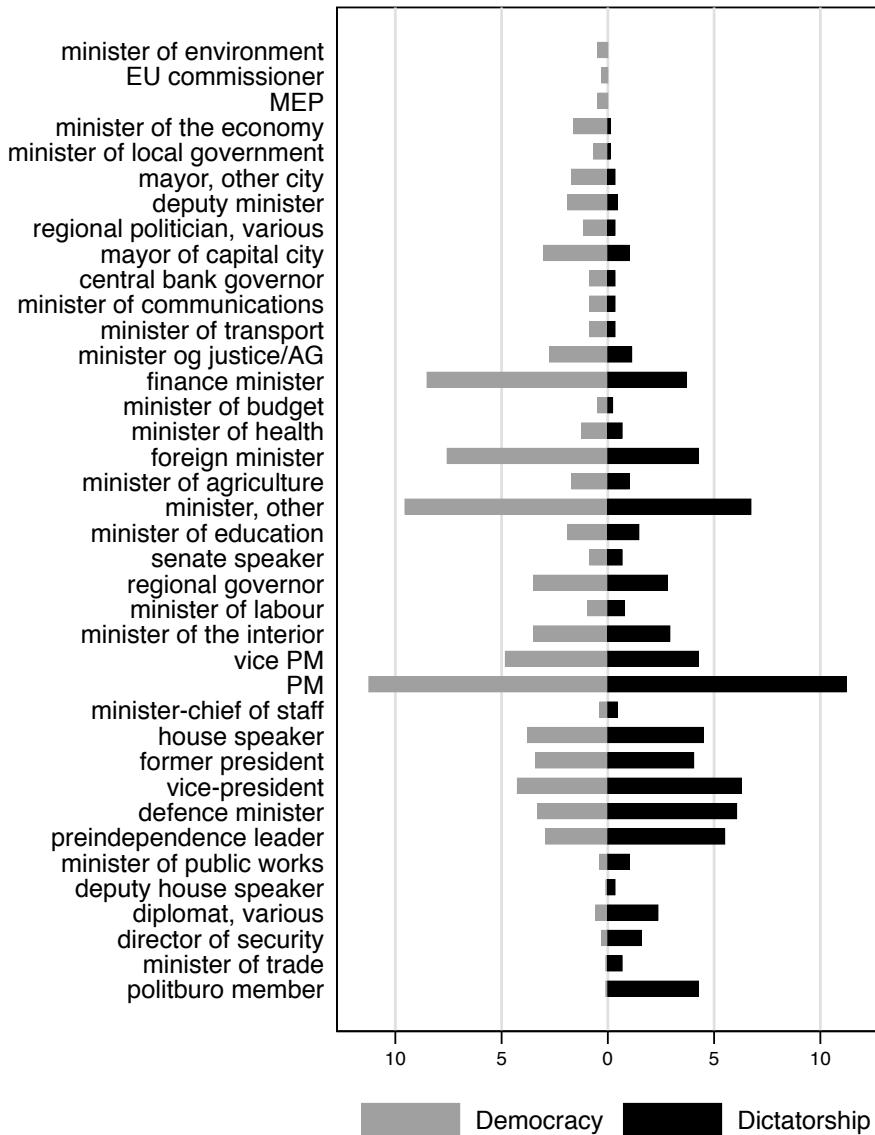


Figure 1: Prior Political Posts of Leaders

Note: Categories report percentage of leaders with experience in particular posts prior to the highest office, sorted by relative differences between democratic and nondemocratic leaders. Categories do not add up to 100 per cent because leaders may occupy more than one post. For ease of presentation, the *party leader/opposition leader/MP* category is not included in the figure (21% and 6% in democracy and dictatorship, respectively).

public works, or served in the politburo, security agencies or as diplomats. Below we leverage these data to estimate the latent scores of experience.

The Latent-Variable Model to Estimate PolEx

While we have a number of indicators of experience in politics, it is unclear how these add up to a single experience score. How much do we weigh each indicator? How much does formal experience count, relative to being “on the ground” as a party activist? How much more experience does a former minister of foreign affairs have than a former minister of railroads? We can address these questions by estimating a latent variable model to represent political experience, of which our various indicators are the observed implications.

There is an important difference with comparable measurement models such as that of democracy by Treier and Jackman (2008). Democracies share a range of characteristics, and the more these are present, the more likely it can be classified as a democracy. When it comes to political experience however, the type of experience varies significantly between leaders. One individual may have experience as a deputy party leader, moving on to a junior minister role, to then become minister of finance and eventually the leader. Another person may reach the summit of power through an entirely different trajectory. Both might be similarly experienced overall.²

To avoid the negative correlations between different types of experience due to mutual exclusivity of posts for the same individual at the same time, we aggregate posts into broad categories. We group all posts together into political posts in general—a full list is depicted in Figure 1—as well as into senior political posts and ministerial positions. We create a set of dummy variables taking the value of one if the individual occupied at least one, two, or three of the general posts, respectively, as well as a dummy whether the individual occupied any of the senior posts. In addition, we include two variables counting the number of years of political experience—one for formal posts only and another more broadly defined—as well as a variable

²This complication relates to the distinction between formative and reflective measurement models in the psychology and marketing literatures (Curtis and Jackson, 1962; Diamantopoulos and Winklhofer, 2001). See the supplementary materials for a more detailed discussion.

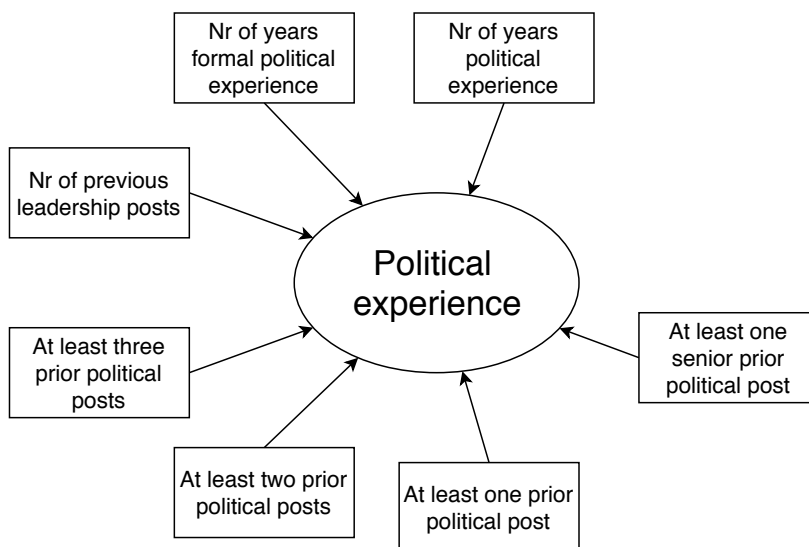


Figure 2: Measurement Model of Political Experience

Note: Measurement model specification of political experience, where squares represent observable, constitutive indicators of a latent construct, political experience.

counting the number of times one has served as the national leader in the past. The diagram in Figure 2 outlines our measurement model specification. While the career trajectories will differ between individuals, more experienced leaders will have held more posts, for longer, at more senior levels. The reduction of the model to generic count variables and dummies allows us to estimate the latent variable model in a similar vein to that of the measurement model for democracy by Treier and Jackman (2008).

Aside from the estimation issues caused by the mutual exclusivity of different posts at the same time, this aggregation also maximises the validity and comparability across regimes, by raising the level of abstraction (Sartori, 1970). The length of experience, the number of senior posts, the number of political posts—whatever these posts might be—on average should get us a valid cross-regime measurement. Anything else makes comparing experience across regimes impossible. While the richness of experience between different national leaders is important and interesting, it is precisely incorporating that richness which makes it impossible to measure political experience across regime types. Even though detailed types of offices and pathways cannot be seen from our measure, on average, high score should correspond to higher levels of political experience.

We estimate the *PolEx* using a Bayesian framework that allows us to get full posterior information on uncertainty for each of the individual scores. Our model can be seen as a set of simultaneous regression equations, where the same latent variable explains the various indicator variables.

Because it is reasonable to assume that the initial experience will be more significant than later additional years, we apply an inverse hyperbolic sine transformation—akin to a logarithmic transformation—on the three count variables. For the transformed count variables, we assume a normal distribution, while for the dummy variables we use a logistic specification. Each equation contains a discrimination parameter, with a prior $\beta_1 \sim \Gamma(2, 1)$ and a difficulty parameter with prior $\beta_0 \sim N(0, 1)$.³ For example, for the experience in years indicator we have:

$$EY_i^* \sim N(\beta_{1,EY}(\gamma_i - \beta_{0,EY}), \sigma_{EY}),$$

with EY^* the observed experience in years, after the inverse hyperbolic transformation. The latent variable itself has a prior distribution of $\gamma \sim N(0, 1)$. This follows the two parameter logistic formulation of the item response theory model (Glockner-Rist and Hoijtink, 2003), which is equivalent to a factor analysis model with binary or mixed responses (Quinn, 2004). As in other applications in political science, the focus is on the latent variable scores for each observation, as opposed to the discrimination parameters that are the focus in psychometric applications (Clinton et al., 2004). The model is estimated using the No-U-Turn Sampler algorithm (Carpenter et al., 2017), using eight chains of 20,000 iterations, of which 4,000 are discarded as a warm-up.⁴

Table 1 provides estimates of the discrimination and difficulty parameters. Difficulty parameters capture the extent to which, on average, leaders obtain a high level of experience on the particular indicator. Discrimination parameters, equivalent to factor loadings, capture the extent to which items are able to separate experienced from inexperienced leaders, but they cannot be directly compared between those for continuous variables and those for the binary variables.

³Using a gamma prior ensures positive coefficients, such that the latent variable captures experience, not inexperience. Quinn (2004) and Clinton et al. (2004) implement similar constraints.

⁴The Gelman-Rubin convergence statistics range from $\hat{R} = 0.9995$ to $\hat{R} = 1.0014$, which indicates convergence.

	Discrimination (β_1)	Difficulty (β_0)
Nr of years experience	1.127 (0.025)	-2.712 (0.065)
Nr of years formal experience	1.197 (0.027)	-2.142 (0.055)
One prior political post	2.352 (0.136)	-0.927 (0.050)
Prior top post or ministry	1.194 (0.087)	0.535 (0.053)
Two prior political posts	1.316 (0.122)	1.292 (0.090)
Three prior political posts	2.339 (0.120)	1.728 (0.297)
Nr of previous times in office	0.094 (0.158)	-1.486 (0.008)

TABLE 1: Parameter Estimates and Relative Importance of Component Variables

Note: Standard errors for the model parameters in parentheses.

To compare the relative importance of component variables, we can visualise the predicted values on the component variables given the latent variable score based on item response curves, which are presented in Figure 3.

All those who are scored to have above average experience at the time of entering office tend to have had at least one prior political post. In turn, those with higher levels of experience also typically tend to have had a senior post or ministry. Having had multiple prior posts is less common. Among those at the highest levels of *PolEx* there is only just over 60% chance of having

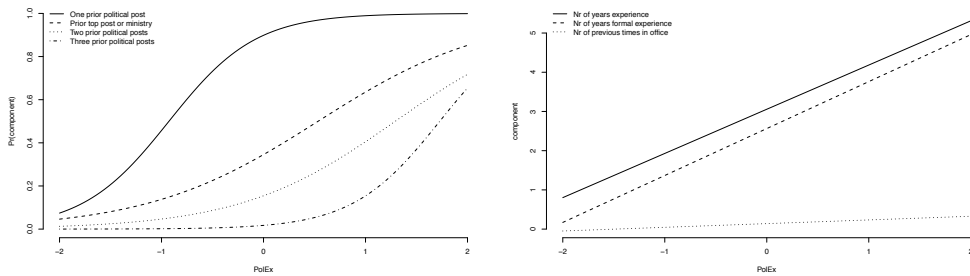


Figure 3: Item Response Curves

Note: Item response curves for all component variables of the latent variable model, with predicted probabilities for binary component variables (left) and linear predictions for count variables (right).

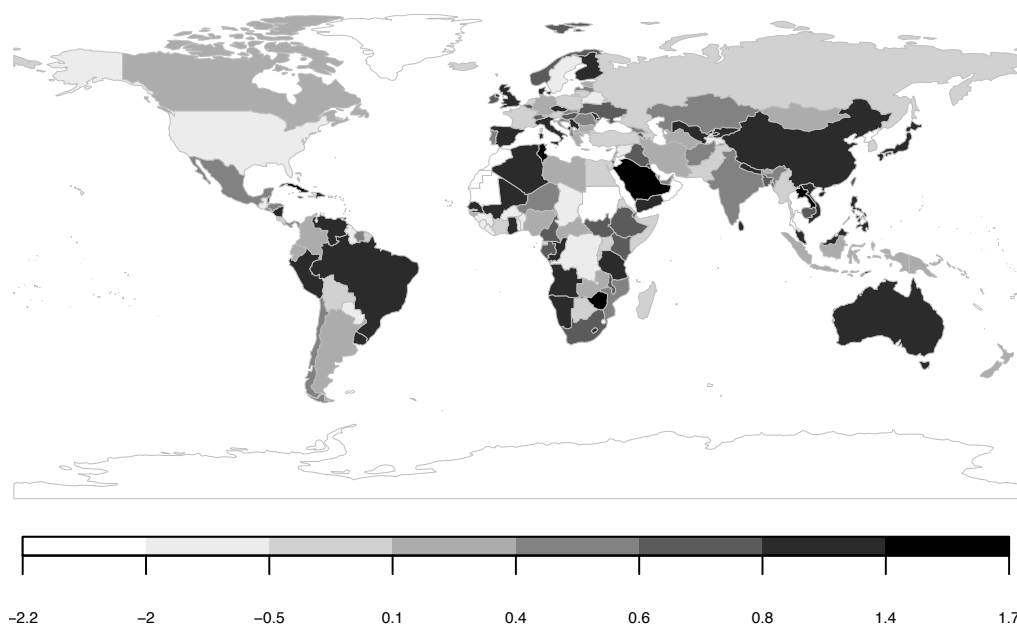


Figure 4: *PolEx* of World Leaders in 2017

Note: *PolEx* scores from the time of entry into office of incumbent leaders in office on 31 December 2017.

had three prior political posts. We also observe a strong relationship between *PolEx* and years of experience in formal and informal politics.

As a test of face validity, Figure 4 demonstrates the *PolEx* scores of all leaders in the world, while Figure 5 displays the *PolEx* scores for the most and least experienced leaders in the world in 2017. In both cases, leaders in office in 2017 are included, while their level of experience at the time they took office is assessed. The results are intuitive as we can distinguish between experienced leaders such as Xi Jinping of China, and known inexperienced leaders such as Trump of the US.

Regime Type and the Experience of Political Leaders

With the assistance of the *PolEx* scores, we are able to address a research question posed earlier: do democracies select more politically experienced leaders? Figure 6 reveals that over time and on average, democracies outperform dictatorships. However, the stark differences visible until mid-eighties have been replaced with a closer gap in this century as dictatorships came to

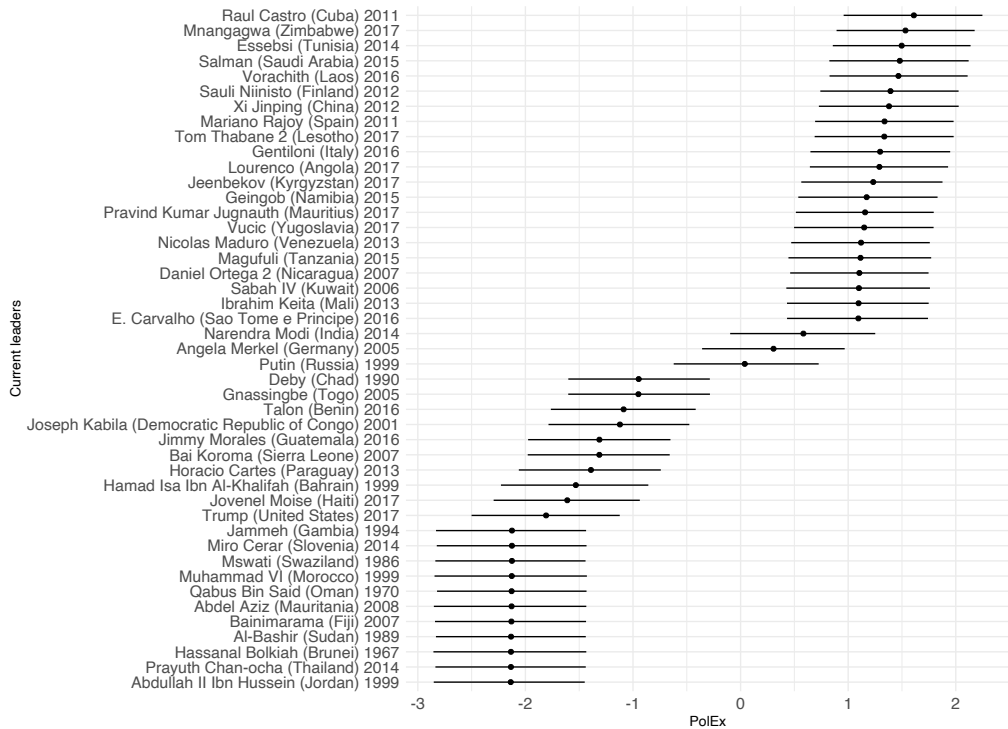


Figure 5: *PolEx* Estimates for Selected Leaders

Note: Average *PolEx* scores for the 12% least, and 12% most experienced leaders currently in office, with 95% equal tailed credible intervals. In addition, the plot includes Trump, Xi, Putin, Modi, and Merkel.

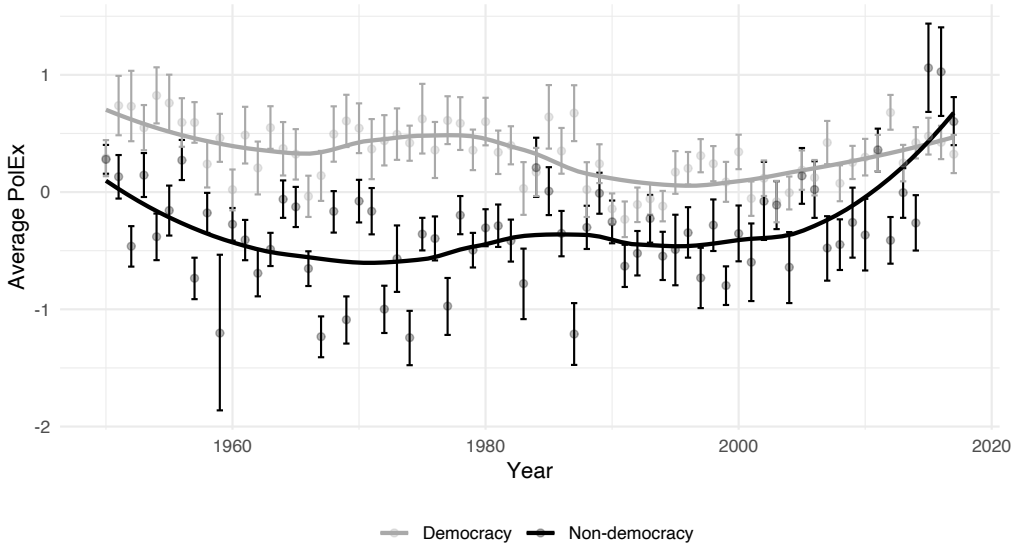


Figure 6: Average *PolEx* of Political Leaders, 1950–2017

Note: Average value *PolEx*, at the time of entering office, with 95% equal tailed credible intervals and smoothened curves.

recruit more experienced leaders, finally closing the gap in recent years.⁵ If democratic leadership becomes relatively less experienced, democracies may find themselves at a disadvantage in settings where leadership matters, such as in international diplomacy.

Conclusions

Current scholarship has gone beyond the “leaders matter” argument and studies what in particular about leaders, such as their background traits and careers, matter for survival in office (Yu and Jong-A-Pin, 2016), post-office employment (Baturu, 2017), or conflict behaviour (Horowitz et al., 2005). Empirical scholars can now rely on the *PolEx* score to investigate whether leaders’ experience matters for policy outcomes. A nebulous and unobservable variable such as political experience is difficult to measure, in particular across regime types. Having discussed several conceptual perspectives, we opted for a *prior-experience* approach. Drawing from a new data set

⁵The supplementary appendix contains additional robustness checks on the estimation of *PolEx* and the finding regarding democracies and non-democracies.

on nearly 2,000 national leaders, we estimate *PolEx*, a latent experience score. Measurement equivalence across democratic and non-democratic regimes is established by demonstrating the high correlation between latent scores whether estimated jointly or separately by regime type.⁶ We establish that democracies tend to select more experienced leaders than non-democracies, but that this distinction has diminished over time.

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Data Availability Statement

The data for the estimation of the model, as well as the resulting estimated *PolEx* scores and their 95% equal tailed credible intervals can be found at the journal's Dataverse:

<https://doi.org/10.7910/DVN/NRC1ZD>.

REFERENCES

- Bak, D. and G. Palmer (2010). Testing the Biden Hypotheses: Leader tenure, age, and international conflict. *Foreign Policy Analysis* 6(3), 257–273.
- Baturo, A. (2016). Cursus honorum: Personal background, careers and experience of political leaders in democracy and dictatorship — new data and analyses. *Politics And Governance* 4(2), 138–157.

⁶See Section 3.1 in the appendix.

- Baturo, A. (2017). Democracy, development, and career trajectories of former political leaders. *Comparative Political Studies* 50(8), 1023—1054.
- Besley, T. and M. Reynal-Querol (2011). Do democracies select more educated leaders? *American Political Science Review* 105(3), 552–66.
- Carpenter, B., A. Gelman, M. D. Hoffman, D. Lee, B. Goodrich, M. Betancourt, M. Brubaker, J. Guo, P. Li, and A. Riddell (2017). Stan: A probabilistic programming language. *Journal of statistical software* 76(1).
- Clinton, J., S. Jackman, and D. Rivers (2004). The statistical analysis of roll call voting: A unified approach. *American Political Science Review* 98, 355–70.
- Curtis, R. F. and E. F. Jackson (1962). Multiple indicators in survey research. *American Journal of Sociology* 68(2), 195–204.
- Diamantopoulos, A. and H. M. Winklhofer (2001). Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research* 38(2), 269–277.
- Englund, W. (2016). The roots of the hostility between Putin and Clinton (28 july 2016). The Washington Post.
- Ewing, R. (2003). Hu Jintao: The making of a Chinese general secretary. *The China Quarterly* 173, 17–34.
- Gelpi, C. and J. M. Grieco (2001). Attracting trouble: Democracy, leadership tenure, and the targeting of militarized challenges, 1918-1992. *Journal of Conflict Resolution* 45(6), 794–817.
- Glockner-Rist, A. and H. Hoijtink (2003). The best of both worlds: Factor analysis of dichotomous data using item response theory and structural equation modeling. *Structural Equation Modeling* 10(4), 544–565.
- Horowitz, M., R. McDermott, and A. C. Stam (2005). Leader age, regime type, and violent international relations. *Journal of Conflict Resolution* 49(5), 661–85.

- Potter, P. (2007). Does experience matter? American presidential experience, age, and international conflict. *Journal of Conflict Resolution* 51(3), 351–378.
- Quinn, K. (2004). Bayesian factor analysis for mixed ordinal and continuous responses. *Political Analysis* 12, 338–53.
- Sartori, G. (1970). Concept misformation in comparative politics. *American Political Science Review* 64(4), 1033–1053.
- Treier, S. and S. Jackman (2008). Democracy as a latent variable. *American Journal of Political Science* 52(1), 201–217.
- Yu, S. and R. Jong-A-Pin (2016). Political leader survival: Does competence matter? *Public Choice* 166, 113–142.

What is PolEx?

Supplementary Appendix to

What Countries Select More Experienced Leaders? The PolEx Measure of Political Experience

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1 Further Details about *PolEx*

Figure 1 plots the average *PolEx* scores for all leaders in the world, irrespective of their political regime, at the time of their taking political office. The average *PolEx* score for the entire data set is zero by design, but there is variation over time, with more experienced leaders being selected at the beginning and the end of the time period, and some outliers of low experience in the sixties.

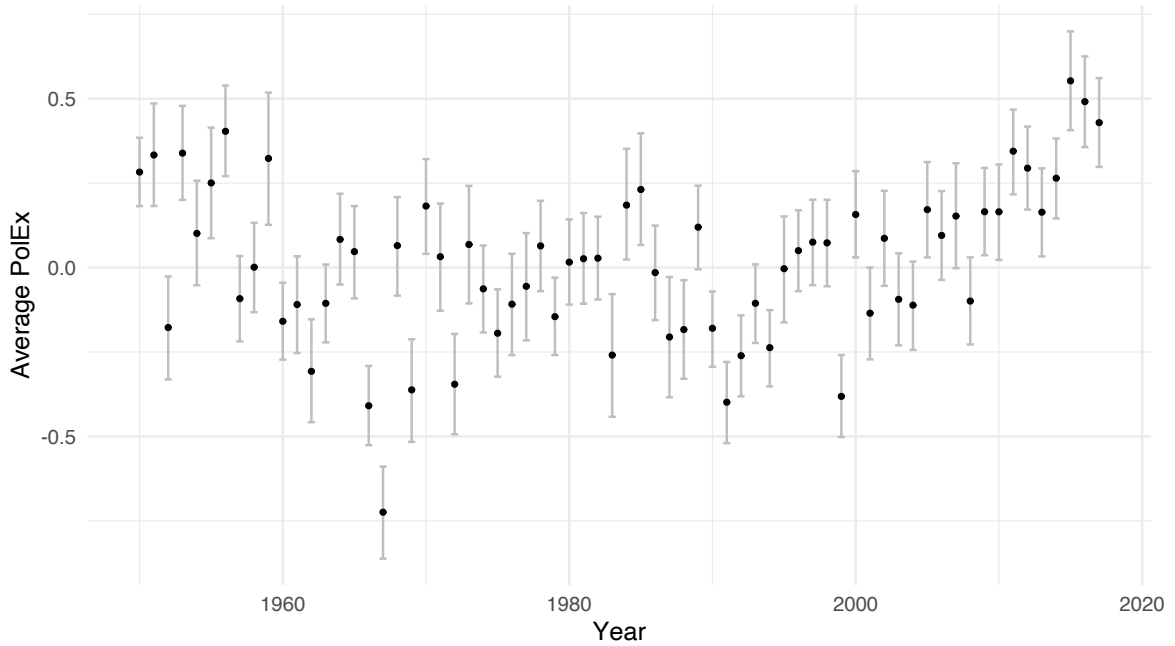


Figure 1: *Average PolEx of Political Leaders, 1950–2017*

Note: Average value *PolEx*, at the time of entering office, with 95% equal tailed credible intervals.

Here as in other plots, including Figure 5 in the paper, the equal tailed credible intervals are found by taking the 2.5% and 97.5% quantiles of the posterior distribution of the respective coefficients. Here, the average score across all new leaders in a given year is calculated for each iteration of the Markov Chain Monte Carlo sampling algorithm, and the quantiles subsequently calculated on the thus obtained posterior distribution of the annual mean. This method therefore fully leverages the detailed posterior information obtained in a Bayesian framework (cf. [Quinn, 2004](#); [Clinton, Jackman and Rivers, 2004](#)).

In turn, Figure 2 displays national average *PolEx* scores for all countries in the world for the whole 1950–2017 period. Countries such as the United Kingdom, Ireland, Saudi Arabia, China, Soviet Union/Russia have the most experienced leaders historically, while Brunei, Oman, Democratic Republic of Congo, Sierra Leone or Mauritania are those that feature the least experienced leadership at the time of entry into office. Regionally however, Western countries and Eastern Europe have the most experienced leadership at the time of entry into office, and Africa and the Middle East—the least experienced.

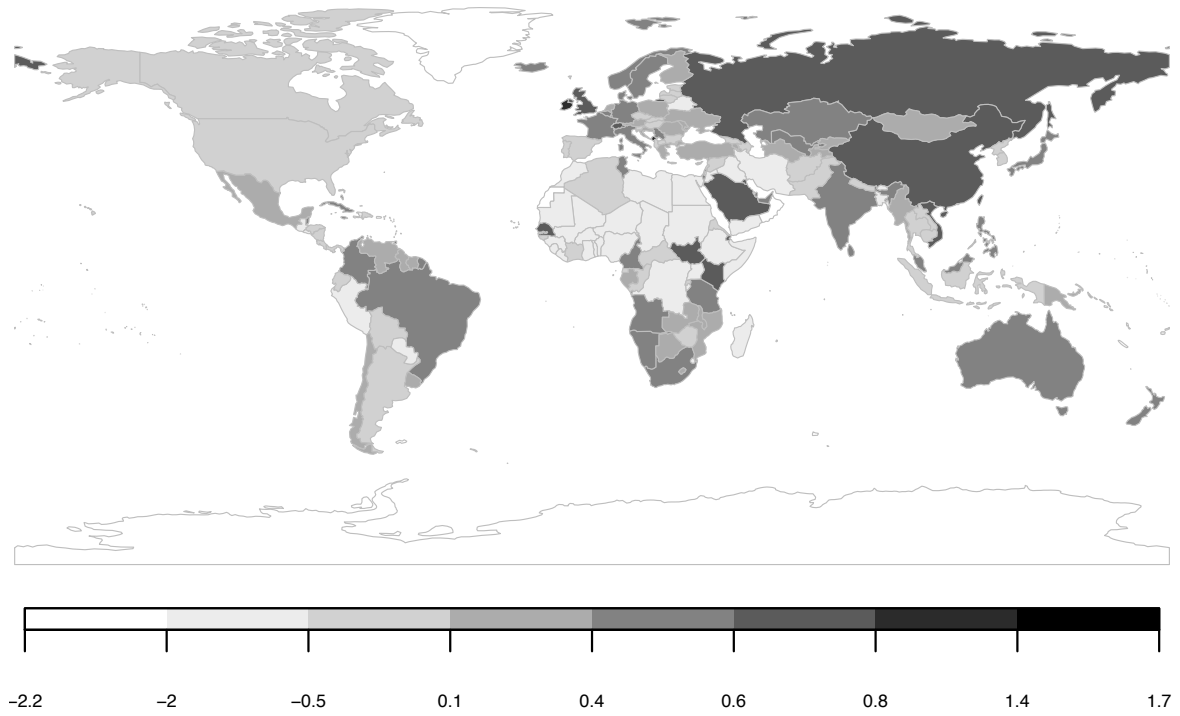


Figure 2: Average National *PolEx*, 1950–2017

Note: Average *PolEx* scores all national political leaders, 1950–2017.

1.1 Formative versus reflective measurement models and *PolEx*

In the psychology and marketing literatures, there is a distinction between reflective and formative measurement models (Curtis and Jackson, 1962; Diamantopoulos and Winklhofer, 2001). In a reflective model, the indicators used are reflective of, i.e. caused by, the latent variable, while in a formative model the indicators constitute, or cause, the latent variable. In a reflective model one expects the indicators to be highly correlated, since they are caused by the same factor, but in a formative model this is not necessarily the case (Curtis and Jackson, 1962). While measuring democracy may be seen as a formative model, with the indicators as constituent elements of democracy, Treier and Jackman (2008) were able to ignore the distinction between these two approaches because of the intercorrelation between the indicators. In our application, where a current level of political experience is determined by prior political activity, but where this activity can take many different trajectories, only formative models can be applied. The significant drawback is that a formative model per se, without integration into a broader causal framework, is statistically underdetermined. Since not all indicators need to correlate, it is not the primary dimensions of the underlying correlation of the indicators that can be taken as the measure of the latent construct.

Similar to Treier and Jackman (2008), we can avoid the complications of the estimations of the formative model to a large extent by relying on the high correlation between the underlying indicators of the main concept. The mutual exclusivity of different posts at the same time for the same individual generate low or negative correlations, but by aggregating the posts into broad categories, we are able to estimate the model as if it were a reflective

model. We thus address the underdetermination problem of the formative model in a similar vein to that of the measurement model for democracy by [Treier and Jackman \(2008\)](#).

1.2 Political experience and *PolEx*

In the paper we emphasised that in order to account for the political experience and generalise across regime types, we focus on political experience *in politics* that takes place explicitly in formal or informal politics, not general life experience or leadership experience in the military, corporate sector, trade unions, diplomatic service, etcetera. In other words, this is a negative definition of experience, centred on excluding non-political types of experience. While we provided details about the logic of inclusion of particular components of experience in politics, because of word count constraints these details were necessarily brief. Here we can instead discuss a positive definition of experience, i.e., what goes into experience in politics, as opposed to what political experience is not.

Even if we exclude non-political experience, what constitutes a political experience in different countries and regimes may require further assumptions. We therefore focus—with one exception to which we return below—on the experience in *formal* politics, such as being a member of parliament, cabinet minister, province governor, a city mayor, or a member of a sub-national parliament or regional executive, etcetera, that is, political experience in the executive or legislative branches, including employed as a full-time party functionary in non-democratic regimes. We exclude experience in non-political activities, such as in the military or academia, as well as experience in non-formal politics (again, with one exception).

As explained in the paper, we include years in formal politics, previous time as a national political leader, as well as the number of senior and non-senior political posts. Years in formal politics, or previous time(s) as a national leader are numeric indicators that can be understood in the same manner in different countries, in democracy and non-democracy alike. Indeed, even though democracies are more likely to give their leaders a second chance, leaders do return to office in dictatorships too, such as Batista of Cuba or Rawlings of Ghana, who returned to political leadership after interim periods. Likewise, years in formal politics, whether one, five or twenty years, is a measure that can be applied to democratic and non-democratic leaders alike.

To account for the quality and breadth of experience in formal politics, we also include the number of top posts, senior posts, and all political posts. In presidential democracies and many non-democratic regimes headed by *de facto* leaders who do not have the titles of prime ministers themselves (e.g. when dictators have the titles of presidents, party general secretaries or head of state), the post of prime minister can be regarded as a top political post. The posts of finance and foreign ministers are senior ministerial posts, whether in democracy and dictatorship, even if the precise ranking order of importance of these posts may depend on the type of regime ([Baturu and Elkink, 2014](#)). These posts are still relatively senior posts across regime types.

We can also account for the important political posts (in formal politics of their countries), in democracy and dictatorship. These are the posts we include in Table 1. As components of political experience, we include political posts, listed in the descriptive figure in

the paper. These are the posts that are present in both democracies and non-democracies. We exclude posts that can only be present in one type of political regime. We therefore include posts, or their close equivalents, that democratic and non-democratic leaders alike have, or can have in their professional background. Table 1 provides details about the types of posts that we count. As can be seen, among democratic and non-democratic leaders, there are posts of ministers of education, ministers of healthcare or capital city mayors, even chiefs of security service (George H. W. Bush who served as the Director of Central Intelligence in the USA—a democracy). Even the minister of environment or that communications that are encountered in democracies only, as denoted in bold font—in principle they can be encountered in non-democracies too. Indeed, if President Berdymukhamedov of Turkmenistan—a non-democratic regime, was the minister of healthcare in the past, in principle, in other dictatorships, other leaders may serve as ministers of environment during their careers. Even very few posts associated with the EU, in principle can be found in the background of non-democratic leaders in the future. It has not been realised yet, but given that a current EU member, Hungary, was down-ranked from its democracy status in 2018 by the Freedom House, in principle its Prime Minister could have had the EU background (such as Dalia Grybauskaitė (2009–19) of Lithuania). The only other exception is the post of the politburo member, a rough equivalent of the cabinet minister in a democracy. While this post is not encountered among democratic leaders, it is an important political post across many non-democratic regimes that cannot be excluded. In principle, former officials in a non-democratic regimes who have served as politburo members can also run for democratic office in the same country, after transition. We exclude posts that are very regime specific, like being the member of the royal household, or rebel leader, or the chief of army staff.

By including the number of such posts, and grouping them into three categories that are comparable across regime types, we assume that higher values will account for more breadth and quality of experience in formal politics, in democracy and dictatorship.

Finally, the only indicator that relaxes our focus on formal politics, and the posts in formal politics, is that of the number of years in politics in total, not just in formal politics. It includes all years in politics prior to assuming the highest office, including years in civil service, also colonial service or political service in the former colonial or metropolitan institutions, such as the membership of the French National Assembly, French Union Assembly, local colonial assembly between 1946 and the time of independence in the former French colonies, or the secretary of the republican Communist party in the Soviet Union, for example. Years active membership in political opposition, revolutionary movement, anti-colonial struggle and any other political-related and revolutionary activity, running for presidential office unsuccessfully, are also counted whenever possible. This measure therefore includes years of political experience in activities that are often regime- or even country-specific. However, because it is measured in years it can be included in the model without making specific assumptions as to specific political posts that may, or may not be present in different regimes. This measure gives us extra leverage to account for these residual aspects of political experience that other included measures, centred on formal politics, do not include.

	Democracy	Non-democracy
Prior top post	PM, vice-president, president, pre-independence political leader	PM, vice-president, president, pre-independence political leader ¹
Prior top ministry	Minister of finance (chancellor of the exchequer, etc), MFA, vice-PM various	Minister of finance, MFA, vice-PM various, Politburo member
Prior political posts, excluding top posts	(regional): mayor of capital city, regional governor, mayor of other city, regional politician other; (parliament): house speaker, senate speaker, deputy house speaker; (minister): minister of interior, minister of justice, minister of education, <i>minister of the economy</i> , minister of health (and related portfolios), minister-chief of staff, minister of agriculture, minister of trade, minister of transport, minister of labour, minister of public works, minister of local government, minister of budget, minister of communications, minister of environment , minister other portfolios; (party): party leader, party secretary; (other): minister of defence head of security, EU commissioner , MEP , deputy minister, various, central bank governor, diplomat	(regional): mayor of capital city, regional governor, mayor of other city, regional politician other; (parliament): house speaker, senate speaker, deputy house speaker; (minister): minister of interior, minister of justice, minister of education, <i>minister of the economy</i> , minister of health (and related portfolios), minister-chief of staff, minister of agriculture, minister of trade, minister of transport, minister of labour, minister of public works, minister of local government, minister of budget, minister of communications, minister other portfolios; (party): party leader, party secretary; (other): minister of defence, head of security, deputy minister, various, central bank governor, diplomat

Table 1: *Post Classifications of PolEx in Democracy and Non-democracy*

Note: post categories that are only present in one regime type are in bold. ¹If a leader occupies national leadership post prior to state independence, e.g., Mohammed V, the king of Morocco (1957–61), Sultan of Morocco (1927–53, 55–7) prior to Morocco’s independence in 1957. Similarly, Sukarno (1949–67) of Indonesia was the national president from 1945, prior to independence of 1949.

1.3 Examples of individual leaders

Winston Churchill, the British Prime-Minister for the second time from 1951–55, has the highest score of *PolEx* in the estimation sample of almost 2,000 leaders. This suggests that the measure has strong face validity. The high score requires no explanation since Churchill’s career is well known. The score is based on his long 49-year career in formal politics from being elected as an MP in 1900 for the first time. From 1901 Churchill has remained in politics for most of this time (with short breaks during WW1 and 1922–24) until 1940, occupying most of the important posts (including the Home office and the Chancellor). Even out of office in 1945–51, Churchill remained in parliament as the party leader. His high score is driven by the length of his experience, the number of senior political posts in the past, his previous PM experience, as well as the breadth of his service (the number of ministerial portfolios including those of the minister of state).

To illustrate the distribution of *PolEx* scores, Table 2 provides further examples of individual leaders, in both democracies and non-democracies, with brief descriptions of their political career prior to obtaining the highest office in the nation. In the statistical model, *PolEx* has a standard normal prior, so we find the lowest scores around -2 and the higher scores around $+2$, two standard deviations away from the overall average level of political experience prior to taking office.

Democracy			Non-democracy			
1th	– 2.151	Lugo (Paraguay), 2008–12	No experience in politics or formal years in politics; no posts	– 2.150	Koroma (Sierra Leone), 2007–8	No experience in politics or formal years in politics; no posts
10th	– 1.547	Ahtisaari (Finland), 1994–2000	1 year in politics (presidential campaign), no experience in formal politics, professional diplomat	– 1.133	Kinigi (Burundi), 1993–94	1 year in politics (advisor to PM), 1 year in formal politics, PM for less than a year before presidency
25th	– 0.010	Yushchenko (Ukraine), 2005–10	6 years in formal politics, PM (1999–2001), parliamentary party leader (2002–4), central bank governor	– 0.128	Mwanawasa (Zambia), 2002–8	11 years in politics (from 1990 in party politics) and 3 years in formal politics, vice president (1991–94), also MP
50th	0.302	Gillard (Australia), 2010–13	12 years in formal politics in parliament, Deputy Prime Minister (2007–10), also minister of education, and of employment	0.334	Berdymukhamedov (Turkmenistan) 2007–	10 years in formal politics; minister of health (from 1997) also Vice Prime Minister (from 2001)
75th	0.789	Hollande (France), 2012–17	20 years in formal politics as MP from 1988, local politics, regional politician (mayor) (2001–8), party leader (1997–2008), president of Correze General Council (2008–12)	0.708	Hailemariam (Ethiopia), 2012–18	11 years in formal politics, 14 years in politics incl. deputy governor (2000–2), regional governor (2002–6); chief whip with ministerial portfolio; 2010–12 Vice PM and MFA
95th	0.906	Clerides (Cyprus), 1993–2003	33 years in formal politics including as justice minister (1959–60), as an MP and house speaker (1960–76), president (1974), speaker and party leader (1976–93)	0.949	Bouteflika (Algeria), 1999–2019	29 years in formal politics incl. as minister for sport (1962–3), MFA (1963–79); party central committee member (1989–99)
99th	1.668	Churchill (UK), 1955–55	49 years in formal politics from being elected as an MP in 1900. From 1901 active in politics for most of this time (with short breaks during WW1 and 1922–24). Home office (1910–11), Chancellor (1924–29), PM (1940–45). In 1945–51, party leader	1.524	Mnangagwa (Zimbabwe), 2017–	37 years in formal politics, in addition to 18 years in ZANU/ZAPU politics prior to independence. MP (1980–88). Minister of defence (2009–13), Justice minister (2013–17), vice-president (2014–17), other ministerial portfolios

Table 2: *Leaders' Prior Experience in Politics, Different Percentiles of PolEx*

1.4 *PolEx* and other measures of political experience

While to our knowledge no alternative measure of political experience prior to taking office exists in the international relations and comparative literatures, we do find political experience regularly used in empirical analyses. The solution in these applications tends to be to use a proxy for experience, most commonly age (Bak and Palmer, 2010; Horowitz, McDermott and Stam, 2005) or education levels of leaders. Strictly speaking, in the leadership literature education is used in connection to associated competence, i.e., *education-experience* as competence, similar to *domain-experience*. For example, Besley and Reynal-Querol (2011) argue that education leads to more competent leaders (also Besley, Montalvo and Reynal-

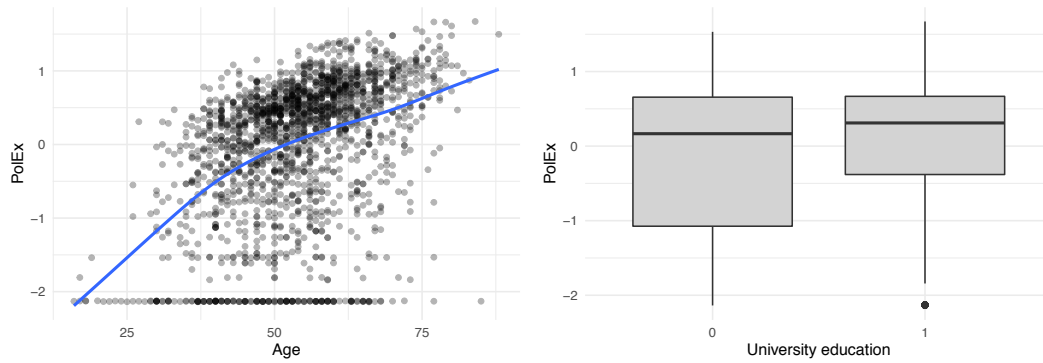


Figure 3: *PolEx by Age and Education of the Leader*

Querol, 2011) and subsequently develop a data base on educational backgrounds, that is used to demonstrate that democracies select more educated leaders than do non-democracies—closely in line with the empirical trends of interest in this paper. Similarly, Ludwig (2002, 140) shows the distribution of grades in school of leaders by regime type, attempting to show the higher level of competence in democracies. Much like age, education is a very limited proxy for political experience. Indeed, scholars question whether education or even competence matters for governance (Bienen and de Walle, 1991; Carnes and Lupu, 2015).

Since leaders' age and education appear to be reasonable proxies for experience, how does the *PolEx* measure compare? Do we capture basically the same variation, albeit in a much more complicated manner? If so, we might as well stick to using these proxies, which are easily comparable over time and between different political regimes.

Figure 3 provides some insight into the relation between age (at entry into office) and our measure of political experience, as well as that of education—here reduced to a dummy for the presence or absence of a university degree. Naturally, we do see that *PolEx* increases with age, and with higher levels of education. Higher levels of education contribute to improved changes to obtain more specialised higher office, political or non-political, and can therefore be expected to correlate with political experience. Being of older age simply allows for more years in which one could have obtained political experience—there is a natural upper bound to the amount of political experience one can have at any given age. The left plot does indeed suggest this upper bound effect, with no observations in the top-left quadrant of the figure. Otherwise, there remains a high amount of variation in experience within different age groups, however, suggesting that *PolEx* captures something well beyond what age captures. Given that *PolEx* is by design based on explicit indicators of political experience, we can assume that it captures relevant experience more appropriately than the age proxy variable.

	Democracy	Non-democracy
Nr of years experience	20.2 (12.1)	14.1 (12.9)
Nr of years formal experience	14.9 (10.4)	8.8 (10.2)
Previous times in office	0.2 (0.5)	0.1 (0.4)
(at least one time)	191 (9.7%)	87 (4.4%)
Prior top post or ministry	392 (38.5%)	327 (38.6%)
(prior top post)	215 (21.1%)	220 (25.9%)
(prior top ministry)	200 (19.7%)	126 (14.9%)
At least one prior political post	894 (87.9%)	561 (66.2%)
At least two prior political posts	219 (21.5%)	177 (20.9%)

Table 3: *Components of PolEx in Democracy and Non-democracy*

Note: Mean and standard deviation for continuous variables, counts and percentages for binary variables.

2 Political Experience and Democracy

2.1 Components of experience in democracies and non-democracies

Table 1 provided insight in the different types of posts that are included in our indicators of political experience, and demonstrated in particular how the range of offices varies little between democracies and non-democracies. This emphasises the comparability of our measure of experience across political regimes, one of the key aims of our paper. So if the range of posts varies little between democracies and non-democracies, how do the various components then relate to the overall finding that democracies tend to—or at least tended to until recently—select more experienced leaders than non-democracies?

Table 3 provides some insight into this question. It provides an overview of the different component variables underlying the latent variable model of *PolEx* and shows the distribution, on average over time, between democracies and non-democracies. It is clear that the overall result on the difference in political experience is not based on any particular indicator, but holds across the board. While for the indicator on “top posts or ministries,” non-democracies score higher than democracies in terms of top posts other than top ministries, on average between these two categories democracies and non-democracies are virtually identical. Significant variation between democracies and non-democracies is visible however in less senior prior posts and in terms of the average number of years experience, in either formal or informal political posts.

To confirm that our findings regarding the difference between democracies and non-democracies is not an artefact of the model specification to estimate *PolEx*, Table 4 includes models explaining three of the component variables of *PolEx* by regime type: the count of years in formal politics (1–2), *polTopPost* (3–4) and *polTopMinistry* (5–6). Because years in politics is a count variable, models 1–2 are fitted as fixed-effects poisson models, and models 3–6 are fitted as fixed-effects probit regressions. Results indicate that leaders in democracies and wealthier countries, who are also older, tend to have longer records in formal politics, while leaders in democracies are not more likely to hold top posts in the past, such as multiple times as prime-ministers in the past in parliamentary regimes. In contrast, leaders in democracies are less likely to serve as ministers of finance, foreign affairs, vice prime-ministers, or politburo members, than leaders in dictatorships.

	Formal years		polTopPost		polTopMinistry	
	1:	2:	3:	4:	5:	6:
Democracy	0.257*** (0.027)		0.207 (0.132)		-0.340** (0.170)	
GDP pc, (log)	0.295*** (0.049)	0.301*** (0.050)	-0.493+ (0.275)	-0.437 (0.291)	0.198 (0.286)	0.052 (0.289)
Economic growth	0.001 (0.002)	0.004** (0.002)	0.021** (0.009)	0.012 (0.011)	0.012 (0.011)	0.013 (0.011)
Age at entry	0.030*** (0.001)	0.029*** (0.001)	0.033*** (0.005)	0.034*** (0.005)	0.011+ (0.006)	0.011+ (0.006)
Polity2		-0.000 (0.004)		-0.021 (0.019)		-0.017 (0.023)
Personalist regime		-0.380*** (0.077)		0.189 (0.371)		0.261 (0.440)
Military regime		-1.018*** (0.074)		-1.046** (0.363)		-0.817** (0.391)
Monarchy		-0.626** (0.263)		-4.697 (102.814)		-0.053 (0.732)
Single party		0.333*** (0.062)		0.077 (0.332)		0.322 (0.385)
Presidential		0.014 (0.053)		0.115 (0.286)		-0.297 (0.306)
Constant	0.017 (0.204)	-0.139 (0.211)	0.572 (1.199)	0.361 (1.299)	-5.691 (152.687)	-5.781 (144.369)
N	1471	1368	1264	1166	1085	1028
χ^2	7005.07	6841.44	202.77	227.80	138.09	139.69

Table 4: *Political Experience: Quantity and Quality?* Note: Models 1–6 are estimated as fixed-effects. Models 1–2 are poisson specifications with the number of years in formal politics as the dependent variable; 3–6 are probit specifications with the dependent variable taking the value of one for top posts (3–4) and top ministerial posts (5–6), as explained in text. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

2.2 Different measures of democracy

Our finding on the difference between democracies and non-democracies of course relies importantly on our measure of democracy. In the paper we relied on the *Polity2* score (Marshall and Jaggers, 2011), but alternative measurements of democracy would also have been possible. Therefore, to examine whether results are sensitive to the choice of democracy indicator, here we additionally examine the selection of experienced and not experienced leaders into office under different measures of democracy and dictatorship.

Figure 4 plots the average values of *PolEx* for democracy and non-democracy, replicating Figure 5 in the paper using alternative commonly used measures of democracy. The top left and right sub-figures follow binary indicators for democracy, the indicator provided by Cheibub, Gandhi and Vreeland (2010) (CGV, left), and from Boix, Miller and Rosato (2013) (right). The two figures at the bottom are both based on the indicator provided by the Varieties of Democracy project by Coppedge et al. (2019). In this data set, countries are classified as liberal democracies, electoral democracies, electoral autocracies, or closed autocracies. The plot on the left contrasts the two democracy categories with the two autocracy categories; the plot on the right the closed autocracies with the other three categories. Finally, Figure 5 shows the level of political experience among newly selected leaders across all four V-Dem categories separately—omitting credible intervals for readability.

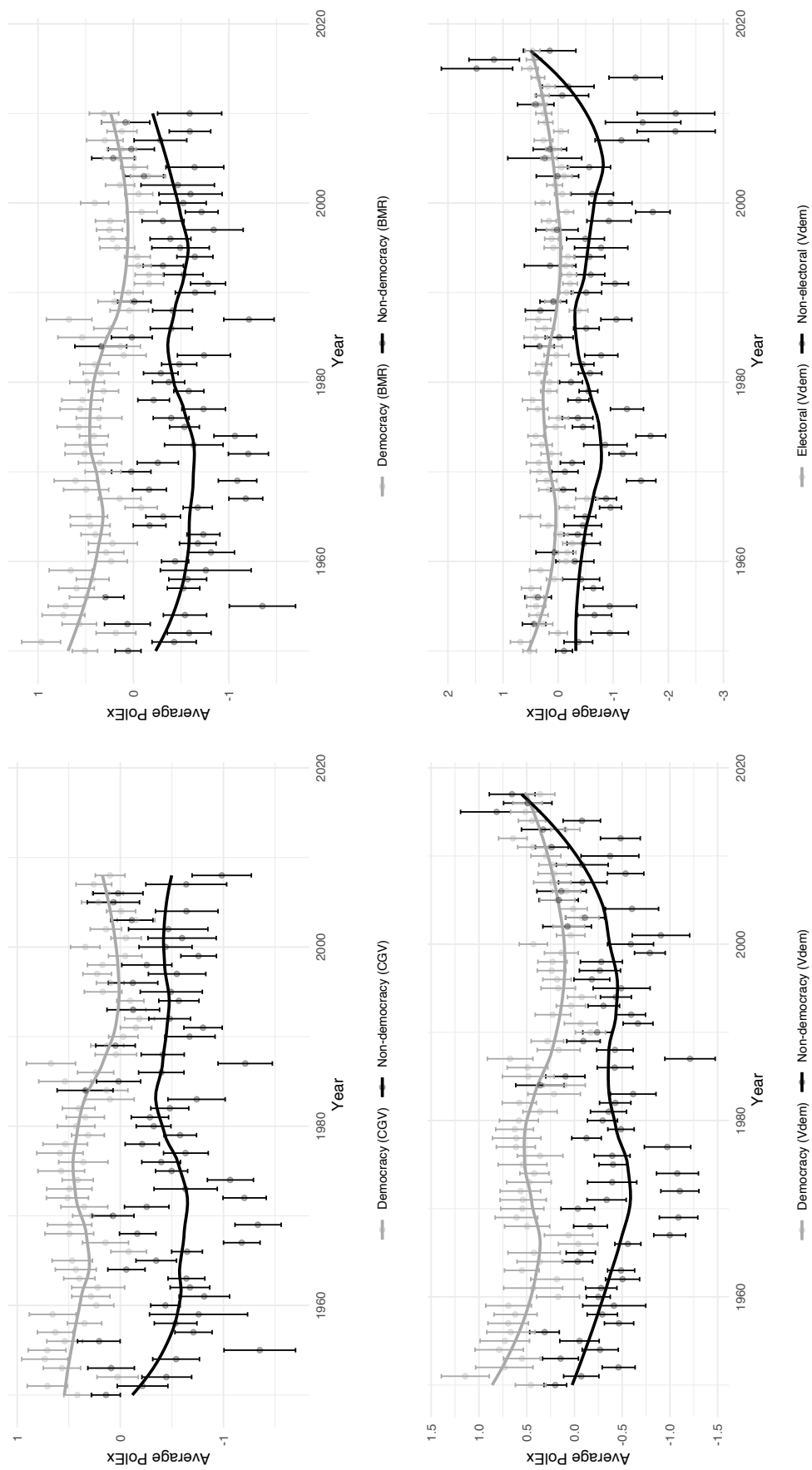


Figure 4: *Political Experience over Time: Measurements of Democracy* Note: Replications of Figure 5 in the paper, using alternative measures of democracy: Cheibub, Gandhi and Vreeland (2010) (top-left), Boix, Miller and Rosato (2013) (top-right), Coppedge et al. (2019), contrasting democracies to all other non-democracies (bottom-left), and democracies and electoral autocracies to other regimes (bottom-right).

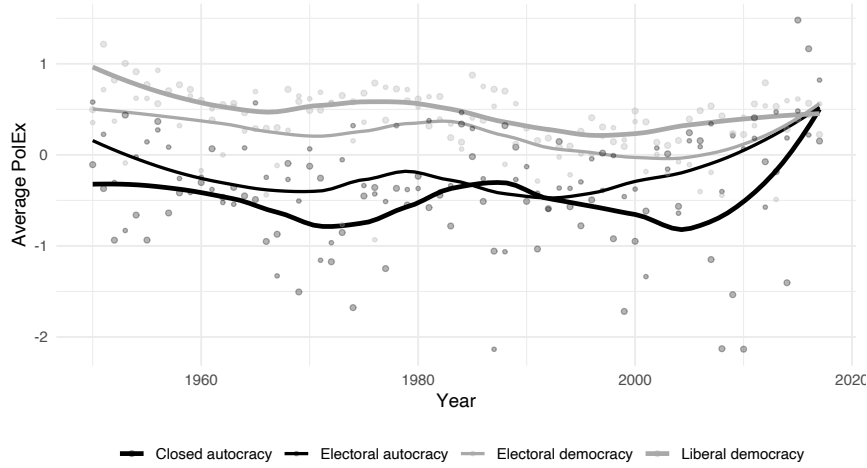


Figure 5: *Political Experience over Time: Four VDEM categories* Note: Replication of Figure 5 in the paper, using [Coppedge et al. \(2019\)](#) to contrast regimes along the range from democracies to closed autocracies, using smoothed curves.

Overall we find very similar patterns to those shown in Figure 5 in the paper, with a greater gap between democracies and non-democracies in earlier decades than more recently, but the measure of democracy does matter. The convergence is stronger if we draw from [Marshall and Jaggers \(2011\)](#) and [Coppedge et al. \(2019\)](#) than if we rely on [Cheibub, Gandhi and Vreeland \(2010\)](#) and [Boix, Miller and Rosato \(2013\)](#), but all four measures indicate that the gap is closing.

In addition to visualisations, we can specify multivariate models to predict the values of *PolEx*. The estimation sample includes leader-observations for first (or only) years in office. The values of all explanatory variables are for the first year in office or lagged by one year, as explained below. To account for country-specific unobserved traits, all specifications are fitted as fixed-effects. The first model in Table 5 is a simple specification to predict whether democracies select more experienced leaders. The explanatory variable, *Democracy* takes the value of one if the *Polity2* score is greater than or equal to six, and zero otherwise. As a sensitivity test in columns 2–8 we instead include alternative indicators for democracy. The second column contains a model specification where a regime is defined as democratic if it takes a positive value on the *Polity2* score, and as non-democratic otherwise. In the third model we include *Polity2* score as a continuous variable ranging from -10 to $+10$. Next, in the fourth and fifth columns we include models with the alternative binary indicators for democracy, CGV ([Cheibub, Gandhi and Vreeland, 2010](#)) and BMR [Boix, Miller and Rosato \(2013\)](#). Finally, we include the measure of democracy based on Varieties of Democracy indicator from [Coppedge et al. \(2019\)](#), with regimes that are categorised as liberal or electoral democracy counted as democracies. Model 7 includes the four categories as separate independent variables. The last model includes an interval measure of democracy, *v2x regime*, also from [Coppedge et al. \(2019\)](#). As can be seen, the choice of alternative variables does not affect the results. Results indicate that democracies do select more experienced leaders on average.

	1:	2:	3:	4:	5:	6:	7:	8:
Democracy	0.346*** (0.055)							
Polity2>0		0.519*** (0.055)						
Polity2			0.039*** (0.004)					
Democracy, CGV				0.535*** (0.063)				
Democracy, BMR					0.512*** (0.061)			
Democracy, V-Dem						0.345*** (0.059)		
Electoral autocracy, V-Dem							0.329*** (0.061)	
Electoral democracy, V-Dem							0.534*** (0.073)	
Liberal democracy, V-Dem							0.575*** (0.098)	
Polyarchy, V-Dem								0.868*** (0.113)
Constant	0.554+ (0.307)	0.480 (0.300)	0.669** (0.300)	0.535 (0.325)	0.543+ (0.326)	0.555+ (0.308)	0.456 (0.308)	0.341 (0.309)
N	1935	1851	1851	1593	1681	1935	1917	1917
r^2	0.33	0.36	0.36	0.38	0.37	0.33	0.34	0.33

Table 5: *Democracy and Leaders' Political Experience* Note: Models 1–8 are estimated as fixed-effects regression specifications. *Closed autocracy*, *V-Dem* is the omitted baseline category in Model 7. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

2.3 Separating leaders of new states

All things being equal, leaders of newly independent states can be expected to have lower *PolEx* scores than leaders of nations with the history of statehood. Since many democracies, especially in the early nineties, are newly established states, this might potentially be part of the explanation why the gap between democracies and non-democracies has narrowed in recent decades. We do not find a stark differentiation between new and longer established states in terms of the selection of experienced leaders, however. On average, leaders of new states are assessed at -0.21 , in contrast to a 0.02 average score of those with statehood. Furthermore, there are no significant differences between leaders of new countries who are democrats and dictators, as can be seen from Figure 6. If anything, newly minted democrats are slightly less experienced than their non-democratic peers: -0.24 versus -0.20 (the difference is not statistically significant).

Figure 7 underlines this argument, where the replication of Figure 5 in the paper looks very similar indeed when all leaders selected at the same time as a new state is established are excluded from the data set. The change in the differentiation between democracies and non-democracies in recent decades—in particular from the early nineties—cannot be attributed to the greater prevalence of democracy among newly established states. While leaders of newly independent states are likely to have lower experience on average, it does not render such leaders non-experienced because many of them occupied prior political posts

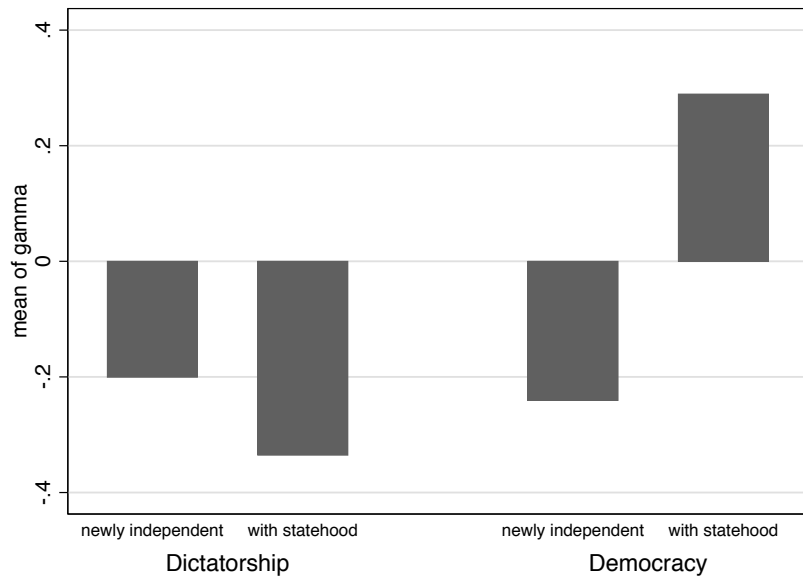


Figure 6: *PolEx, Independence, Regime Types*. Note: Average *PolEx* score for leaders who assume office in newly independent nations, and otherwise, in democracy and non-democracy.

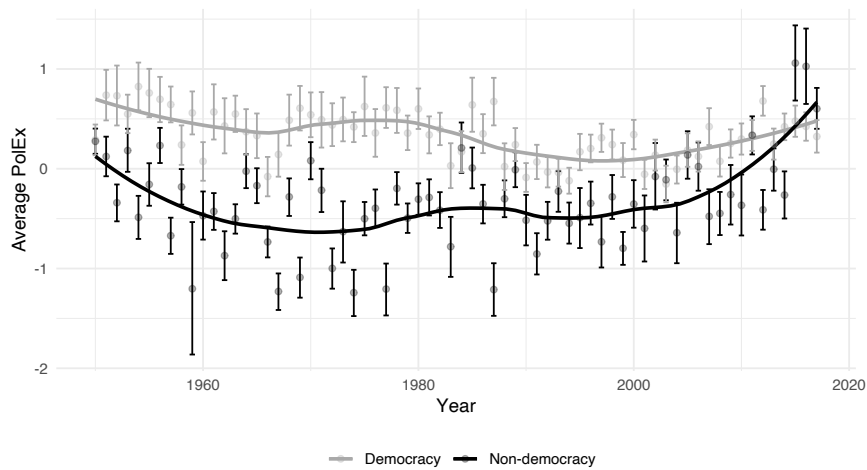


Figure 7: *Political Experience over Time: Excluding New States* Note: Replication of Figure 5 in the paper, excluding all new states.

Godmanis, Latvia	-1.55	Snegur, Moldova	0.10
Akayev, Kyrgyzstan	-1.53	Niyazov, Turkmenistan	0.25
Gamsakhurdia, Georgia	-1.29	Mutalibov, Azerbaijan	0.28
Landsbergis, Lithuania	-1.18	Nazarbaev, Kazakhstan	0.41
Shushkevich, Belarus	-0.97	Kravchuk, Ukraine	0.48
Savisaar, Estonia	-0.68	Yeltsin, Russia	0.53
Ter-Petrosyan, Armenia	-0.68	Nabiyev, Tajikistan	0.90
Karimov, Uzbekistan	-0.03		

Table 6: *First Post-Independence Leaders of the former USSR and their PolEx Scores*

under colonial administration or in another state. For example, there is significant variability among first post-Soviet leaders of newly independent states depending on whether they came to power from the opposition, or elevated themselves from soviet republican administrations, as can be seen from Table 6.

2.4 Adding control variables

Our analysis of democracies versus non-democracies is primarily to demonstrate that the cross-regime comparability of our measure of political experience is valuable and can help in answering questions about leader selection in different political regimes. It is not a developed causal argument, which would require a more elaborate theoretical framework, as well as an explication of the causal mechanisms through which this differentiation between regimes takes place. It is primarily meant as a descriptive exercise, one that raises more questions than it answers—food for future research. Aside from a more thorough theoretical and empirical investigation of causal mechanisms, a proper causal analysis would require appropriate controls for alternative explanations—similar to the investigation of new versus established states in Section 2.3.

Nevertheless, the suggestive causal argument does imply that control variables might be appropriate. Without attempting a full causal analysis, which we leave to future research, as a simple test to account for possible omitted variables, Table 7 includes additional predictors. For robustness, we include two different measures of democracy, based on *Polity2* and the CGV indicator (Cheibub, Gandhi and Vreeland, 2010). It is conceivable that wealthier, more complex societies, as well as countries in the midst of economic crisis, select more experienced leaders. The lagged values of *GDP per capita*, *Economic growth* and *Population, mln* are taken from Feenstra, Inklaar and Timmer (2015). Because newly independent countries may have less experienced leaders (as shown in Figure 6), we include the number of years from independence (COW, 2017), with a logarithmic transformation. Countries under short periods of occupation are set to earlier statehood dates. Because several of the constituent terms of *PolEx* include years of political experience, all things being equal, older leaders will be more likely to have longer experience in politics, than younger leaders (as is also evident in Figure 3). We therefore account for the possibility that the model identifies the effects of democracy on experience, as opposed to effects of the likelihood of selecting younger leaders. Finally, we also include the (log of) number of years a particular regime, either democracy or dictatorship, has been in place, based on the *durable* indicator from

	1:	2:	3:	4:
Democracy	0.356*** (0.063)		0.199** (0.074)	
Democracy, CGV		0.589*** (0.068)		0.347*** (0.086)
GDP pc, (log)	0.041 (0.132)	0.004 (0.144)	-0.016 (0.142)	-0.128 (0.151)
Economic growth	0.006 (0.004)	0.006 (0.004)	0.009+ (0.005)	0.011** (0.005)
Age at entry	0.027*** (0.002)	0.025*** (0.002)	0.026*** (0.002)	0.025*** (0.003)
Population, mln	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Statehood, (log years)	0.027 (0.051)	-0.061 (0.056)		
Regime durability (log)			0.036 (0.031)	0.015 (0.034)
Constant	-1.443** (0.602)	-0.931 (0.648)	-1.056+ (0.628)	-0.587 (0.663)
N	1469	1287	1068	936
r ²	0.45	0.49	0.50	0.54

Table 7: *Democracy, Statehood, Regime Durability, and Leaders' Experience* Note: Models 1–4 are estimated as fixed-effects regression specifications. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

[Marshall and Jaggers \(2011\)](#).

Table 7 reveals that the coefficient on democracy remains statistically significant after accounting for age, which is also statistically significant, while other predictors do not improve on the prediction, except *Economic growth* in Models 3–4. The coefficient on *Statehood, years* is not statistically significant. This could be explained by the fact that the founding fathers of “young” nations, as well their successors, often have experience in politics in the country from which they subsequently declared independence, as previously discussed and evidenced from Table 6. Furthermore, Figure 6 revealed that at independence there are no significant differences between democracies and non-democracies, even if there democratic leaders of nations with statehood are more experienced, than dictators.

2.5 Results by subtypes of non-democracies

The *PolEx* measure may also be employed to compare leaders' selection within the broader regime types of democracies and non-democracies. For example, [Linz \(1994, 171–173\)](#) argues that presidentialism is more likely to elect outsiders. Figure 8 indicates that leaders of presidential democracies are indeed less experienced than their peers in parliamentary regimes, but not dramatically so: the median value of their *PolEx* is 0.360, versus 0.497 under parliamentarism. In turn, among dictatorships, the rulers of party regimes are almost as experienced as their democratic peers, followed by monarchs, then by personal dictators, with military leaders at the bottom.

To confirm these findings on the variation between subtypes of regimes, Table 8 includes two specifications fitted on a sample of democratic regimes only. Model 1 includes the binary indicator taking the value of one if the regime is either presidential or semi-presidential,

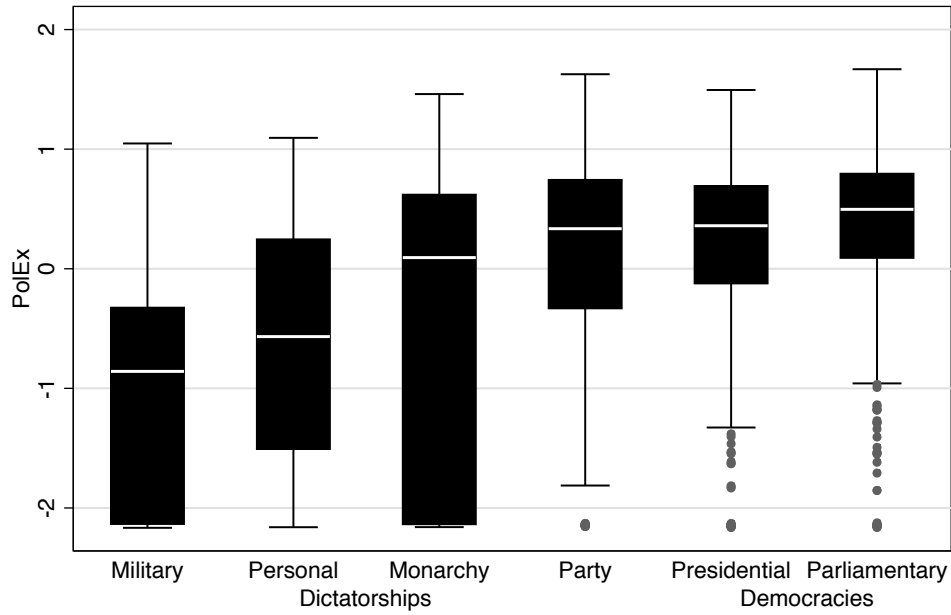


Figure 8: Experience in Politics and Political Regimes

Average value *PolEx*, at the time of entering office, per regime category. Non-democratic regimes are from [Geddes, Wright and Frantz \(2014\)](#).

zero if parliamentary (sourced from [Przeworski et al., 2000](#)). There are no statistically significant differences between presidential and parliamentary regimes in terms of the overall experience of their leaders (Models 1–2).

We also specify two additional models estimated on the sample of dictatorships only. Table 8 also has models 3–4 that include three non-democratic regime categories, with the *Single party* regime as the baseline category. Results indicate that leaders of personalist and military regimes are less experienced than general-secretaries and presidents of party-based regimes. Models 5–6 are estimated on a complete sample that includes democracies and dictatorships. Because we are interested in institutional effects of different regimes, we use the full *Polity IV* scale instead of a binary *Democracy* variable as a predictor. The *Parliamentary* regime type is chosen as the baseline category.¹ We find that leaders of military and personalist regimes, as well as monarchies, are less experienced than prime-ministers in parliamentary democracies. Leaders of party-based regimes and presidents in presidential democracies have no statistically significant differences from prime-ministers, in terms of their experience. This suggests that the distinction between democracy and non-democracy is perhaps not the only relevant factor, and that the structuring of the political careers through parties, common among democracies but also party dictatorships, equally matters. Models 2, 4 and 6 in Table 4 further corroborate this finding, showing that it does not depend on *PolEx* per se, but is also visible when separate indicators of political experience are investigated.

¹In several dozens of observations where there was a clash between categorisations of some regimes as *presidential democracy* by [Przeworski et al. \(2000\)](#) versus a type of dictatorship by [Geddes, Wright and Frantz \(2014\)](#), we reconciled based on *Polity IV* scores at the time of entry into office, i.e., as *presidential democracy* if *Polity IV* is greater than or equal to six, and as the type of dictatorship otherwise.

	Democracy		Dictatorship		All	
	1:	2:	3:	4:	5:	6:
Presidential	-0.132 (0.187)	-0.261 (0.207)				
GDP pc, (log)		0.298 (0.272)		-0.185 (0.322)		-0.006 (0.168)
Economic growth		0.006 (0.006)		-0.006 (0.008)		0.007 (0.004)
Age at entry		0.023*** (0.003)		0.034*** (0.005)		0.025*** (0.002)
Statehood, years		-0.002 (0.003)		0.003 (0.004)		0.001 (0.002)
Personalist regime			-0.488*** (0.147)	-0.721*** (0.201)	-0.595*** (0.129)	-0.406** (0.150)
Military regime			-0.918*** (0.146)	-0.981*** (0.182)	-0.990*** (0.121)	-0.889*** (0.131)
Monarchy			0.156 (0.287)	-1.551+ (0.890)	-0.551** (0.210)	-0.762** (0.305)
Polity2					0.013** (0.007)	0.011 (0.007)
Single party					0.008 (0.122)	0.129 (0.139)
Presidential					-0.148 (0.103)	-0.116 (0.113)
Constant	0.667 (0.430)	-1.769 (1.153)	0.828+ (0.434)	-0.777 (1.268)	0.750** (0.299)	-0.946 (0.717)
N	1018	888	627	422	1747	1401
r ²	0.25	0.34	0.47	0.59	0.41	0.50

Table 8: *Regime Types and Leaders' Political Experience* Note: Models 1–6 are estimated as fixed-effects regression specifications. Models 1–2 are estimated on a sample of democracies. *Party* regime is an omitted category in Models 3–4; *Parliamentary* is an omitted category in Models 5–6. *Presidential* category is adjusted not to include several regimes categorised as non-democratic in [Geddes, Wright and Frantz \(2014\)](#), as explained in text. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

2.6 Political experience in military regimes

What constitutes an experience in politics varies across non-democratic regimes. Military non-democratic regimes stand out. Almost always, leaders of military juntas are professional military officers who only have experience in the military and therefore no direct political experience that can be comparable with that in other regimes. This does not mean that leaders of military juntas have no relevant experience that may assist them in the job of running the country—military service promotes valuable organisational skills as well as character and leadership traits ([Barlow, Jordan and Hendrix, 2003](#)). Such skills, even if they are not directly comparable to skills acquired in political careers, may still make leaders with military backgrounds relatively experienced. It ends up being a modelling choice how to treat experience in the military. One possibility is to count the number of years in service as commissioned military officers, in the same manner as we count the number of years in various political posts, but because we are interested in making our measurement as comparable across regimes as possible, we decided not to count years in the military as years in politics. Besides, military experience does not always directly translate into political skills.

	<i>w/o military</i>		<i>w/o coups</i>	
	<i>1:</i>	<i>2:</i>	<i>3:</i>	<i>4:</i>
Democracy	0.152** (0.057)		0.113+ (0.064)	
Democracy, CGV		0.223** (0.074)		0.192** (0.074)
Constant	0.637** (0.293)	0.639** (0.313)	0.676** (0.297)	0.650** (0.298)
N	1769	1436	1305	1215
r^2	0.32	0.36	0.35	0.36

Table 9: *Robustness* Note: Models 1–4 are estimated as fixed-effects regression specifications. Significant + $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

From the management literature we know that former military officers who become CEOs display less risk aversion and more assertive behaviour as business leaders (Malmendier, Tate and Yan, 2011).

Military experience is generally more akin to what we have labelled *domain-experience*, preparing for a narrow domain of national leadership, rather than broader *prior-experience* in politics. We only include years of experience if future leaders of military juntas have a record in formal political posts even if they remained as military officers at the time. For instance, President Artur da Costa e Silva (1967–69) of Brazil, which had a military regime at the time, is coded as having close to three years of political experience, because he had served as war minister from 1964 under another military president, Castelo Branco (Skidmore, 1988, 19). The alternative would have been to count all 45 years of his military career as political experience.

To test for the possibility that democracy effects are driven by the fact that non-democracies include military regimes, where military officers tend to have lower, if any, experience in formal politics prior to assuming office, in Table 9, Models 1 and 3, we exclude leader-observations who assume power in military regimes (27 per cent of dictators, or 9 per cent of all leaders). Because many leaders in dictatorships come to office through a coup, but subsequently build personalist rather than military regimes, we can also account for this by excluding leaders who enter office as a result of a coup (Models 2 and 4).

2.7 Leaders in office instead of leaders selected

In Figure 4 in the paper, where we visualise a map of the world coloured by the level of political experience of leaders in office in 2017, we do not only include leaders who are selected in 2017, but also those who are still in office but came to office earlier. Our measure of political experience focuses on the level of political experience at the point of selection, hence Figure 5 only includes leaders who are selected in that given year. Figure 9 provides the alternative visualisation, the time trend between democracies and non-democracies in terms of a “moving average”, where all leaders in office are included. The *PolEx* is of course still measured at the point of entry. This figure shows that any reduction in the difference between democracies and non-democracies will only have a very slow impact on, for example, international politics, since when we look at all leaders in office, the gap is

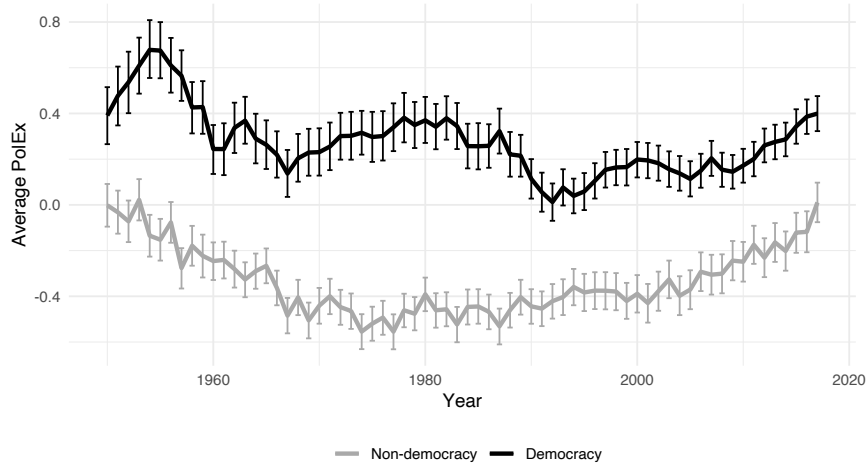


Figure 9: *Political Experience over Time: Moving average* Note: Replication of Figure 5 in the paper, including all leaders in office in a given year, with 95% equal tailed credible intervals.

only slowly closing, and democracies still have significantly more experienced leaders.

2.8 Decline in political experience in liberal democracies post-Cold war

What can possibly explain the downward trend in leaders' political experience among democracies in the 1980s and 1990s, and the positive trend among dictatorships over time? Figure 5 in the paper, as well as additional sub-plots included in Figure 4 in this appendix, all indicate the increased convergence between democracies and non-democracies over time. Because our primary goal is to introduce and explain the new measure of political experience, the substantive question of possible behind the causes of this observed time trend deserves a more thorough treatment in future research. Still, on the basis of results reported above as well as few supplementary analyses we can suggest possible reasons.

In brief, we did not find significant differences between *PolEx* of democratic and non-democratic leaders of new states (Section 2.3 above). Even if there were more leaders of newly independent states that are democracies than leaders of equally new states that are non-democracies—and the numbers are approximately even—their *PolEx* scores are not that different. Furthermore, the downward trend among democracies cannot be due to any institutional changes in leadership selection. Generally speaking, institutions in liberal democracies are very sticky, and by and large there are only insignificant changes in how democracies select their leaders over time; even fewer changes between presidentialism and parliamentarism and how they select leaders (e.g., Czech Republic transition to a direct presidential election in 2013 is uncommon).

The relative democratic decline could instead be due to the rise of outsiders, particularly in Latin America (Carreras, 2014, 2012). For example, the average *PolEx* of Latin American leaders in 1985–2005 period is 0.15, in contrast to the average experience of 0.41 for Western leaders (Western Europe, North America, New Zealand and Australia) that period, or in contrast to the average experience of 0.27 for the same Latin American region in 2005–17 (0.47 in the West). Given the fact that Latin American democratic leaders are the second

	Pre 1991	After 1991	t-test
Closed autocracy	-0.45 (1.07)	-0.48 (1.09)	-0.1066
Electoral autocracy	-0.19 (0.99)	-0.14 (1.07)	0.5777
Electoral democracy	0.23 (0.76)	0.12 (0.78)	-1.4096
Liberal democracy	0.55 (0.51)	0.33 (0.69)	-4.0255

Table 10: *Difference in PolEx between Cold War and After*

Note: Average *PolEx* (standard deviation in brackets), based on V-Dem (v2x regime).

largest group of democratic leaders (followed by Western leaders), this factor additionally explains the pattern.

The steady growth in the average experience of non-democratic leaders is also interesting. Over time, there has been a decline of military regimes, with the less experienced leaders at their head (see however Table 9, which indicates the exclusion of military regimes do not affect the overall result), but it is instead the steady growth of *PolEx* in electoral autocracies, particularly after the end of the Cold war, that partly explains the positive trend.

We can take a closer look within dictatorships and instead of focusing on categories based on who governs (military, party, military, monarchy), distinguish between closed and electoral autocracies. From [Coppedge et al. \(2019\)](#) we know that over time there has been a growing number of electoral autocracies, and a declining number of closed autocracies. Earlier, Figure 5 that displayed the average value of *PolEx* in four regime subtypes, revealed that the political experience of the leaders of electoral autocracies has increased from around 2005, which additionally explains the closing gap between democracies and autocracies over all. Still, based on the data from V-Dem that distinguishes between electoral and closed autocracies, the average value of experience within dictatorships remains relatively stable over Cold war to post Cold war periods, whether among closed or electoral autocracies, as we can see from Table 10. What is different, instead, is lower experience among leaders in electoral democracies, and particularly among leaders of liberal democracies. In fact, the only category of V-Dem that has statistically significant differences between the Cold war and post cold war periods is that of liberal democracy: leaders of liberal democracies have lower *PolEx* scores after 1991 than their predecessors before 1991 (Student *t*-test -4.03). What makes democratic electorates turn to the inexperienced leaders is a question that has been, and will be, the subject of serious scholarly attention.

3 Robustness Tests

3.1 Evaluating the comparability between regimes

The previous pages have demonstrated how the comparison between democracies and non-democracies remains relatively robust regardless of the measure of democracy, the exclusion of new states, the exclusion of military regimes, or the exclusion of coups. Results remain when relevant control variables are added and in addition to the variation between democracies and non-democracies, interesting variation exists between further subcategories of political regimes. In this section we return to the *PolEx* in general, which, regardless of the

	Democracies		Non-Democracies	
	Discrimination (β_1)	Difficulty (β_0)	Discrimination (β_1)	Difficulty (β_0)
Nr of years experience	0.877 (0.027)	-3.863 (0.125)	1.247 (0.043)	-2.122 (0.084)
Nr of years formal experience	0.967 (0.032)	-3.090 (0.107)	1.248 (0.044)	-1.640 (0.071)
One prior political post	1.749 (0.157)	-1.640 (0.112)	2.996 (0.300)	-0.430 (0.056)
Prior top post or ministry	0.817 (0.106)	0.694 (0.110)	2.015 (0.195)	0.445 (0.058)
Two prior political posts	1.260 (1.175)	1.317 (1.143)	1.596 (0.195)	1.208 (0.103)
Three prior political posts	2.451 (0.421)	1.664 (0.161)	2.424 (0.441)	1.814 (0.166)
Nr of previous times in office	0.110 (0.012)	-1.569 (0.212)	0.069 (0.011)	-1.400 (0.266)

Table 11: Parameter Estimates of Component Variables by Regime Type
Standard errors for the model parameters in parentheses.

specific question of whether democracies select more experienced leaders or not, is designed to be comparable across political regimes.

A further validation consists of estimating the latent variable model separately for all democracies and for all non-democracies (based on the Polity IV measure as in the paper). Table 11 provides the discrimination and difficulty parameters based on these two separate estimations. As in the paper, standard errors are based on the standard deviation of the posterior distribution. While we see some variation in the relevance of different parameters between the overall results and those separated by the two regimes, overall results are rather similar. While this is not obvious from the table, Figure 10 shows the predicted *PolEx* score for the two models, showing that what changes between the regime types is the intercept and overall slope, but the versions remain highly correlated.

The different intercepts is primarily an artefact of the fact that the latent variable is constraint to be zero on average across all regimes. At higher levels of political experience, that between democracies and non-democracies is similar, while on average, non-democracies exhibit lower levels of experience among political leaders. The slope coefficients therefore “correct” for the divergence in intercepts, such that the average level of experience is zero and highest level similar across regimes. The correlation between the indicators and *PolEx* does not visibly vary between the regime types. The end result is an estimation of *PolEx* which is very highly correlated with that of the overall estimation, but since the latent variable is by design zero on average, the intercept is different—especially at lower levels of *PolEx*, the *PolEx* estimated for democracies only is lower than those for the overall dataset, while those estimated for autocracies only are higher—at high levels of experience, they converge (roughly, a *PolEx* of -2 corresponds to a *PolEx* for democracies of -3 and for autocracies of -1.5 ; a *PolEx* of $+1.5$ corresponds to a *PolEx* of $+1.5$ on the separately estimated models as well).

Figure 11 underlines this argument, showing how the item response curves—the predicted scores on component variables based on the *PolEx* estimate—vary between regime

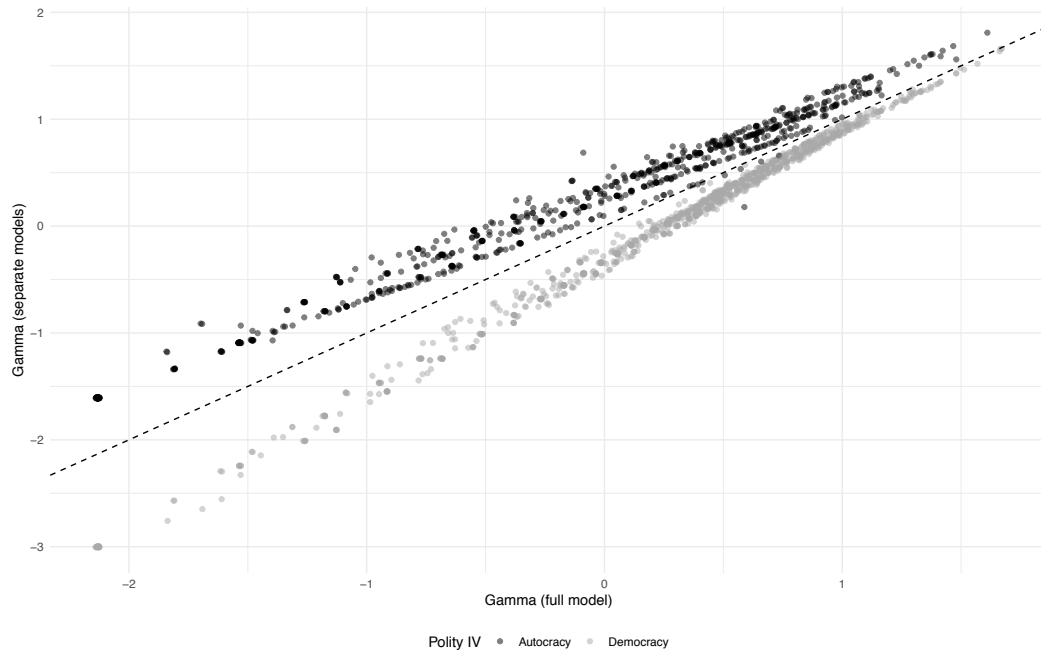


Figure 10: *Comparison of PolEx Estimated across Regimes and Separately for Democracies and Autocracies.*

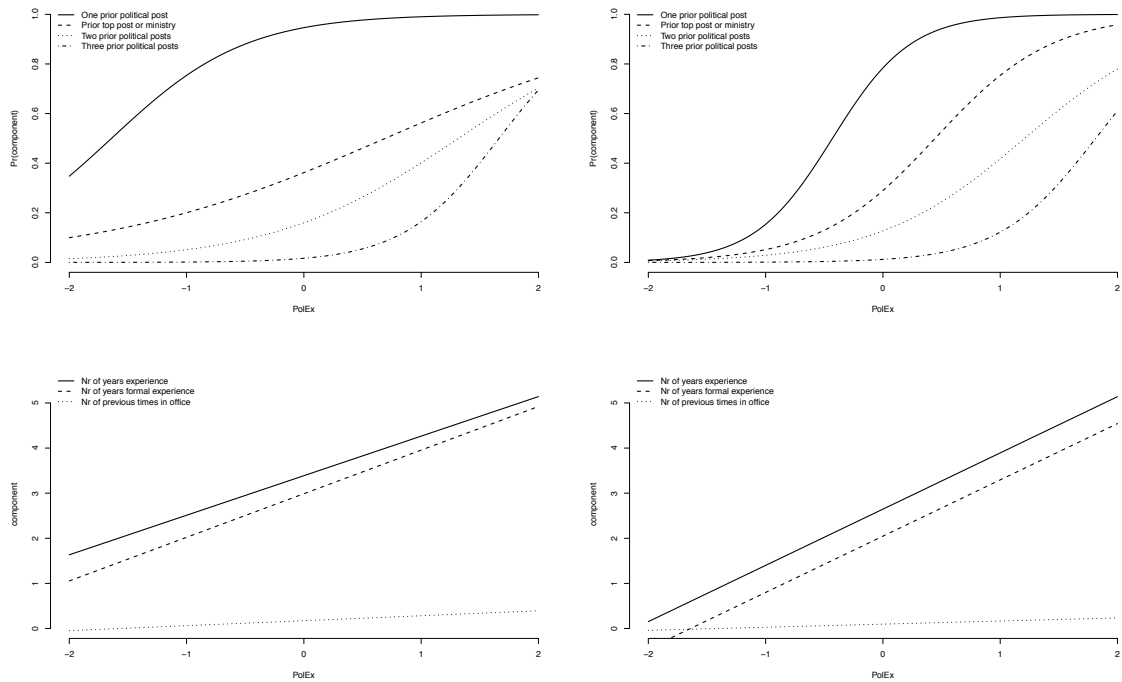


Figure 11: Item Response Curves

Note: Item response curves for all component variables of the latent variable model, with predicted probabilities for binary component variables (top) and linear predictions for count variables (bottom), with models estimates for democracies (left) and autocracies (right).

	Democracies	
	Discrimination (β_1)	Difficulty (β_0)
Nr of years experience	1.095 (0.024)	-2.255 (0.059)
Nr of years formal experience	1.349 (0.030)	-1.439 (0.045)
One prior political post	1.862 (0.099)	-0.995 (0.057)
Prior top post or ministry	0.950 (0.073)	0.609 (0.064)
Two prior political posts	0.958 (0.091)	1.585 (0.131)
Three prior political posts	1.539 (0.194)	2.140 (0.204)
Nr of previous times in office	1.045 (0.102)	2.055 (0.158)

Table 12: Parameter Estimates of Component Variables for Alternative Specification
Standard errors for the model parameters in parentheses.

types. The relative roles of all component variables remain the same, but they each impact stronger in the case of autocracies, where the baseline level of experience is lower and the impact of any change on any of the component variables correspondingly higher.

3.2 Using an alternative model specification

In the model specification in the paper, we use an inverse hyperbolic sine transformation for all count variables. This is akin to a logarithmic transformation, but can also be applied to cases with no experience (zero years), unlike the standard logarithm. This captures the idea that as the number of years of political experience increase, any additional year will have a decreasing impact on overall political experience. There is a large difference between having a few or no years of experience, but not that much difference between having 50 or 40 years of experience. This transformation furthermore leads to a distribution of the count variables which is more or less normal, allowing for a standard normal linear model for these component variables, akin to that in standard factor analysis. And factor analysis, in turn, is closely related to the item response theory model, albeit typically for normally distributed variables (Takane and De Leeuw, 1987; Glockner-Rist and Hoijtink, 2003; Quinn, 2004).

An obvious alternative to this approach to the count variables in the model would be to use a poisson instead of a normal distribution for the count variables. This leads to an otherwise similar model specification. Table 12 provides the discrimination and difficulty parameters of this alternative model specification. We find that the discrimination parameters (or, equivalently, factor loadings) are similar in their distribution across the different component variables, but different in absolute terms, from those reported in Table 1 in the paper. That absolute values are different is an obvious effect of changing the link function between the core IRT specification of $\beta_{1,EY}(\gamma_i - \beta_{0,EY})$ and the component variable EY , but the fact that relative parameter values are similar adds confidence in the results included in

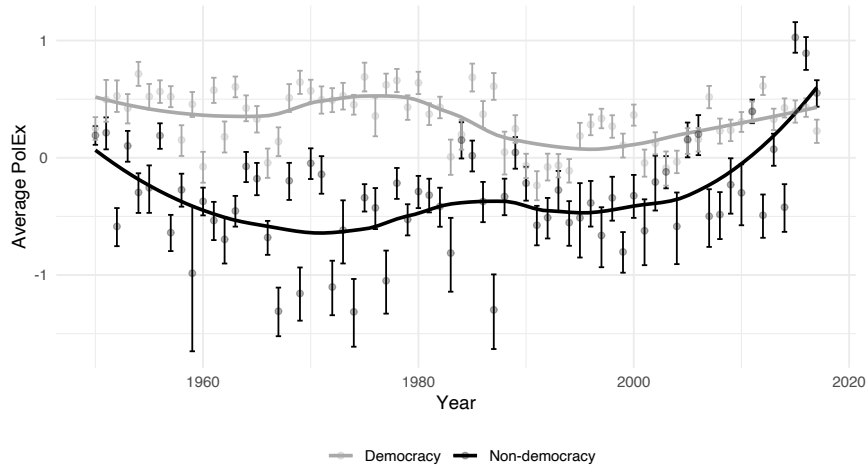


Figure 12: *Political Experience over Time: Alternative Model Specification* Note: Replication of Figure 5 in the paper, using an alternative model specification.

the paper.

Furthermore, Figure 12 shows that our finding in relation to the trend between democracies and non-democracies is virtually identical under this alternative model specification to that explored in the paper.

4 Descriptive statistics

Finally, an appendix is not complete without a table providing all descriptive statistics on the variables used in the analysis. Table 13 provides these details for all variables used in both the paper and this supplementary appendix.

Variable	Mean	Std. Dev.	Min.	Max.	N
PolEx	0.001	0.942	-2.166	1.668	1935
Democracy	0.543	0.498	0	1	1949
Polity2	3.584	6.643	-10	10	1865
Democracy, CGV	0.591	0.492	0	1	1606
Democracy, BMR	0.570	0.495	0	1	1695
Democracy, V-Dem	0.477	0.5	0	1	1949
v2x polyarchy	0.491	0.289	0.01	0.934	1931
GDP pc, (log)	3.84	0.506	2.208	5.271	1556
Economic growth	1.56	5.754	-37.285	50.117	1522
Age at entry	53.988	10.875	16	88	1948
Statehood, years (log)	3.985	1.066	0	5.303	1828
Population, mln	34.157	110.919	0.083	1355.387	1620
Regime durability, log	2.771	1.258	0	5.298	1298
Personalist regime	0.072	0.259	0	1	1949
Military regime	0.087	0.281	0	1	1949
Monarchy	0.036	0.186	0	1	1949
Single party	0.133	0.34	0	1	1949
Formal experience, years	12.115	10.713	0	52	1938
polTopPost	0.236	0.425	0	1	1949
polTopMinistry	0.174	0.38	0	1	1949
Experience, years	17.520	12.859	0	58	1936
Previous times in office	0.170	0.470	0	5	1949
Any previous top post	0.236	0.425	0	1	1949
Any previous top ministry	0.174	0.380	0	1	1949
Any previous top post or ministry	0.388	0.488	0	1	1949
At least one prior political post	0.782	0.413	0	1	1949
At least two prior political posts	0.215	0.411	0	1	1949
At least three prior political posts	0.067	0.250	0	1	1949

Table 13: *Descriptive Statistics*

References

- Bak, Daehee and Glenn Palmer. 2010. "Testing the Biden Hypotheses: Leader Tenure, Age, and International Conflict." *Foreign Policy Analysis* 6(3):257–273.
- Barlow, Cassie, Mark Jordan and William Hendrix. 2003. "Character Assessment: An Examination of Leadership Levels." *Journal of Business and Psychology* 17(4):563–584.
- Baturo, Alexander and Johan A. Elkind. 2014. "Office or Officeholder? Regime Deinstitutionalization and Sources of Individual Political Influence." *Journal of Politics* 76(3):859–72.
- Besley, Timothy, Jose Montalvo and Marta Reynal-Querol. 2011. "Do Educated Leaders Matter?" *Economic Journal* 121(554):205–27.
- Besley, Timothy and Martha Reynal-Querol. 2011. "Do Democracies Select More Educated Leaders?" *American Political Science Review* 105(3):552–66.
- Bienen, Henry and Nicolas Van de Walle. 1991. *Of Time and Power: Leadership Duration in the Modern World*. Stanford, Calif.: Stanford University Press.
- Boix, Carles, Michael Miller and Sebastian Rosato. 2013. "A Complete Data Set of Political Regimes, 1800–2007." *Comparative Political Studies* 46(12):1523–54.

- Carnes, Nicholas and Noam Lupu. 2015. "What Good Is a College Degree? Education and Leader Quality Reconsidered." *Journal of Politics* 78(1):35–49.
- Carreras, Miguel. 2012. "The Rise of Outsiders in Latin America, 1980–2010: An Institutional Perspective." *Comparative Political Studies* 45(12):1451–1482.
- Carreras, Miguel. 2014. "Outsiders and Executive-Legislative Conflict in Latin America." *Latin American Politics and Society* 56(3):70–92.
- Cheibub, Jose, Jennifer Gandhi and James Vreeland. 2010. "Democracy and Dictatorship Revisited." *Public Choice* 143(2):67–101.
- Clinton, Joshua, Simon Jackman and Douglas Rivers. 2004. "The Statistical Analysis of Roll Call Voting: A Unified Approach." *American Political Science Review* 98:355–70.
- Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Adam Glynn, Allen Hicken, Anna Luhrmann, Kyle L. Marquardt, Kelly McMann, Pamela Paxton, Daniel Pemstein, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Agnes Cornell, Lisa Gastaldi, Haakon Gjerlow, Valeriya Mechkova, Johannes von Romer, Aksel Sundtrom, Eitan Tzelgov, Luca Uberti, Yi ting Wang, Tore Wig and Daniel Ziblatt. 2019. "V-Dem Codebook v9." Varieties of Democracy (V-Dem) Project.
- COW, Correlates of War Project. 2017. "State System Membership List, v2016." Online, <http://correlatesofwar.org>.
- Curtis, Richard F. and Elton F. Jackson. 1962. "Multiple indicators in survey research." *American Journal of Sociology* 68(2):195–204.
- Diamantopoulos, Adamantios and Heidi M. Winklhofer. 2001. "Index Construction with Formative Indicators: An Alternative to Scale Development." *Journal of Marketing Research* 38(2):269–277.
- Feenstra, Robert, Robert Inklaar and Marcel Timmer. 2015. "The Next Generation of the Penn World Table." *American Economic Review* 105(10):3150–3182.
- Geddes, Barbara, Joseph Wright and Erica Frantz. 2014. "Autocratic Breakdown and Regime Transitions: A New Data Set." *Perspectives on Politics* 12:313–331.
- Glockner-Rist, Angelika and Herbert Hoijtink. 2003. "The best of both worlds: Factor analysis of dichotomous data using item response theory and structural equation modeling." *Structural Equation Modeling* 10(4):544–565.
- Horowitz, Michael, Rose McDermott and Allan C. Stam. 2005. "Leader Age, Regime Type, and Violent International Relations." *Journal of Conflict Resolution* 49(5):661–85.
- Linz, Juan. 1994. Presidential or Parliamentary Democracy: Does it Make a Difference? In *The Failure of Presidential Democracy: The Case of Latin America*, ed. Juan Linz and Arturo Valenzuela. Baltimore: Johns Hopkins University Press pp. 3–87.
- Ludwig, Arnold M. 2002. *King of the mountain: The nature of political leadership*. University Press of Kentucky.

- Malmendier, Ulrike, Geoffrey Tate and Jon Yan. 2011. "Overconfidence and Early-Life Experiences: The Effect of Managerial Traits on Corporate Financial Policies." *Journal of Finance* 66(5):1687–1733.
- Marshall, Monty and Keith Jagers. 2011. *Political Regime Characteristics and Transitions, 1800–2010, Dataset Users' Manual, Polity IV Project*. University of Maryland, College Park, MD.
- Przeworski, Adam, Michael Alvarez, Jose Cheibub and Fernando Limongi. 2000. *Democracy and Development: Political Institutions and Well-being in the World, 1950–1990*. Cambridge; New York: Cambridge University Press.
- Quinn, Kevin. 2004. "Bayesian Factor Analysis for Mixed Ordinal and Continuous Responses." *Political Analysis* 12:338–53.
- Skidmore, Thomas. 1988. *The Politics of Military Rule in Brazil, 1964–85*. New York: Oxford University Press.
- Takane, Yoshio and Jan De Leeuw. 1987. "On the relationship between item response theory and factor analysis of discretized variables." *Psychometrika* 52(3):393–408.
- Treier, Shawn and Simon Jackman. 2008. "Democracy as a latent variable." *American Journal of Political Science* 52(1):201–217.