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Conceptualization and Measurement

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# The Index of Egalitarian Democracy and Its Components: V-Dem's Conceptualization and Measurement\*

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## Introduction

Much of the scholarship on democracy was produced in a global context characterized by Cold War ideologies. In this context, democracy often came to be associated with capitalist societies that embody, first and foremost, principles of freedom, competition and self-determination. Equality, in contrast, was more frequently associated with the underlying principles of socialist or communist societies, many of which were ruled autocratically by single parties or absolutist dictators. It is not surprising, then, that the most widely-accepted conceptions of democracy tend to emphasize freedom, competition and participation, and sometimes distinctively liberal aspects such as private property rights, constraints on executive power, and strong, independent judiciaries, much more than they do equality.

Despite this historical association, equality occupies an important place in much of democratic theory. As Alexis de Tocqueville wrote, "democracy and socialism have nothing in common but one word, equality."<sup>1</sup> Indeed, much of the earliest theorizing about democracy was based on the simple idea that individuals are not inherently unequal, as aristocratic systems implied. More recent scholarship has addressed a wide range of ways in which not only political equality but also (at least some minimum levels of) socio-economic equality in terms of, for example, conditions of health, education and income protection. It is increasingly evident that these factors are integral to both the persistence and quality of democratic polities.

V-Dem's conception of egalitarian democracy builds on the theorized notion that individuals from all social groups ought to be equally capable of exercising their political rights and freedoms, and of influencing political and governing processes. Underlying this broad principle are two main sub-components: *equal protection* and *equal distribution of resources*. Equal protection implies that the state grants and protects rights and freedoms evenly across social groups. An equal distribution of resources ensures that individuals have the basic necessities enabling them to exercise those rights and freedoms, and leading towards an equal potential to influence decision making.

This paper begins by discussing the theoretical foundations of egalitarian democracy, then describes the V-Dem approach to creating an index of egalitarian democracy

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<sup>1</sup>See Mayer et al. (1960).

including a discussion of both the data and methods used to create the index. Using a variety of techniques, we then test the validity of V-Dem's measures of the Egalitarian component of democracy as well as its constituent parts. The paper concludes by outlining potential directions for research on egalitarian democracy, and its potential contribution to our broader understanding of democracy.

## The Concept of Egalitarian Democracy

Egalitarian conceptions of democracy rest on the foundation that democracy, as a system of rule "by the people," requires that citizens are equally capable of participating in the governing process. Ideally, all groups should enjoy equal *de jure* and *de facto* capabilities to participate in a variety of ways. These forms of participation include, but are not limited to, making informed voting decisions, expressing one's opinion, demonstrating, running for office, serving in positions of political power, putting issues on the agenda, and otherwise influencing policy-making. Thus, the concept of egalitarian democracy implies that material and immaterial inequalities fundamentally inhibit the actual exercise of formal rights and liberties; hence a more equal distribution of resources across various groups should enhance political equality.

The importance of egalitarianism arises, in part, out of the need to distinguish democratic forms of government from aristocratic or autocratic ones. As Bernstein (1961) wrote, democracy represents "an absence of class government, as the indication of a social condition where a political privilege belongs to no one class as opposed to the whole community"(1961: 21). This negative definition of democracy is integral to much theorizing about democracy, both about its origins and effectiveness as a form of government. For example, in his landmark study of democratization, Dahl notes that hegemonic political regimes are considerably more common where a small group of elites monopolizes the political and economic resources in society (Dahl, 1989: 85-86). Likewise, warnings about the potential for tyrannical majorities to undermine democratic forms of government relate directly to the notion of a privileged political class (Madison, 1787; Mill, 1859).

As these perspectives imply, the importance of equality in a democratic polity is fundamentally related to participation. The systematic deprivation or inequality of

rights and/or resources limits the extent to which individuals or particular groups may participate in, and exercise influence over, political and governing processes.<sup>2</sup> The Athenian notion that “no political system could be legitimate, desirable or good if it excluded the people from participating in ruling”(Dahl, 1989: 25) reflects the multidimensional nature of this relationship. Equal participation not only lends legitimacy to the democratic system, but also renders it a more effective instrument of rule.

Regarding legitimacy, equality minimizes the “resentments and frustrations” of some groups in society (Robert, 1971: 82), thereby leading to greater overall acceptance of the system in place. As Lipset (1959) notes, if some groups are denied access to political and governing processes, especially in newer democracies, the legitimacy of the system is likely to remain in question (1959: 89). In a study using survey data across countries, Anderson and Barimendi find empirical support for the idea that the decision to participate in the political system is itself an expression of legitimacy for that system (Anderson and Barimendi, 2008: 290). In other words, equal levels, or opportunities for, participation may quell the potential mobilization of anti-democratic forces, thereby increasing the chances of democratic survival and stability.<sup>3</sup>

Equality, some argue, can also make the democratic polity more effective.<sup>4</sup> In that equality among groups produces lower levels of polarization, an egalitarian democracy can more effectively resolve political and policy disputes. In *Democracy and Education*, for instance, Dewey explains democracy as “a society which makes provision for participation in its good of all its members on equal terms and which secures flexible readjustment of its institutions through interaction of the different forms of associated life”(1916: 99). It is through these interactions that governments come to better serve their citizens.

Effectiveness and legitimacy can be mutually reinforcing in such a way that further

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<sup>2</sup>This implies that egalitarian democracy is likely to be closely related to the principle of participatory democracy, one of V-Dem’s other principles. But seeing as the focus in V-Dem’s participatory doctrine is on availability of institutional mechanisms for direct participation and actual exercise of participatory actions such as voting, the egalitarian principle is necessary to elaborate the preconditions such as state-guarantees of rights across groups and provision of socio-economic equality that make participation possible.

<sup>3</sup>As (Robert, 1971: 89-91) argues, however, democratic regimes can, in many cases, tolerate high levels of inequality by granting only small political concessions to marginalized populations.

<sup>4</sup>In defining effectiveness, we follow the definition provided by Lipset: “the extent to which it satisfies the basic functions of government as defined by the expectations of most members of a society” (1959: 86). We recognize that there may be many ways in which a democratic regime is more or less effective, but it is beyond the scope of this paper to elaborate and adjudicate the many approaches to this concept.

strengthens democracy. This type of dynamic comes about, as Dahl (1989) explains, not only when *de jure* forms of equality exist, but when citizens truly “believe that no single member, and no minority of members, is so definitely better qualified to rule that the one or the few should be permitted to rule over the entire association. They believe, on the contrary, that all members of the association are adequately qualified to participate on an equal footing with the others in the process of governing the association (Dahl, 1989: 31). This “strong principle of equality,” Dahl argues, ensures that “when binding decisions are made, no citizen’s claims as to the laws, rules and policies to be adopted are to be counted as superior to the claims of any other citizen” (1989: 105), thereby lending both legitimacy and a sense of effectiveness to the democratic process.

As Dahl (1989) makes clear, prospects for equality and equal participation in a democracy are also closely related to questions about the definition and composition of the ‘demos’. With respect to Athenian democracy, Aristotle famously argued that democracy is only possible in smaller, homogeneous polities. In particular, only in contexts where “few citizens lived at the level of real poverty could there be a situation in which the mass of the population intelligently participate in politics and develop the self-restraint necessary to avoid succumbing to the appeals of irresponsible demagogues” (Lipset, 1981: 31). Dahl (1989) echoes this concern, noting that large levels of inequality are likely to undermine the strong principle of equality, since the wealthy will be likely to see the poor as unfit to rule.

The relationship between economic and political inequalities is of particular importance to the prospects for achieving the ‘strong principle.’ Where inequalities exist along socioeconomic lines, Walzer argues that one way to advance the “strong principle” is to redistribute in such a way that “redraws the line between politics and economics” resulting in a strengthened “sphere of politics” (Walzer, 1983: 122). For Walzer, the key to achieving greater equality in society is by ensuring what he calls “complex equality,” or the idea that inequality does not overlap across political and economic spheres. As we explain below, where the state ensures ample protection of rights and freedoms to all groups and distributes resources in a way that sufficiently

Given that the exclusion of citizens from democratic processes undermines the potential for a legitimate and effective government that is responsive to all citizens, the principle of egalitarian democracy must address the ways in which equal participation

becomes both possible and productive. First, the denial of universal suffrage, outlawing of some political parties, or other *de jure* conditions can fundamentally impede the ability of some groups to meaningfully participate. These conditions have occurred quite frequently in the history of democracies, such as in the denial of voting rights to slaves, women and other marginalized populations.<sup>5</sup> Exclusion can also be indirect or informal such as when suffrage is legally universal but some groups in society are denied the protections and resources necessary to participate. There are abundant examples of these types of informal limitations, such as intimidation of particular groups voters, unequal access to justice, a dearth of resources that make participation possible, such as time, money, health or education. Whether formal or informal, potentially harms both the effectiveness and legitimacy of the democratic system.

The mediating effect of participation in the relationship between inequality and democracy guides our conceptualization of V-Dem's Egalitarian principle.<sup>6</sup> Viewed as an inhibitor of meaningful participation in both political and governing processes, inequality can threaten the electoral, participatory and deliberative elements of democracy. Our elaboration of the concept of egalitarian democracy therefore focuses principally on the ways that equality enables more meaningful participation of both individuals and social groups. We focus in particular on two broad sub-components that relate closely to the potential for equal participation - and hence, influence - in governing processes. First, the government must *protect the rights and freedoms of individuals equally across all groups*. Second, egalitarian democracy requires the state to invest in, or otherwise facilitate, an *equal distribution of resources*. Together these two subcomponents form the basis for V-Dem's Egalitarian component of democracy.<sup>7</sup>

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<sup>5</sup>For a slightly different perspective on the inability of certain groups to participate, see Cohen's (2009) conception of "semi-citizenship."

<sup>6</sup>To elaborate various principles of democracy, V-Dem uses both *components* and *high-level indices* or HLI's. As described in Section 3, V-Dem produces the Egalitarian Component, an index that aggregate the fundamental concepts associated with the principle (called subcomponents), as well as an Egalitarian Democracy Index that combines the principle with the concept of electoral democracy. The terms "principle" and "component" are used interchangeably.

<sup>7</sup>Note that egalitarian democracy as we define it does not entail equality of power between leaders and citizens, as leaders in all polities are by definition more powerful and because, at any given time, power is likely to be skewed in favor of one group or another. The idea, more broadly, is that groups or individuals are equally capable of holding power and exerting influence over the governing process.

## Equal Protection

Equality, as Rousseau declared, is necessary because “liberty cannot subsist without it” (Rousseau, 1920: 170). For V-Dem, the Equal Protection subcomponent means that the state grants and protects rights and freedoms evenly across social groups, such that all citizens are free to engage in the political process. The egalitarian principle implies that state guarantees the rights and freedoms comprising V-Dem’s liberal and participatory components equally to all citizens.<sup>8</sup> Whereas the liberal principle focuses largely on the extent to which formal political rights and civil liberties are codified in a country’s constitution, the Equal Protection subcomponent focuses to a larger extent on the effective extension of those rights and freedoms across the populace. In this sense, the subcomponent considers not only the formal extension of rights and liberties, but also their effective extension across groups and territories.

Stating that “that all adult members of the political community should have an equal right to have their voices heard, and be given equal consideration in the formulation of public policy,” (Beetham, 1999: 282) argues that equal protection of human rights is integral to democracy. To achieve equal protection of rights and freedoms, the state itself must not interfere in the ability of groups to participate. It must also take action to ensure that rights and freedoms of one social group are not threatened by the actions of another group or individual. The equal protection of rights requires not only that formal protections, but that the various instruments of the state not interfere in the ability of some citizens to exercise these rights.

There are myriad ways that rights and freedoms could be unequally applied across social groups. Historically, political or civil rights have often been extended only to certain social groups such as non-slaves, property owners, men, religious groups, and so on. It is not uncommon that some groups are barred from contesting political office, forming political parties or freely expressing their views. Additionally, subtle intimidation by government officials, such as placing law enforcement officers at polling stations, can deter marginalized or minority communities from participating. Difficulties registering to vote, or accessing justice in the case of rights violations, can also deter members of certain groups from participating.

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<sup>8</sup>Note that this could also apply to contexts where the definition of citizenship is severely restricted thereby excluding large groups of people from enjoying an array of rights and freedoms.

## Equal Distribution

In addition to protecting the rights and freedoms of groups equally, literature on egalitarian democracy suggests that inequalities of health, education, income or other basic needs inhibit the exercise of political power and the enjoyment of political rights. Hence, a more equal distribution of these resources across social groups is necessary to achieve political equality.<sup>9</sup> V-Dem's second subcomponent of the Egalitarian component thus measures the extent to which resources are distributed equally in society.

An equal distribution of resources supports egalitarian democracy in two principal ways. First, lower poverty rates and the distribution of goods and services (such as food, water, housing, education and healthcare) ensure that all individuals are capable of participating in politics and government. In short, basic needs must be met in order for individuals to be able to effectively exercise their rights and freedoms (see, for example, Beetham (1999); Saward (1998); Sen (2001)).

The idea that basic resources are necessary to ensure citizens' abilities to participate can be traced back to Athenian democracy where, as Walzer describes, "the citizens as a body were prepared to lay out large sums" in order to "make it possible for each and every citizen to participate in political life"(Walzer, 1983: 71). The provision of basic services such as health and education are also critical to enabling all groups to meaningfully participate in political and governing processes. Following the logic of Maslow (1943) and Sen (2001), if citizens need to spend their time and energy concerned about sickness, security or other basic needs, they are considerably less likely to engage in activities related to self-actualization or the governance of their communities. A particularly cogent case concerns equal access to healthcare, for example. If citizens are denied healthcare in a way that leads to sickness or even death, they cannot exercise the right to vote. In short, where groups or individuals are deprived of these resources, their *de facto* abilities to participate can be severely impaired.

Second, high levels of resource inequality undermine the ability of poorer populations to participate meaningfully (Sinclair, 1962; Dahl, 2006). To this end, social or economic inequalities can translate into political inequalities, an issue addressed most notably by Walzer (1983), who argues that overlapping "spheres" of inequality are

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<sup>9</sup>See, for example, Berman (2006); Bernstein (1961); Dahl (1982, 1989); Dewey (1916); Dworkin (1987); Gould (1988); Miller and Walzer (1995).

particularly harmful to society.

Following, again, the healthcare example: if one group has a significantly shorter life expectancy than another because of lack of access to healthcare, their political influence will consequently be reduced over time. A similar argument is typically made regarding education. Individuals and groups with higher levels of education are more likely to comprehend and engage in political debates (Verba et al., 1995). a condition that is necessary for one to make informed choices; to stand for office, to be active in political parties, and so on. Lack of high-quality basic education impairs an individual's abilities to be a political equal. It is for this reason that Dahl suggests that "each citizen ought to have adequate and equal opportunities for discovering and validating...the choice on the matter to be decided that would best serve their interest"(Dahl, 1989: 112). Where opportunities or abilities to participate are limited, it is neither possible for citizens to adequately understand and formulate opinions on particular issues, nor is it likely that their interests, once formed, will be adequately represented in decision processes.

Sen (2001) provides yet another perspective on the way that resource inequality can harm individuals' abilities to participate meaningfully in social and political life. As he explains, "*relative* deprivation in terms of *incomes* can yield *absolute* deprivation in terms of *capabilities*...In a generally opulent country, more income is needed to buy enough commodities to achieve the *same social functioning*" "taking part in the life of the community" (Sen, 2001: 89). Thus, Sen not only warns against the potential for overlapping spheres of inequality, but suggests that these particular inequalities are not likely to abate as countries grow or transform their economies.

The need for democracies to distribute resources equally is, perhaps, best summed up by Dahl:

In the democratic vision, the freedom achieved by a democratic order is above all the freedom of self determination in making collective and binding decisions: the self-determination of citizens entitled to participate as political equals in making the laws and rules under which they will live together as citizens...it follows that a democratic society would, among other things, manage to allocate its resources so as to optimize political equality, and thus the primary freedom of collective self-determination by means of the democratic process, as well as the liberties necessary to that process.(Dahl, 1989: 326)

In other words, if the goal of a system characterized by ‘rule by the people’ is to realize a collective self-determination, then an equal distribution of resources is necessary to meaningfully advance that goal.

## Data and Measurement

The V-Dem dataset includes some 350 indicators covering 173 countries over the period 1900 to the present. The underlying data for about half of these indicators are obtained from over 2,700 country experts from across the world. Multiple, independent experts code each country-year for every indicator. For the purposes of the indices discussed here, we use only expert-based indicators measuring *de facto* constraints on the actual use of political rights stemming from the lack of state protection and/or the lack of socio-economic equality. A comprehensive account of the data collection process and the Bayesian ordinal IRT-modeling employed to produce point estimates and confidence levels for the indicators is found in the “V-Dem Methodology” document (Coppedge et al., 2015b), and in the description of the measurement model by Pemstein et al. (2015). Both papers are available at <https://v-dem.net>.<sup>10</sup>

Several goals guide the selection of indicators and construction of these indices. First, the Egalitarian component is designed to be orthogonal to V-Dem’s other democracy indices. This means that we only select indicators that are not employed in the other indices. Second, we strive to construct each subcomponent in a way that captures the two theoretical dimensions of the egalitarian component identified above, in a coherent and conceptually distinct fashion. Starting from a conceptual logic identifying which of the individual indicators should tap into each of the two subcomponents, we then employed a basic principal components analysis to confirm that these sets of indicators load onto a single underlying dimension. This preliminary analysis of the indicators thus helps to ensure that the subcomponents reflect coherent concepts that can be distinguished from other concepts of interest. In the final step, Bayesian Factors Analysis is used to aggregate individual indicators to estimates of its single underlying dimension. One distinct advantage of these data is that they include confidence

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<sup>10</sup>Future versions of the egalitarian indices will include indicators that are not based on V-Dem expert surveys. These indicators will supplement the V-Dem data available to produce “thick” versions of the egalitarian component and subcomponents.

**Table 1:** Indicators used in the Equal Protection Subcomponent

Indicator	Code	Mean	SD	N
Equal access to justice	v2xcl_acjst	.061	1.481	16,526
Social class equality in respect for civil liberties	v2clacjust	-.052	1.497	15,105
Social group equality in respect for civil liberties	v2clsocgrp	.075	1.47	16,526
Weaker civil liberties (percent of population)	v2clnlpct	42.756	20.894	15,151

intervals for each estimate, taking rater accountability and uncertainty into account. This is the same procedure used for all V-Dem subcomponents and is also discussed in Pemstein et al. (2015)

## The Equal Protection and Equal Distribution Subcomponent Indices

We develop the Equal Protection subcomponent utilizing V-Dem measures reflecting, in general, the extent to which rights and freedoms are applied equally across the population. The specific measures, listed in Table 1, are measuring respect for civil liberties across social classes, social groups and across the territory as well as the extent to which citizens have equal access to justice.<sup>11</sup>

The Equal Distribution of Resources subcomponent employs seven V-Dem indicators capturing the extent to which basic resources are provided by the government and the extent to which these resources are distributed equally among the population. We include not only measures of the distribution of public goods and services but also the distribution of power across social groups. The indicators used to construct the Equal Distribution of Resources subcomponent are listed in Table 2

## The Egalitarian Component Index

V-Dem's *Egalitarian Component* (v2x\_egal) aggregates the *Equal Protection* and *Equal Distribution* subcomponent indices. The Egalitarian Component index is formed by simply averaging the Equal Protection and Equal Distribution of Resources subcomponents. Like the other V-Dem indices for liberal, participatory, and deliberative components, this approach represents a compromise, or default, when there is no clear theoretical

<sup>11</sup>While the V-Dem dataset does provide other indicators that would serve as good measures of concepts related to equal protection, those indicators are not included in the Equal Protection subcomponent because they are employed in one of the other democracy indices.

**Table 2:** Indicators used in the Equal Distribution of Resources subcomponent

Indicator	Code	Mean	SD	N
Particularistic or public goods	v2dlencmps	.016	1.478	16,517
Means tested vs. universalistic welfare policies	v2dlunivl	-.223	1.474	16,517
Educational equality	v2peedueq	-.346	1.609	16,545
Health equality	v2pehealth	-.239	1.595	16,545
Power distributed by socioeconomic position	v2pepwrse	-.391	1.434	16,545
Power distributed by social group	v2pepwrsoc	-.174	1.504	16,546
Power distributed by gender	v2pepwrge	-.795	1.303	16,546

guidance on the relationship between the subcomponents. As described in Coppedge et al. (2015a), if the two subcomponents were both necessary for the concept to exist, then a multiplicative approach to aggregation would be most appropriate. If they are best aggregated such that one subcomponent could substitute for the other, then an additive approach should be used. Given that both the equal protection of rights and the equal distribution of resources are necessary to have egalitarian democracy *and* that strength on one component may represent a higher achievement of egalitarianism, we take the mean of the two subcomponents - a strategy that recognizes the relevance of both approaches to this particular concept. In short, by averaging the two subcomponents together, we acknowledge that countries scoring high on one dimension but lower on the other should still be considered as more closely embodying the principle of egalitarianism. Averaging also acknowledges that if a country denies its citizens *either* the equal protection of rights or the equal distribution of resources, then they are effectively limiting the extent to which they embody the egalitarian principle. Finally, this aggregation puts a premium on countries that are strong in both dimensions.

Consider a hypothetical country case. A communist country, for example, may score highly on the Equal Distribution subcomponent but very low on the Equal Protection subcomponent, since the latter measures the application of rights and freedoms across the social groups and territory. While the equal distribution of resources in this country implies that citizens are likely to be very *capable* of participating should rights and freedoms be granted to them, the fact that the application of rights and freedoms is limited effectively nullifies their ability to participate. While the fact that citizens across social groups are capable of participating reflects a stronger *potential* for egalitarian democracy, the lacking protection of rights and freedoms effectively renders

this capability moot. This country would, at maximum, get a medium score on the Egalitarian component. One must remember that no claim is made that this is a measure of democracy, only the extent to which egalitarian principles are incorporated in the polity. It is at the next level of aggregation that *Egalitarian Democracy* is measured, where lack of electoral aspects in this type of country case, would further minimize the impact of having a relatively high score on just one of the subcomponents.

## The Egalitarian Democracy Index

Following the aggregation rule of V-Dem's other democracy indices, the egalitarian component is then combined with the Electoral Democracy index (*v2x\_polyarchy*) to form the Egalitarian Democracy index (*v2x\_egaldem*). In the V-Dem conceptual scheme, the electoral principle is regarded as of critical importance for all other conceptions of democracy. There can be no democracy without elections, but following the canon in each of the traditions that argues that electoral democracy is insufficient, there is more to democracy than just elections. We therefore combine the score for the Electoral Democracy index with the score for the Egalitarian Component. Based on extensive deliberations among the authors and other members of the V-Dem research group, the following aggregation formula is used:

$$v2x\_egaldem = .25 * v2x\_polyarchy^{1.6} + .25 * v2x\_egal + .5 * v2x\_polyarchy^{1.6} * v2x\_egal$$

The underlying rationale is equal weighting of the additive terms and the multiplicative term in order to respect both the Sartorian necessary condition logic and a family resemblance logic. The degree of egalitarianism still matter for egalitarian democracy even when there is no electoral democracy, and electoral democracy still matters even when there is no egalitarianism; but the highest level of egalitarian democracy can be attained only when there is a high-level of both electoral democracy and egalitarianism (for further details including the detailed rationale for weights, see Coppedge et al. 2015a. "Comparisons and Contrast", V-Dem project document).

Descriptive statistics for the subcomponent, component and high-level indices are provided in Table 3. All indices are scaled between 0-1. Due to the varying aggregation techniques, the scores on the Egalitarian Democracy index are considerably lower than

**Table 3: Egalitarian Indices Descriptive Statistics**

Indicator	Code	Mean	SD	N
Equal Protection Subcomponent	v2xeg_eqprotec	.453	.296	14288
Equal Distribution Subcomponent	v2xeg_eqdist	.411	.308	16,522
Egalitarian Component	v2x_egal	.439	.273	16,522
Egalitarian Democracy Index	v2x_egaldem	.250	.244	15,828

the other three indices. It is also important to note that because the Equal Protection and Egalitarian Component indices utilize the continuous measure of the percent of the population to which civil rights and liberties apply, the overall scores may not be completely comparable to other V-Dem indices that do not make use of continuous variables.

## Validation of the Indices

To what extent does V-Dem’s Egalitarian component capture the concepts as described above? This sections employs a variety of validation tests designed to evaluate V-Dem’s measure of egalitarian democracy. Since few, if any, measures of egalitarian democracy exist, testing the validity of the V-Dem’s Egalitarian Component index is not necessarily a straightforward matter. To the extent possible, we follow the guidance of Adcock and Collier (2001), Seawright and Collier (2014) and Gerring (2011) by conducting validation tests using content, case and convergent/discriminant methods, each of which “provides one kind of evidence to be integrated into an overall process of assessment”(Adcock and Collier, 2001: 543).<sup>12</sup>

The purpose of the validity tests in this section is to assess the extent to which the index captures the concepts described in the previous section. Our approach to validation specifically addresses the possibility of systematic measurement error that compromises the extent to which the index measures the concepts of interest. Systematic measurement error introduces bias into the concept thereby weakening confidence

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<sup>12</sup>This paper does not yet include a fourth type of test - nomological validation. This type of validation utilizes tests of theorized relationships involving the systematized concept of interest. Confirmation of the theorized relationship in this case is treated as evidence for the measure’s validity (Adcock and Collier, 2001: 542).

not only in the index itself but in the theorized relationships (Gerring, 2011: 159).<sup>13</sup> Additionally, the validity tests focus principally on the egalitarian component and its two subcomponents, rather than on the validity of the specific indicators used to construct the subcomponents, or on the broader Egalitarian Democracy index, which combines the Egalitarian component with the Electoral (or Polyarchy) index.

## Content Validation

Content validation addresses the question of whether or not the measure adequately captures the full content of the systematized concept. It assesses whether or not the appropriate conceptual elements are included as well as the extent to which inappropriate elements are not included (Adcock and Collier, 2001: 538). It can be especially important to assess the content validity of measures produced using a latent variable approach given the uncertainty involved in assuming the existence of an underlying latent variable within a set of observed indicators.

As Bollen and Jackman (1989) argues, in order to assess content validity, there must be some level of agreement about the concepts being investigated. Drawing on the conceptual discussion above, we assess the extent to which the content of the indices capture the concepts of interest, or at least the indicators associated with those concepts. First, to assess the extent to which we have captured a coherent set of concept, we investigate the correlations amongst the four indices. As seen in Table 4, there is are, unsurprisingly, correlations greater than .85 between the Egalitarian Democracy, Egalitarian Component, as well as the two subcomponents. More reassuring, however, is the strong correlation between the two subcomponents (.833), suggesting an underlying relationship between equal protection and equal distribution that form the basis of the egalitarian principle of democracy.<sup>14</sup>

Table 5 shows correlations of constituent indicators with the four indices. Looking first

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<sup>13</sup>Note that we focus exclusively on validity in this paper, rather than on reliability. The notion of reliability relates to random (stochastic) error. Given that V-Dem's processes of data generation are specifically designed to minimize random error, and that their indicators include confidence intervals with the explicit purpose of measuring random error, we refer readers interested in the reliability of the data used to construct the index to V-Dem's reference materials, available at <https://v-dem.net/en/reference/version-4-mar-2015/>.

<sup>14</sup>In future versions of this paper we plan to also analyze the posterior loadings matrix resulting from the Bayesian Factor Analysis to get a better sense of which variables are 'doing the most work' to produce the model's estimates for each index.

**Table 4: Correlation Matrix of Four Indices\***

Index	Code	Egal Dem	Egal Comp	Eq. Protec.	Eq. Dist.
Egalitarian Democracy	v2x_egaldem	1.000			
Egalitarian Component	v2x_egal	0.891	1.000		
Equal Protection	v2xeg_eqprotec	0.850	0.953	1.000	
Equal Distribution	v2xeg_eqdr	0.854	0.961	0.833	1.000

\*All correlation coefficients statistically significant at 99% confidence level

at the Egalitarian Component index, the indicators correlating the most strongly are equal access to justice across socio-economic groups, health equality, education equality and civil liberties applied across social groups. These strong relationships suggest that concepts related to both equal protection and equal distribution of resources are well-represented in the component. The fact that the distribution of health and education resources relate closely to the resulting component fit well with the theorized relevance, described in greater detail above, of access to quality health and education resources to participatory equality.

It is also encouraging that the indicators used in the Equal protection index correlate relatively strongly with the Equal Distribution subcomponent and vice versa. With the exception of universalistic welfare policies and power distribution by gender, the indicators used in the Equal Distribution subcomponent correlate at .7 or above with the Equal Protection subcomponent. These correlations are consistent with our expectation that an equal distribution of resources to lead to greater levels of equality in participation, which in turn would lead to rights and freedoms extended to greater proportions of the population.

Finally, the relatively weak association of the four indices to the indicator measuring the percent of the population for whom civil liberties are protected (v2clslnlpc) is not surprising given that the continuous nature of this particular variable produces greater levels of variation in indicator scores. We therefore view the relatively weak correlation coefficients as a statistical anomaly rather than a sign that the equal application of civil liberties is only weakly associated with our indices.

Overall, the strong correlations among the indicators and indices provide confidence in the content of the indices. The correlations across the Equal Protection and Equal Distribution subcomponents are especially encouraging, since these associations

**Table 5:** Correlations of Egalitarian Index and Constituent Indicators

Variable	V-Dem Code	Egal Dem.	Egal. Comp	Equal Protection	Equal Distribution
Equal access to justice across social groups	v2xcl_acjst	0.824	0.777	0.789	0.697
Equal access to justice across socio-economic class	v2clacjst	0.764	0.901	0.920	0.818
Civil Liberties across social groups	v2clsocgrp	0.719	0.826	0.892	0.712
Civil Liberties applied equally (percent)	v2clsnlpct(rev)	0.622	0.661	0.684	0.570
Particularistic or Public Goods	v2dlencmps	0.668	0.760	0.684	0.769
Welfare policies applied universally	v2dlunivl	0.595	0.704	0.580	0.755
Educational equality	v2peedueq	0.768	0.879	0.762	0.914
Health equality	v2pehealth	0.791	0.888	0.784	0.922
Power distributed by socioeconomic position	v2pepwrse	0.718	0.815	0.700	0.849
Power distributed by social group	v2pepwrsoc	0.756	0.799	0.731	0.791
Power distributed by gender	v2pepwrngen	0.727	0.754	0.643	0.785

Number of observations range between 13958 and 16526

All correlation coefficients statistically significant at 99% confidence level

point to the presence of mutually-reinforcing dynamics between these two important egalitarian concepts in such a way that reinforces the broader phenomenon of the egalitarian principle of democracy.

## **Case Validity**

As a second validation check, we examine the extent to which the indices match our knowledge of particular cases both across units (countries) and over time. First, we examine countries scoring highest, lowest, and at the median on each of the four indices in different time periods. Table 6 shows examples of these country rankings.

As seen in Table 6, a set of countries consisting of the Scandinavian countries, Switzerland and Slovenia consistently score highest on all indices across the three time periods. Second, at the lowest end of the spectrum of index scores we find countries that we tend to consider both oppressive and weak in terms of their capacity to deliver goods and services to their populations. Countries like Angola, Somalia, Myanmar, Guinea-Bissau and South Sudan make multiple appearances as the lowest-scoring countries across the four indices. In the median category we see a wide variety of countries ranging from authoritarian socialist regimes such as Cuba to relatively capitalist and democratic ones such as South Korea.

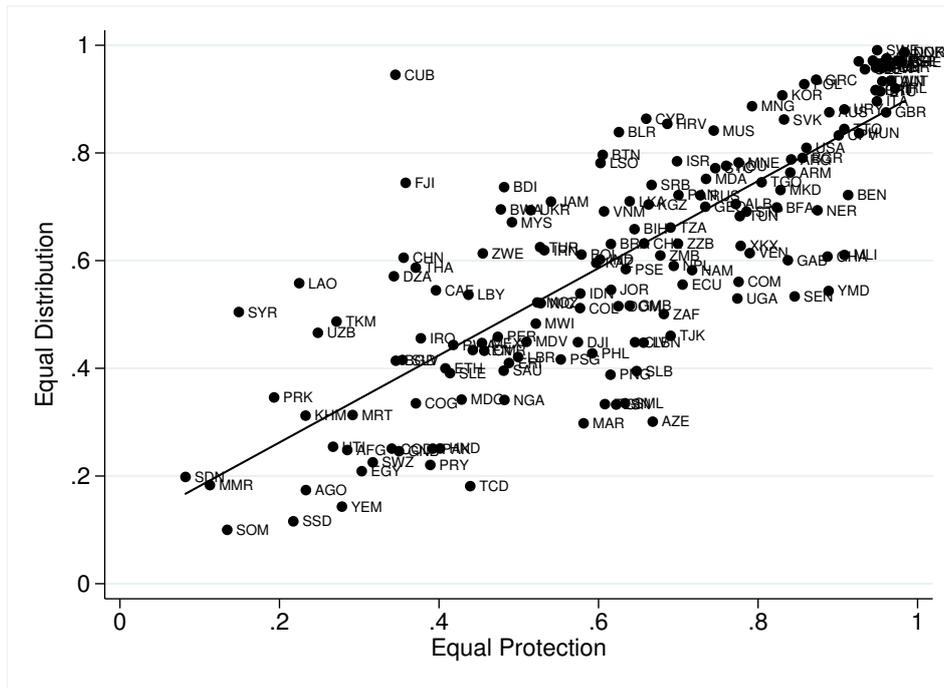
Another way to evaluate the face validity is to plot the equal distribution versus equal protection subcomponents. Figure 1 shows such a plot for the mean scores over the period of 1990-2015. The scatter plot shows a strong positive correlation between the two dimensions. In general, countries that we would expect to score high on both dimensions are found in the upper right-hand corner, such as the Nordic countries and post-Communist democracies such as Poland, the Czech Republic and others. Countries like Cuba, China and Thailand demonstrate relatively high equal distribution scores for their levels of Equal Protection, while those countries with relatively liberal regimes but weaker distributions of resources - Benin and Senegal for example - appear further below the best-fit line.

We also examine whether or not the variables change over time as expected. Focusing on major events such as the fall of the Soviet Union, the US civil rights movement or the gradualistic economic reforms in China, we can assess the extent to which our indices capture the expected movements resulting from these types of events.

**Table 6:** Country Rankings by Index and Time Period

Index	Time Period	Top	Median	Bottom
Egalitarian Democracy	1900-1944	Denmark, New Zealand	Moldova, Philippines	Malawi, Guinea-Bissau
	1945-1989	Denmark, Slovenia	Seychelles, Mali	Angola, Yemen
	1990-2015	Denmark, Switzerland	Zambia, Seychelles	Somalia, Myanmar
Egalitarian	1900-1944	Denmark, Switzerland	Ghana, Mali	Malawi, Namibia
	1945-1989	Switzerland, Slovenia	Cuba, Turkey	Angola, Guinea-Bissau
	1990-2015	Sweden, Norway	Brazil, Cuba	Somalia, Sudan
Equal Protection	1900-1944	Denmark, Switzerland	Tunisia, Algeria	Malawi, Guinea-Bissau
	1945-1989	Denmark, Switzerland	Senegal, Gabon	Angola, Guinea-Bissau
	1990-2015	Norway, Denmark	Bosnia-Herz, Ivory Coast	Sudan, Myanmar
Equal Distribution	1900-1944	Switzerland, Estonia	S. Korea, Italy	Nepal, Rwanda
	1945-1989	Uruguay, East Germany	Iraq, Qatar	Angola, Paraguay
	1990-2015	Norway, Denmark	Venezuela, Iran	Somalia, South Sudan

**Figure 1:** Scatter Plot: Equal Protection vs. Equal Distribution in 2010



An examination of Russia and Poland following the events of the late 1980s and early 1990s provides both cross-country and cross-temporal assessments of the Equal Distribution subcomponent. Given the varying results of economic reform in Poland and Russia, specifically related to the distribution of state assets, we would expect to see Russia's scores on Equal Distribution decline more rapidly than Poland's following the transitions. Likewise, we would expect the onset of communist rule in Russia in 1917 and in Poland after World War II to produce a distinct upward trend in the Equal Distribution subcomponent. Overall, the Egalitarian component may not show very strong fluctuation, since the Equal Protection component would likely be moving in opposite directions. Figure 2 shows that the Equal Distribution component indeed captures the expected fluctuations across the two countries. Specifically, Russia's Equal Distribution subcomponent rises considerably around the time of the 1917 revolution then drops precipitously after 1991. Poland's sharp rise in the Equal Distribution score occurs both around 1917 and again after World War II, when Soviet occupation began. It does not show any signs of decline following the collapse of the Soviet Union, a pattern that reflects a more successful process of economic reform that both delayed privatization and ensured social welfare mechanisms (Sachs et al., 1995). A more gradual process of economic liberalization in China is also evident from the

**Figure 2:** Equal Distribution Subcomponent in Russia and Poland

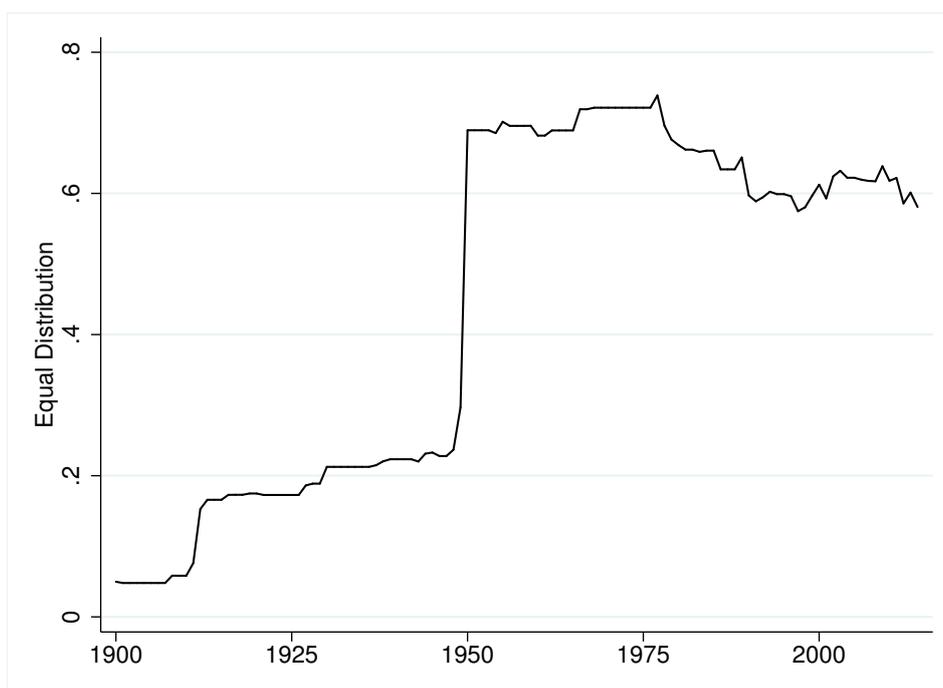


Equal Distribution subcomponent. As seen in Figure 3, while Equal Distribution rose considerably after Mao's rise to power in 1949 it began a period of increasing fluctuation and slight decline as Chinese leaders since Deng Xiaoping have pursued economic reform since Mao's death in 1976. In other words, whereas the Cultural Revolution evened the distribution of resources, liberalization reforms since the 1970s have led to a consistent downward trend in the Equal Distribution subcomponent in China.

A closer examination of the Equal Protection subcomponent also demonstrates its ability to measure changes over time in the equal protection of rights. Figure 4, for example, shows changes in the Equal Protection subcomponent over time in the United States. As expected a major increase occurs in Equal Protection scores around the time of the Civil Rights Act of 1964. A small increase is also evident around the time that women were granted suffrage in 1919, but the small size of this increase is probably due to our inability to include indicators of the equal application of civil rights across gender because such indicators are employed in other indices.

The time trends in the Equal Distribution subcomponent in the U.S. are also telling. Distribution rises following the passage of the New Deal and again in the 1960s, but levels off as retrenchment of these major social programs became more prevalent in

**Figure 3: Equal Distribution Subcomponent in China**

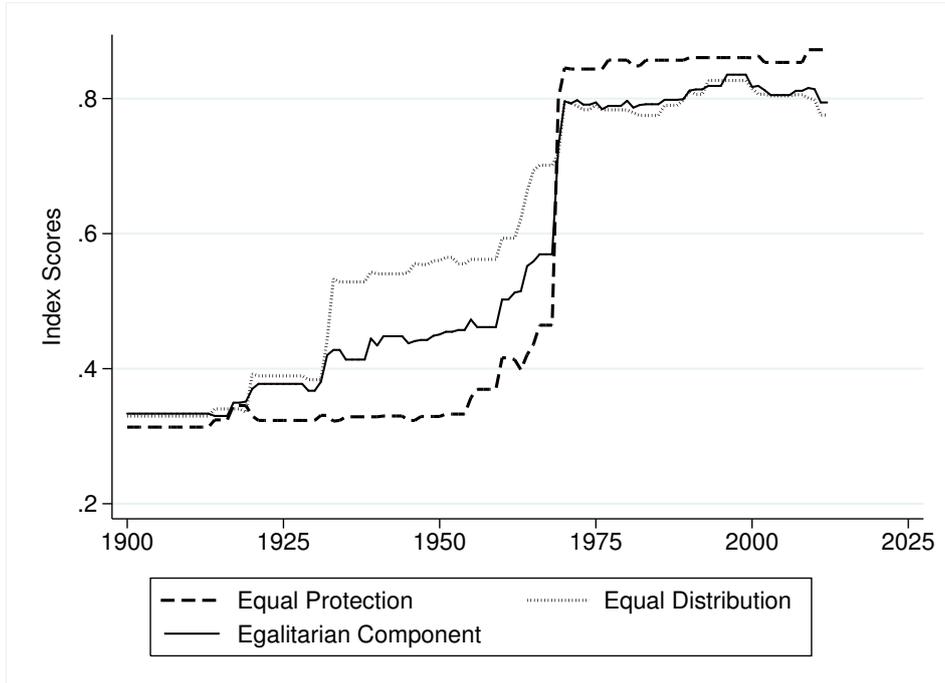


the 1970s and 80s. The Egalitarian Component, represented by the solid line, follows a somewhat consistent middle ground between the two subcomponents, but tracks more closely to Equal Distribution in more recent decades. Why, exactly, the component tracks more closely to Equal Distribution requires further inquiry.

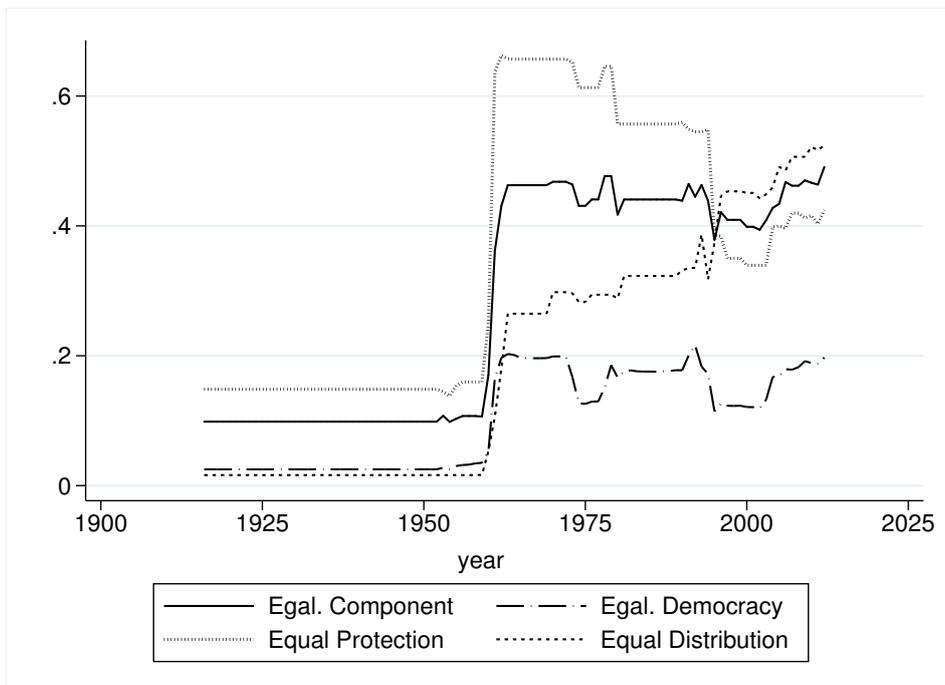
Finally, we present time trends across the four indices in Rwanda in Figure 5. Sharp increases in both subcomponents are evident around Rwanda's independence from the Belgians in 1962. With the onset of civil war in 1994 Equal Protection falls dramatically. Since the end of the war and Rwanda's subsequent economic successes, Equal Distribution rises steadily, while the gains in Equal Protection under President Kagame are less strong. While the Egalitarian Component tracks, as expected, between the two subcomponents, the recent increases in the Egalitarian Democracy index are somewhat less sharp, reflecting the continued absence of a strong electoral democracy.

Overall, the cases demonstrate the potential utility of the four indices in capturing relevant variation - both across countries and over time - in various aspects of egalitarian conceptions of democracy. Though the case of the United States shows that the Equal Protection index may not always capture all relevant discrepancies in the extension of rights and freedoms, the overall movements in the four indices across a variety of cases merit a sufficiently high level of confidence that the index scores, in

**Figure 4: Equal Protection and Distribution in the United States**



**Figure 5: Egalitarian Indices in Rwanda**



general, match what we know about particular cases.

## **Convergent/Discriminant Validation**

The purpose of convergent/discriminant validation is to assess whether or not the measure relates more closely to alternative indicators of the systematized concept of interest than it does to measures of different concepts. If scores of a particular measure do not converge as expected with alternative indicators, it may be necessary to either refine the measures to achieve greater convergence or reevaluate the conceptualization that led to the expectation of convergence in the first place (Adcock and Collier, 2001: 540). To test convergent/discriminant validity we simply compare and contrast the indices with other V-Dem indices.<sup>15</sup>

Table 7 shows correlations of the Egalitarian indices with V-Dem's other component indices. The correlations show that both the Egalitarian Democracy and Egalitarian Component Indices correlate with the Deliberative, Participatory, Civil Society, Gender and Rule of Law/Individual Liberty indices. They correlate considerably less closely to the Corruption, Judicial Constraints and Suffrage indices. Generally speaking, these patterns of correlation are consistent with the theoretical expectations outlined in the conceptual discussion above. Specifically, we expect the egalitarian measures to relate most closely to measures of the participatory, deliberative and liberal principles. Moreover, the relatively weak correlation of the Egalitarian Democracy and Egalitarian Component indices with less relevant concepts provides further confidence that the measure discriminates between 'egalitarianism' and other, distinct concepts.

Moving on to examine the correlations between the subcomponent indices and other V-Dem indices, we see that while both the Equal Protection and Equal Distribution indices correlate very strongly with the Gender Empowerment index, Equal Protection also corresponds very closely to the Civil Liberties and the Equality Before the Law/Individual Liberties indices, while the Equal Distribution subcomponent relates more closely to the Core Civil Society index. These varying correlations, though slight, make sense considering the conceptual background of the two subcomponents. In particular, assuming that basic rights to participation exist the core civil society

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<sup>15</sup>In future versions of this paper, we plan to further convergent/discriminant validation by also comparing and contrasting the egalitarian indices with variables related to egalitarian principles from outside the V-Dem dataset

**Table 7:** Correlations with Other V-Dem Indices

Index	Code	Eg. Dem.	Eg. Comp.	Eq. Prot.	Eq. Dist.
Polyarchy	v2x_polyarchy	0.949	0.788	0.753	0.755
Participatory	v2x_partip	0.829	0.727	0.701	0.685
Liberal	v2x_liberal	0.811	0.720	0.737	0.641
Deliberative	v2x_delibdem	0.961	0.782	0.745	0.745
Corruption	v2x_corr	-0.454	-0.417	-0.390	-0.390
Core Civil Society	v2x_gencs	0.787	0.781	0.705	0.778
Civil Society Particip.	v2x_cspart	0.828	0.729	0.717	0.671
Free Expression	v2x_freexp	0.767	0.619	0.644	0.541
Civil Liberties	v2x_gencl	0.816	0.812	0.821	0.733
Gender	v2x_gender	0.839	0.848	0.775	0.832
Judicial Const. on Exec.	v2x_jucon	0.674	0.580	0.587	0.518
Rule of Law and Ind. Lib.	v2x_rol_free	0.836	0.752	0.779	0.669
Suffrage	v2x_suffr	0.577	0.638	0.559	0.658

All correlation coefficients statistically significant at 99% confidence level

index - a measure of the “robustness” of civil society - should relate more closely to the distribution of resources that enable civil society organizations to participate. Likewise, *de facto* suffrage, as measured by the Suffrage index, is likely to be more extensive where resources are distributed equally throughout society.

We draw several important lessons from this series of tests including content, case and convergent/discriminant methods of validation on the four Egalitarian indices. First, we are generally confident that the measures as currently constructed capture the theorized concepts related to egalitarian principles. That said, additional work may be necessary to build more comprehensive subcomponents, especially to measure the equal protection of rights and liberties across various types of social groups. Additionally, although we like that the Equal Distribution subcomponent currently captures the importance of health and educational equality, there is less attention in this subcomponent to income. Integrating income (in)equality measures into ‘thicker’ versions of the subcomponent will help to capture a wider variety of resource-distribution types.

Second, the close relationship between the Equal Protection and Equal Distribution subcomponents is encouraging from a conceptual perspective, but has the potential effect of obscuring important changes in the overall Equal Protection of rights and

resources. Conceptually, it makes sense that those with resources can better see to their protection of rights and freedoms. In this sense, where resources are distributed more equally amongst the population, we would expect broader protections of rights and freedoms. But the connection between these two concepts can also obscure the overall protection of rights. In the case of Rwanda, for example, Figure 5 shows recent increases in *both* the protection of rights and the distribution of resources may blur the widely acknowledged overall reductions in political and civil rights purportedly resulting from President Kagame's rule. Future efforts to achieve a more fine-grained distinction between the two subcomponents could help to better understand the underlying dynamics that give rise to, or threaten, egalitarian facets of democracy.

## A Research Agenda

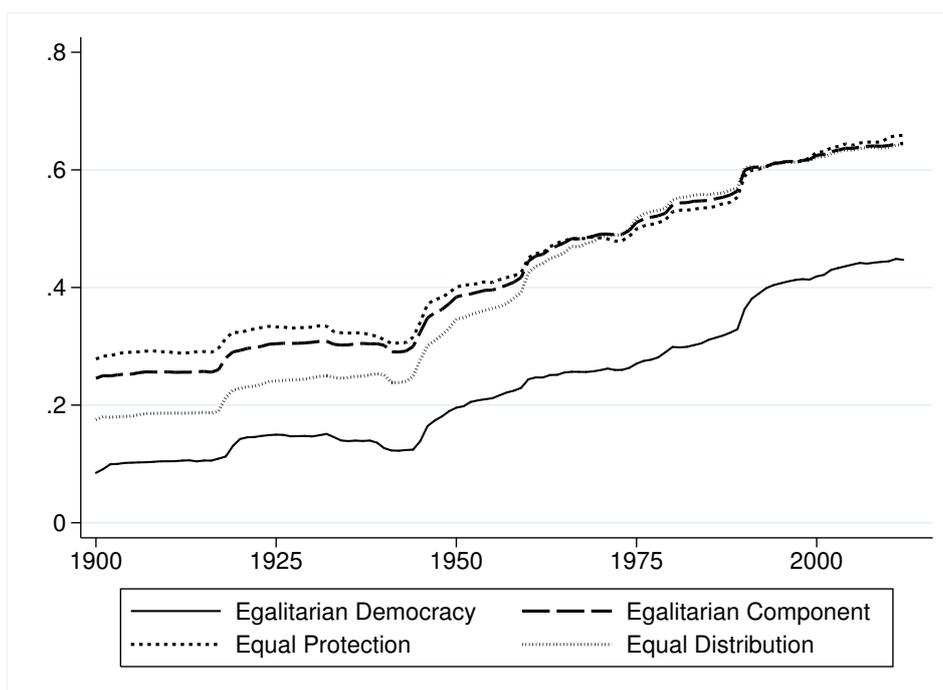
We conclude the paper by suggesting a number of ways in which the development of these four indices related to egalitarian principles of democracy can advance existing research. Though any research agenda so briefly outlined is undoubtedly incomplete, we outline three areas that we view as particularly important areas to which V-Dem's measure of Egalitarian democracy could contribute. The three areas include global trends in the egalitarian nature of polities, the relationship between equality/inequality and democratic survival and the relationship of egalitarian democracy to Dahl's "strong principle of equality."

Figure 6 shows global trends in the four egalitarian indices from 1900-2012.<sup>16</sup> The convergence among the indices following World War II is particularly striking. It seems likely that some combination of economic prosperity and the spread of communism may have combined to bring the Equal Protection and Equal Distribution subcomponents closer together. The change in Equal Distribution during this period is particularly large and would be an interesting area to investigate further to see how resource distributions changed across different types of economic systems. Additionally, we see a spurt of growth in all indices corresponding to the "Third Wave" of democratization at the end of the 1980s and the early 1990s. While one might assume that the fall of communism during this time would lead to *less* equal distributions of

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<sup>16</sup>The last year for which data are currently available on the full slate of V-Dem countries is 2012.

**Figure 6:** Global Trends in Egalitarian Indices



resources, the Equal Distribution subcomponent appears to move in close tandem with Equal Protection. A more complete inquiry into these trajectories, and the relationships between the two subcomponents they imply, would help to deepen our knowledge about the underlying dynamics of egalitarian democracy.

A second area of potential research relates to the expanding body of empirical research on the relationship between inequality and democracy (Boix, 2003; Acemoglu and Robinson, 2006). Though this area of research has not come to any firm conclusions about the extent to which inequality makes a transition to democracy more or less likely, there is mounting evidence that high levels of inequality threaten both the survival and quality of democracy.<sup>17</sup> Not only would V-Dem's egalitarian indices enable researchers to better grasp the inequality dynamics that shape the probability of authoritarian reversals, but they could also provide insight into the particular institutional mechanisms that affect the participation patterns of the poor or otherwise marginalized populations in ways that could potentially undermine democratic stability. The idea here would be to bring closer together literature on the relationship between inequality and participation, for example by Gerber (1998); Uslaner and Brown (2005) with research on the relationship between inequality and democratic survival.

<sup>17</sup>For example, see Houle (2009); Haggard and Kaufman (2012).

A final area of research could investigate empirically the origins of Dahl's "Strong Principle of Equality." Dahl (1989) notes specifically that he does not know why strong beliefs in equality arise in some context but not others. By bringing together mass-based public opinion survey data with V-Dem's egalitarian indices, we could better understand how and why a polity's egalitarian undercurrents evoke broader beliefs in equality among citizens.

Ultimately, these three areas of potential research are just a small fraction of the types of knowledge that could be gained from further advancing our ability to conceptualize and systematically measure the egalitarian underpinnings of democratic regimes. This paper points not only to the effectiveness and utility of developing such indices, but also to the potential benefits from further work to improve these indices and explore their range of capabilities.

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