Voting Counts:
Participation in the Measurement of Democracy

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Abstract:

The measures of democracy commonly used in empirical research suffer notable limitations, primarily the exclusion of participation. As a result, statistical studies may misstate the effect of democracy on important social outcomes or misinterpret the aspect of democracy that is responsible for that effect. We respond by validating two variants of a new indicator, the Participation Enhanced Polity Score (PEPS), which combine institutional factors with the breadth of citizen participation. Using statistical evidence on democratic persistence, basic needs fulfillment, and gender inequality, we demonstrate that including participation is crucial to accurately measuring democracy and gauging its effects.

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1. Introduction

Democracy has become the most widely praised of the world's political systems due to its implications for peace, prosperity, equality, and freedom.[1] The case for democracy as a superior political system, however, is only as strong as the validity of the empirical methods that produce these findings. Those methods, in turn, must rest upon a definition and measurement strategy that effectively captures key features of democracy. Measures used in previous studies suffer notable limitations. In particular, democracy indicators such as Polity and Freedom House, which emphasize institutional arrangements and civil liberties, neglect citizen participation (Jaggers and Gurr, 1995; Freedom House, 2002). As a result, some countries are coded as "pure" democracies despite participation limited by gender, class, or ethnicity. This omission undermines the normative basis for claims of democratic superiority and may distort the empirical relationship of democracy with its postulated outcomes.

We correct this oversight by creating two variants of a new indicator of nations' democracy levels, the Participation Enhanced Polity Score (PEPS). The PEPS variants combine institutional factors with considerations of the breadth of citizen participation. By validating these new indicators, we demonstrate the necessity of including participation in any robust measure of democracy. Section two reviews the range of definitions and measures previously offered for democracy. Section three demonstrates the intuitive validity of our concept of participatory democracy by contrasting actual political participation with institutional characteristics and suffrage limitations. In section four we unveil the details of our PEPS measures and lay out our plan to validate them by demonstrating that they better fit theoretical expectations than existing democracy measures. In sections five, six, and seven we replicate studies that link democracy with one variable said to *cause* democracy (development), with one that is *internal* to the democratic process (the persistence and durability of institutions), and finally, with two important *consequences* of democracy (the attainment of basic human needs and gender equality).

[1] There is evidence that democracies engage in less foreign conflict (Schumpeter, 1955; O'Neal and Russett, 1997) and more external cooperation (Haas, 1974; Mansfield et.al., 1998). They provide superior levels of basic human needs (Moon and Dixon, 1985; Gough, 2000) and feature higher levels of human rights (Mitchell and McCormick, 1988; Poe and Tate, 1994). It is even argued that democracies exhibit higher levels of macroeconomic growth (Sirowy and Inkeles, 1990; Brunetti, 1997).

These replicated studies demonstrate not only that our new measure is as useful as the existing ones, but that in important respects it is an improvement.

2. On Measuring Democracy

Both ancient and modern political philosophers have struggled to describe the democratic 'ideal', a governance system in which every citizen participates in the political process that shapes the collectivity's fate and, through it, their own. Whatever the problems of capturing such an ideal, the classification of actual states is more problematic yet. In *The Politics,* Aristotle (1996: 120) writes that a form of government "is a question of degree; an oligarchy, for example, may become more or less oligarchical, and a democracy more or less democratic". More recently, Lipset (1959:73) observed "democracy is not a quality of a social system which either does or does not exist, but rather a complex of characteristics which may be ranked in many different ways". Indeed, researchers have operationalized "democracy" by various means, each reflecting a unique view of what lies at the core of the "ideal democracy".[2]

In a review of nine projects that gather data on democracy, Munck and Verkuilen (2002a:9) warn against "maximalist" or "minimalist" definitions that include either too many or too few theoretically relevant attributes.[3] Maximalist definitions, as exemplified by Freedom House's (2000) freedom index, "tend to be so overburdened as to be of little analytical use", composed more of lists of characteristics than a tightly defined essence. Freedom House classifies nations as free, partly free, and not free on scales that encompass twenty-five conceptions of political rights and civil liberties. Because some of these attributes – such as "socioeconomic rights", "property rights" and "freedom from war" – are certainly not exclusive to democracy, we do not consider them explicit *democracy* scales, even though empirical researchers often use them under the implicit assumption that "free" states are more democratic (Starr, 1991, 1999; Lipset, Seong, and Torres, 1993; Burkhardt and Lewis-Beck, 1994).

[2] It is rare to find one democracy that is exactly like any another. For the breadth of modern conceptions of democracy, see Pieterse (2002). For empirical variations, see the ACE Project (2003).

[3] Because most conceptions acknowledge that complex political systems cannot reach perfection, most scholars eschew a democracy/autocracy dichotomy in favor of a gradation approach to measurement (Elkins, 2000).

At the other extreme lies the Polity project (Jaggers and Gurr, 1995), which has produced the most widely used democracy measure. Its intellectual genesis can be traced to Eckstein and Gurr (1975), who defined the character of a political regime principally in terms of its authority relations.[4] Jaggers and Gurr (1995:471) clarify the conceptual basis of their measurement approach:

> At its theoretical core, we argue that there are three essential, interdependent elements of democracy as it is conceived of in Western liberal philosophy. The first is the presence of institutions and procedures through which citizens can express effective preferences about alternative political policies and leaders. .... A second component of Western-conceived democracy is the existence of institutionalized constraints on the exercise of executive power. The third dimension of democracy ... is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation.

Polity effectively captures the important structural aspects of institutional relationships and political rights by combining annual democracy and autocracy indicators to create an overall score that ranges from -10 (pure autocracy) to +10 (pure democracy). The data is defined for all independent countries with populations greater than 500,000 in the early 1990s and extends from 1801 to 2002. This broad coverage, together with open availability and explanatory definitions, have made the various Polity data sets, most recently version IV, popular among large-N researchers.

We value Polity – indeed, we have incorporated it into our own measures described below – but it exemplifies the concern of Munck and Verkuilen (2002a) that minimalist measurement approaches omit a necessary attribute: participation. Marshall et. al. (2002) contest the criticism that Polity does not explicitly code political participation as a central element of democracy, correctly pointing out that it does encompass suffrage via its inclusion of the "competitiveness of political participation". Munck and Verkuilen (2002b) note – and we demonstrate with particular examples below – that this approach falls short of an adequate treatment since it adopts a low and arbitrary threshold to identify restricted participation (20 percent of the adult male population), allowing quite exclusionary regimes to attain very high democracy scores. More broadly, we agree with Paxton (2000) that something crucial is lost between the definition of democracy and the actual measures that are used by most contemporary

[4] Specifically, a polity's authority structure can be analyzed in terms of: (1) the influence relations between super-ordinate and subordinate strata, (2) the degree of inequality between them, (3) the institutional relations among super-ordinates, (4) the competitiveness of recruitment, and (5) the basis of political legitimacy.

studies. She notes that despite some mention of "universal suffrage" in their definitions, the measures usually ignore the absence of women as political participants.

3. Democracy and Participation

Our critique goes further. The extension of suffrage is an undeniably critical feature of democratization, but it is not enough that citizens have a *right* to participate. To make democracy meaningful, citizens must actually *exercise* that right. We argue, in the "civic republican" tradition, that it is profoundly misleading to characterize a political system as strongly democratic without broad, if not universal participation, especially in the electoral process where those who are governed provide approbation to those who govern.

Democracy's appeal certainly stems in part from its promise to maximize the interests of the citizenry and further its collective values, but its goals extend beyond effective policy. Participation not only enhances the moral legitimacy of the public will, it also allows for the "self-actualization" of its citizens (Finkel, 1985). Democracy is an extension of the individual's freedom and autonomy, an element of what Amartya Sen (1999) says "what one can do or be".[5] Furthermore, while democracy encourages individualism, both its roots and its most important consequences lie in the social relationships among its citizens (Young, 1999).

Democracy can empower the individual and sustain the community only if its processes incorporate the participation of all of those affected by it (Parry, Moyser and Day, 1992).[6] In the words of Aristotle (1996: 98), "…if liberty and equality, as is thought by some, are chiefly to be found in democracy, they will be best attained when all persons alike share in the government to the utmost". When citizens do not participate in their democracy, the strength of that democracy is undermined. Extensive participation is particularly crucial in shaping the collective identity that underlies democracy's most cherished consequence, achieving social justice and egalitarian outcomes across

[5] Thus, participatory democracy shares the ideal of empowerment that pervades the contemporary development literature (Chambers, 1997; Bebbington, 1999; Freire, 1998; Scoones, 1998).

[6] Of course, just as democratic institutions can co-exist with restricted participation, so too can high levels of participation be found in systems without restraints on executive authority or respect for minority rights, as discussed by the literature on "illiberal democracy" (Zakaria, 1997).

class, gender, and ethnic cleavages.

Some have responded by emphasizing universal suffrage as a democratic ideal, but in these terms it is clear that whether citizens choose not to vote or cannot legally vote, the implication of the lack of breadth in participation is fundamentally the same.[7] Furthermore, it is impossible to incorporate legal suffrage into a measure of democracy without relying on subjective judgments and categorical coding that prevent precision. Three examples, each corresponding to one of the most common means of suffrage denial, illustrate that Polity's approach results in a coarse-grained measure that can misrepresent the degree of participation, and, therefore, the level of democracy in a regime. Class exclusion (on the basis of property) is represented most clearly by the evolution of participation in Great Britain. Ethnic exclusion is demonstrated most dramatically by the role of race in South Africa. Switzerland illustrates both gender exclusion and the broader point that participation levels can reveal aspects of a system's institutional structure that would otherwise remain invisible.

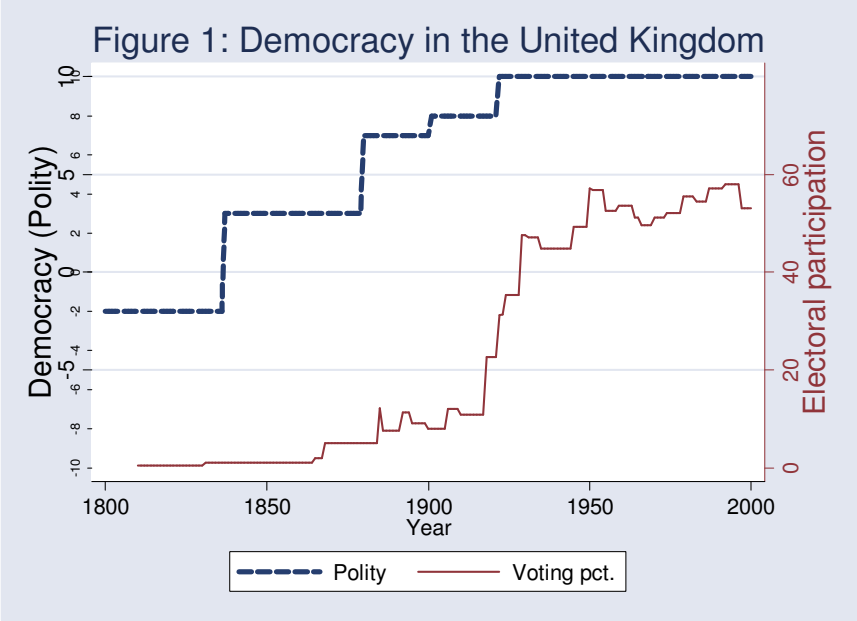


Figure 1's sketch of Britain's political evolution, which has informed so much of the literature on the theoretical "requisites" of democracy (Lipset, 1959), underscores the limitation of Polity's treatment of political participation. Polity's 21-point democracy/autocracy scale,

[7] Breadth measures the horizontal pervasiveness of politics within a governed population, which we conceive as *how many* people interact with the political system, not *how* they interact with the system. Our concern with the *breadth* of citizen participation is reflected in our emphasis upon *electoral* participation. We do not mean to deny the importance of the *depth of* citizen participation as manifested in such phenomena as lobbies, special interest groups, etc. These are the social networks, community organizations and civic associations laid out by Robert Putnam (1993) as a part of a state's *social capital*. Putnam's idea of social capital also includes other manifestations of citizen participation that are not necessarily political in nature, such as choral societies, sports clubs, and community service organizations. Our decision is based principally upon data availability, but it is also justified by a distinction between activities that are state-centered and those lodged within civil society.

illustrated by the dashed line, tracks the major changes in British political history, but only roughly. The Reform Bill of 1832 revised a complicated system of determining the franchise by increasing the number of voters from 500,000 to 813,000. Despite the modesty of this expansion, changes in the Polity Score for Britain give a sense of greatly expanded democracy, moving from a -2 (democracy=4, autocracy=6) to a +3 (democracy=6, autocracy=3). However, as illustrated by the solid line, only six percent of the adult population voted even after the reform.[8] While the male franchise had broadened considerably by 1884, "suffrage still excluded agricultural workers…[and] servants." (Palmer and Colton, 1992:610) Actual voter turnout reached 12% of the population only in the election of 1885 before falling, and didn't return to that level again until 1918.

All the while, Polity scores for executive recruitment and competition increased while institutionalized autocracy decreased. In 1880 the Polity democracy score stood at 7 (autocracy=0). By 1901 the democracy score rose to 8 and by 1922 Polity suggests that Britain was a "perfect 10" democracy, even though full male suffrage was not achieved until 1918 and full female suffrage until 1928. Britain has received the highest democracy rating ever since, even though the voting rate has never exceeded 60% of the adult population. The high scores that Britain receives from 1880 on are misleading and, with respect to changes in participation, mistimed. As Figure 1 illustrates, participation doubled during a period Polity records as unchanged and doubled again during a modest 2 point move in Polity.

The racial exclusion in South Africa also demonstrates the danger of conceiving democracy without taking account of the breadth of citizen participation. According to Polity, South Africa was a relatively stable democracy from 1910 until 1989. It was coded a 7 out of 10 on democracy and a 3 of 10 on autocracy, bringing its score to +4. A positive score is surprising because it ignores the exclusion of the 90 percent of the population that did not – most *could* not – vote. While democracy existed in *white* South Africa, from the viewpoint of breadth of participation, the democracy measure is misleading. In particular, one would hardly expect a political system marked by such rights

[8] Figure 1 shows voter turnout data from Vanhanen (2000) adjusted to reflect voting age population.

infringements and participation restrictions to produce the kinds of outcomes usually associated with democracy, especially basic needs attainment or other dimensions of broad social development.

Switzerland, our final example, has scored a perfect 10 out of 10 on democracy in the Polity dataset since 1848, even though women – roughly half the population - were not granted the right to vote until 1971, 123 years later. Furthermore, electoral turnout has hovered around 30% recently, despite virtually universal suffrage. One reason is that Switzerland's collective executive is an organizational form that diminishes voter motivation by minimizing the significance of election outcomes. Surely such a system should be regarded as less democratic than one in which most citizens participate in elections that actually make a difference in the leadership and policies of the nation.

The failure of Polity to record this limitation on democracy is not at all unique to Switzerland, and Polity's treatment of gender restrictions is mirrored by other measures. As Paxton notes (2000:104), "…we should recognize that our current efforts at assessing explanations are focused on a restrictive form of democratization." She further observes that if the dates when many countries transitioned to democracy were adjusted to accurately reflect when the whole voting age population was granted suffrage, many early examples of democracy would take on a very different appearance. Indeed, even the "waves of democratization" identified by Huntington (1991) can be shown to be mistimed. In response, Bollen and Paxton (2003) have greatly advanced on Polity's approach by developing a new dataset that explicitly codes actual legal restrictions on the franchise. They compute a precise index of the extent of legal suffrage that grades countries on a scale from zero to 100 percent (universal suffrage). Their choice of how to code such restrictions, though inevitably arbitrary, is reasonable, and the resulting index will allow studies of suffrage that were not possible previously.[9]

The major flaw in relying upon the official franchise is suggested by the observation that in the 1990s all but a handful of countries are coded as having suffrage at 98 percent or more, while actual voting rates were far lower but varied quite widely. One reason is that the absence of legal proscriptions does not preclude quite restrictive, but more difficult to quantify, institutional barriers. Some of the

[9] For example, refusing the vote to convicts results in a subtraction of .50 whereas a deduction of .25 occurs when a restriction is placed on voting rights of the mentally disabled.

factors that prevent voting, make it difficult, or exact excessive costs for participation in marginal democracies include political violence, societal pressures, intimidation, procedural irregularities, illiteracy, language and educational limitations, absence of transportation, party boycotts, and more. Even in relatively well-institutionalized political systems, the ease of participation varies considerably.[10] Our caution is lent credence by a regression analysis revealing that Bollen and Paxton's indicator of formal suffrage limitations explains only about 28 percent of the variance in the percentage of the adult population that casts ballots.[11] Thus, to assume that formal statutory limitations on suffrage accurately measure the myriad of *real* participation restrictions invites large measurement error.

Accordingly, we prefer an approach to measuring the breadth of political participation based on actual voting records. In the process, we do lose the ability to distinguish between informal restrictions and citizen choice as the explanation for low turnouts, but as the above discussion demonstrates, this distinction is far from clear-cut and ultimately almost impossible to judge. Moreover, since we regard participation itself as the core of the matter, the *explanation* for turnout rates is not central to identifying participation levels. We do admit that it is tempting to label some reasons for non-participation a strength of the political system ("I am so confident that officials will decide wisely, I do not need to vote") and others a weakness ("I don't vote because the available candidates are all equally unlikely to represent me"). Probing the *sources* of voter apathy may shed light on whether a political system is satisfying to citizens, but it is not relevant to judging whether the system is participatory and, therefore, democratic.

One potential influence on turnout levels does merit special mention, the potentially distorting effect of compulsory voting laws, even though our analysis eventually concluded that it did not threaten

[10] Examples of incentives and disincentives built into institutions include registration laws, residency requirements, and the location of polling places (Powell, 1986). Turnout is discouraged by single member districts, disproportionality in translating votes to legislative seats, multipartyism, and bicameralism (Jackman, 1987). Postal voting, absentee and advance voting, weekend elections, and longer poll hours encourage it (Franklin, 1996). Other factors that increase voting – and indicate the breadth of the democracy – include citizen attitudes that reflect political culture and individual experience with the political system, such as partisanship, feelings of efficacy, trust in institutions, and interest in public affairs. The competitiveness of elections and the likelihood of change as a result of elections also spur turnout (Mahler, 2002; Franklin, 1996).

[11] The sample was comprised of the nearly 4,000 nation-years from 1950 to 2000 for which data exists on both measures. The overall Polity score described above explains an almost identical proportion of the variance in votes cast, a result that also holds in additional analyses with various other predictors included in the estimation equation.

the validity and reliability of voting-based measures.[12] The cases that would introduce the greatest distortions are those notorious autocracies that statutorily mandate voting and subsequently report nearly 100 percent turnout. However, they do not affect our analysis since their participation rate is coded as missing data in our principal data source, IDEA (2003).[13] For the vast majority of nations, compulsory voting legislation is so lightly enforced and prescribes such small sanctions - mostly relatively modest fines - that it is more accurately considered an *incentive* to participate than a requirement to do so.[14] Citizens must weigh many incentives and disincentives for voting, including peer pressure, a desire to influence policy and choose leaders, a sense of obligation, the hope to economically benefit from some candidates, the opportunity costs of voting, and many others we cannot identify or measure. As we are not comfortable in judging which of these incentives and disincentives pass muster as democratic in spirit, those states that have compulsory voting have not been disqualified as democracies.

This judgment was made easier by an analysis that led us to doubt that compulsory voting statutes have enough impact on turnout to warrant singling them out among other determinants of participation. To test their effects we used data from IDEA (Pintor and Gratschew, 2002) to construct dummy variables for nations that had compulsory voting legislation. Following IDEA, we recognized four categories of such nations, according to the level of enforcement. In 1996, 32 of the 158 nations with voting data had some compulsory voting legislation, with nine coded as having strong enforcement and another eleven with weak enforcement.[15]

An initial analysis found that nations with compulsory voting had turnout rates about three percentage points higher than those which did not, but the effect was not statistically significant ($t = .86$). A further analysis, reported in Table 1, shows that nations with strongly enforced compulsory

[12] See http://www.idea.int/vt/analysis/Compulsory_Voting.cfm for a discussion of many of these issues.
[13] IDEA includes only elections in which "there was a degree of competitiveness … This criterion excludes one-party states …" Thus, these cases are omitted from analyses involving our PEPS2 measure. As explained below, their participation rate does not alter their PEPS1 score because of the multiplicative character of its composition.
[14]IDEA identifies only four countries that include imprisonment among possible penalties and only one of these – Fiji – is said to have strict enforcement. IDEA could find no evidence of imprisonment ever occurring as punishment in any nation. Perez-Linan (2001) suggests that the effect of compulsory voting laws are due more to "the sense of duty" they create than to the punishment, thus falling within the category of mobilization strategies which vary widely across nations and should not warrant exclusion.
[15] The others were either not enforced, or IDEA could not determine the level of enforcement.

voting had an average of 4.9 percent higher voting rates than those without compulsory voting. Nations with weak enforcement averaged roughly 10.8 percent higher rates, suggesting that it was not coercion that was responsible for higher turnout. Neither effect was statistically significant and overall these dummy variables accounted for less than 4 percent of the variance in voting. When other plausible predictors were included in the estimating equation (e.g. Polity, Bollen and Paxton's suffrage measure, GDP per capita), the apparent effect of compulsory voting was reduced even further. Thus, our results indicate that the effect of compulsory voting, if present at all, is not large enough to warrant concern that voting rates are invalidated as a result.[16] Buoyed by these findings, we create a new measure that retains the strengths of Polity's "institutionalized democracy", but augments what we see as its significant weakness, the omission of a sensitive participation component.

	Coefficient	Std Error	t	P > |t|
Strong enforcement	.0486	.0647	0.75	0.453
Weak enforcement	.1079	.0589	1.83	0.069
No enforcement	-.0013	.0728	-0.02	0.986
Enforcement n/a	-.1164	.0854	-1.36	0.175
Constant	.6467	.0167	38.74	0.000
r^2 = 0.0377 **adjusted r^2** = .0125 **probability of F** = 0.2056 N=158				
Table 1 OLS regression of turnout on compulsory voting				

4. The Participation Enhanced Polity Scores (PEPS)

In response to the failure of current measures to adequately encompass participation, we propose two variants of a new measure of Participatory Democracy, which we call PEPS1 and PEPS2. Both combine Polity's institutionalized authority relations with a behavioral dimension, the percentage of the adult population that participates in the electoral process.[17] We begin by defining a voter turnout scalar (VTS), such that at year t for country i:

[1] $VTS_{i,t} = Votes_{i,t}/Adult\ Population_{i,t}$

Our analysis is based principally on the 1950-2002 period, for which our data source was IDEA

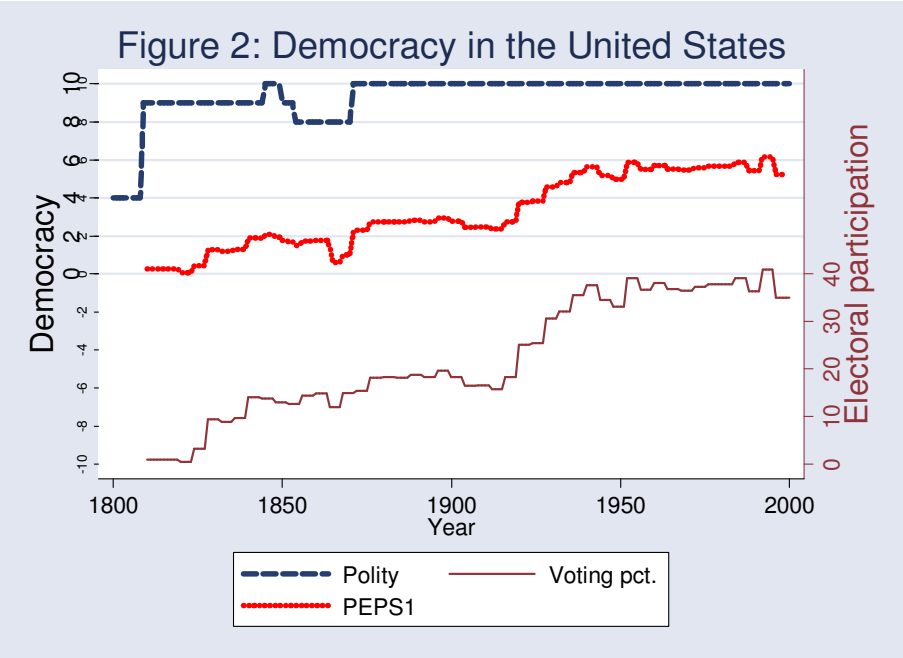
[16] Previous studies have produced various conclusions. Jackman (1987) reports a parameter estimate showing that compulsory voting boosted turnout between 13 and 22%, but he openly questions its validity, not least because only three of the nineteen countries in his sample of developed countries had compulsory voting. Perez-Linan (2001) finds no significant effect within Latin America. Blais and Dobrzynska (1998) find a parameter estimate of between 10 and 12%. Franklin (1996) finds the effect to be about 7%, roughly similar to that of postal voting and Sunday voting, but considerably smaller than the proportionality of the system and the salience of the election.

[17] The most rudimentary measure is voter turnout as a percentage of the *total* population. Vanhanen (2000) uses this measure, but acknowledges that it introduces substantial bias because adults represent a highly variable percentage of the population across nations and over time. Following both IDEA (2003) and Paxton and Bollen (2002), we mark the age of majority at 18, even though the actual voting age varies widely, especially in earlier eras.

(2003), which reports both votes and the adult population.[18] In the few analyses we conducted for the period prior to 1950, we used Vanhanen (2000) as the data source.[19]

PEPS1 is a simple modification of Polity's 21-point Democracy score. It is based upon the principle that institutionalized authority relations and citizens' electoral participation each give expression and meaning to the other. Participation is trivial if it does not influence policies via institutions that transmit the popular will. Authority relations that seemingly convey power to the electorate are not very meaningful if the electorate is not itself a sizable fraction of the citizenry. To compute PEPS1 we first multiply the VTS for each state by the Polity IV democracy score. This reduces the democracy score proportionally as voting turnout falls below 100% of the adult population. Then, emulating the 21-point Polity scale, we subtract the Polity autocracy variable from this adjusted democracy score to yield a continuous measure of participatory democracy:

[2] $PEPS1_{i,t} = (VTS_{i,t} * \text{Polity Democracy Score}_{i,t}) - \text{Polity Autocracy Score}_{i,t}$



This measure recognizes much finer distinctions predicated on levels of participation, as illustrated by Figure 2, where the dotted line signifying PEPS1 properly records the considerable expansion in the breadth of participatory democracy experienced by the United States since Polity first judged it a "perfect 10" in the slave-holding era of 1845. PEPS1 can also differentiate

[18] IDEA reports elections from 1945 to 2003, which leaves no basis on which to code participation for the years between 1945 and the next election; thus, we begin in 1950. IDEA's estimate of adult population is mostly based on data reported by UN Department of Economic and Social Affairs.

[19] To achieve some degree of comparability, but lacking demographic data, we multiply Vanhanen's estimate of total population by 2/3 as a crude estimate of the adult population. Our data treatment procedures are detailed on our project webpage.

among the 34 countries coded as 10 by Polity in 2000, recognizing several European countries just a fraction below 10 as well as Papua New Guinea (about 6), the U.S. (about 5), and Switzerland (around 4). Following Elkins (2000), PEPS1 may be justified on levels-of-measurement grounds, if the additional information contained in the continuous measure improves upon predictions derived from the categorical one, a test we perform below.

This multiplicative construction ensures that the participation rate carries no weight when the Polity democracy score is zero and has little impact on the overall score at low levels of democracy. It prevents high voting turnouts, including those inflated by false reporting or harsh compulsory voting laws, from producing an unwarranted high score on Participatory Democracy among autocracies. While conceptually attractive, the result is a measure that does not differ from the Polity score for the 48% of the nation-years in our sample with zero scores on democracy.

Thus, we construct an alternative variable, PEPS2, which does not so strongly pre-judge the democratic effect of participation within an autocratic institutional structure. We compute PEPS2 as the average of the Polity score and the VTS, after the latter's 0-100 range is scaled to match the former's –10 to +10.[20] Whereas PEPS1 may be thought of as a fully continuous extension of Polity's coarse categorization of participation, PEPS2 is designed as an index combining the institutional and participation facets of democracy in a more equal weighting. Specifically,

[3] $PEPS2_{i,t} = (((VTS_{i,t} / 5) - 10) + Polity_{i,t}) / 2$

In practice, PEPS2 permits much greater differentiation among countries at low levels of democracy than does PEPS1, whereas the two versions differ from one another only fractionally among nations with high Polity scores.

The discussion above establishes the "*face* validity" of our measures of Participatory Democracy. The remainder of the paper spells out the benefits of using those measures and, in the process, demonstrates their reliability and validity. Several methods of establishing "*construct* validity" are available for new measures of well-known concepts whose existing operationalizations have been

[20] The Polity score is a variant of Polity2 in which nations under foreign occupation are treated as missing data points rather than the zero value. See Marshall and Jaggers (2001) for details.

used in previous research. The first, "internal construct validation" or "*convergent* validity" requires a demonstration that the measures are collinear with existing indicators of the same concept also widely assumed to have face validity.[21]

Accordingly, Table 2 presents the correlations of Participatory Democracy scores and their components with the indexes of democracy and their components from three leading data projects, the Polity project of Jaggers and Gurr (1995), the Freedom House project originated by Gastil (1972), and the democracy project of Vanhanen (2000).[22] The convergent validity of the Participation Enhanced Polity Scores are established by their high correlations with each of the alternative measures.

Table 2 Correlations between Participatory Democracy scores and Democracy Indices

	Polity democracy	Polity autocracy	Polity3	FH political rights	FH civil liberties I	FH freedom	V competitiveness	V participation	Vanhanen index	PEPS1	Voting/Population	PEPS2
Polity democracy	1.00											
Polity autocracy	0.86	1.00										
Polity3	0.97	-0.96	1.00									
FH political rights	0.92	0.87	0.92	1.00								
FH civil liberties	0.86	0.82	0.86	0.92	1.00							
FH freedom	0.91	-0.86	0.91	0.98	0.98	1.00						
V competitiveness	0.81	-0.74	0.81	0.86	0.81	0.85	1.00					
V participation	0.49	-0.38	0.45	0.50	0.47	0.50	0.51	1.00				
Vanhanen index	0.77	-0.65	0.74	0.83	0.80	0.83	0.81	0.74	1.00			
PEPS1	**0.93**	**-0.94**	**0.97**	**0.92**	**0.88**	**0.92**	**0.81**	**0.57**	**0.85**	**1.00**		
Voting/Population	0.48	-0.38	0.45	0.49	0.46	0.48	0.50	0.98	0.71	**0.55**	1.00	
PEPS2	**0.85**	**-0.79**	**0.85**	**0.81**	**0.76**	**0.81**	**0.77**	**0.84**	**0.85**	**0.90**	**0.85**	**1.00**

A different approach, known as "external construct validity", gauges the validity of a measure in terms of its empirical associations with concepts that are *causally* linked to it. This causal linkage should be firmly established in the theoretical literature and supported by uncontested empirical evidence. When the validity of the new measure is more open to question than the accuracy of the theoretical claim, the finding of a statistical relationship that is theoretically expected is properly interpreted as affirmation of the validity of the new measure. This procedure permits the identification

[21] Munck and Verkuilen (2002a) contend that comparisons between a new measure and existing ones can establish reliability, but not validity. To be reliable a measure must be fully reproducible by an independent drawing on the same sources. But this position does not take into account the collective validity accorded to these measures by the expert acceptance reflected in their widespread use.

[22] The pairwise correlations represent the sample of all available scores for the period 1800 to the present, encompassing a total of 15,785 nation-years. Since Freedom House covers only the period since 1972, most of the correlations involving those variables are computed over about 4000 cases. To avoid confusion over signs, the Freedom House variables have been rescaled so that higher numbers indicate higher levels of democracy. In the original, the freest nations earned a score of 1 and the least free a 7, which would produce a negative correlation with other indicators.

of a stronger form of "predictive validity", whether our measure produces a *better* prediction than existing ones.

In the next three sections, we choose three sets of phenomena to conduct external construct validity tests: one a known *cause* of democracy (development), one an *internal attribute* of democracy itself (its persistence over time, i.e. serial correlation that mirrors a "test-retest" approach to reliability), and two known *consequences* of democracy (the achievement of basic needs and gender equality).

5. Democratization and modernization: the historical record

Among the most cited correlations in the social sciences is the tendency of rich nations to be more democratic. The robustness of this result across numerous indicators, samples, and test procedures makes this an unusually solid comparison for external and predictive approaches to validation. The underlying theoretical expectation is also well established. Nearly identical predictions have been generated from both refinements of modernization theory and theoretical challengers to it (Inkeles, 1998; Bollen, 1983; Rostow, 1971). They emphasize structural conditions thought to accompany rising incomes: education, urbanization, changing class structures, technological growth, etc. Przeworski and Limongi (1997:156) portray it this way:[23]

> A story told about country after country is that as they develop, social structure becomes complex, labor processes begin to require the active cooperation of employees, and new groups emerge and organize. As a result, the system can no longer be effectively run by command: the society is too complex, technological change endows the direct producers with some autonomy and private information, civil society emerges, and dictatorial forms of control lose their effectiveness. Various groups, whether the bourgeoisie, workers, or just the amorphous "civil society," rise against the dictatorial regime, and it falls.

Countless studies have confirmed the correlation between economic development and democracy, most using logged GDP per capita as the independent variable (Jackman, 1973; Lipset, 1959, 1994; Bollen, 1983; Huntington, 1987; Bhagwati, 1992; Barro, 1996; Burkhardt and Lewis-Beck, 1994; Lipset, Seong, Torres 1993). This body of work serves as a control of sorts by establishing an

[23] Their explanation of the cross-sectional relationship, however, focuses on democratic consolidation rather than its introduction. They contend that prosperity does not induce democracy (which can be initiated at any level of development), but rather prevents it from being displaced.

outcome against which we can compare our new measures. If our measures do not exhibit the same close relationship with logged GDP, then they should be questioned. By contrast, if the relationship is closer than other democracy measures we may reasonably conclude that we have captured essential elements that others have not.

We test this premise in a cross-sectional analysis by estimating equations [4] through [6] on two different samples.

[4] $Polity_{i,t} = \alpha_1 + \beta_1 \ln(GDPcap_{i,t}) + \in_t$

[5] $PEPS1_{i,t} = \alpha_2 + \beta_2 \ln(GDPcap_{i,t}) + \mu_{1t}$

[6] $PEPS2_{i,t} = \alpha_3 + \beta_3 \ln(GDPcap_{i,t}) + \mu_{2t}$

Year	# of Obs.	Polity r^2	PEPS1 r^2	PEPS2 r^2
1820	12	.064	.051	.066
1870	22	.232	.262	.236
1913	27	.343	.417	.476
1950	74	.324	.418	.442
1973	124	.215	.244	.221
1990	127	.442	.502	.469
1998	142	.224	.284	.307

Table 3 Cross-Sectional OLS Regression of Democracy on logged GDP

The first estimation, reported in Table 3, is conducted over the seven years for which Maddison (2001) provides GDP data, using turnout data from Vanhanen (2000). In all seven years, PEPS2 is more closely related to income than is Polity and, in six of the seven, PEPS1 also fits the data better than the Polity measure.

We conducted a similar analysis for each year from 1950 through 2000, using IDEA voting data and Penn World Tables real GDP.[24] In 49 of 51 years PEPS1 yields higher r^2 values than Polity, while PEPS2 was more closely related to GDP per capita than Polity in 44 cases. Polity produced a higher correlation than both in only 2 of the 51 years. While not conclusive evidence for the superiority of the Participation Enhanced Polity Scores, these results lend credence to our argument by showing that the theoretically-expected and frequently-confirmed cross-sectional relationship between democracy and income emerges more clearly with PEPS than with Polity. [25]

6. The persistence of democracy: Does participation matter?

Having shown that the greater cross-sectional variance found in PEPS can be accounted for by accepted theory, we now demonstrate that the more frequent cross-*time* changes in PEPS also measure

[24] The results, reported in a table comparable to Table 3 are available from the authors.

[25] Longitudinal analysis was attempted using Prais-Winsten time-series techniques, which are close derivatives of linear regression models. The results were inconclusive, due to problems of collinearity associated with unchanging (i.e., y(t)=y(t+1)) Polity Scores and a tendency for non-convergence in the Prais-Winsten iterations.

real differences rather than merely noise. To do so we take advantage of another well-known property of political systems, their tendency to evolve slowly and incrementally. The internal logic of the complex interlocking changes that constitute democratization provide a powerful momentum that appears statistically as strong serial correlation, whereby the best prediction of a nation's level of democracy is invariably its own lagged value. Following Elkins (2000), we argue that the more finely-graded PEPS is superior to Polity if the additional detail it contains provides useful forecasting information. Challenging the prediction of serial correlation is surely a daunting task for any alternative indicator.

This measurement stance invokes an underlying theoretical contention: that participation itself drives change in other components of democracy. We expect participation to be a "leading indicator" of change in authority relations because broad citizen participation exerts pressure towards greater institutionalized democracy, whereas low participation allows authority relations to slide in an authoritarian direction.[26] The conviction that empowered citizens will choose institutions that embody democratic authority relations is central to the utilitarian defense of democracy as a superior political system. If true, participation is a key component of democracy not only because it makes democracy more complete at present, but also because it makes it more likely to endure and even progress in the future.

To test whether electoral participation predicts the future state of authority relations, we estimate a series of Granger-causality equations defined over various time periods and with differing lags (Granger 1969; Freeman 1983).[27] In our first cross-sectional time-series analysis, the sample contains 3883 nation-years over the 1950 to 2000 time period, consisting of unbalanced panels from 4 to 51 years for 143 nations. We assume a lag of one year and estimate:

[7] $\text{Polity}_{i,t} = \alpha + \rho * \text{Polity}_{i,t-1} + \beta_1 * \text{VTS}_{i,t-1} + \in_i$

[26] The reverse is also true. When authority relations become more democratic, participation grows. This occurs both because institutional change may afford enhanced opportunities and because citizens are more willing to incur the opportunity costs (and other risks of participation) when institutions make participation significant for policy choice.

[27] Lodging the analysis within a discussion of measurement issues makes clear that we are as interested in statistical predictability as in formal causal claims, however.

We expect to find a large value for ρ but are most interested in whether β_1 achieves statistical significance. Polity is indeed strongly serially correlated, as represented by the coefficient of .96 and z of 217.49 in the first row of Table 4. However, the coefficient of the lagged participation variable attains a z of 6.96, significant well past .001. Even in the presence of the lagged dependent variable, participation rates are strongly and positively related to future Polity scores.[28] Nations with higher participation rates are likely to have more democratic authority relations a year later.

	Coefficient	Std. Err.	Z	P>|z|
Lagged Polity	.9580	.0044	217.49	0.000
Lagged VTS	.8756	.1258	6.96	0.000
Constant	-.3642	.0748	-4.87	0.000
r^2: within = 0.7924 between = 0.9959 overall = 0.9469				
Table 4 Random effects GLS regression of Polity				

To analyze the effect of participation across broader expanses of time we also use a design with a single discrete panel for each nation. This approach enables us to check the robustness of the above result across alternative formulations and to determine if a superior prediction can be obtained from PEPS, which combines the causally intertwined participation and institutional dimensions of democracy. Table 5 reports the result of estimating equations [8] through [11], where each analysis is conducted over a separate decade, beginning with the 1960 to 1970 interval. The dependent variable is the Polity score at the end of the decade, whereas the predictor variables are measured at the beginning of the decade.

	1960–1970	1970–1980	1980–1990	1990–2000
	N=52	**N=64**	**N=76**	**N=85**
Polity alone [equation 8]				
Coefficient	0.82	0.83	0.60	0.71
t	8.73	9.05	7.59	11.45
r^2	0.60	0.57	0.44	0.61
Polity & VTS [equation 9]				
Polity				
Coefficient	0.67	0.76	0.42	0.53
t	6.08	7.54	4.90	7.46
VTS				
coefficient	7.81	4.43	9.96	8.39
t	2.35	1.55	3.81	4.11
r^2	0.64	0.59	0.53	0.68
PEPS1 alone [equation 10]				
Coefficient	0.98	0.94	0.70	0.82
t	9.78	8.98	7.72	11.86
r^2	0.66	0.57	0.45	0.63
PEPS2 alone [equation 11]				
Coefficient	1.13	1.11	0.90	0.97
t	9.33	8.52	9.13	13.17
r^2	0.64	0.54	0.53	0.68
Table 5 Estimation of equations [8] - [11], 1960-2000				

[8] $Polity_{i,t} = \alpha_1 + \rho * Polity_{t-10} + \in_i$

[9] $Polity_{i,t} = \alpha_1 + \rho * Polity_{t-10} + \beta_1 * VTS_{t-10} + \in_i$

[10] $Polity_{i,t} = \alpha_1 + \beta_1 * PEPS1_{t-10} + \in_i$

[11] $Polity_{i,t} = \alpha_1 + \beta_1 * PEPS2_{t-10} + \in_I$

In each column, the first analysis, labeled "Polity alone", represents the benchmark equation [8]. In an attempt to improve upon the fit of this point of reference, the remaining analyses include the

[28] Since lagged Polity scores also predict voting rates, it may be said that both elements of Participatory Democracy Granger-cause the other. However, the effect in the reverse direction is less than half as strong. The analysis is available from the authors.

participation effect in three different ways. Equation [9], the second analysis reported in each column, adds the Voter Turnout Scalar to the previous estimation, emulating equation [7] but with a longer lag. Equations [10] and [11] duplicate [8], but substitute PEPS1 and PEPS2, respectively, for Polity as the predictor.

The results support our thesis. For each decade except the 1970s, VTS is positive and statistically significant, indicating that past participation rates help predict future Polity scores. For example, in the 1990s, the Polity score at the beginning of the decade could explain 61 percent of the variance in Polity at the end of the decade. Adding participation, however, noticeably improved the r^2 to .68, with the t value for VTS showing a highly significant 4.11. In fact, both PEPS1 and PEPS2 alone are superior to Polity in predicting Polity's future value in every decade except the 1970s.[29] Based on these findings, it is undeniable that including participation as an element of an overall democracy score pays dividends for the analysis of democratic persistence post 1960.

Is the same true for an earlier era, dating to the early 19th century? An analysis of that period allows us to look at lag times that test democratic persistence over periods far longer than the one-year and the one-decade intervals in the analyses above. We used the years contained in Maddison (2001) as our base points: 1820, 1870, 1913, 1950, 1973, 1990 and 1998, allowing a total of twenty one different intervals ranging from eight to 178 years. [30]

The first set of regressions, reported in the leftmost columns of Table 6, represent the benchmark estimation of equation [8], Polity's ability to predict its own future values. The serial correlation is evidenced by t values that are statistically significant in 15 of the 21 cases, with the strength of the relationship decreasing as the time horizons increase.[31]

The second pair of columns reports the results when our measure of voter turnout replaces Polity

[29] A similar conclusion follows from an unreported analysis of an extension of equation [7] beyond one year. With higher-order lags, participation attained greater significance and the predictive power of lagged Polity declined. At ten years, the two are about equally good predictors and at twenty years lagged Polity scores make no additional contribution whatever to the prediction offered by participation rates.

[30] The participation measure, VTS, is computed from Vanhanen's turnout data and Maddison's population estimate.

[31] However, past values of democracy predict 1950 and 1973 less well regardless of the base year. Presumably this aberration reflects the emergence of the highly autocratic systems of Eastern Europe after World War II.

as the predictor variable. Fifteen of these 21 coefficients are also statistically significant. In 10 cases, turnout provides a better prediction of Polity's future than Polity itself does. Because they are generally those with the longest estimation intervals, it appears that the impact of participation may not decay as rapidly as democracy's institutional component.[32]

Time Period		Polity alone [8]		VTS alone		Polity & VTS [9]			PEPS1 [10]		PEPS2 [11]	
						Polity	VTS					
	N	t	r^2	t	r^2	t	t	r^2	t	r^2	t	r^2
1820-1870	19	4.87	0.58	0.74	0.03	4.61	0.20	0.58	3.94	0.48	4.86	0.58
1820-1913	18	2.40	0.26	2.74	0.32	2.02	2.37	0.46	2.24	0.24	2.46	0.27
1820-1950	18	0.80	0.04	2.28	0.25	0.31	2.06	0.25	0.40	0.01	0.84	0.04
1820-1973	19	0.44	0.01	2.18	0.22	-0.10	2.06	0.22	-0.07	0.00	0.48	0.01
1820-1990	19	1.14	0.07	1.46	0.11	0.79	1.17	0.14	1.19	0.08	1.17	0.07
1820-1998	19	0.59	0.02	1.33	0.09	0.25	1.18	0.10	0.05	0.01	0.61	0.02
1870-1913	39	3.20	0.22	5.00	0.40	1.05	3.56	0.42	2.93	0.19	3.73	0.27
1870-1950	40	2.30	0.12	3.02	0.19	0.80	2.00	0.21	1.79	0.08	2.57	0.15
1870-1973	41	2.25	0.11	1.83	0.08	1.44	0.72	0.13	1.52	0.06	2.33	0.12
1870-1990	40	3.02	0.19	2.16	0.11	2.08	0.60	0.20	3.13	0.20	3.09	0.20
1870-1998	41	1.38	0.05	2.14	0.10	0.27	1.59	0.11	1.44	0.05	1.59	0.06
1913-1950	45	4.25	0.30	5.05	0.37	2.02	3.12	0.43	3.96	0.27	5.33	0.40
1913-1973	46	2.79	0.15	3.62	0.23	1.04	2.37	0.25	2.39	0.12	3.51	0.22
1913-1990	45	2.20	0.10	1.71	0.06	1.45	0.60	0.11	2.03	0.09	2.28	0.11
1913-1998	46	1.73	0.04	1.53	0.05	1.03	0.67	0.07	1.35	0.04	1.87	0.07
1950-1973	78	10.67	0.60	4.34	0.20	9.13	2.04	0.62	11.64	0.64	9.50	0.54
1950-1990	75	5.17	0.27	4.04	0.18	3.93	2.52	0.33	5.72	0.31	5.91	0.32
1950-1998	75	3.79	0.16	3.42	0.14	2.61	2.10	0.21	4.28	0.20	4.43	0.21
1973-1990	127	10.48	0.47	4.70	0.15	8.69	1.02	0.47	10.38	0.46	9.11	0.40
1973-1998	124	8.27	0.36	3.98	0.11	6.83	0.65	0.36	8.29	0.36	7.31	0.30
1990-1998	129	19.05	0.74	9.11	0.40	13.30	1.96	0.75	18.53	0.73	16.62	0.69

Table 6 Predicting future values of Polity

The specification of equation [9] reinforces the importance of participation, as turnout remains a significant predictor across 10 of the intervals even with the lagged dependent variable in the equation. The estimation of equation [10] reveals that PEPS1 is a significant predictor of Polity in 13 of 21 analyses, in seven of which it outperformed Polity itself. The last column's report of equation [12] offers the most striking results: over 15 of 21 intervals, the relationship between Polity and lagged PEPS2 was significant; and in 16 cases the PEPS2 prediction was superior to Polity's.[33]

In short, we have very strong evidence of a statistical relationship between earlier levels of participation and later levels of institutional democracy, over lags ranging from one to 178 years, estimated within three different model specifications, and using two different data sources. Moreover, we have shown that both PEPS measures are at least as effective in predicting future Polity levels as lagged Polity itself, and frequently superior. Thus, if we adjudicate the question of the value of the additional detail contained in PEPS on the basis of whether it portends future democratic change, the conclusion is evident. Since higher participation makes a nation *causally* closer to full democracy, the

[32] Because they also have the earliest base years, it may instead signify an era effect.

[33] In analyses not presented, both PEPS1 and PEPS2 are also shown to have higher serial correlation than Polity.

PEPS measures appropriately register it as *conceptually* closer as well.[34]

We know of no standard by which to judge whether these results are strong enough to justify the inclusion of participation in a measure of democracy. However, this analysis surely adds to the external construct validity established by the demonstration that the PEPS measures perform closer to theoretical expectations as dependent variables than does Polity.

7. Democracy, basic needs, and gender equality

Our final series of tests of the predictive validity of PEPS concerns the effect of democracy, variously measured, on two social outcomes with a strong distributional component – the achievement of basic human needs and gender equality. There is little doubt that a democratic state can and should play a key role in shaping those outcomes; indeed, it is generally acknowledged that egalitarian outcomes *require* affirmative state action (Moon, 1991; Lindblom, 1977; Gough, 2000). Typical is Moon's (1991: 100) formulation:

> "If the natural propensity to inequality is to be minimized, the productive capacities of the economy must be directed toward the provision of basic needs. That direction must be accomplished outside a system dominated by the logic of capital accumulation and microeconomic rationality; that is, it must occur in the political realm."

Under what conditions will the state assume the orientation that leads it to act in this way? In what Hewitt (1977) describes as the "simple democratic hypothesis," the "existence of democratic institutions – especially the enfranchisement of all citizens – virtually guarantees relatively egalitarian policies." (1991:132) Intuitively, we expect that the political agenda of the poor will emphasize basic needs and the agenda of women will feature gender equality. If so, democratic institutions should translate these preferences into electoral power that affects state policy. If they do not, democratic states will find it difficult to maintain their legitimacy and retain their authority. Since these institutions are a central variable that determines the state's position on issues such as basic needs provision and gender

[34] Such cross-time inferences are both appropriate and necessary because democracy is not an idea well suited for discrete point estimates at precise instants. Its essence lies in linkages that are revealed only over time, especially that the preferences expressed in elections are reflected in subsequent policies. Nevertheless, statistical testing methods require that we make such simplifying assumptions.

equality, we expect that authoritarian states will be less likely to promote such outcomes.

Hewitt (1977: 451) also offers an alternative view when he states, "Political democracy is not a sufficient condition for the achievement of a more equal society. The crucial matter is what the mass electorate *does* with the franchise." Thus, he anticipates that democracy does not *necessarily* promote equality; it does so only when the electorate attaches priority to it.

While there is, no doubt, substantial variation in the preferences of different electorates, we suspect that the apparently different effect of democracy in different settings is also a product of conceptual and measurement limitations concerning the degree of democracy actually present. We contend that the breadth of political participation is at least as important as the presence of democratic institutions in bringing about outcomes that benefit the citizenry. Unless the poor actually participate, there is no magic in democratic institutions that will bring about favorable outcomes for them. If women do not participate, democracy is only partial – and will not engender equality. We test the effect of participation on these social outcomes by comparing the predictive value of alternative measures of democracy.

First, as a measure of basic needs attainment we select an index of life expectancy and literacy rates calculated from 1998 and 1999 data contained in the United Nations Development Program's Human Development Report (2000).[35]

[12] $\text{HumanDevelopment}_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{Polity}_i + \in_i$

[13] $\text{HumanDevelopment}_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{Polity}_i + \beta_3 * \text{VTS}_i + \in_i$

[14] $\text{HumanDevelopment}_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{PEPS1}_i + \in_i$

[15] $\text{HumanDevelopment}_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{PEPS2}_i + \in_i$

Table 7 reports the results of five regressions, each of which uses logged real GDP per capita and a different democracy measure to predict Human Development.[36] In column [12], which uses Polity as

[35] We use the mean of adult literacy in 1999 and adult life expectancy in 1998. These two social indicators constitute two-thirds of UNDP's Human Development Index (HDI) (omitting GDP per capita, because we use it on the right-hand side of the estimating equations) as well as two-thirds of the venerable Physical Quality of Life Index (PQLI) frequently used in previous basic needs studies (omitting infant mortality because of data availability).

[36] To maximize N, we use 1996 data on GDP and democracy, but the results are largely unchanged at various lags.

the democracy measure, we see a result common to all previous studies of basic needs: human development rises along with economic development (t=14.31) and increasing levels of democracy (t=2.68) (Moon, 1991, Gough, 2000; Moon and Dixon, 1985).

The next column replaces Polity with our measure of participation, the Voter Turnout Scalar (VTS) computed from IDEA data. The results are striking. The t values demonstrate that participation is a far more significant predictor of Human Development than the Polity measure of democratic institutions. Column [13], which reports the estimation that includes both these elements of democracy, confirms that participation *does* matter – indeed, more so than democratic institutions, the t value of which is no longer statistically significant. The remaining columns demonstrate that our two variants of the Participation Enhanced Polity Score are both better predictors of basic needs provision than is Polity. These results add empirical evidence to our conceptual argument – that the full effect of democracy on important social outcomes cannot be appreciated until participation is incorporated into its measure. The failure to do so risks underestimating democracy's positive effects and, perhaps more importantly, misunderstanding the pathway by which democracy accomplishes them.

N=125	equation [12]		VTS alone		equation [13]		equation [14]		equation [15]	
	β	t	β	t	β	t	β	t	β	t
LogGDP pc	11.95	14.22	12.33	16.03	11.87	14.43	11.86	13.98	11.74	14.45
Polity	.392	2.68			.235	1.51				
VTS			13.50	3.42	10.95	2.56				
PEPS1							.482	2.76		
PEPS2									.712	3.61
r^2	.705		.715		.720		.706		.718	

Table 7 Democracy and Human Development

Finally, we turn to gender equality.[37] Numerous scholars have commented on the importance of gender in development, demonstrating that when women possess the same social, political, and economic opportunities as men, many positive development outcomes result (Klasen, 1999; Osmani and Sen, 2003; Nussbaum, 2000). According to Amartya Sen (1999), "Nothing, arguably, is as important today in the political economy of development as an adequate recognition of the political, economic, and social participation and leadership of women." Despite the importance of gender equality as a value in

[37] Gender equality can be assessed along several partially colinear dimensions, including labor force participation, literacy, and office-holding (Marshall, 1985; Pampel and Tanaka, 1986; Miller, 1999). Following UNDP (1995), we focus on education, income, and life chances.

itself and as a spur to development, few rigorous cross-national studies have attempted to uncover its structural determinants.[38] Indeed, there is little agreement on how it should be conceptualized or measured. For the purpose of this study, we select the UNDP's gender-development index (GDI), which is more aptly described as a gendered version of the human development index than as a direct measure of gender equality itself.[39] Given the link between democracy and other forms of equality, we adopt a design identical to that described above, estimating equations [16] through [19]. We expect that democracy contributes to gender equality, especially when democracy is properly understood to encompass participation.

[16] $GDI_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{Polity}_i + \in_i$

[17] $GDI_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{Polity}_i + \beta_3 * \text{VTS}_i + \in_i$

[18] $GDI_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{PEPS1}_i + \in_i$

[19] $GDI_i = \alpha_1 + \beta_1 * \log(\text{GDP per capita})_i + \beta_2 * \text{PEPS2}_i + \in_i$

Column [16] establishes that both economic development (logged real GDP per capita) and institutional democracy (Polity) are positively associated with gender equality, as expected. The remaining columns demonstrate a now familiar outcome. Our participation measure, the Voter Turnout Scalar, is a far better predictor of gender-sensitive development than is the Polity measure of democratic institutions.[40] Its t-value is far higher when it is the sole democracy measure in the estimation and, as column [17] shows, Polity is no longer significant in the presence of the VTS. Column [18]

	[16]		VTS alone		[17]		[18]		[19]	
N=127	β	t	β	t	β	t	β	t	β	t
LogGDP pc	.146	25.88	.148	30.06	.146	27.91	.145	25.76	.144	27.25
Polity	.003	3.17			.001	1.16				
VTS			.142	5.61	.129	4.61				
PEPS1							.004	3.66		
PEPS2									.006	5.01
r^2	.874		.892		.893		.878		.887	

Table 6 Democracy and Gender Equality

[38] Most have focused almost exclusively on economic development as the independent variable (Jalan and Subbarao, 1994; Easterly, 1997; Filmer et.al., 1998; Forsythe et. al., 2000).

[39] The GDI is first described in UNDP (1995). Its critics, who note that it mixes absolute levels of attainment and indicators of inequality, include Dijkstra (2002), Forsythe et. al. (1998), Jalan and Subbarao (1994), Bardhan and Klasen (1999), and Dijkstra and Hammer (2000).

[40] This may explain why other studies have found little evidence of a democracy effect (Williamson and Boehmer, 1997; Paxton, 1997; Dollar and Gatti, 1999; Brown, 2004).

demonstrates that PEPS1 is clearly superior to Polity, but column [19] shows that PEPS2 is better yet. Thus, we see that the most significant consequences of democracy – the welfare of citizens and the equality of their treatment – follow more from the breadth of political participation than from the mere presence of institutions. Our exercise in construct validation reveals important causal mechanisms in the effect of democracy on institutional stability and key social outcomes.

8. Conclusion

Broad political participation is a core feature of democracy and crucial for its durability. Participation helps to shape collective identity, as well as achieve social justice and equality across class, gender and ethnic cleavages. No measure of democracy can be considered an accurate representation of its basic character without directly including participation as a significant component. And while we applaud increased attention to the extent of suffrage in a country, what matters is the number of citizens who actually vote.

Our Participation Enhanced Polity Scores has passed the tests appropriate for new measures. We demonstrated via three examples – Great Britain, South Africa, and Switzerland – that PEPS can offer a more accurate reflection of democratic qualities than existing measures. We demonstrated the reliability of PEPS by showing its close relationship with accepted alternatives. We validated it by comparing its empirical correlates in three kinds of studies. First, we confirmed that the story of rising incomes leading to democracy is more vividly captured by PEPS than others. Second, we confirmed our hypothesis that countries with high levels of participation would be more likely to be democratic in the future and argued that this pattern warranted including participation in a contemporary measure. Finally, we demonstrated that PEPS was a better predictor of the provision of basic human needs and gender equality, a characteristic theoretically associated with democracy. Based on these results we can conclude that the full effect of democracy on important social outcomes cannot be appreciated until participation is incorporated into its measure.

But, our disquiet about measuring democracy is not just about the face validity of concepts. It is

not merely aesthetics that induce our unease at labeling as perfectly democratic those polities that restrict the full exercise of citizenship. It is because the campaign for democratic change must rely on accurate causal claims that we call on empirical researchers to employ a broader measurement of democracy than previous studies. We also caution those who would seek to build democratic systems in order to achieve the benefits associated with them, that they must make the breadth of political participation at least as high a priority as institutional structure. Voting counts!

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