

# ACCESS TO THE INTERNET AND DECLINING DEMOCRACY IN VENEZUELA

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## ABSTRACT

This article explores the effects of different social determinants on having Internet access in Venezuela amid recent economic and political turmoil affecting living conditions and satisfaction with democracy. It argues that the so-called digital divide, a term depicting connectivity gaps, uses a simplistic dichotomy measuring percentages of who has and who hasn't accessed the Internet. The article goes beyond such a restrictive metric and grasps whether, and to what extent, having Internet at home is affected by more revealing sociodemographic predictors, including gender, age, place of residency, income, or education. To illustrate my point, the article draws on data from the 2017 AmericasBarometer public opinion survey conducted in Venezuela. It models logistic regression to explore the straightforward but often understudied characteristics that might carry voting-age adults to have Internet service. Given Venezuela's democracy crisis, the article also questions whether having Internet at home affected respondents being satisfied with how democracy worked in the country.

Keywords: Internet access, democracy, digital divide, logistic regression, Latin America

The sustained growth in Internet access worldwide has encouraged social scientists to question the link between information and communication technologies (ICTs) and people's attitudes and interactions both online and offline. Recent research sheds light on how access to the Internet impacts daily life, that is, from digital activism to participation in mass protest amid the crisis of democracy worldwide.<sup>1</sup> Since the turn of the century, there has been an ongoing interest in national and comparative studies evidencing the digital divide between active Internet users and

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1. Kelly; Ragnedda, "Tackling Digital Exclusion."



nonusers and the social consequences of the access gap.<sup>2</sup> This article adds to such literature by exploring the interwoven relationship between having access to the Internet and poor democratic track records.<sup>3</sup> I zoom into Venezuela's case, where civil liberties and freedom of expression have been severely crumpled amid the abrupt "decline and fall" of the rule of law.<sup>4</sup> Freedom House<sup>5</sup> ranked Venezuela the second-least-democratic country in the Americas, behind Cuba, and some authors have suggested calling it a competitive authoritarian regime.<sup>6</sup> The country has substantially "autocratized" in the last decade, diverting to a path of receding democratic traits in the forms of government assaults on civil society and the media, persistent political violence, strong police and military presence, frequent abuses of human rights, regular protests demanding regime reform, and counter-protests supporting the government.<sup>7</sup>

The article argues that standard metrics of Internet access usually downplay crucial sociodemographic characteristics that further diminish our knowledge of the digital gap in times of critical contingency. Although the gap in Internet access has shortened (most notably since the early 2000s, when only 4 percent of the population were active users), 61 percent of Venezuelans still do not have access to the Internet.<sup>8</sup> Current economic and humanitarian emergencies have impacted individuals' ability to afford Internet services and ICT devices, making connectivity unaffordable for many. For those lucky enough to surf the web, the government imposes frequent Internet crackdowns to avoid collateral damage from its crisis.<sup>9</sup> Besides these and other mounting obstacles based on geographic, social, and economic factors, current limitations on contents and violations of user rights have made the Internet in Venezuela "unfree."<sup>10</sup>

I begin the article with a literature review, theorizing on selected socioeconomic variables and their impact on Internet access. Next, I discuss possible explanations for why having Internet access might trigger different attitudes toward democracy amid political and societal turmoil.

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2. Katz and Rice; Deibert et al.
  3. Kalathil and Boas; Weidmann and Rød.
  4. Levine; Bruce; Coker; Canache.
  5. Freedom House, "Freedom in the World 2020."
  6. Levitsky and Way.
  7. Lührmann et al.
  8. Conatel.
  9. Groll.
  10. Freedom House, "Freedom on the Net 2019."

Subsequently, I present data from the 2017 round of the LAPOP AmericasBarometer and briefly explain the nonlinear statistical methods used. Because the Internet divide is often registered as dichotomous, that is, whether or not having Internet service, the results section investigates the probabilities of selected factors, presented in a set of continuous and categorical predictors, on having Internet access as reported by voting-age adults in Venezuela. It also explores the self-reported patterns of satisfaction with how democracy works for those having Internet service at home. The final section discusses and suggests further research implications.

### The Digital Divide and Democracy

The digital divide is frequently used as a predictor of social phenomena connected to democracy, for example, from governance preferences to voting events participation.<sup>11</sup> Scholars explain the “divide” as a three-staged approach worth revisiting.<sup>12</sup> Initially, it seemed relevant to explore the socio-economic gap in light of inequalities in accessing the Internet, mostly in societies, countries, or entire continents, where the cost and diffusion of technologies were too expensive.<sup>13</sup> The dichotomy of users versus nonusers focused predominantly on those included or excluded from the advantages of using ICTs and the Internet. However, this version of the divide was shortsighted since excluding other social, cultural, political, and economic inequalities rendered the examination too superficial.<sup>14</sup> For example, regulation of the Internet became a factor hindering Internet access. Wallsten<sup>15</sup> found that during the 1990s and early 2000s, countries that regulated entry by Internet service providers (ISPs) had fewer Internet hosts and users, while countries that regulated Internet pricing had greater prices for access. Thus, a second stage approached multidimensional disparities, such as those affecting Internet inequities (i.e., age, gender, education, and income gaps). The third level, which several scholars seem to find more enlightening, looks after the different forms of access, use, and capacity to process information on the Internet that affect social consequences offline.<sup>16</sup>

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11. Stoycheff and Nisbet; Bailard.

12. Ragnedda, “Conceptualising the Digital Divide.”

13. James.

14. Korupp and Szydluk.

15. Wallsten, 503.

16. Ragnedda, 35.

Although conceptualizing the digital divide in industrialized nations seems up-to-date with the three-waves explanation, in the younger democracies, such a path remains a work under theoretical and empirical progress.<sup>17</sup> My claim is that rapid social and economic change in nonindustrialized countries provides concrete and empirical information on the second and third stages of the digital divide. I aim to disaggregate theories of social inequalities that tend to precede and reinforce the digital divide to derive a series of testable hypothesis. I also seek related individual attitudes toward democracy that are partly influenced by having Internet service. This duality should serve as a proxy to understand individual experiences that go beyond the pure material gap as observed by others. I argue that having Internet service or access is a matter of various ideas intersecting at once. Not only an individual needs the sorts of electronic networking devices, such as computer ownership plus the ability to enter the Internet at home or somewhere else, but extra-personal factors remain crucial, such as private vendors or public third-party providers offering broadband or other connectivity services.

Assuming individuals have plausible means to access the Internet, many preexisting social factors remain of vital consideration. Gender, for example, has been a central element in the Internet divide debate. Women tend to be excluded from accessing and possessing ICTs in light of underlying and prior inequity conditions. Gender gaps have tended to disappear in regions such as Europe; however, women remain slightly less likely to access and remain Internet users. For example, in developing regions, there is concern about male-to-female inequalities in access and usage that later turn into differences in frequency and intensity of Internet usage.<sup>18</sup> Using a woman-centered approach to calculate gender Internet access gaps, Iglesias<sup>19</sup> found that men remain 21 percent more likely to be online than women, reaching 52 percent in the least developed countries. In North America, men are 1 percent more likely to be online than women, meanwhile in South Asia, the same odds ratio (*OR*) reaches 137 percent. In Latin America, the female-to-male gap is estimated at 12 percent.<sup>20</sup> However, one needs to be careful as survey measures do not always paint the entire picture, for example, when questioning how the gender gap works in the presence of cohabiting households.

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17. Galperin; Gillwald; Song.

18. Ono and Zavodny.

19. Iglesias.

20. Ibid.

Internet access also varies over generations. Studies have found that those between 18 and 30 years old are the largest group of Internet users; meanwhile, the least connected tend to be those aged fifty and over.<sup>21</sup> Such measures tend to evolve quickly as online education for the elderly has helped bring more active users. Below the threshold of adulthood, children are growing in presence as Internet access for schooling purposes has massified, for example, during the COVID-19 pandemic.

Digital inclusion also depends on geographic factors, whether residing in urban, suburban, or rural areas, and by municipality size. While technologies are more easily reachable in urban spaces due to different incentives for commercial strategies to offer broadband and other connectivity services there, current spatial differences are not as easily identifiable as once thought. Rural areas are said to be catching up to large cities, however, disproportioned concentrations of minority and poor communities restrict access to the Internet and ICTs.<sup>22</sup>

The educational gap might be one of the most pertinent factors behind many social inequities, including Internet access. While the less-educated are less likely to have Internet service at home, because of many apparent restrictions, including less income to pay for computational services and ICTs, one would expect lower penetration rates of Internet access hand-in-hand with fewer years of schooling.

Greater household income has allowed a reduction in the digital gap in richer societies. The trend is for individuals in families with the highest family income to increase their accessibility faster than individuals in families with lower income levels. It is reasonable to hypothesize that a slower rate of diffusion for low-income families in certain countries remains visible, makes them overall less likely to have Internet than the rich.<sup>23</sup> I derive, all things being equal, that the literature is compatible with the following set of testable hypotheses:

$H_1$  (*Gender*): Males are more likely to have Internet service at home than women.

$H_2$  (*Age*): Individuals older than 18 are more likely to have Internet service at home than adults who are under 50 versus 50 and older.

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21. Jackson et al.

22. Crampton.

23. Martin and Robinson.

$H_3$  (*Residence*): Those living in urban areas are more likely to have Internet service at home than those in rural.

$H_4$  (*Municipality size*): Those living in larger municipalities are more likely to have Internet service at home than those in smaller municipalities.

$H_5$  (*Education*): Higher education levels, expressed in more years of schooling, make individuals more likely to have Internet service at home.

$H_6$  (*Household income*): Those with a greater monthly household income are more likely to have Internet service at home.

Knowledge of Internet use is as important as knowing with some certainty about Internet penetration. For example, greater citizen commitment to democracy might be attributable to greater Internet use levels when democratization is also high.<sup>24</sup> Vaster and constant connectivity via smartphones and superfast fiber-optic broadband have allowed ordinary people to connect with political processes and democracy as much as they do to connect with family or browse the web for leisure.<sup>25</sup> However, in light of the often-argued positive relationship between increasing digital technologies energizing the penetration of liberal representative democracy,<sup>26</sup> one could propose that relatively cheap available ICTs to the lay-citizens have not been the silver bullet for democracy problems predating the Internet, such as lack of legitimacy, institutional consolidation, popular representation, and the recognition of basic civil liberties.<sup>27</sup>

Rød and Weidmann<sup>28</sup> found that the effects of the Internet on changes toward greater democracy are not significant, concluding that while autocrats benefit from providing Internet access, that they will later heavily censor. The Internet thus has not contributed in the same way toward more democracy globally. The effect of Internet access on satisfaction with the functioning of democracy among citizens can be mediated, nonetheless, by factors playing an important role in the perception of the quality of democracy, that is, accessibility to independent news media and the free unrestricted use of social media and other forms of online instant

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24. Nisbet, Stoycheff, and Pearce.

25. Nielsen.

26. Margetts; Clarke and Knake.

27. Nielsen.

28. Rød and Weidmann.

interaction.<sup>29</sup> At the individual level, people might be less satisfied if they have access to the Internet. They can keep authorities accountable for communicating to each other the vices perceived in how democracy works. Previous research suggests that Internet use is correlated with enhanced satisfaction in advanced democracies, although it is associated with negative satisfaction in nations with weak democratic practices.<sup>30</sup> It is reasonable to expect that they will be less satisfied with how democracy works among those having Internet service at home. I derive, all things being equal, the following hypothesis:

*H<sub>7</sub> (Satisfaction with democracy):* Individuals having Internet service at home will be more likely to be unsatisfied with how democracy works.

Table 1 shows the frequency of Internet usage in Venezuela.<sup>31</sup> Individuals using the Internet every or almost every day have consistently increased since 2008, meanwhile those that reported never using the Internet have decreased. However, Table 2 shows that the number of individuals with Internet service at home increased until 2014 (with a peak in 2012, although the number of cases collected that year was smaller) but declined by five percentage points in 2016. In addition to fewer individuals with the Internet at home, those connected are subject to suffer the effects of censoring, filtering, and monitoring online contents that can weaken mass demonstration and protest and freedom of expression and activism. Figure 1 shows a snippet on the state of democracy in Venezuela using the V-Dem Project's Liberal Democracy Index, which is a composite measuring various features such as the quality of elections, freedom of expression and the media, freedom of association and civil society, checks on the executive, and the rule of law.<sup>32</sup> Although Venezuela's scores were above world and regional averages during the early 1990s, since the turn of the century they began a sharp decline with present patterns similar to countries scoring the lowest levels on the index, that is, Bahrain, China, Nicaragua, North Korea, Russia, Saudi Arabia, and Turkey.<sup>33</sup>

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29. Ceron and Memoli.

30. Bailard.

31. The AmericasBarometer dataset for Venezuela is accessible at [www.LapopSurveys.org](http://www.LapopSurveys.org).

32. Coppedge et al.

33. Lührmann et al., 10–11

TABLE I Internet Usage in Venezuela (Percentages)

Frequency	2008	2010	2012	2014	2016/2017
Every or almost every day	10.3	17.82	20.4	30.3	38.43
At least once a week	11.2	20.17	15.6	19.3	16.45
At least once a month	7.6	9.21	7.6	7.83	5.21
Rarely	14.8	11.9	12.35	9.7	13.05
Never	56.1	40.89	44	32.78	26.86
<i>N</i>	1,471	1,487	1,466	1,495	1,556

Source: The data analyzed are from the AmericasBarometer, rounds 2008–2017.

TABLE 2 Do You Have Internet Service at Home? (Percentages)

Frequency	2010	2012	2014	2016/17
Yes	29.3	80.2	57.1	52.4
No	70.6	19.9	42.9	47.6
<i>N</i>	1,500	783	1,495	1,555

Source: The data analyzed are from the AmericasBarometer, rounds 2010–2017.

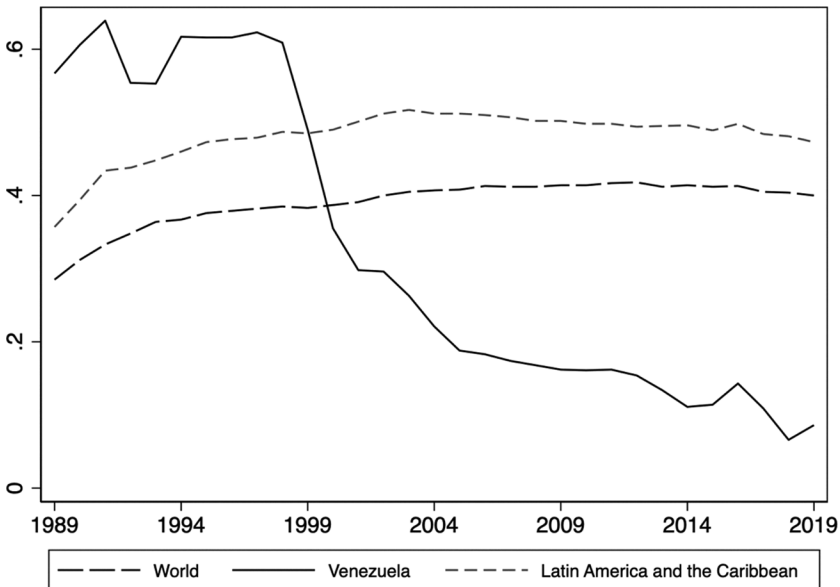


FIGURE 1 V-Dem's Liberal Democracy Index Scores by Year.

Source: Author's construction with data from Coppedge et al. (2020).

Note: The V-Dem liberal democracy index measures to what extent is ideal of liberal democracy is achieved on a scale interval, from low to high (0–1).



In the Venezuelan context, I predict that having the Internet facilitates citizens' appraisal on the state of freedom of expression, thus making them unsatisfied with democracy. Against the same background, I argue that popular organization and contributing to collective action will foster political expression and influence civic participation. In line with previous research, I predict that having the Internet is a powerful mobilizer in protest action,<sup>34</sup> especially in helping mobilize protests by providing a space for those not satisfied with how democracy works.<sup>35</sup>

*H<sub>8</sub> (Freedom of expression):* Individuals with Internet service perceiving lesser freedom of expression in the country will be more likely to be unsatisfied with how democracy works.

*H<sub>9</sub> (Participation in protests):* Those with Internet service and with previous participation in protests will be more likely to say they are unsatisfied with democracy.

The next section of the article describes the data and statistical methods used to test these hypotheses. Taken together, Hypotheses 1 to 6 can be considered a set of plausible demographic characteristics that might cause a person to have Internet service at home. Whereas Hypotheses 7 to 9 were evaluated on the basis that they determined to a certain desired degree attitudinal characteristics of how much respondents with Internet service are satisfied with democracy in the country.

## Data Source and Methods

The widely used annual measure of Internet users collected by the International Telecommunication Union (ITU), counts national aggregates of individual Internet access in the last three months via a computer, mobile phone, tablet, digital TV, etcetera. The data are drawn from the AmericasBarometer, however, it measured whether the respondent had Internet service at home.<sup>36</sup> The Venezuela sample ( $N = 1,558$ ) included

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34. Shah et al.

35. Kim; Kely.

36. Generally, having Internet at home involves broadband (a connection between a device and the Internet), usually offered from a provider that reaches a specific urban or rural location. Another way to have Internet at home is accessing wi-fi without an Internet provider, such as using a public hotspot, using a mobile or tablet as a hotspot, or buying a portable router.

voting-age adults interviewed face-to-face in Spanish in their households from October 3, 2016 to January 28, 2017. The methodology followed stratification and clustering in nine major regions by size of municipality (large, medium, and small). The survey designed by LAPOP used a multistage probability design in the regions of Santo Domingo Metropolitan Area, North, East, and South, then sub-stratified by size of municipality and by urban and rural areas within municipalities including all departments in Venezuela.<sup>37</sup>

From the full set of survey questions, respondents' attitudes and characteristics used in this article included: gender, age, residence, size of municipality, household income, education, having Internet at home, satisfaction with democracy, self-reported opinion on freedom of expression, and participation in protests.

Due to the relative ease of interpretation, a series of logistic models were introduced to analyze the categorical outcomes in question. The basic assumption in a nonlinear model is that we are dealing with two or more variables, each of which has two or more categories that usually cannot be ordered, with one variable acting as a binary dependent variable (DV). Thus, the odds of being in the category of greatest interest of the DV (commonly coded as 1 and the other as 0) is modeled as a function of the other predictors.<sup>38</sup>

I report the unstandardized and standardized regression coefficients ( $b$  and  $bStdY$  for  $y$ -standardization, respectively) and the effects of  $OR$  for readily understandable results. The latter can be understood as "the factor change in the odds of the outcome being a 1 as compared to the odds of the outcome being a 0 for a one-unit change in the predictor".<sup>39</sup> In logit modeling, is easy to confuse probabilities, odds, and  $OR$ .<sup>40</sup> The high point of  $OR$  is that they capture the estimates relation's nonlinearity and indicate conditional effects. However, the low point is that they do not contain information about the magnitude of the change in probability, therefore, it makes sense to report the regression coefficients.

As a way to partially address the issue of comparing the relative effects of the DV, I use something similar to a standardized regression coefficient.<sup>41</sup>  $Y$ -standardization allows us to rank the effects of independent variables

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37. AmericasBarometer, "AmericasBarometer, 2016/17: Technical Information Venezuela."

38. Menard, "Logit Model," 590; Long.

39. Mitchell and Chen, 64.

40. Huang and Moon; Lottes, DeMaris, and Adler.

41. Kaufman.

(IVs) on the DVs by expressing the standard deviation-unit change in the outcome for a one-unit change in the predictor.<sup>42</sup>

For my theory-driven models, I used two DVs indicating that a characteristic of interest was present. The DV in model 1 was whether a respondent had Internet service at home (1 = yes, 0 = no). The DV in models 2a and 2b was whether a respondent was satisfied with how democracy worked in Venezuela (1 = yes, 0 = no). My IVs of interest were coded with the following: gender (1 = male, 0 = female), age (in four categories, from 18 to 30, 31 to 50, 51 to 70, and 71 to 90), residency (urban = 1, rural = 0), size of municipality (1 = large, 2 = medium, 3 = small), years of education (in three categories, from 0 to 5, 6 to 11, and 12 to 18, with higher scores indicating more education), household income (in 16 categories indicating monthly household income in bolívares (with higher scores indicating more income), freedom of expression (1 = not enough, 2 = enough, 3 = too much), and participation in protests (1 = yes, 0 = no). For model 1, my specific research question was what sociodemographic variables in Venezuela's adult population were associated with having Internet service at home? For models 2a and 2b, the research question was what attitudinal characteristics of Venezuela's adults impacted their self-reported perception on the performance of democracy?

## Results

Using the regression coefficients from the logit models as input, we want to see the strength of the relationship between the predictors and having Internet access (model 1) and satisfaction with democracy (model 2). As a proxy to contextualize my results and the DVs' categories of interest, the article also uses data from the 2017 AmericasBarometer country survey conducted in Uruguay between March 11 and May 29 ( $N = 1,515$ ).<sup>43</sup> We should be careful not to extrapolate comparisons over models when using logistic regression as differences in unobserved heterogeneity affects our possibilities to draw conclusions across samples.<sup>44</sup> We can focus on ranking the effects of the IVs on the DVs for each country's logit model, comparing across columns, not rows.

42. Mood; Menard, "Standards for Standardized Logistic Regression Coefficients."

43. AmericasBarometer, "AmericasBarometer, 2016/17 Technical Information Uruguay."

44. Mood, 73; Kuha and Mills.

Including Uruguay follows the most dissimilar case selection methodology based on the values for the predictors explained next. From the descriptive statistics in Table 3, 52 percent of the sample in Venezuela declared having Internet service at home, meanwhile 76 percent did in Uruguay. Regarding satisfaction with how democracy worked, the

TABLE 3 Descriptive Statistics, Selected Variables

Variable	Min	Max	Venezuela		Uruguay	
			Mean	SD	Mean	SD
Gender	0	1	0.49	0.50	0.47	0.49
Age	18	90	40.3	15.6	46.5	17.7
Residency	0	1	0.91	0.28	0.93	0.25
Municipality size	1	3	1.82	0.67	–	–
Municipality size	1	5	–	–	2.43	1.40
Year of education	0	18	11.16	4.00	9.90	3.85
Monthly income	0	16	9.53	5.62	8.13	4.62
Satisfaction with how democracy works	0	1	0.26	0.44	0.68	0.47
Freedom of expression	1	3	1.53	0.79	1.94	0.63
Participation in protest	0	1	0.15	0.36	0.11	0.32
Internet service at home	0	1	0.52	0.49	0.76	0.42

Source: Authors construction with data from the AmericasBarometer, round 2016/17.

Note: Municipality in Venezuela is a categorical variable with 1 = >300,000, 2 = between 50,000 and 300,000, and 3 = <50,000. In Uruguay, this was a five-fold categorical variable with 1 = >100,00 and Montevideo; 2 = 40,000 and less than 100,000; 3 = 13,500–40,000; 4 = 500–13,500; and 5 = <13,500. Income in Venezuela was measured as monthly household income in Bolívares ranging from none; <\$22,100; \$22,101–\$24,350; \$24,351–\$26,650; \$26,651–\$29,850; \$29,851–\$32,350; \$32,351–\$35,600; \$35,601–\$38,400; \$38,401–\$42,100; \$42,101–\$45,800; \$45,801–\$49,500; \$49,501–\$53,400; \$53,401–\$57,800; \$57,801–\$64,700; \$64,701–\$80,650; \$80,651–\$96,600; >96,600. Income in Uruguay was measured as monthly household income in pesos ranging from none; <\$8,000; \$8,000–\$11,000; \$11,001–\$13,500; \$13,501–\$16,450; \$16,451–\$18,900; \$18,901–\$21,300; \$21,301–\$23,800; \$23,801–\$26,700; \$26,701–\$30,000; \$30,001–\$34,000; \$34,001–\$38,500; \$38,501–\$43,000; \$43,001–\$53,000; \$53,001–\$73,000; \$73,001–\$100,000; >\$100,000. Min, minimum; Max, maximum; SD, standard deviation.

difference was clearly in favor of Uruguay (42 percentage points). For Uruguay, the percentage falling in each category of interest was above 10 percent, thus, I confirmed the distribution was not excessively skewed to prevent me from using dichotomous modeling.<sup>45</sup> Notice other differences in the samples, such as Venezuela's slightly younger and more educated population by mean comparison. Uruguayans' monthly income fell in the \$23,801–\$26,700 pesos category, and for Venezuelans, the mean fell in the range between \$42,101 and \$45,800 bolívares.

From Table 4, several patterns are revealed from the data. First, we see that the probability of having Internet service at home by gender is lower in Venezuela (i.e., for females is 0.50, and for males is 0.55; both significant at  $p < 0.001$ ).<sup>46</sup> In both countries, male respondents showed higher probabilities of having Internet service at home. The overall odds of having Internet service at home in Venezuela was 0.52, and the odds of having Internet service at home among males was 1.2 times versus females. However, this turned nonsignificant ( $p = 0.96$ ), controlling for all the other variables.

To get a better sense of who has home access to the Internet, Table 5 shows the result of the first logit model using the DV having Internet service at home by selected IVs (gender, age, residence, size of municipality, and monthly household income). The model shows

TABLE 4 Crosstab Gender and Internet Service at Home, Frequency, and Row Percentages

Gender	Internet Service at Home (Venezuela)		Total
	No	Yes	
Female	389 (49.6 percent)	394 (50.3 percent)	783
Male	351 (45.4 percent)	421 (54.5 percent)	772
Total	749 (47.5 percent)	815 (52.4 percent)	1,555
Gender	Internet Service at Home (Uruguay)		Total
	No	Yes	
Female	180 (22.8 percent)	610 (77.2 percent)	719
Male	170 (23.6 percent)	549 (76.4 percent)	790
Total	350 (23.2 percent)	1,159 (76.8 percent)	1,509

Source: The data analyzed are from the AmericasBarometer round 2017.

45. Lottes, DeMaris, and Adler, 286.

46. The probability of an event (in this case, yes = 1) can be calculated easily by dividing the number of events by the total sample size. An event's odds can be calculated by dividing the events (yes = 1) by the non-events (no = 0).

TABLE 5 Logit Regression for Having Internet Service at Home on Selected Independent Variables (Model 1)

Dependent Variable	Independent Variables	Venezuela			Uruguay		
		<i>b</i> (SE)	<i>bStdY</i>	OR (SE) %	<i>b</i> (SE)	<i>bStdY</i>	OR (SE) %
Internet service at home	Gender	-0.091 (0.12)	-0.046	0.91 (0.10) -8.7 percent	-0.30* (0.14)	-0.14	0.74 (0.11) -26 percent
	Age						
	31-50	-0.178 (0.114)	-0.09	0.83 (0.10) -16.4 percent	0.03(0.20)	0.007	1.03 (0.21) 3 percent
	51-70	-0.123 (0.17)	-0.06	0.88 (0.12) -11.7 percent	-0.297 (0.19)	-0.06	0.74 (0.14) -26 percent
	71-90	-0.820** (0.41)	-0.41	0.44 (0.11) -56 percent	-0.907** (0.27)	-0.12	0.40 (0.11) -60 percent
	Residence	0.62* (0.24)	0.31	1.8 (0.41) 85 percent	0.448 (0.45)	0.05	1.6 (0.70) 56.6 percent
	Municipality size						
	Medium	0.07 (0.13)	0.04	1.08 (0.14) 8 percent	-0.37 (.20)	-0.06	0.70 (0.14) -30 percent
	Small	-0.19 (0.21)	-0.10	0.82 (0.15) -17.5 percent	0.13 (0.22)	0.02	1.13 (0.25) -13 percent

	Venezuela		Uruguay	
Education				
	(6–11)	0.91** (0.31)	0.45	2.5 (0.78) 57.4 percent
	(12–18)	1.65** (0.32)	0.83	5.3 (0.169) 128 percent
Household Income		0.086** (0.012)	0.04	1.09 (0.01) 63 percent
Constant		-2.2** (0.42)		0.20** (0.01) -1.10 (0.10)
Log likelihood			-749.790	
Prob > $\chi^2$			0.000	
pseudo- $R^2$			0.10	
Pearson $\chi^2$			0.34	
Prob > $\chi^2$				
$N$			1,209	1,346

Source: Author's construction with data from the AmericasBarometer round 2017.

Note: For the case of Uruguay, municipality size was only considered given the categories 1, 2, and 3 (see notes in Table 1).  $b$ , unstandardized coefficients;  $bStdY$ ,  $y$ -standardized coefficients;  $OR$ , odds ratios;  $SE$ , standard errors in parentheses; %, per cent change in odds for unit increase in  $X$ . \* $p < 0.05$ , \*\* $p < 0.001$ .

the main effects of the demographic predictors on the probability of occurrence in the outcome's category of interest. Controlling for other predictors in the model, being a male in Uruguay decreases the odds of having Internet service at home by 26 percent compared to females ( $H_1$ ). This relationship turned statistically significant. In the model for Venezuela, the gender variable did not reach the usual levels of statistical significance.

The age variable used was 18 to 30 years old as the reference category. In both countries, being 71 and 90 years old compared with those between 18 and 30 decreased the odds of having Internet service at home by a factor equal or greater to 0.4 (or a decrease of 56 percent and 60 percent using the percentage formula in Venezuela and Uruguay, respectively,  $p < 0.001$ ), holding all other variables constant ( $H_2$ ). In Venezuela, the probability of having Internet at home for the four age categories was respectively, 0.57, 0.54, 0.46, and 0.25, ( $p < 0.001$ ), much lower than in Uruguay (0.79, 0.82, 0.75, and 0.57, respectively,  $p < 0.001$ ).

The divide between those having Internet at home in urban or rural locations is telling ( $H_3$ ). In Venezuela, 65 percent ( $N = 87$ ) declared not having Internet at home among those in rural areas. From those living in urban areas, 46 percent ( $N = 653$ ) did not have a home with Internet service. From model 1, we see that if a respondent in Venezuela lived in an urban location and holding all other variables constant, the odds of having Internet service at home increased by 85 percent than living in a rural setting ( $p < 0.01$ ).

The  $y$ -standardized coefficients can offer much relevant information and the basis for comparison, for example, for predictors with no natural metric.<sup>47</sup> From the statistically significant variables in Venezuela, having more education has the strongest relationship, followed by age (negatively associated with the 71–90 years old category), then residence, and lastly, household income.  $Y$ -standardization in this case indicates a 1 unit increase in education (in the 12–18 years category) produces, on average, a 0.45 standard deviation increase in the DV. Because we do not measure the models' outcome in standard deviations, we care only what the coefficients tell us about ranking the predictors' effects. For the contrast case, Uruguay, the strongest relationships are similarly ranked from high to low, although gender came before household income. In both models, the logit regression does not detect any statistically significant effect by municipality size ( $H_4$ ).

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47. Menard.



Education ( $H_5$ ) turned out to be a highly significant predictor in Venezuela and Uruguay ( $p < 0.001$ ), meaning more educated respondents are more likely to have Internet service at home, with a clear increase in the odds by 128 percent in the above 12 years of education in Venezuela and a 418 percent increase in Uruguay in the same group, compared to the reference category, all other things being equal.

In Venezuela, it was only among those earning between \$49,501 and \$53,400 bolívares that having Internet service was a percentage majority (64 versus 36 percent, respectively). In other words, below such an income threshold, respondents not having Internet at home were a percentage majority. This time, the results of a logistic regression showed that for each increase in monthly household income category ( $H_6$ ), the odds of having Internet service at home increased by 63 percent ( $p < 0.001$ ) in Venezuela, and 22 percent in Uruguay, holding all other variables constant.

Next, I explored the attitudinal predictors of satisfaction with how democracy works, including having Internet service. Table 6 reports the bivariate relationship between Internet service at home and freedom of expression, participation in protests, and satisfaction with how democracy works. The Pearson  $r$  coefficients are statistically significant, some have negative correlations (in the case of Venezuela), but overall, the relationships are very weak.

From Table 7, we see the logistic regression results of model 2a, testing satisfaction with how democracy works by having Internet service at home. For statistical purposes, unlike other significance measures, I was pleased that the goodness-of-fit tests for models 1, 2a, and 2b showed no significant.<sup>48</sup> Satisfaction with democracy was based on the question: "In general, would you say that you are very satisfied, satisfied, dissatisfied or very

TABLE 6 Correlation Matrix, Selected Variables on Having Internet Service at Home

Variables	Internet Service at Home	
	Venezuela	Uruguay
Freedom of expression	-0.06 <sup>†</sup>	0.06 <sup>†</sup>
Participation in protest	.10 <sup>**</sup>	0.10 <sup>**</sup>
Satisfaction with how democracy works	-0.12 <sup>**</sup>	0.07 <sup>**</sup>

Source: Author's construction with data from the AmericasBarometer round 2017.

Note: <sup>†</sup> $p < 0.05$ , <sup>\*\*</sup> $p < 0.001$ .

48. Walsh.

TABLE 7 Logit Regression for Satisfaction with How Democracy Works on Selected Variables (Model 2a)

Dependent Variable	Independent Variables	Venezuela			Uruguay		
		<i>b</i> (SE)	<i>bStd Y</i>	<i>OR</i> (SE) %	<i>b</i> (SE)	<i>bStd Y</i>	<i>OR</i> (SE) %
Satisfaction with how democracy works	Internet at home	-0.55** (0.12)	-0.30	0.58 (0.07) -42 percent	0.35** (0.13)	0.19	1.41 (0.18) 42 percent
	Constant	-0.75** (0.10)		0.47 (0.04)	0.46*** (0.11)		1.59 (0.17)
	Log likelihood	-850.600			-931.149		
	Prob > $\chi^2$	0.000			0.000		
	pseudo- <i>R</i> <sup>2</sup>	0.01			0.003		
	<i>N</i>	1,489			1,484		

Source: Author's construction with data from the AmericasBarometer round 2017.

Note: *b*, unstandardized coefficients; *bStdY*, *y*-standardized coefficients; *OR*, odds ratios; SE, standard errors in parentheses; %, percent change in odds for unit increase in *X*. \**p* < 0.05, \*\**p* < 0.001.

dissatisfied with the way democracy works in Venezuela?” Respondents said they were very dissatisfied (26.83 percent), dissatisfied (46.46 percent), satisfied (19.85 percent), and very satisfied (6.64 percent) with how democracy worked in Venezuela. When creating a new dichotomous variable between those dissatisfied (0) versus those satisfied (1) with how democracy worked, percentages changed to 73.5 percent versus 26.5 percent, respectively (*N* = 1,491). For the case of Uruguay, respondents were 32 percent not satisfied and 68 percent were satisfied with how democracy worked in their country (*N* = 1,489). In model 2a, the logistic regression (using the new dichotomous variable as outcome and Internet service at home now acting as the sole predictor), revealed that if a respondent in Venezuela had Internet service at home (*H*<sub>1</sub>), the odds of being satisfied with how democracy worked decreased by 42 percent (*p* < 0.001), holding all other variables equal.

In Table 8, model 2b includes only those who reported having access to the Internet at home, the regression coefficients suggested that the self-reported perception of freedom of expression predicting satisfaction with democracy is strongly supported (*H*<sub>2</sub>). Respondents were asked: “. . . and freedom of expression. Do we have very little, enough or too much?” From the entire sample, and not surprisingly, 65.26 percent thought Venezuela

TABLE 8 Logit Regression for Satisfaction with How Democracy Works on Selected Variables, by those Having Internet Service at Home (Model 2b)

Dependent Variable	Independent Variables	Venezuela			Uruguay		
		<i>b</i> (SE)	<i>bStd</i> <i>Y</i>	<i>OR</i> (SE) %	<i>b</i> (SE)	<i>bStd</i> <i>Y</i>	<i>OR</i> (SE) %
Satisfaction with how democracy works	Freedom of expression						
	Enough	1.12** (0.23)	0.56	3.06 (0.71) 206 percent	1.40*** (0.16)	0.74	4.09 (0.65) 309 percent
	Too much	2.03** (0.22)	1.03	7.63 (1.7) 663 percent	0.17*** (0.21)	0.62	3.25 (0.68) 225 percent
	Participation in protest	0.04 (0.25)	0.02	1.04 (0.25) 43 percent	0.48* (0.21)	0.25	1.60 (0.34) 61 percent
	Constant	-1.97*** (0.14)		0.13 (0.02)	-0.279* (0.14)		0.75 (0.10)
	Log likelihood	-362.13			-655.80		
	Prob > chi <sup>2</sup>		0.000			0.000	
	pseudo- <i>R</i> <sup>2</sup>		0.11			0.06	
	Pearson $\chi^2$ Prob > chi <sup>2</sup>		0.74			0.83	
	<i>N</i>		781			1,136	

Source: Author's construction with data from the AmericasBarometer round 2017.

Note: *b*, unstandardized coefficients; *bStdY*, *y*-standardized coefficients; *OR*, odds ratios; SE, standard errors in parentheses; %, per cent change in odds for unit increase in *X*. \**p* < 0.05, \*\**p* < 0.001.

had very little freedom of expression, 16.38 percent thought it had enough, and 18.36 percent considered it had too much (*N* = 1,514). When using the sample reduced to only those having Internet at home, considering the country had enough liberty of expression compared with believing the country had very little freedom of expression increased the odds of being satisfied with how democracy worked by a factor of 3 (or a 200 percent

increase); and, similarly for those considering the country had too much liberty of expression ( $OR = 7.63$ , or an increase by 663 percent), holding all other variables constant.

To assess respondents' participation in protests ( $H_9$ ), they were asked: "In the last 12 months, have you participated in a demonstration or protest march?" In Venezuela, respondents saying "yes" added to 19 percent, and those saying "no" were 81 percent ( $N = 814$ ). Similarly, in Uruguay the "yes" option had 13.4 percent versus 86.6 percent who said "no" ( $N = 1,159$ ). Only in Uruguay the coefficient was statistically significant ( $p < .05$ ,  $OR = 1.60$ , or a 61 per cent increase in the odds), holding all other variables constant.

## Conclusion

At the outset of this article, I asked whether sociodemographic characteristics affected Internet access in times of critical contingency. I specifically questioned whether and how a subset of sociodemographic variables in Venezuela's adult population was associated with having Internet service at home. My results indicate that there isn't a statistically significant relationship to argue whether males in Venezuela are more likely to have Internet service at home than women ( $H_1$  *gender*: rejected). Conversely, the article found support to argue that those aged 50 and older are less likely to have Internet service at home than younger age groups ( $H_2$  *age*: accepted). Another claim that found strong support, quite expectedly, is the idea that those living in urban areas are more likely to have Internet service at home ( $H_3$  *residence*: accepted). In turn, the municipality's size did not show statistically significant results ( $H_4$  *municipality size*: rejected). The remaining two sociodemographic predictors indicate that higher education levels, expressed in more years of schooling, make individuals more likely to having Internet service at home ( $H_5$  *education*: accepted); and that those with a greater monthly household are more likely to have Internet service at home ( $H_6$  *household income*: accepted).

My results confirmed the literature calling for better Internet access toward the underserved communities from the developing world still struggling for affordable and accessible connections.<sup>49</sup> The Internet in

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49. Sambuli.

Venezuela seems reserved for the urban rich and educated, when it should be a basic service for most of the population. Severe limitations abound, including effective regulatory frameworks to broaden Internet networks. While in Uruguay the Internet gap has shortened as the country's economy and democracy thrive, in Venezuela, not only the current digital gap is worrying, but also whether Internet contents will be preserved free of censorship and abuses. As other studies have shown, digital gaps promote Internet illiteracy making citizens vulnerable to disinformation campaigns, censorship, and freedom of expression abuses.<sup>50</sup>

The digital gap in Venezuela, as shown in the article, presents a series of problems, most notably whether its unconnected population will become part of the one billion new users expected throughout the world by the beginning of 2022. Breaking the digital gap, is to some, the most important challenge of the century.<sup>51</sup> In line with other studies, the article's first set of hypotheses showed that addressing the digital gap requires looking at how socioeconomic factors affect inequities in access. I proposed that these parameters served as a first step taken in considering more predictors of unequal access, such as institutional stability, infrastructure development, or number of mobile phone subscriptions<sup>52</sup> that could shed light on the attitudes and values of Internet users and nonusers determining various "cultures of the Internet" shaping digital divides.<sup>53</sup>

In that vein, the second set of predictors were emphasized in democratic culture, and it asked what attitudinal characteristics in Venezuela's adults impacted their self-reported perception of the performance of democracy? The article found that individuals with Internet service at home were more likely to feel unsatisfied with how democracy worked in the country than those who did not have Internet ( $H_7$ , *satisfaction with democracy*: accepted). Similarly, individuals with Internet service perceiving lesser freedom of expression in the country were more likely to be unsatisfied with how democracy works than those that did not have Internet ( $H_8$ , *freedom of expression*: accepted). Finally, the article concluded that previous participation in protests among those with Internet service was not a statistically significant predictor of satisfaction with democracy ( $H_9$ , *participation in protests*: rejected).

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50. Paterson.

51. Bildt and Smith.

52. Skaletsky et al.

53. Dutton and Reisdorf.

Similar to other studies, the jump from the second-level divide associated with sociodemographic factors to the third-level divide (the democratic divide) showed clear differences between those who use the Internet for politics and those who do not as reported elsewhere.<sup>54</sup> In Venezuela, the democratic divide became evident between Internet users those that were unsatisfied with how democracy worked and saw lesser levels of freedom of expression. As it has been shown, political Internet users are individuals with high Internet skills and political interest.<sup>55</sup> Venezuelans might be less optimistic due to the detriment of democracy seen in the last two decades plus an Internet service that is inconsistent with that of neighboring nations in Latin America. The norm is that in most nations, the Internet remains very free allowing citizens to practice democracy (only with the exception of Cuba).

Two main takeaways can be concluded. First, and in line with previous studies, the case of Venezuela sheds light on the mutual nature between the democratization of access to the Internet and the interaction with political developments, such as regulation of online media and online contents, which can eventually promote or hinder Internet access among different subgroups, but most importantly, the deliberation and mobilization of ideas that flow over the web.<sup>56</sup> Scholars argue that the Internet can offer openness and “unrestricted levels” to individual freedom of expression.<sup>57</sup> Yet, and secondly, the case study addressed in the article triggers further concerns on the idea that participation in the digital era involves undergoing political and cultural transformations that consider expression and participation as the ultimate sources of political legitimacy.<sup>58</sup> In developing societies, the Internet’s potential to democratize civil society advocacy is a critical resource for marginalized or socially suspect groups and subjects living under a democracy. Online communications provide them with the means to express and transmit excluded ideas and identities.<sup>59</sup> This might not be the case in today’s Venezuela.

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54. Min.

55. *Ibid.*

56. Enjolras and Steen-Johnsen; Schia and Gjesvik.

57. Ester and Vinken; Bernal.

58. Gerbaudo.

59. Friedman.

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