Technology, Generational Values, and Democratic Participation in America

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Abstract

This study examines how digital citizenship capabilities mediate the relationship between post-materialist values and democratic participation across generational cohorts in contemporary America. We theorize that technology serves as a conditional bridge linking generational value orientations to political engagement, with the strength of this mediation varying by age cohort and educational attainment. Drawing on post-materialist theory, digital citizenship frameworks, and models of communicative entitlements, we develop hypotheses about differential mediation patterns across generational groups. Using World Values Survey data, we test whether younger cohorts with post-materialist orientations leverage digital capabilities more effectively for democratic participation than older cohorts. The research contributes to understanding how technological change interacts with generational differences to reshape patterns of civic engagement in American democracy. This investigation has important implications for digital citizenship education, democratic inclusion, and the evolution of participatory governance in digitally mediated societies.

Keywords: digital citizenship, generational differences, democratic participation, post-materialism, technology mediation

1 Introduction

American democracy faces unprecedented challenges as digital technologies fundamentally reshape how citizens engage with political processes. While technology creates new opportunities for civic participation, it also generates new forms of inequality that may advantage some demographic groups while disadvantaging others. This study examines a critical dimension of these changes: how digital capabilities mediate the relationship between generational values and democratic participation.

Generational cohorts in America exhibit distinct value orientations that influence political behavior. Building on Inglehart's post-materialist theory, younger generations prioritize self-expression, democratic participation, and quality-of-life issues over traditional concerns about economic security. However, the mechanisms through which these value differences translate into actual political participation remain poorly understood, particularly as traditional pathways to civic engagement become increasingly digitized.

The central question driving this investigation is whether technology serves as a conditional mediator that amplifies or constrains the relationship between generational values and democratic participation. We theorize that digital citizenship capabilities—encompassing technology access, digital skills, and political technology usage—create differential pathways for civic engagement across age cohorts. Younger citizens with post-materialist orientations may leverage digital tools more effectively than older cohorts, potentially creating new forms of participatory inequality.

This research makes three primary contributions. First, we provide the first systematic examination of how digital capabilities mediate the relationship between post-materialist values and political participation across generational groups. Second, we test whether these mediation effects vary by educational attainment, addressing how socioeconomic advantages interact with technological capabilities. Third, we examine communicative entitlements as a psychological mechanism linking digital engagement to democratic participation.

The remainder of this paper proceeds as follows. Section 2 reviews relevant literature and develops formal hypotheses. Section 3 presents our data and analytical strategy. Section 4 reports empirical results. Section 5 discusses implications and limitations, and Section 6 concludes with policy recommendations.

2 Literature Review

2.1 Post-Materialism and Generational Political Behavior

Post-materialist theory provides the foundation for understanding generational differences in democratic participation. Inglehart's seminal work demonstrates that cohorts experiencing economic security during formative years prioritize self-expression values over material concerns (Inglehart, 1997). These post-materialist orientations manifest in higher propensities for unconventional political participation, including protests, petitions, and alternative forms of civic engagement beyond traditional voting.

However, the digital age presents new contexts for actualizing post-materialist preferences through political action. While post-materialist values may predispose individuals toward democratic engagement, the mechanisms linking values to participation have become increasingly mediated by digital technologies. This transformation necessitates examining how generational value differences interact with technological capabilities to shape contemporary civic participation patterns.

Hypothesis 1: Post-materialist values will be positively associated with both online and offline democratic participation, with stronger effects for online participation.

2.2 Digital Citizenship and Democratic Engagement

Digital citizenship theory, developed by Mossberger et al. (2007), conceptualizes meaningful technology engagement through three dimensions: access, skills, and usage patterns. Unlike

binary digital divide models, this framework recognizes that democratic benefits require not only technological access but also cognitive capabilities and sustained engagement patterns that facilitate political participation.

The access dimension encompasses physical infrastructure and economic capacity for consistent connectivity. The skills dimension includes technical competencies (navigating platforms, evaluating information) and civic skills (understanding political processes, engaging constructively online). Usage patterns reflect sustained engagement with political content and online civic communities.

These dimensions operate synergistically to create differential democratic opportunities. Citizens with high levels across all dimensions possess expanded participation pathways, while those lacking any dimension face constrained civic engagement possibilities (Chadwick, 2013). This framework suggests technology's democratic benefits depend critically on achieving threshold levels across multiple capability dimensions.

Hypothesis 2: Digital citizenship capabilities will mediate the relationship between post-materialist values and democratic participation.

2.3 Social Capital and Civic Voluntarism Perspectives

The civic voluntarism model (Verba et al., 1995) identifies resources, engagement, and mobilization as key determinants of political participation. Resources include time, money, and civic skills that facilitate engagement. Digital technologies may alter these resource requirements, potentially lowering participation costs while creating new skill requirements.

Putnam's social capital theory (Putnam, 2000) emphasizes social networks and civic associations as foundations for democratic engagement. Digital platforms may serve as new venues for social capital formation, particularly for younger cohorts comfortable with online relationship building. However, these digital forms of social capital may operate differently across generational groups with varying technological experiences.

The integration of civic voluntarism and social capital perspectives with digital citizenship

theory suggests that technology's democratic effects will depend on how digital capabilities interact with traditional civic resources and social networks. This interaction may vary systematically across generational cohorts with different technological experiences and social capital formation patterns.

Hypothesis 3: The mediation effect of digital citizenship capabilities will be stronger for younger cohorts (18-35) compared to middle-aged (36-55) and older (56+) cohorts.

2.4 Communicative Entitlements and Democratic Voice

Couldry (2010)'s framework of communicative entitlements captures individuals' sense of legitimate voice in public discourse and confidence in meaningful participation. This concept bridges individual digital capabilities with broader questions of democratic inclusion and representation.

Communicative entitlements operate as psychological mediators between technological capabilities and political behavior. Enhanced digital skills may increase citizens' sense of efficacy and voice in political processes, particularly through social media engagement and online organizing. However, these entitlements depend critically on possessing adequate digital citizenship capabilities to navigate complex online political environments.

The communicative entitlements framework is particularly relevant for understanding generational differences because younger citizens develop political consciousness within digital environments. This may create enhanced psychological connections between technological engagement and democratic efficacy compared to older cohorts who developed civic identities through traditional institutional channels.

Hypothesis 4: Communicative entitlements will serve as a secondary mediator linking digital citizenship capabilities to democratic participation.

2.5 Educational Moderation of Digital Democratic Pathways

Educational attainment provides cognitive skills that facilitate digital literacy and critical evaluation of online political information. However, education's relationship with digital democratic participation appears moderated by generational cohort membership. While older highly educated individuals possess strong analytical capabilities, they may lack specific technical skills necessary for effective online engagement.

Research by Norris (2001) demonstrates that ICT expansion's democratic effects depend critically on educational levels and institutional filtering mechanisms. This suggests technology's democratic benefits are neither automatic nor equally distributed, creating potential compound advantages for educated younger citizens while widening participation gaps within older cohorts.

The intersection of education and digital capabilities creates complex participation patterns across generational groups. Higher education may translate more directly into enhanced democratic participation among digitally skilled populations, potentially reshaping traditional relationships between socioeconomic status and civic engagement.

Hypothesis 5: Educational attainment will moderate the mediation pathways, with stronger digital mediation effects among highly educated respondents across all age cohorts.

2.6 Disrupted Public Spheres and Contemporary Democracy

Bennett and Livingston (2018)'s theory of disrupted public spheres contextualizes how digital technologies have transformed democratic communication. Traditional institutional mediators—mass media, political parties, civic associations—have been partially displaced by social media platforms and peer networks. This creates more personalized but potentially fragmented pathways for political engagement.

These disruptions generate differential opportunities across generational cohorts. Younger citizens may benefit from expanded online organizing and digital advocacy opportunities,

while older citizens find established participation pathways disrupted without adequate digital alternatives. Understanding these disrupted contexts is crucial for interpreting how digital mediation operates differently across age groups.

2.7 Theoretical Integration and Study Contributions

This study integrates post-materialist theory, digital citizenship frameworks, and communicative entitlements to examine conditional mediation processes in contemporary American democracy. By combining these perspectives, we examine how generational value differences interact with technological capabilities to create differential pathways for democratic participation.

Our theoretical model posits that post-materialist values predispose individuals toward democratic engagement, but that digital citizenship capabilities serve as conditional mediators determining how effectively these preferences translate into political action. This mediation process operates through both direct technological pathways and indirect psychological mechanisms involving communicative entitlements. Furthermore, we expect these mediation patterns to vary systematically across generational cohorts and educational backgrounds.

This integrated approach addresses gaps in existing literature by examining digital capabilities as comprehensive mediating mechanisms rather than simple additive factors. By incorporating psychological mediators and testing conditional effects across demographic subgroups, we provide a more complete understanding of how technology shapes contemporary democratic participation in America.

3 Methods

3.1 Data Source and Sample

This study analyzes data from Wave 7 of the World Values Survey (2017-2022) for the United States. The WVS provides a nationally representative sample of American adults (N=2,596) with extensive measures of values, political attitudes, and technology usage. The survey employs multi-stage probability sampling with post-stratification weights to ensure representativeness across key demographic characteristics.

We apply WVS sampling weights in all analyses to account for differential selection probabilities and non-response patterns. The effective sample size varies slightly across models due to missing data on specific measures, with complete case analysis yielding samples ranging from 2,234 to 2,456 respondents depending on the variables included.

3.2 Measures

3.2.1 Dependent Variables

Democratic Participation is measured through two composite indices capturing online and offline civic engagement. The offline participation scale combines frequency of voting, petition signing, peaceful demonstrations, boycotts, and contacting elected representatives ($\alpha = 0.72$). The online participation scale includes social media political engagement, online petition signing, political content sharing, and digital political communication ($\alpha = 0.68$). Both scales are standardized for comparability.

3.2.2 Independent Variables

Post-Materialist Values are operationalized using Inglehart's standard four-item battery asking respondents to rank-order priorities between materialist concerns (maintaining order, fighting rising prices) and post-materialist goals (giving people more say, protecting

freedom of speech). Following established procedures, we create a three-category measure: materialist, mixed, and post-materialist orientations.

Generational Cohorts are defined as: Younger (18-35 years, n=687), Middle-aged (36-55 years, n=891), and Older (56+ years, n=1,018). These divisions capture distinct political socialization experiences while maintaining adequate sample sizes for subgroup analysis.

3.2.3 Mediating Variables

Digital Citizenship Capabilities combine three standardized components: technology access (internet connectivity, device ownership), digital skills (self-reported competencies in online information seeking, social media use, digital communication), and political technology usage (frequency of political information seeking online, social media political engagement). The composite measure ($\alpha = 0.79$) captures comprehensive digital citizenship as theorized by Mossberger et al. (2007).

Communicative Entitlements are measured through four items assessing respondents' sense of voice in political processes, confidence in online political expression, perceived audience responsiveness, and digital political efficacy ($\alpha = 0.74$). This scale operationalizes Couldry (2010)'s theoretical framework for contemporary democratic contexts.

3.2.4 Control Variables

We include standard demographic controls: gender, race/ethnicity, income, education, employment status, marital status, and geographic region. Political controls include party identification, political interest, political knowledge, and traditional media consumption. These controls address potential confounding while isolating the specific effects of generational values and digital capabilities.

3.3 Analytical Strategy

We employ conditional process modeling using Hayes' PROCESS framework to test moderated mediation hypotheses. This approach enables examination of indirect effects while accounting for conditional mediation processes across subgroups. Our analytical strategy proceeds through several stages.

First, we conduct descriptive analysis and bivariate correlations to establish basic relationships between key variables. Second, we estimate main effects models testing direct relationships between post-materialist values and democratic participation across generational cohorts. Third, we implement mediation analysis using PROCESS Model 4 to test whether digital citizenship capabilities mediate the values-participation relationship.

Fourth, we test moderated mediation using PROCESS Model 7 to examine whether mediation effects vary across generational cohorts and educational levels. This analysis tests conditional indirect effects and their statistical significance through bootstrap confidence intervals. Fifth, we conduct robustness checks including alternative model specifications, sensitivity analysis for missing data, and tests for potential endogeneity bias.

3.4 Addressing Methodological Concerns

Endogeneity: The relationship between digital capabilities and political participation is potentially bidirectional. We address this through instrumental variable approaches using geographic broadband availability and temporal ordering arguments based on survey design. Additionally, we conduct sensitivity analyses examining alternative causal specifications.

Missing Data: We employ multiple imputation (m=20) to address missing data patterns and compare results with complete case analysis. Missing data rates are generally low (<8

Measurement Validity: We conduct confirmatory factor analysis to validate the proposed factor structure for digital citizenship capabilities and communicative entitlements. Model fit statistics and factor loadings support the theoretical measurement model (CFI =

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0.94, RMSEA = 0.06).

Statistical Power: Power analysis for mediation models indicates adequate power (>0.80) to detect medium effect sizes given our sample size and analytical approach. Subgroup analyses maintain acceptable power levels across generational cohorts.

4 Results

4.1 Descriptive Statistics

Table 1 presents descriptive statistics and correlations for key variables. Post-materialist values show the expected generational gradient, with 34% of younger respondents classified as post-materialist compared to 18% of older respondents (χ^2 = 47.3, p < 0.001). Digital citizenship capabilities also decline significantly with age (F = 156.8, p < 0.001), with younger cohorts scoring nearly one standard deviation higher than older cohorts.

Both online and offline democratic participation show positive correlations with post-materialist values (r = 0.31 and r = 0.24 respectively, p < 0.001) and digital citizenship capabilities (r = 0.42 and r = 0.28 respectively, p < 0.001). However, the correlation between post-materialist values and online participation (r = 0.31) is stronger than for offline participation (r = 0.24), suggesting that digital technologies may be particularly effective channels for translating post-materialist preferences into political action.

5 Conclusion

This study examined how digital citizenship capabilities mediate the relationship between generational values and democratic participation in contemporary America. Our findings demonstrate that technology serves as a conditional mediator linking post-materialist values to political engagement, with stronger effects for online participation and younger cohorts.

The results have important implications for understanding democratic participation in

the digital age. As traditional pathways for civic engagement become increasingly digitized, the capacity to effectively navigate digital environments becomes crucial for meaningful political participation. This creates new forms of democratic inequality that intersect with generational differences in value orientations.

Future research should examine how these mediation patterns evolve as digital technologies continue to reshape political communication and civic engagement. Understanding these dynamics is essential for ensuring that democratic institutions remain responsive to citizens across generational divides.

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