

The Digital Democracy Divide: How Technology Adoption Mediates the Relationship Between Postmaterialist Values and Democratic Participation Among Americans

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Abstract

This study examines how technology adoption mediates the relationship between postmaterialist values and democratic participation in the United States, contributing to social science understanding of value-driven pathways to digital political engagement. Integrating Inglehart’s postmaterialist theory with social cognitive theory and digital democracy frameworks, we analyze data from 2,596 Americans in the World Values Survey Wave 7 using structural equation modeling and mediation analysis. Three key findings emerge. First, technology adoption significantly mediates the relationship between postmaterialist values and political participation, with indirect effects of 0.147 ($p < 0.001$) for online activities and 0.089 ($p < 0.01$) for offline engagement. Second, contrary to “digital native” assumptions, mediation effects remain consistent across generational cohorts, challenging age-based explanations of digital political behavior. Third, digital political efficacy moderates the technology-participation relationship ($\beta = 0.156$, $p < 0.001$), with stronger effects among citizens with higher digital confidence. These findings advance postmaterialist theory

by demonstrating technology-mediated value expression pathways and contribute to digital democracy research by revealing how individual orientations shape political engagement in digital contexts. The study addresses the digital democracy paradox by showing that while technology expands participation opportunities for postmaterialist citizens, it may simultaneously reinforce value-based inequalities in democratic engagement.

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1 Introduction

The digital revolution has fundamentally transformed the landscape of democratic participation, creating new pathways for political engagement while simultaneously raising questions about equality and inclusion in democratic processes. As citizens increasingly turn to digital platforms for political information, discussion, and action, scholars have begun to grapple with what ? terms the “myth of digital democracy”—the paradoxical reality that while technology promises to democratize political participation, it may actually reinforce existing inequalities and create new forms of digital exclusion. This transformation of political engagement in the digital age presents a critical challenge for understanding how individual values and motivations interact with technological capabilities to shape democratic participation patterns.

Despite decades of research on both value systems and political participation, significant gaps remain in our understanding of how postmaterialist orientations—characterized by emphasis on self-expression, democratic values, and quality of life concerns (?)—influence engagement with digital political platforms. While ? demonstrated that postmaterialist values predict higher levels of unconventional political participation, the emergence of digital technologies has created entirely new categories of political activity that challenge traditional distinctions between conventional and unconventional participation. The question of whether and how these value orientations translate into digital political engagement remains largely unexplored, representing a crucial gap in both postmaterialist theory and digital democracy research.

1.1 The Digital Democracy Paradox

The promise of digital democracy has long been that technology would lower barriers to political participation, enable more diverse voices to be heard, and create new opportunities for citizen engagement with democratic processes ?. Early optimists argued that the internet would serve as a great equalizer, providing citizens with unprecedented access to political information and opportunities for participation regardless of traditional socioeconomic constraints ?. However, empirical evidence increasingly suggests that digital

political participation reproduces and may even amplify existing inequalities in democratic engagement.

It provides compelling evidence that the internet has not democratized political participation as promised, but rather has concentrated political voice among already privileged groups while creating new forms of exclusion for marginalized populations. This “digital democracy divide” manifests not only in terms of access to technology—the traditional focus of digital divide research—but also in terms of the skills, efficacy, and motivational orientations necessary to translate technological access into meaningful political engagement (??).

Recent meta-analytic evidence supports this complexity. A comprehensive analysis of 204 studies reveals that while digital media use generally correlates with increased political participation, effects vary significantly by platform type, user characteristics, and political context. Similarly, It demonstrates that social media’s effects on political engagement are moderated by individual differences in political motivation and digital skills, suggesting that value orientations may play a crucial mediating role in technology-participation relationships.

The result is what we term the “digital democracy paradox”: while technology creates new opportunities for democratic participation, it simultaneously generates new forms of inequality that may undermine democratic ideals of equal voice and representation. Understanding this paradox requires examining not only technological access but also the individual-level mechanisms through which values, motivations, and capabilities interact to produce differential patterns of digital political engagement.

1.2 Theoretical Contributions and Research Questions

This study contributes to social science by developing and testing an integrated theoretical framework that explains how postmaterialist values influence democratic participation through technology-mediated pathways. By combining Inglehart’s postmaterialist theory with social cognitive theory (??) and digital democracy frameworks (??), we advance understanding of the psychological and motivational foundations of digital political

participation.

Our theoretical contribution is threefold. First, we extend postmaterialist theory to the digital age by demonstrating how self-expression values translate into technology adoption for political purposes. Second, we contribute to digital democracy research by revealing individual-level mechanisms that explain differential patterns of technology-mediated political engagement. Third, we challenge “digital native” assumptions by examining how value-driven technology adoption operates across generational cohorts.

Three specific research questions guide this investigation:

RQ1: *To what extent does technology adoption mediate the relationship between postmaterialist values and democratic participation, and how do these mediation effects differ between online and offline political activities?*

This question addresses the fundamental mechanism linking values to political behavior in the digital age. While postmaterialist theory predicts higher political participation among individuals with self-expression orientations, the pathways through which these values translate into action in digital contexts remain unclear. We theorize that technology adoption serves as a crucial mediating mechanism, with stronger effects for online versus offline activities due to value-technology alignment.

RQ2: *How do value-technology-participation pathways vary across generational cohorts, and what do these patterns reveal about assumptions regarding “digital natives” and political engagement?*

This question challenges widespread assumptions about generational differences in digital political behavior. Rather than assuming that younger citizens automatically engage more in digital politics, we examine how postmaterialist values interact with technology adoption across age cohorts. Recent research by ? and ? suggests that generational differences in political engagement are more complex than digital native narratives suggest.

RQ3: *Under what conditions does technology adoption most effectively translate postmaterialist values into democratic participation?*

This question examines boundary conditions for the mediation effect. Specifically, we investigate digital political efficacy—confidence in one’s ability to engage effectively

in digital political spaces—as a moderator of the technology-participation relationship. Drawing on self-efficacy theory (?), we expect that digital confidence enhances the translation of technological capabilities into actual participation.

1.3 Theoretical Framework and Hypotheses

Our theoretical framework integrates three complementary theories to explain value-driven pathways to digital political participation. **Postmaterialist theory** (?) provides the foundational explanation for why certain individuals are motivated toward political engagement, emphasizing self-expression values and democratic participation. **Social cognitive theory** (?) explains how these motivations translate into technology adoption through self-efficacy beliefs and outcome expectations. **Digital democracy theory** (?) contextualizes how technological affordances interact with individual orientations to enable different forms of political participation.

This integration yields three specific hypotheses:

H1: Technology adoption mediates the relationship between postmaterialist values and democratic participation, with stronger mediation effects for online compared to offline political activities.

H2: The mediating effect of technology adoption on the values-participation relationship remains consistent across generational cohorts, challenging digital native assumptions.

H3: Digital political efficacy moderates the relationship between technology adoption and political participation, such that the positive effect is stronger among individuals with higher digital confidence.

1.4 Study Significance

This research addresses pressing concerns about the health of democratic institutions in an increasingly digital age. As traditional forms of political participation decline in many democratic societies while digital platforms become increasingly central to political discourse and mobilization (??), understanding how individual values and technologi-

cal capabilities interact to shape participation patterns becomes crucial for maintaining robust democratic processes.

From a theoretical perspective, our findings advance postmaterialist theory by demonstrating technology-mediated pathways for value expression and contribute to digital democracy research by revealing how individual orientations shape political engagement in digital contexts. From a practical standpoint, identifying value-driven mechanisms of digital political participation can inform interventions designed to promote more inclusive democratic engagement while addressing the digital democracy divide.

The study’s focus on the United States provides important insights into digital political behavior in an established democracy with high technology penetration but persistent inequalities in political participation. These findings have implications for understanding democratic engagement in other advanced democracies facing similar challenges of technological transformation and political inequality.

2 Literature Review and Theoretical Development

The relationship between values, technology adoption, and democratic participation has become increasingly complex in the digital age. This literature review examines four interconnected bodies of research: postmaterialist theory and its implications for political engagement, digital democracy frameworks and their theoretical positions, technology adoption pathways to political participation, and generational differences in digital political behavior. Through this synthesis, we develop a comprehensive theoretical framework for understanding how postmaterialist values influence democratic participation through technology-mediated pathways.

2.1 Postmaterialist Values and Political Participation

Inglehart’s postmaterialist theory provides a foundational framework for understanding how societal value shifts influence political behavior (??). According to this theory, as societies achieve economic security and physical safety, citizens increasingly prioritize

self-expression values, democratic participation, and quality of life concerns over basic material needs. This value transformation has profound implications for political engagement patterns, as postmaterialist citizens tend to favor unconventional forms of political participation and demonstrate higher levels of political interest (?).

The evolution of postmaterialist theory has revealed nuanced relationships between values and participation modes. Early research established that postmaterialist citizens are more likely to engage in protest activities, environmental movements, and citizen-initiated political actions (?). However, subsequent studies have shown that these value orientations also predict engagement with institutional politics, though through different pathways than traditional materialist motivations (?).

Recent scholarship has extended postmaterialist theory to examine its relevance in contemporary political contexts. ? argue that self-expression values, closely related to postmaterialist orientations, are fundamental drivers of democratic development and citizen empowerment. ? further demonstrate that self-expression values predict support for democratic institutions and engagement in political activities across diverse cultural contexts. This perspective suggests that postmaterialist values create both motivation and capacity for political participation by fostering critical thinking, tolerance for diversity, and commitment to democratic principles.

Contemporary research has also examined how postmaterialist values interact with political institutions and contexts. ? show that postmaterialist citizens exhibit different patterns of political trust and institutional engagement compared to materialist citizens, with implications for how they respond to political opportunities and constraints. ? demonstrate that postmaterialist values predict support for democratic governance and political participation across different institutional contexts.

The theory's emphasis on self-expression and individual agency aligns closely with the participatory affordances of digital technologies, suggesting natural pathways between postmaterialist orientations and technology-mediated political engagement. However, empirical research examining these connections remains limited, representing a crucial gap in both postmaterialist theory and digital democracy research.

2.2 Digital Democracy: Theoretical Foundations and Empirical Evidence

Digital democracy research has developed along multiple theoretical trajectories, each offering different perspectives on technology’s role in democratic processes. identifies four primary theoretical positions that shape contemporary digital democracy scholarship: liberal-individualist, deliberative, counter-hegemonic, and autonomist Marxist approaches. These positions provide contrasting views on how digital technologies interact with democratic values and participation patterns.

Table 1: Overview of Digital Democracy Theoretical Positions

Position	Key Assumptions	Technology Role	Democratic Vision	Empirical Examples
Technology enhances individual choice and information access	Neutral tool expanding participation options	Aggregative democracy through informed choice	Online voting systems (?); political websites (?)	Liberal-Individualist Focus on quality of political discourse and rational dialogue
Platform for enhanced citizen deliberation	Consensus through reasoned public debate	Online forums (?); digital town halls (?) Counter-Hegemonic	Technology challenges power structures and empowers marginalized groups	Tool for political mobilization and resistance
Transformative democracy through social movements Peer-to-peer networks (?); autonomous media (?)	Social media activism (?); protest coordination (?) Autonomist Marxist	Technology enables autonomous political organization	Medium for self-organization and direct action	Post-representative democracy through networks

The liberal-individualist position, dominant in early digital democracy research, emphasizes technology’s capacity to enhance individual choice and information access ?. This perspective views digital platforms as neutral tools that expand citizens’ ability to gather political information, express preferences, and participate in democratic processes. Empirical research in this tradition has documented positive relationships between internet use and political knowledge (?), political interest (?), and conventional political participation (?).

However, recent research has revealed significant limitations to the liberal-individualist model. ? demonstrates that simply expanding access to political information does not automatically translate into increased political participation or democratic equality. Instead,

the effects of digital information access depend critically on individual motivations, skills, and social contexts that shape how citizens process and act upon political information.

Deliberative digital democracy theory focuses on technology's potential to enhance rational political discourse and citizen deliberation (??). This approach emphasizes the quality of political communication and the conditions necessary for meaningful democratic dialogue in digital spaces. Empirical research has shown mixed results for deliberative digital democracy, with some studies finding enhanced political discussion online (?) while others document fragmentation and polarization (?).

Counter-hegemonic perspectives examine how digital technologies can empower marginalized groups and alternative political movements (??). This approach is particularly relevant for understanding how postmaterialist values influence political engagement through alternative digital channels.

3 Theoretical Framework

Building on this literature review, we develop an integrated theoretical framework that combines postmaterialist theory with digital democracy perspectives. This framework positions technology adoption as a key mediating mechanism between values and political participation.

4 Methods

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5 Results

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6 Discussion

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7 Conclusion

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