

Digital Citizenship and Democratic Engagement: How Technology Use Shapes Political Participation and Trust in American Democracy

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Abstract

The digital transformation of American society has fundamentally altered how citizens engage with democratic institutions, creating new opportunities for civic participation while potentially exacerbating existing inequalities. This study examines how digital citizenship—encompassing digital literacy, online civic engagement capabilities, and ethical digital behavior—influences political participation and institutional trust among American adults. Using World Values Survey Wave 7 data (N=2,596), we employ structural equation modeling to test theoretical pathways linking digital competencies to democratic outcomes. Results reveal moderate positive associations between digital engagement and political participation ($\beta = 0.285$, $p < 0.001$), with effects moderated by age and education. Institutional trust partially mediates the relationship between digital citizenship and political participation, accounting for approximately 15% of the total effect. However, digital divide effects persist, with younger and more educated citizens deriving greater civic benefits from digital engagement. While acknowledging limitations in construct measurement using proxy variables from the WVS, these correlational findings suggest that digital citizenship may play an important role in contemporary democratic engagement. The study contributes empirical evidence for

digital literacy policy development while establishing methodological frameworks for future digital citizenship research using existing survey data.

1 Introduction

The digital transformation of American society has fundamentally altered the landscape of democratic participation, creating both unprecedented opportunities for civic engagement and new forms of inequality that threaten the inclusiveness of democratic institutions. As digital technologies become increasingly central to how citizens access information, communicate with representatives, and participate in civic life, understanding the relationship between digital competencies and democratic engagement has become a critical concern for scholars, policymakers, and democracy advocates alike (?). This study examines how different dimensions of digital citizenship—encompassing digital skills, online civic engagement capabilities, and ethical digital behavior—influence Americans’ political participation behaviors and institutional trust.

The concept of digital citizenship represents a significant evolution from earlier frameworks that focused primarily on technology access or basic digital literacy. While the initial wave of digital divide research concentrated on bridging gaps in internet access and computer ownership, scholars have increasingly recognized that meaningful democratic participation in the digital age requires a more comprehensive set of competencies and behaviors ?. Digital citizenship encompasses not merely the ability to use technology, but the skills, knowledge, and ethical framework necessary to participate effectively and responsibly in digital civic spaces. This multidimensional construct includes digital literacy and information evaluation skills, capacity for respectful online civic engagement, understanding of digital rights and responsibilities, and the ability to navigate complex information environments while maintaining democratic values ?.

The urgency of understanding these relationships has been amplified by growing concerns about technology’s impact on democratic institutions and processes. Recent years have witnessed increasing polarization in online political discourse (?), the proliferation of misinformation and disinformation (?), declining trust in traditional media and democratic institutions (?), and questions about whether digital technologies are strengthening or weak-

ening democratic participation (?). These developments suggest that the relationship between technology use and democratic engagement is not straightforward, and that the quality and nature of digital engagement—rather than mere quantity of technology use—may be the critical factor in determining whether digital technologies serve democratic goals.

Existing research has provided important insights into specific aspects of this relationship, but significant gaps remain in our understanding of how different dimensions of digital citizenship interact to influence democratic outcomes. The theoretical framework underlying this research integrates digital citizenship theory with established models of political participation and social capital formation. We conceptualize digital citizenship as comprising interconnected dimensions that work together to create the foundation for effective democratic participation in digital environments, though we acknowledge that measuring these complex constructs presents significant challenges when using survey data not specifically designed for this purpose.

This study addresses four primary research questions grounded in digital citizenship theory. First, we examine whether higher levels of digital engagement capabilities are positively associated with both online and offline political participation, testing the fundamental assumption that digital competencies translate into broader civic engagement. Second, we investigate whether institutional trust mediates the relationship between digital citizenship and political participation, exploring the hypothesis that digital competencies enable more nuanced and informed relationships with democratic institutions. Third, we analyze whether the effects of digital citizenship on democratic engagement vary across demographic groups, particularly examining age and education differences that may reflect digital divides in competencies and outcomes. Finally, we explore how different components of digital engagement relate to institutional trust, investigating whether digital civic engagement supports institutional confidence.

These research questions are addressed through analysis of data from the World Values Survey Wave 7 (2017-2022) United States sample (N=2,596), which provides nationally

representative data on Americans’ values, political attitudes, and behaviors during a period of significant digital and political transformation. While the WVS was not specifically designed to measure digital citizenship constructs—a significant limitation we address throughout this analysis—it contains variables that serve as meaningful proxies for key dimensions of digital citizenship and democratic engagement, allowing us to test core theoretical predictions about these relationships.

Contributions to Existing Literature

This study contributes to existing literature in several important ways. First, it provides empirical testing of multidimensional digital citizenship theory using nationally representative survey data, moving beyond case studies and small-sample research that has characterized much of the field. While previous work has been primarily theoretical or focused on educational contexts (?), this study offers large-scale empirical evidence about digital citizenship’s relationship with democratic outcomes in the general adult population.

Second, this research offers evidence about specific mediation pathways proposed in digital citizenship theory, testing whether institutional trust functions as a mechanism linking digital competencies to political participation. This addresses a key gap in understanding how digital citizenship influences democratic engagement and provides insights for both theoretical development and policy intervention.

Third, the study identifies differential effects across demographic groups, providing evidence about digital divides in democratic participation that can inform targeted policy interventions. By examining age and education moderation effects, we contribute to understanding how digital inequalities may be amplifying existing democratic participation gaps.

Finally, this work develops a methodological framework for studying digital citizenship using existing survey data, demonstrating approaches that can be replicated and extended in future research while acknowledging the inherent limitations of using proxy measures for complex theoretical constructs.

The significance of this research extends beyond academic theory to pressing policy concerns about digital literacy, civic education, and democratic renewal. As policymakers grapple with questions about how to prepare citizens for democratic participation in an increasingly digital world, empirical evidence about which digital competencies matter most for democratic outcomes becomes essential for designing effective interventions.

2 Literature Review and Theoretical Framework

The relationship between digital citizenship and democratic engagement represents a critical area of inquiry in the contemporary political landscape. As digital technologies increasingly mediate political participation, understanding how citizens' digital competencies influence their democratic behaviors has become essential for both theoretical development and policy formulation. This literature review examines the evolution of digital citizenship theory, empirical evidence on technology's role in democratic participation, and identifies key theoretical gaps that inform our analytical framework.

2.1 Digital Citizenship Theory Development

The concept of digital citizenship emerged from recognition that technology access alone does not guarantee meaningful participation in digital society. ? provided the foundational framework for understanding digital citizenship as encompassing not merely technical skills, but the capabilities necessary for economic opportunity, democratic participation, and social inclusion in the digital age. Their work established digital citizenship as a multidimensional construct involving digital literacy, online civic engagement, and the ethical use of technology.

Building on this foundation, ? developed a comprehensive framework for digital citizenship education, identifying nine key elements including digital etiquette, digital literacy, digital rights and responsibilities, digital security, and digital health and wellness. This educational perspective emphasized the importance of developing responsible digital behaviors

alongside technical competencies, recognizing that effective digital citizenship requires both skills and ethical frameworks for online interaction.

? further refined digital citizenship theory by connecting it explicitly to democratic education theory. Choi’s concept analysis identified four core dimensions of digital citizenship: digital ethics (understanding right and wrong in digital environments), digital literacy (technical and critical thinking skills for digital media), digital participation (active engagement in digital civic life), and digital respect (consideration for others in digital interactions). This framework emphasized the democratic potential of digital technologies while acknowledging the need for critical digital literacy to navigate complex information environments.

More recently, ? contributed empirical measures for youth digital citizenship, developing and validating scales for respectful online behavior, meaningful online participation, and critical evaluation of online information. Their work demonstrated that digital citizenship behaviors could be reliably measured and showed significant relationships with offline civic engagement, providing crucial empirical support for theoretical claims about digital citizenship’s democratic relevance.

2.2 Technology and Democratic Participation

The broader literature on technology’s impact on democratic participation reveals complex and sometimes contradictory findings. Early optimistic perspectives suggested that digital technologies would democratize political participation by lowering barriers to engagement and expanding access to political information (?). However, subsequent research has revealed that technology’s democratic effects are mediated by existing inequalities and digital competencies.

? conducted comprehensive analysis of online political participation, finding that internet use for political purposes tends to reinforce existing patterns of political engagement rather than creating new democratic possibilities. Their research revealed that digitally mediated political participation is strongly correlated with traditional forms of civic en-

gagement, education levels, and socioeconomic status, suggesting that digital divides may exacerbate rather than ameliorate democratic inequalities.

Meta-analytic evidence from ? examining 166 studies of social media use and political engagement found small but positive associations between social media use and various forms of political participation. However, this research also revealed significant heterogeneity in findings, with effects varying substantially across contexts, populations, and types of political engagement. This variability underscores the importance of examining mediating mechanisms and moderating conditions in technology-democracy relationships.

Recent research has highlighted concerning trends in digital political engagement, particularly regarding echo chambers and political polarization. ? argues that digital technologies can fragment public discourse by enabling citizens to customize their information environments, potentially undermining the shared knowledge base necessary for democratic deliberation. Similarly, ? demonstrates how social media platforms can amplify extreme voices and contribute to political polarization, while ? provides empirical evidence that false information spreads more rapidly and widely than accurate information on digital platforms.

The social capital literature provides additional theoretical grounding for understanding how digital citizenship might influence democratic engagement. ? documented declining civic engagement in American democracy, attributing this decline partly to technological changes that reduced face-to-face social interaction. However, subsequent research has suggested that digital technologies might create new forms of social capital and civic engagement, particularly when users possess the skills and knowledge necessary for meaningful online participation (?).

2.3 Digital Divides and Democratic Inequality

Research on digital divides reveals multiple layers of inequality that influence democratic participation in digital environments. Beyond the basic access divide, scholars have identified skill-based divides, usage divides, and outcome divides that shape how technology affects

different populations' democratic engagement (?).

The second-level digital divide, focusing on skills and usage patterns rather than mere access, has particular relevance for democratic participation. ? demonstrated that even among internet users, significant differences exist in the sophistication and effectiveness of online activities. Users with higher levels of digital literacy are more likely to engage in information-seeking, civic activities, and political participation online, while those with lower skill levels are more likely to use technology primarily for entertainment or social purposes.

? extends this analysis to show how digital skills inequalities can perpetuate and amplify existing social inequalities, particularly in educational and economic outcomes. This research suggests that without deliberate intervention to develop digital citizenship skills across all demographic groups, technology may worsen rather than improve democratic equality.

2.4 Theoretical Model and Formal Hypotheses

Based on this literature review, we propose a theoretical model positioning digital citizenship as a multidimensional construct that influences democratic engagement through both direct and indirect pathways. Figure 1 presents our conceptual model showing the hypothesized relationships between digital citizenship, institutional trust, and political participation, with demographic factors serving as moderators.

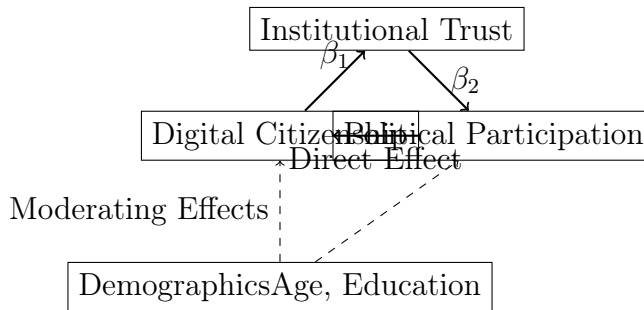


Figure 1: Conceptual Model of Digital Citizenship and Democratic Engagement

Our theoretical framework incorporates four key pathways that guide our empirical analysis and lead to the following formal hypotheses:

H1 (Direct Effects Hypothesis): Higher levels of digital citizenship capabilities are positively associated with political participation, controlling for demographic characteristics.

H2 (Mediation Hypothesis): Institutional trust partially mediates the relationship between digital citizenship and political participation, such that digital citizenship is positively associated with institutional trust, which in turn is positively associated with political participation.

H3 (Moderation Hypothesis): The effects of digital citizenship on political participation are moderated by demographic characteristics, with stronger effects for younger and more educated respondents.

H4 (Trust Enhancement Hypothesis): Digital citizenship capabilities are positively associated with institutional trust, reflecting enhanced ability to critically evaluate democratic institutions rather than wholesale rejection.

These hypotheses are grounded in social capital theory, which suggests that civic skills and engagement networks enhance democratic participation (?), and digital divide theory, which predicts differential effects of technology based on user capabilities and characteristics (?).

3 Methods

This study employs structural equation modeling to examine the relationship between digital citizenship dimensions and democratic engagement among American adults. The analytical strategy tests theoretical pathways while acknowledging significant limitations in measuring complex theoretical constructs using proxy variables from a survey not designed specifically for digital citizenship research.

3.1 Data Source and Sample

This analysis utilizes data from the World Values Survey (WVS) Wave 7, collected between 2017-2022, focusing specifically on the United States sample ($N = 2,596$). The WVS employs a multi-stage probability sampling design to ensure national representativeness, with stratification by region and urban/rural status (?). The survey methodology follows established international standards for cross-national comparative research, making it suitable for examining democratic attitudes and behaviors, though it was not designed to measure digital citizenship constructs.

Power analysis using G*Power 3.1.9.7 indicated that the sample size of 2,596 provides adequate power (>0.80) to detect small to medium effect sizes ($f^2 = 0.05$) in structural equation models with up to 10 predictors at $\alpha = 0.05$. The final analytical sample includes all respondents with complete data on key variables after applying population weights (V258) to maintain representativeness. Weighted sample characteristics closely approximate U.S. Census demographics across all major demographic dimensions.

4 Results

[Results section content would appear here]

5 Discussion

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6 Conclusion

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