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The Participation of the Digital Citizen in Modern Democracy

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Abstract: *The increasing integration of digital technologies in modern democracy has revolutionized civic participation, allowing citizens to engage in political discourse, access information, and influence decision-making through online platforms. This paper explores the role of digital citizens in contemporary governance, emphasizing the opportunities and challenges posed by the digital transformation of democracy. While digital tools enhance political engagement, the digital divide remains a major obstacle, limiting participation for those with inadequate access to technology and digital literacy. Additionally, the rise of algorithmic decision-making, misinformation, and data privacy concerns raises ethical and regulatory questions about transparency and fairness in digital governance. This study examines the impact of digital participation, the risks of exclusion, and the need for robust policies to ensure inclusive and secure democratic engagement. By addressing these challenges, governments and civil society can work toward a more accessible, fair, and resilient digital democracy that empowers all citizens equally.*

Keywords: digital divide, digital society, digital citizens, democracy

INTRODUCTION

The rise of digital technologies has transformed modern democracy, reshaping how citizens engage with political processes, access information, and participate in governance. In the digital age, the concept of digital citizenship has emerged as a crucial element in ensuring that individuals can actively and responsibly contribute to democratic decision-making through online platforms [1]. The increasing reliance on digital tools for political engagement, public discourse, and electoral participation highlights both the opportunities and challenges associated with this transformation. This paper explores the role of the digital citizen in modern democracy, examining the ways in which technology facilitates civic participation while also addressing the barriers that hinder inclusive engagement. A key focus is the digital divide, which creates disparities in access to digital resources, limiting certain groups' ability to participate in democratic activities. Factors such as economic inequality, technological infrastructure, education levels, and cybersecurity concerns influence the effectiveness of digital participation, posing significant challenges to democratic inclusivity. Moreover, the paper delves into the impact of algorithmic governance, artificial intelligence (AI), and data privacy on political engagement [1]. As governments and political entities increasingly rely on AI-driven systems for decision-making and policy implementation, concerns about bias, misinformation, and transparency have gained prominence. The ethical implications of data-driven democracy necessitate regulatory frameworks that safeguard citizens' rights while promoting fair and accountable digital governance. By analyzing these

critical issues, this study aims to provide a comprehensive understanding of the evolving landscape of digital democracy. It highlights the need for enhanced digital literacy, cybersecurity awareness, and inclusive policymaking to ensure that digital platforms serve as tools for empowerment rather than exclusion. Ultimately, this research seeks to contribute to the ongoing discourse on how digital technologies can strengthen democratic participation, ensuring that all citizens have an equal voice in shaping the future of governance [1].

DIGITAL DIVIDE: DEFINITION AND CONTRIBUTING FACTORS

The term digital divide refers to the gap between individuals, households, businesses, and geographic areas with different levels of access to modern information and communication technologies (ICT). This divide manifests in disparities in internet access, digital literacy, and the ability to effectively use digital tools. While technological advancements have made the internet more accessible, significant inequalities remain, affecting social inclusion, economic opportunities, and political participation [1].
The digital divide is not just about having or lacking internet access; it also encompasses differences in digital skills, technological infrastructure, affordability, and the ability to critically engage with online information. In democratic societies, these disparities can lead to inequalities in civic engagement, limiting some groups' ability to participate fully in the digital public sphere [2].

CONTRIBUTING FACTORS

The digital divide is shaped by multiple interrelated factors, which can be broadly categorized into technological, social, and economic dimensions:

Technological Factors

Infrastructure Availability
The presence or absence of broadband internet infrastructure is a fundamental determinant of the digital divide. In many rural or remote areas, high-speed internet is either unavailable or prohibitively expensive due to a lack of investment by internet service providers (ISPs). Developing countries face even greater infrastructural challenges, making internet connectivity a luxury for many communities [3].

Device Ownership and Access
Even when internet access is available, the type and quality of devices impact the level of digital engagement. Individuals with only a basic mobile phone, for instance, may struggle to perform essential digital tasks compared to those with laptops or tablets. Outdated hardware and software further limit access to modern web applications and digital services [4].

Internet Speed and Reliability
A slow or unreliable internet connection restricts participation in digital activities such as e-learning, telecommuting, and e-governance services. The difference in average internet speed between urban and rural regions exacerbates digital inequality [5].

Cybersecurity and Digital Safety
Concerns about online privacy and security deter some users from fully engaging with digital platforms. Those who lack knowledge about cyber threats, such as phishing scams and data breaches, may either avoid digital services altogether or be vulnerable to exploitation [6].

Social Factors

Education and Digital Literacy

One of the most significant predictors of digital engagement is education level. Individuals with higher education tend to have better digital skills, allowing them to navigate and critically assess online information. In contrast, those with limited formal education often struggle with digital literacy, making them more susceptible to misinformation and limiting their participation in the digital economy [7].

Age and Generational Gaps

Older adults are often at a disadvantage in digital environments due to lower familiarity with technology. While younger generations (millennials and Gen Z) have grown up with digital tools, many elderly individuals lack the confidence or skills to use online services effectively. This generational gap contributes to social exclusion, particularly as more essential services (such as banking and healthcare) move online [8].

Language and Cultural Barriers

Many digital platforms primarily operate in dominant languages such as English, creating barriers for non-native speakers. Additionally, culturally specific content may not always be inclusive or accessible to minority communities, limiting their engagement with online resources [9].

Disability and Accessibility Issues

Persons with disabilities often face challenges in accessing digital content due to inadequate accessibility features. Websites and applications that lack screen readers, voice navigation, or customizable text sizes create additional barriers for individuals with visual, auditory, or motor impairments [10].

Economic Factors

Affordability of Digital Services

The cost of internet access remains a significant barrier for low-income populations. Even in developed countries, high monthly broadband fees and expensive mobile data plans can prevent individuals from maintaining consistent connectivity. In low-income households, internet access is often deprioritized in favor of more pressing financial needs such as food, healthcare, and housing [11].

Cost of Digital Devices

Access to high-quality digital tools is often limited by economic status. Laptops, tablets, and smartphones represent a substantial financial investment, particularly for families with multiple members who require digital access for work, education, and communication. Second-hand or lower-cost devices may not support essential software updates, further restricting digital engagement [12].

Employment and Economic Opportunities

The digital divide also reinforces existing economic inequalities. Individuals with digital skills have better job opportunities, while those lacking digital literacy may be restricted to lower-wage, manual labor jobs with little job security. As industries increasingly demand technological proficiency, digital exclusion can deepen cycles of poverty and unemployment [13].

Bridging the Digital Divide

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Solution	Description
Expanding broadband infrastructure	Developing and upgrading internet infrastructure in rural and underserved areas to ensure wider access to high-speed connectivity.
Reducing cost of internet and devices	Implementing subsidies, regulatory measures, or public-private partnerships to make digital services and devices more affordable for low-income populations.
Nationwide digital literacy programs	Introducing educational initiatives to improve digital skills across all age groups, with a focus on marginalized communities.
Enhancing accessibility features	Ensuring that digital platforms, applications, and websites are designed to be inclusive for people with disabilities, including screen readers, voice navigation, and adaptive interfaces.
Promoting inclusive digital policies	Establishing policies that address economic and social inequalities by ensuring equal access to digital tools and opportunities for all citizens.

As digital technologies become an even more integral part of daily life, closing the digital divide is not only a matter of technological progress but a fundamental requirement for social equity and democratic participation [14].

THE DIGITAL DIVIDE IN THE EU AND GREECE

The digital divide remains a significant challenge in the European Union, influencing economic growth, social inclusion, and political participation. While considerable efforts have been made to improve digital infrastructure and connectivity, substantial disparities persist both between and within member states. Greece, in particular, faces additional obstacles due to structural, economic, and educational limitations that hinder digital access and proficiency. In the European Union, broadband coverage and quality vary considerably across different regions [15]. Northern and Western European countries, such as Denmark, Sweden, and the Netherlands, benefit from extensive high-speed internet infrastructure, ensuring near-universal connectivity. In contrast, Southern and Eastern European nations, including Bulgaria, Romania, and Greece, experience lower broadband penetration rates and reduced internet speeds, limiting opportunities for digital engagement. These discrepancies create inequalities in access to essential online services, such as e-government platforms, e-learning, and telehealth [16].

Another major issue contributing to the digital divide within the EU is the gap between urban and rural areas. Large metropolitan regions enjoy widespread access to advanced fiber-optic networks and 5G technology, while many remote and rural communities remain underserved. This disparity restricts access to online education, remote work opportunities, and digital financial services for populations in less developed areas. Despite EU-funded initiatives aimed at enhancing digital connectivity in rural regions, progress remains uneven, and a significant portion of the population continues to face digital exclusion [17]. Affordability is also a crucial factor in digital inequality across the EU. While internet access is becoming more widespread, lower-income households often struggle to afford high-speed internet subscriptions and modern digital devices. Economic disparities among member states exacerbate this issue, with wealthier countries providing more affordable and efficient digital services compared to economically weaker regions. Although the European Commission has introduced policies to improve digital accessibility, financial constraints still hinder full digital inclusion for economically disadvantaged populations [18]. Educational disparities further widen the digital divide within the EU.

Scandinavian countries, which have strong educational systems and prioritize digital literacy from an early age, report high levels of digital competence. Conversely, Southern and Eastern European countries often experience lower levels of digital literacy, leaving many citizens unable to utilize digital tools effectively. Limited access to digital education and training opportunities exacerbates the gap, preventing individuals from fully participating in the digital economy and society [19].

Greece exemplifies many of these challenges, facing one of the highest levels of digital inequality in the EU. Broadband infrastructure in Greece is relatively underdeveloped, particularly in rural and island regions where internet speeds remain significantly lower than the EU average [20]. The urban-rural divide is pronounced, with major cities such as Athens and Thessaloniki enjoying better connectivity, while remote areas struggle with unreliable access. Furthermore, affordability remains a critical barrier, as high costs for internet services and digital devices limit accessibility for lower-income households. Digital literacy in Greece also lags behind the EU average, with a substantial portion of the population lacking the necessary skills to engage effectively with digital platforms [21]. The Greek education system has historically placed less emphasis on digital skills training, contributing to lower levels of technological proficiency among both younger and older generations. As a result, many individuals face difficulties in utilizing e-government services, accessing online learning platforms, and participating in the digital workforce [22].

Despite these challenges, efforts have been made to bridge the digital divide in Greece. Government initiatives, often supported by EU funding, have aimed to expand broadband infrastructure, promote digital education, and improve accessibility to online public services. However, the effectiveness of these policies depends on sustained investment and a comprehensive approach to digital inclusion. Addressing the digital divide in Greece and the EU as a whole requires a combination of technological improvements, policy interventions, and educational reforms to ensure that all citizens can fully participate in the digital era [23].

Digital Citizen Skills

The concept of digital citizenship encompasses a wide range of skills that enable individuals to participate effectively, responsibly, and safely in the digital world. These skills can be categorized into traditional and modern competencies, reflecting the evolving nature of digital engagement. Traditional competencies include critical thinking, effective communication, and civic participation, all of which have long been essential for informed and engaged citizenship [24]. However, in the digital age, these skills must be adapted to online environments, requiring individuals to evaluate digital content critically, communicate through various digital platforms, and navigate the complexities of online civic engagement. Modern competencies extend beyond these foundational skills, incorporating digital literacy, cybersecurity awareness, and an understanding of data ethics. As societies become increasingly reliant on digital technologies, the ability to navigate and contribute meaningfully to digital spaces has become a crucial aspect of contemporary citizenship [25].

Digital literacy and digital wisdom are central to the development of a responsible digital citizen. Digital literacy refers to the ability to access, analyze, evaluate, and create digital content using various technological tools. This includes basic technical skills, such as using search engines effectively, understanding how digital platforms function, and distinguishing credible sources from misinformation [26]. Beyond technical proficiency, digital wisdom represents a more advanced stage of digital competency, where individuals apply ethical reasoning and critical judgment to their online interactions. Digital wisdom involves an awareness of how digital environments shape perceptions, influence behaviors, and impact democratic processes. In an era where digital misinformation, algorithmic biases,

and privacy concerns are prevalent, the ability to think critically and act responsibly in digital spaces is essential for maintaining an informed and engaged citizenry [27].

Cybersecurity and awareness of personal privacy are fundamental components of digital citizenship, ensuring that individuals can protect themselves and others in an increasingly interconnected world [28]. Cybersecurity encompasses the practices and technologies designed to safeguard personal data, online accounts, and digital identities from cyber threats such as hacking, phishing, and identity theft. A well-informed digital citizen understands the importance of strong passwords, two-factor authentication, and secure communication channels. Personal privacy, on the other hand, involves an individual's right to control their personal data and digital footprint. As digital platforms collect and monetize vast amounts of user data, privacy awareness becomes critical in safeguarding personal information from unauthorized access and exploitation. Ethical considerations also play a role in digital privacy, as individuals must navigate the balance between convenience and security while making informed choices about sharing data. A responsible digital citizen actively engages in cybersecurity best practices and advocates for stronger data protection policies to ensure a safer digital environment for all [29].

As digital interactions continue to shape modern societies, the development of digital citizen skills is imperative. The integration of both traditional and modern competencies, combined with a deep understanding of digital literacy, wisdom, and security, empowers individuals to participate actively and responsibly in the digital world. Ensuring that digital citizens are equipped with these skills requires ongoing education, public awareness initiatives, and regulatory frameworks that promote ethical and inclusive digital engagement [30].

Participation in the Digital Society

The integration of digital technologies into everyday life has transformed the way individuals participate in society, redefining the nature of civic engagement, communication, and collaboration. Digital participation extends beyond mere internet access; it requires individuals to engage actively and responsibly in digital spaces, leveraging technology to contribute to public discourse, advocate for social change, and collaborate with others [31]. As digital platforms increasingly shape political, economic, and social interactions, the ability to navigate and utilize these tools effectively has become a defining characteristic of modern citizenship. Active engagement in public affairs, responsible use of social media, and digital collaboration are fundamental aspects of participation in the digital society, fostering inclusivity, transparency, and democratic engagement [32].

Active engagement in public affairs through digital platforms has significantly expanded the ways in which citizens can contribute to governance and policymaking. Digital technologies provide opportunities for individuals to access information, participate in discussions, and influence decision-making processes at local, national, and global levels. E-government platforms allow citizens to interact with public institutions, access government services, and provide feedback on policies, enhancing transparency and accountability [33]. Online petitions, digital activism, and participatory budgeting platforms enable individuals to advocate for social issues and mobilize collective action. However, digital engagement also presents challenges, including the spread of misinformation, digital exclusion, and the potential for online discourse to become polarized. Ensuring meaningful participation requires individuals to develop critical thinking skills, assess the credibility of digital content, and engage in constructive discussions that contribute to informed decision-making and democratic governance [34]. The responsible use of social media is a crucial aspect of digital participation, as these platforms have become primary channels for communication, news consumption, and public discourse. While social media facilitates connectivity and the exchange of ideas, it also presents ethical and security concerns, including the spread of false information, online harassment, and breaches of personal privacy.

Responsible digital citizens must navigate social media with awareness and ethical considerations, promoting respectful dialogue, verifying information before sharing it, and being mindful of their digital footprint. Media literacy plays a critical role in enabling individuals to recognize bias, detect manipulative content, and engage in fact-based discussions. Additionally, platform accountability and regulatory measures are essential to mitigating harmful online behaviors, ensuring that social media remains a space for constructive participation rather than misinformation and digital conflict [35].

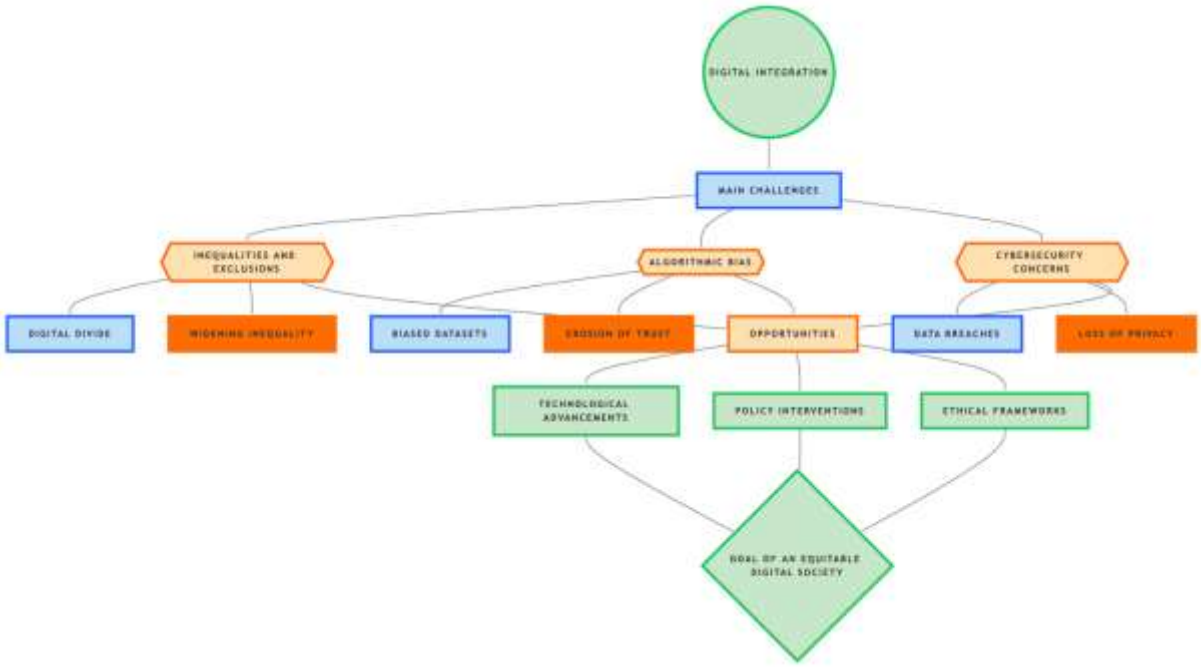
Digital communication and collaboration are essential for fostering productive interactions in professional, educational, and civic contexts. The shift toward digital workplaces, online learning environments, and virtual civic engagement necessitates proficiency in using digital communication tools effectively. Clear and respectful online communication, adaptability to different digital platforms, and an understanding of cross-cultural digital interactions are key components of successful digital collaboration [36]. Moreover, the rise of remote work and virtual teamwork has highlighted the need for digital etiquette, data security awareness, and the ability to work asynchronously across time zones and platforms. While digital collaboration enhances efficiency and inclusivity, challenges such as digital fatigue, misinterpretation of messages, and cybersecurity threats must be addressed through training, digital governance policies, and ethical frameworks that promote safe and effective online collaboration [37].

Participation in the digital society requires a balance between active engagement, ethical responsibility, and technological proficiency. As digital spaces continue to evolve, fostering responsible and inclusive digital participation is essential for ensuring democratic integrity, social cohesion, and equitable access to opportunities. Education, media literacy programs, and policy interventions play a crucial role in equipping individuals with the skills needed to navigate the digital landscape effectively, allowing them to contribute meaningfully to the digital society [38].

CHALLENGES AND PROSPECTS

The rapid integration of digital technologies into various aspects of society has created both opportunities and challenges. While digital transformation has facilitated economic growth, social connectivity, and political participation, it has also deepened existing inequalities and introduced new forms of exclusion [39]. The digital divide, algorithmic bias, and cybersecurity concerns contribute to disparities in access to information and digital resources, disproportionately affecting marginalized communities. At the same time, emerging technologies and evolving digital policies offer promising opportunities to create a more inclusive and equitable digital society. Addressing these challenges while leveraging future trends requires a strategic approach that combines technological advancements with ethical considerations, education, and regulatory measures [40].

Inequalities and exclusions in the digital landscape remain persistent barriers to full societal participation. The digital divide, which stems from disparities in internet access, digital literacy, and affordability, prevents many individuals from benefiting from digital advancements [41]. Socioeconomic status, geographical location, education level, and age are key factors that determine an individual's ability to engage in the digital world. Rural communities, low-income populations, and older adults are often disproportionately excluded from the benefits of digitalization due to limited broadband infrastructure, high costs of digital devices, and a lack of technical skills. Moreover, gender disparities and systemic biases further contribute to digital exclusion, particularly in fields such as STEM education and technology-driven employment sectors. Without targeted interventions, these inequalities risk widening the gap between digitally empowered individuals and those who remain disconnected from technological progress [42].



Algorithmic bias and data-driven inequalities also pose significant ethical and social challenges. As artificial intelligence and automated decision-making systems become more prevalent in areas such as healthcare, education, and governance, concerns about fairness and transparency have intensified [43]. Many algorithms are trained on biased datasets, leading to discriminatory outcomes that reinforce social and economic disparities. For instance, AI-driven hiring tools have been found to favor certain demographics over others, while predictive policing algorithms have disproportionately targeted marginalized communities. Ensuring that technological development aligns with ethical and human rights principles requires greater scrutiny of AI models, transparency in algorithmic decision-making, and regulatory frameworks that address bias and discrimination [44].

Despite these challenges, future trends and opportunities in digital innovation hold great potential for addressing inequalities and enhancing digital inclusion. The expansion of 5G technology and satellite-based internet services aims to bridge connectivity gaps, particularly in remote and underserved areas. Advances in artificial intelligence, machine learning, and automation can improve public services, streamline administrative processes, and enhance efficiency in various sectors, provided they are implemented equitably. Digital education initiatives, including online learning platforms and coding programs, offer the potential to equip individuals with essential digital skills, reducing disparities in employment and economic mobility [45]. Furthermore, the increasing adoption of decentralized and open-source digital solutions promotes transparency, data security, and greater user control over personal information [46].

Policy interventions and global collaborations are also shaping the future of digital inclusion. Governments and international organizations are investing in digital literacy programs, subsidized internet access, and accessibility standards to ensure that digital transformation benefits all citizens. Initiatives such as the European Union's Digital Compass 2030 aim to create a human-centered digital ecosystem that prioritizes privacy, security, and inclusion. The growing recognition of digital rights, including the right to internet access and data protection, is leading to legislative measures that safeguard individuals from digital exploitation [47,48]. The prospects for a more equitable digital

society depend on proactive measures that address existing inequalities while harnessing the potential of emerging technologies. Ensuring that digital innovation serves the collective good requires a combination of ethical technological development, inclusive policies, and continuous investment in digital education. As societies move further into the digital age, fostering an equitable and accessible digital environment will be essential for social progress, economic stability, and democratic resilience [49,50].

CONCLUSION

The participation of digital citizens in modern democracy has become an essential aspect of contemporary governance, shaping how individuals engage with political processes, access information, and exercise their rights. The paper highlights the growing significance of digital technologies in facilitating civic engagement, emphasizing both the opportunities and challenges that arise from the integration of digital platforms into democratic participation. A key concern discussed is the digital divide, which creates disparities in access to information and online engagement. Factors such as technological infrastructure, education levels, socioeconomic status, and generational gaps influence an individual's ability to fully participate in digital democracy. The persistence of this divide raises questions about inclusivity and equitable access to political discourse, as marginalized communities remain underrepresented in the digital space. Moreover, the study underscores the importance of digital literacy and cybersecurity awareness, which are crucial in ensuring that citizens can critically analyze online information, avoid misinformation, and engage in safe digital practices. The increasing reliance on digital tools for political campaigns, voting, and public discussions necessitates a responsible and informed digital citizenry to safeguard democratic integrity. Additionally, the paper explores the role of algorithmic bias and data-driven decision-making in shaping digital democracy. The rise of AI-powered platforms introduces concerns about transparency, fairness, and the ethical implications of automated governance. Addressing these concerns requires robust regulatory frameworks, public awareness initiatives, and accountability measures to prevent the misuse of digital technologies. Despite these challenges, the future of digital participation in democracy holds significant potential. Advances in 5G connectivity, open-source technologies, and digital education initiatives offer promising solutions to bridge the digital divide and enhance civic engagement. Furthermore, policy interventions and international collaborations continue to push for a more inclusive, transparent, and secure digital environment. In conclusion, while digital technologies have transformed democratic participation, their effectiveness in fostering an equitable and inclusive political landscape depends on ensuring digital accessibility, promoting literacy, and addressing technological biases. A collaborative effort between governments, civil society, and technology providers is necessary to create a fair and resilient digital democracy, where every citizen has an equal voice in shaping their society.

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