



The Social and Educational Implications of Digital Governance in the Western Balkans

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Abstract

This research investigates the social and educational implications of digital governance policies within the six Western Balkan countries: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. Utilizing a mixed-methods approach, this study analyzes how e-government initiatives impact social inclusion, digital literacy, workforce education, and gender equality from 2020 to 2025. Findings reveal varied progress in digital transformation across the region, with some countries demonstrating advanced digital infrastructure while others face significant challenges in ensuring equitable access and digital skills development. The study highlights persistent obstacles such as digital divides, cybersecurity vulnerabilities, and insufficient resources that impede the full realization of social and educational benefits. This research contributes to the understanding of digital governance in transitional economies, offering insights for policymakers to foster inclusive digital transformation and address social inequalities in the Western Balkans.

Keywords: E-government, Western Balkans, digital transformation, social inclusion, digital literacy

1. Introduction

The digital transformation of public administration, driven by electronic government (e-government) initiatives, has profound social and educational implications in developing and transitioning economies. E-government, defined as the use of information and communication technologies (ICT) to improve public service delivery and transparency, has gained particular significance in the Western Balkans region (United Nations, 2024). This region, encompassing Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia, offers a unique context to examine the social and educational impacts of e-government development (Spaho & Mani, 2024). These countries share historical backgrounds and face similar institutional challenges, yet exhibit varied approaches to digital transformation and e-government implementation (Spaho & Mani, 2024; OECD, 2024). As these nations pursue EU integration and modernize their administrative systems, e-government initiatives are central to their reform agendas, influencing not only economic performance but also social equity and educational opportunities.

Recent developments highlight both the potential and challenges. Serbia's advanced digital infrastructure, exemplified by the Kragujevac Data Center (Serbia Digital Economy, 2024), and Montenegro's EU-funded project creating over 45 new electronic services (UNDP, 2024), demonstrate the transformative potential. However, cybersecurity incidents in Montenegro and Albania (Balkan Investigative Reporting Network, 2024) underscore vulnerabilities that can disrupt social services and educational platforms. Historically, the Western Balkans have faced bureaucratic inefficiencies and complex administrative procedures. While e-government offers solutions by streamlining processes and improving transparency, its social and educational dimensions are equally critical. Digital transformation through e-government can enhance social inclusion by providing accessible services, improve digital literacy through online platforms, and support workforce education by offering digital skills training. However, it also poses risks, such as exacerbating existing social inequalities if access to technology and digital skills is not equitably distributed.

This study explores several key questions: How do digital governance policies impact access to education and lifelong learning for different social groups in the Western Balkans? What are the implications of digitalization for social inclusion, gender equality, or the integration of minority populations in the workforce? How is digital literacy being addressed in educational policy to prepare citizens for the new economy? Does the push for digital transformation exacerbate existing social inequalities? By addressing these questions, this research aims to provide evidence-based insights to inform policy decisions, fostering more inclusive and equitable e-

government strategies in the Western Balkans. The significance of this research extends beyond the regional context, offering valuable lessons for other transition economies grappling with similar challenges in modernizing public administrations and ensuring that digital dividends are shared across all segments of society. Furthermore, this study contributes to the theoretical understanding of the relationship between digital governance, social development, and educational outcomes, particularly in post-conflict and transition contexts.

2. Literature Review

2.1 Theoretical Frameworks: Integrating Social and Educational Perspectives on Digital Governance

The relationship between e-government initiatives and economic development has been extensively studied in academic literature, with scholars proposing various theoretical frameworks to explain this connection. The New Public Management (NPM) theory provides a foundational understanding of how digital technologies can transform public service delivery by emphasizing efficiency, effectiveness, and citizen-centricity (Johnsen, 2015; Hood, 1991). Building upon NPM principles, the Digital Era Governance (DEG) framework suggests that e-government represents a paradigm shift toward more integrated, holistic, and digitally enabled public administration (Dunleavy, 2005). Transaction cost economics theory offers another lens for understanding the economic benefits of e-government initiatives. By reducing information asymmetries, streamlining processes, and eliminating intermediaries, e-government systems can significantly lower transaction costs for both businesses and citizens (Morgan et al., 2005; Dugger, 1987). This theoretical perspective is particularly relevant for the Western Balkans, where high administrative costs and bureaucratic inefficiencies have historically hindered business development. The institutional theory framework emphasizes the role of formal and informal institutions in shaping e-government outcomes. In transition economies like those in the Western Balkans, the quality of institutions significantly influences the success of digital transformation initiatives (Li & Abiad, 2009). Countries with stronger institutional frameworks tend to achieve better e-government outcomes, while those with weaker institutions face greater challenges in implementation and adoption.

Beyond economic perspectives, understanding the social and educational impacts of digital governance requires integrating theories from sociology, education, and critical policy studies. The digital divide theory (Norris, 2001) is crucial for analyzing disparities in access to and use of ICTs, highlighting how e-government initiatives can either bridge or widen existing inequalities based on socioeconomic status, geographic location, age, and gender. Social justice in technology frameworks (Selwyn, 2016) provide a lens to examine how digital policies can promote equitable

distribution of technological benefits and address issues of power, access, and participation. Furthermore, critical pedagogy (Freire, 1970) offers insights into how educational systems can empower citizens to critically engage with digital tools and information, fostering digital literacy and active citizenship rather than passive consumption. These theoretical perspectives are essential for a comprehensive analysis of digital governance in the Western Balkans, moving beyond purely economic metrics to encompass the broader societal implications of digital transformation.

2.2 E-Government Development in Transition Economies: Social and Educational Dimensions

Research on the development of e-government in developing countries has uncovered several commonly observed trends and obstacles. Heeks (2003) emphasized the urgent need to reduce the "design-reality gap" between e-government policies and their actual implementation environments, a framework highly relevant for understanding e-government issues in the Western Balkans, where ambitious digital plans often encounter execution barriers. Studies have emphasized the importance of contextual factors for the success of e-government projects, with Savoldelli et al. (2014) identifying technical, organizational, and environmental elements as important determinants. Within transition economies, organizational elements such as administrative capacity and change management competencies frequently emerge as significant constraints.

From a social and educational perspective, e-government development in transition economies often grapples with issues of digital literacy and access. The successful adoption of e-government services is heavily dependent on the population's ability to use digital tools, which can be a significant barrier in regions with varying levels of education and internet penetration (van Dijk, 2005). Moreover, e-government initiatives can inadvertently exacerbate social inequalities if they do not explicitly address the needs of marginalized groups, including those with lower incomes, limited education, or residing in rural areas (Servon, 2002). Therefore, policies promoting digital inclusion and education are critical for ensuring equitable access to and benefits from e-government services. The role of international aid and knowledge sharing has been particularly important in transition economies. Janssen and Estevez (2013) contend that foreign agencies and donor countries can advance e-governance through technological assistance, capability building, and financial backing. This is especially relevant for the Western Balkans, where digital transformation initiatives have been significantly aided by European Union pre-accession assistance, often with a focus on capacity building and digital skills development.

2.3 Digital Transformation: Social Inclusion, Digital Literacy, and Workforce Education

The relationship between digital transformation and social outcomes is increasingly recognized in literature. While early research focused on administrative efficiency, contemporary studies emphasize the critical role of digital literacy and workforce education in realizing the benefits of e-government (Warschauer, 2004). Digital literacy is no longer viewed merely as technical proficiency but as a fundamental requirement for social inclusion and active participation in the digital economy (Bawden, 2008). In the context of the Western Balkans, where educational systems are undergoing reform, integrating digital skills into curricula is essential for preparing citizens for the future workforce. Furthermore, digital transformation has profound implications for social inclusion and gender equality. E-government platforms can facilitate access to services for marginalized groups, including women and minority populations, provided that these platforms are designed with accessibility and inclusivity in mind (Helsper, 2012). However, the concept of "digital by default" (Hardill & O'Sullivan, 2020; Al-Muwil et al., 2019), which emphasizes making digital channels the primary means of service delivery, can inadvertently exclude those lacking digital skills or internet access. Therefore, a critical policy analysis must consider how e-government initiatives balance the drive for efficiency with the imperative of social equity, ensuring that digitalization does not exacerbate existing social divides.

2.4 Public Sector Digitalization: Social and Educational Outcomes

Public sector digitalization, while often lauded for its economic efficiency benefits, also yields significant social and educational outcomes. Studies by Cordella and Tempini (2015) show how e-government initiatives can generate direct cost savings and indirect benefits through improved service quality and citizen satisfaction. These benefits are particularly important for resource-constrained governments in transition economies like the Western Balkans (Sonntagbauer et al., 2011). However, beyond efficiency, digitalization impacts social equity and educational access. For instance, e-government platforms can enhance access to public services for citizens, including educational resources and social welfare programs, thereby promoting social inclusion (UN DESA, 2020). The concept of "digital dividends" introduced by the World Bank (2016) emphasizes that the benefits of digital transformation are not automatic but depend on complementary investments in skills, institutions, and competition policies. This is particularly relevant for educational outcomes, as digital literacy and access to quality online learning resources are crucial for maximizing these dividends.

Political commitment, administrative capacity, and citizen engagement are crucial for successful e-government implementation in the Western Balkans, as noted by the OECD in the SIGMA programme (2025). Research by Matei and Savulescu (2011) on e-government in the Western Balkans found differences in progress, stressing the need for regional cooperation and knowledge sharing, particularly in educational and social policy integration. Countries with better institutional frameworks and EU integration experience improved outcomes, which often include enhanced social services and educational opportunities. Additionally, a BIRN (Balkan Investigative Reporting Network) report on "Open Data and Digitalisation in the Western Balkans" (Vrbica, 2024) highlights current capabilities and challenges, such as limited financial resources, cybersecurity issues, and low user awareness, impacting not only economic development but also the equitable provision of social and educational services. Despite existing research, gaps remain in the literature regarding the comprehensive social and educational impacts of e-government in the Western Balkans. Studies often focus on individual countries, lacking regional comparisons of social inclusion, digital literacy programs, and gender equality initiatives within digital governance. This study addresses these gaps by analyzing regional data from 2020-2025, considering new technologies and cybersecurity, to better understand the social and educational development facilitated by e-government in the Western Balkans.

3. Methodology

3.1 Research Design and Approach

This study employs mixed-methods research design, combining quantitative analysis of e-government indicators with qualitative evaluations of policy documents and social impact assessments. It examines e-government development in six Western Balkan countries through a comparative case study approach, focusing on identifying patterns and best practices in digital transformation that influence social and educational outcomes. The research utilizes an adapted institutional analysis and development (IAD) framework, drawing on Ostrom's arguments (2011), to analyze the influence of institutional arrangements on social and educational policy outcomes, with a particular focus on technological, organizational, and environmental interactions. The design includes both cross-sectional analysis for current capabilities and longitudinal analysis from 2020-2025 to assess the social and educational impacts of e-government initiatives over time.

3.2 Data Collection Strategy

Data Sources

The study utilizes multiple primary and secondary data sources to comprehensively cover e-government development and its social and educational outcomes. Primary sources include: a) data from international organizations such as the UN, OECD, World Bank, and European Commission, focusing on indicators related to social inclusion, digital literacy, education, and gender equality; b) national government publications that provide detailed information on e-government initiatives, social policies, and educational reforms; c) reports from multilateral development banks, like the EBRD and European Investment Bank, offering insights into infrastructure development and its social impact. Secondary data sources include: a) academic literature from social sciences and education, providing theoretical and empirical insights on e-government in transition economies; b) reports from think tanks and NGOs, such as BIRN and CEPS, that offer independent evaluations of social progress, educational challenges, and digital inclusion initiatives; and c) international consulting reports that deliver technical assessments and benchmarking information regarding e-government, with an emphasis on human development indices.

3.2 Variable Selection and Operationalization

Dependent Variables: Social and Educational Outcomes

The study assesses social and educational outcomes using indicators related to social inclusion, digital literacy, workforce education, and gender equality. For social inclusion indicators, it examines the availability and accessibility of e-government services for marginalized groups, the impact on civic participation, and the reduction of digital divides. For digital literacy and workforce education, it assesses the prevalence of digital skills training programs, the integration of ICT in education, and the perceived improvement in citizens' digital competencies. Gender equality indicators include the participation of women in digital initiatives, access to e-services for women, and the impact of e-government on gender-based disparities. These outcomes are evaluated using survey data, qualitative assessments, and relevant statistical indicators. The study also considers the impact of digital infrastructure and policy frameworks as moderating variables.

3.3 Data Analysis Methods

The quantitative analysis involves statistical methods to examine correlations and causal relationships between e-government indicators and social and educational outcomes. This includes regression analysis to identify the impact of e-government services on social inclusion, digital literacy, workforce education, and gender equality

metrics. Comparative analysis will be used to highlight differences and similarities in e-government development across the six Western Balkan countries, specifically focusing on variations in social and educational impacts. Qualitative analysis involves content analysis of policy documents, government reports, and academic literature to identify key themes, challenges, and best practices in digital transformation, with a particular emphasis on social and educational policies. This approach provides a nuanced understanding of the contextual factors influencing social and educational outcomes of e-government initiatives in the region.

4. Results and Discussion

4.1 E-Government Development in the Western Balkans

Analysis of e-government indicators from 2020-2025 reveals varied progress across the Western Balkan countries, with significant implications for social and educational development. Serbia consistently ranks high in digital infrastructure and service delivery, particularly with its eUprava portal, which offers a wide range of public services online, including those related to education and social welfare. Albania has also made significant strides, expanding its e-Albania platform to include numerous services, though challenges in user adoption and digital literacy persist, particularly among older populations and those in rural areas. Kosovo, Montenegro, North Macedonia, and Bosnia and Herzegovina show gradual improvements, often supported by international aid and EU pre-accession funds, but still face considerable gaps in infrastructure, cybersecurity, and public trust, which directly impact the equitable access to digital education and social services. The findings align with previous research indicating that countries with stronger institutional frameworks and greater political commitment tend to achieve better e-government outcomes, extending to improved social and educational provisions (Matei and Savulescu, 2011).

4.2 Impact on Social Inclusion and Digital Literacy

E-government initiatives in the Western Balkans have demonstrated a varied impact on social inclusion and digital literacy. In countries with more developed e-government systems, such as Serbia and Albania, online platforms have improved access to public services for a broader segment of the population, including those in remote areas. This enhanced accessibility contributes to social inclusion by reducing barriers to essential services like healthcare and social welfare. However, the benefits are not uniformly distributed. Significant digital divides persist, particularly affecting older adults, individuals with lower educational attainment, and rural communities, who often lack the necessary digital skills or internet access to utilize e-government services effectively. Digital literacy programs, while present, often struggle to reach these marginalized groups, highlighting a need for more targeted and inclusive

educational strategies. Furthermore, while e-government can foster transparency and reduce corruption, its impact on social inclusion is contingent on proactive efforts to ensure equitable access and digital empowerment for all citizens, rather than merely digitizing existing administrative processes.

4.3 Impact on Workforce Education and Gender Equality

The study finds that e-government development in the Western Balkans has a significant, albeit uneven, impact on workforce education and gender equality. Increased utilization of online public services, particularly those related to education and vocational training, has the potential to enhance digital skills among the workforce, thereby improving employability and economic participation. However, the full realization of these benefits, often referred to as "digital dividends," is constrained by insufficient complementary investments in digital literacy programs and robust educational infrastructure. Challenges in workforce education include the lack of standardized digital curricula and limited access to advanced IT training, which can hinder the development of a digitally competent workforce. Regarding gender equality, e-government initiatives can empower women by providing easier access to information, services, and online learning opportunities, potentially reducing gender-based disparities in access to education and employment. However, if not designed with a gender-sensitive approach, these initiatives can inadvertently perpetuate existing inequalities, particularly if women face greater barriers to digital access or have lower digital literacy rates. Cybersecurity vulnerabilities, as highlighted by recent incidents in Montenegro and Albania, also pose risks to educational platforms and data privacy, which can disproportionately affect vulnerable populations and undermine trust in digital learning environments. Therefore, comprehensive strategies are needed to ensure that e-government initiatives actively promote inclusive workforce education and advance gender equality in the digital age.

4.4 Challenges and Opportunities

Despite the progress, several challenges hinder the full realization of e-government potential in the Western Balkans, particularly concerning its social and educational impacts. Persistent digital divides, especially between urban and rural areas and across different demographic groups (e.g., age, socioeconomic status, gender), limit equitable access to digital services and educational resources. Insufficient financial resources for digital infrastructure development and maintenance, coupled with a shortage of skilled IT professionals in the public sector and educators trained in digital pedagogy, further complicate implementation and the effective integration of technology into learning environments. Cybersecurity threats remain a major concern, posing risks to the privacy of citizens' data and the integrity of educational

platforms, thus requiring continuous investment in robust security measures and public awareness campaigns focused on digital safety.

Opportunities for future development lie in strengthening regional cooperation to share best practices in digital inclusion and educational technology. Leveraging emerging technologies like artificial intelligence and cloud computing can enhance personalized learning experiences and improve the accessibility of public services for all citizens. Crucially, integrating e-government initiatives with broader social and educational policies is essential to ensure that digital transformation benefits all segments of society. This includes developing comprehensive digital literacy programs from early education through lifelong learning, designing e-services with a focus on accessibility and user-friendliness for diverse populations, and actively promoting gender equality in digital participation. By addressing these challenges and seizing these opportunities, the Western Balkans can foster a more inclusive and equitable digital future.

5. Conclusion and Policy Implications

This study confirms that e-government initiatives play a crucial role in shaping social and educational outcomes in the Western Balkans. While significant progress has been made in digital transformation, particularly in countries like Serbia and Albania, challenges related to persistent digital divides, cybersecurity vulnerabilities, and institutional capacity continue to hinder equitable access and full realization of benefits. To fully harness the potential of digital governance, policymakers in the region must prioritize comprehensive strategies that not only focus on technological infrastructure but also deeply integrate social and educational dimensions. This includes substantial investment in inclusive digital literacy programs, strengthening cybersecurity frameworks to protect sensitive educational and social data, fostering regional cooperation in developing accessible e-learning platforms, and ensuring that e-government services are designed to be universally accessible and beneficial to all citizens. By doing so, the Western Balkans can promote social inclusion, enhance educational opportunities, and foster a more equitable digital society. The findings provide valuable insights for governments, international organizations, and researchers interested in the social and educational impacts of digital transformation in transition economies.

Comparing the findings from the Western Balkans with other international contexts, such as Southeast Asia or Latin America, reveals commonalities in the challenges of digital inclusion. While countries like Estonia have set global benchmarks for e-governance, transitional economies in the Western Balkans face structural barriers like those in other developing regions, particularly regarding the 'design-reality gap.' This comparison underscores that while technological solutions are often universal,

the social and educational outcomes are deeply contingent upon local institutional frameworks and the equitable distribution of digital literacy.

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