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Digital
Inclusion
Initiative

Digital Inclusion Initiative

NATIONAL REPORT

FOR BOSNIA AND HERZEGOVINA



Publisher

Centar za obrazovne inicijative Step by Step
Kralja Tvrtka 1, Sarajevo
www.inskola.com i www.sbs.ba

For the publisher

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June 2025



**Funded by
the European Union**

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of the author and do not necessarily reflect the views of the European Union



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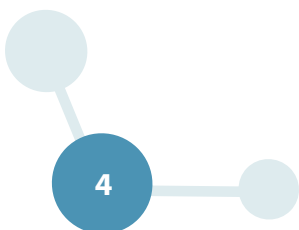
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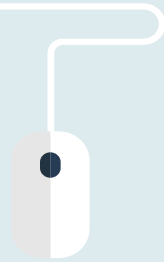
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LIST OF ABBREVIATIONS

AI	Artificial Intelligence	ICT	information and communication technologies
AKELIUS	Akelius Digital Language Course	ITU	International Telecommunication Union
BiH	Bosnia and Herzegovina	LMS	Learning Management System
CEI Step by Step	Center For Educational Initiatives Step by Step	MKT	Ministry of Communications and Transport of Bosnia and Herzegovina
DEI	Directorate for European Integration of Bosnia and Herzegovina	OECD	Organization for Economic Cooperation and Development
DII	digital inclusion	PARCO	Public Administration Reform Office of Bosnia and Herzegovina
EBRD	European Bank for Reconstruction and Development	PISA	Programme for International Student Assessment
ETF	European Training Foundation	RCC	Regional Cooperation Council
EU	European Union	RS	Republika Srpska
EU4DigitalSME	European Union for innovation and digitization of small and medium-sized enterprises in Bosnia and Herzegovina	SDG	Sustainable Development Goals
FBIH	Federation of Bosnia and Herzegovina	UN	United Nations
FMRPO	Federal Ministry of Development, Entrepreneurship and Crafts	UNDP	United Nations Development Programme
FZZPR	Federal Institute for Employment and Spatial Planning	UNICEF	United Nations Children's Fund
GDP	gross domestic product	USK	Una-Sana Canton
IDDEEA	Agency for identification documents, records and data exchange of Bosnia and Herzegovina	WBIF	Western Balkans Investment Framework
		WB	World Bank





INTRODUCTION

The national report was created within the project Digital Inclusion Initiative (DII¹), a regional project implemented in Albania, Bosna and Hercegovina, Kosovo, North Macedonia and Serbia funded by the European Commission. The goal of the project is to enhance the role of civil society organizations (CSOs) from the Western Balkans in advocating for participatory democracies and the EU accession process by strengthening their capacities for policy development and advocacy for digital inclusion.

Data and information presented in the national report are collected through a policy questionnaire fulfilled after the analysis of digitalization and digital inclusion policy documents. Consultations with relevant institutions, experts, users of digital services, members of vulnerable groups and civil society organizations as well as focus group were used to complement desk research and to obtain stakeholders' perspective on equity-related issues in the process of digitalization and to formulate recommendations for policy improvement.

1 www.diiproject.net



1. CONCEPTUALIZATION OF DIGITAL INCLUSION

1.1. Definition of digital inclusion in national legislation

The legislative and strategic framework of Bosnia and Herzegovina does not contain an officially adopted definition of digital inclusion. However, the concept is implicitly present in several policy documents. The Federation of Bosnia and Herzegovina (FBiH) Development Strategy 2021–2027 highlights the importance of digitalization to ensure access, participation, and development for all citizens, regardless of gender, age, or profession (Federal Institute for Development Programming, 2021). Although the term “digital inclusion” is not explicitly used, the Strategy identifies the need to include vulnerable groups—such as the elderly, the poor, and persons with disabilities—in digital training and services (Federal Institute for Development Programming, 2021).

The Framework for Implementation of Sustainable Development Goals in BiH explicitly uses the term digital inclusion, emphasizing that no one should be excluded from the digital society (UNBiH, 2021). The FBiH Social Inclusion Strategy 2021–2027 also promotes equal access to digital tools, even though it does not directly use the term (UNICEF, 2021). A similar approach exists in Brčko District legislation, where digital inclusion is supported through development and digital infrastructure strategies, again without a formal definition

(Government of Brčko District, 2021). The FBiH Small Business Development Strategy underscores the need to support vulnerable groups in the IT sector, including unemployed women and women with disabilities (fm-rpo.gov.ba). The Spatial Data Infrastructure Strategy of the Federation of BiH (2023–2027) highlights the importance of ensuring access to spatial data for all users (fzzpr.gov.ba).

Participants in focus groups and interviews stated that the lack of a formal definition of digital inclusion in legislation hinders the implementation of concrete measures. They noted that digital exclusion is experienced daily, particularly by persons with disabilities, the elderly (65+), the poor, and residents of rural areas. The absence of shared definitions and standards, as well as the lack of organized training and accessible digital resources, are identified as key barriers to digital inclusion.

Analysis of the legislative framework confirms that Bosnia and Herzegovina lacks a unified definition of digital inclusion. Instead, the term “digital transformation” is commonly used, referring mainly to technical and infrastructural modernization of public administration, education, and the economy (Federal Institute for Development Programming, 2021; UNICEF, 2021). Although some strategic documents include measures targeting vulnerable groups—such as digital training for older persons, rural women, and persons with disabilities—these actions are not systemically connected to a clearly defined concept of digital inclusion, nor are they terminologically consistent within the legislative-strategic framework.

As part of this research conducted under the common methodology of the EU-funded project Enhancing Digital Inclusion in the Western Balkans, digital inclusion is viewed as a broad and multidimensional concept. It includes not only technical aspects of access and infrastructure but also social, cultural, and psychological factors—such as trust in technology, user attitudes, access to education, and systemic support for independent and meaningful use of digital tools.

Compared with this broader conceptualization, national policies are largely focused on infrastructural development, basic digital skills, and modernization of public services. They lack deeper analysis and targeted responses to social inequalities and the risks of digital exclusion among vulnerable groups.

Although national documents, such as the FBiH Development Strategy 2021–2027, acknowledge the need for developing digital skills and securing infrastructure,

these measures do not reflect a comprehensive analysis of social inequalities or aim to specifically reduce digital exclusion.

The differences between the national and project-based definitions (as in Enhancing Digital Inclusion in the Western Balkans) lie in terminology, approach, and the understanding of digital skill development and planned support. While national documents recognize the importance of training, they rarely connect it to the concept of digital inclusion. Though rarely mentioned, digital inclusion should become a central concept—shifting attention to the broader societal implications of digitalization and emphasizing support for marginalized groups to ensure equal opportunities for all members of society.

The development of digital competences and empowerment of vulnerable groups are fundamental prerequisites for achieving inclusion.



2. NATIONAL CONTEXT OF DIGITAL INCLUSION

2.1. General contextual data

Bosnia and Herzegovina, with its complex administrative structure, does not have a unified strategy dedicated to digital inclusion. However, various aspects of digital access and transformation are addressed through sectoral and entity-level strategies. According to the BiH Agency for Statistics (2024), the GDP amounts to BAM 42.3 billion, the average salary is approximately EUR 700, and the unemployment rate stands at 13.2%. More than half of the employed population (54.2%) earns below the average wage, and nearly 28% of the population has completed only primary education (Agency for Statistics of BiH, 2016). Poverty and social exclusion affect 16.5% of the population (DEIBiH, 2022), and 60.8% of citizens live in rural areas (UNDP & FAO, 2021).

Although BiH participates in programs like Digital Europe (MKT, 2024) and applies strategies such as the FBiH Small Business Development Strategy (FMRPO, 2022) and the Spatial Data Infrastructure Strategy (FZZPR, 2023), the policy framework remains fragmented and insufficiently focused on digital inclusion. The emphasis is predominantly on infrastructure and e-services, while measures for vulnerable groups remain undefined or insufficient (UNICEF, 2021; PARCO, 2025).

Field data (focus groups) confirm that digital exclusion is most pronounced among the elderly, the poor, and

rural populations, with little systemic support for their digital integration. Focus group participants also emphasized the lack of centralized responsibility and political will for developing inclusive digital policies.

2.2. Data on digital skills and habits in using digital technologies

According to the Regional Cooperation Council (RCC), only 35.3% of BiH citizens possess at least basic digital skills, and only 9% have advanced digital skills—significantly below the EU average (RCC, 2022). Although the study does not provide disaggregated data by population categories, it highlights the urgent need for systematic development of digital competences, particularly for vulnerable groups such as the elderly, unemployed, and individuals with lower educational attainment. The European Training Foundation (ETF) reports that 84% of employed persons in BiH use computers at work, and 17% had to learn new software or programs in the past 12 months. However, only 6% expressed a need for further digital skills training, which may indicate either a lack of awareness or a lack of accessible training opportunities (ETF, 2023). In the education sector, the situation is worsened by the fact that over 500 schools in BiH lack internet access, directly hindering around 14,000 students from acquiring digital competences (UNICEF, 2024). Although specific school locations are not identified, earlier analyses suggest most are in rural areas. Focus group participants across cantons and entities emphasized that the

digital equipment in schools often results from short-term donations or ad hoc initiatives, rather than systemic investments. There are also examples of schools improvising video and audio lessons during the pandemic for students without internet access—further evidence of an inconsistent and unsustainable support system (Focus Group Report, 2025). A UNICEF analysis from 2014 shows that 64.6% of children in rural areas do not have internet access at home, compared to 29.5% in urban areas—highlighting the greater infrastructural challenges in rural parts of the country (UNICEF, 2014). UNICEF’s 2023 regional report confirms that internet access issues in schools are widespread across the Western Balkans but are particularly severe in rural and economically disadvantaged areas, including BiH (UNICEF, 2023). According to PISA 2018, a survey of school principals reveals that many schools in BiH lack sufficient computers per student, and some regions face severe obstacles in accessing high-speed internet and modern IT equipment (PISA 2018, OECD). These findings indicate that the problem goes beyond infrastructure and includes a lack of systematic and equitable resource distribution. On the other hand, Eurostat (2023) data shows that 81.6% of households in BiH have internet access, and 80.4% of individuals use the internet daily—an improvement compared to previous years. Nevertheless, these figures still lag behind most EU candidate countries, highlighting the persistent digital divide between BiH and EU standards.

A 2024 study by the Association for Digital Transformation in BiH applied the Digital Skills Indicator 2.0 (DSI

2.0) methodology, offering a detailed insight into five domains: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. The analysis shows that a significant portion of the population fails to reach basic competency levels in all these categories, with notable differences based on gender, age, and employment status. Especially concerning is the fact that individuals who had not used the internet in the previous three months were excluded from the competence assessment—thus excluding the most vulnerable from official evaluations.

The report underscores the importance of identifying and including so-called “invisible groups”—those not formally recognized as vulnerable but de facto excluded from digital society. These include:

- unregistered migrants,
- persons with mental and developmental disabilities,
- youth in institutional care (e.g., foster care or orphanages),
- long-term unemployed individuals without internet access.

There are no public policies or statistics addressing these groups, further exacerbating their exclusion. The project’s focus group recommends the introduction of digital vulnerability indicators based on multiple factors: access, literacy, income, and social status.

Table 1: Digital skills and habits (population and households)

Indicator	Value	Source
Internet usage	83,38% of the total population	World Bank, 2023
Active social media use	55,9%	DataReportal, 2023
Basic to advanced digital skills	63%	Regional Cooperation Council (RCC), 2021
Household internet access	84,2%	Agency for Statistics of BiH, 2024
Smartphone use for internet access	93% of households	UNICEF, 2020

Although 84% of the population uses the internet, the majority use it passively—for entertainment rather than for administrative or educational purposes. Focus groups revealed that “functional digital literacy” is limited and that there is a lack of targeted programs to build such skills among older individuals, the unemployed, and residents of rural areas.

Key Indicators:

- Only 9% of the population possesses advanced digital skills (RCC, 2022).
- 84% of employed individuals use computers at work, but only 6% seek additional training (ETF, 2023).
- Over 14,000 students in 500 schools lack internet access (UNICEF, 2024).

2.3. Field analysis and insights

While statistical data suggests a high level of internet access, field research indicates a significant gap between formal availability and actual usability. Focus groups confirm that many citizens use the internet mainly for entertainment, while administrative and

educational content remains inaccessible due to low levels of digital literacy and the lack of educational support. A concerning issue is that neither teachers nor professionals are adequately trained, and there is no mapping of digital illiteracy by age, gender, or disability (Interview with expert associate from the NGO DUGA, BiH, 2025).

Participants also pointed out that official statistics do not disaggregate data for vulnerable groups, such as persons with disabilities, older adults, or the unemployed. There is a clear need for the development of indicators that would enable monitoring progress in digital inclusion across different grounds of discrimination and exclusion.

2.4. Overview of the strategic and legal framework

The strategic and legal framework of Bosnia and Herzegovina partially reflects the priorities defined by European policies but remains misaligned with key EU documents such as the European Declaration on Digital Rights and Principles (European Commission, 2022).

While digitalization is recognized as a development tool in strategies like the Federation of BiH Development Strategy 2021–2027, the Brčko District Development Strategy 2021–2027, and the documents of the Agency for Information Society of Republika Srpska, aspects like universal internet access, digital literacy, and privacy protection are not clearly regulated (Federal Institute for Development Programming, 2021; Government of Brčko District, 2021; Agency for Information Society RS, 2023).

The focus of these strategies is primarily on technical infrastructure, e-governance, and the development of digital services, while the social dimension of digital development is marginalized. A critical issue is the lack of a comprehensive national document aligned with the DigiComp framework, which defines digital competences as core 21st-century skills. While the need for digital skill development is referenced in multiple strategies, there is no system to standardize and systematically monitor those competences in line with EU models. This gap is further highlighted by the absence of a national strategy for digital education, although the formation of an intersectoral committee for digital transformation in education marks progress. In line with the Sustainable Development Goals (SDGs), BiH's 2023 Voluntary National Review acknowledges the role of digital technologies in achieving social inclusion and progress. However, there has been no concrete mapping of digital policies or solutions in relation to specific SDGs, despite clear links between digitalization of education (SDG 4), improved access to information (SDG 10), and digital equality (SDG 5) (Council of Ministers of

BiH, 2023). The Reform Programme of BiH (2024–2027) announces some digital transition measures, including modernization of e-services, institutional interoperability, and strengthening of digital infrastructure. However, available documents do not explicitly recognize digital inclusion as a social priority of the digital transformation process (European Commission, 2024). The European Commission's 2024 Country Report on BiH notes that the country still lacks a comprehensive Information Society Strategy and that its legislative framework is not aligned with EU acquis, including core regulations like the Digital Services Act and Digital Markets Act. Institutional coordination and data exchange between administrative bodies remain limited. A notable step forward was made in June 2024, when BiH became a member of the Digital Europe Programme, granting access to projects in artificial intelligence, advanced digital skills, and key infrastructure, which could serve as a medium-term platform for policy alignment (European Commission, 2024). Based on the above, it can be concluded that BiH still lacks a comprehensive and operational framework that fully meets European standards for digital inclusion. To ensure an inclusive and equitable digital society, it is necessary to establish a Digital Rights Law, develop a national DigiComp-based framework for digital competences, and explicitly map digital solutions within the context of the SDGs.

Currently, Bosnia and Herzegovina does not have a unified law or strategy dedicated specifically to digital inclusion. However, several strategic and legal documents address various aspects of digital access, transformation, and education, including the following:

1. Law on Electronic Signatures (2006): Grants legal validity to electronic documents. However, its practical implementation remains limited. The new Law on E-Governance in Sarajevo Canton aims to address this, though results are yet to be observed (PARCO, 2025).
2. SME Development Strategy of FBiH 2022–2027: Emphasizes the inclusion of vulnerable groups in the IT sector, particularly women and persons with disabilities. However, digital inclusion is not explicitly mentioned (FMRPO, 2022).
3. Spatial Data Infrastructure Strategy of FBiH 2023–2027: Focuses on making spatial data available and interoperable for all users, aligning with broader goals of digital accessibility (FZZPR, 2023).
4. Digital Europe Programme (joined in 2024): Provides BiH access to EU funds and expertise in digital technologies, education, and infrastructure (MKT, 2024).
5. Brčko District Development Strategy 2021–2027: Includes plans to improve digital infrastructure and public digital services to support socio-economic development including internet availability and e-government development (Government of Brčko District, 2021).
6. Law on the Government of Brčko District (2023): Regulates the organization and responsibilities of the Government, including the development of digital services and infrastructure (Assembly of Brčko District BiH, 2023).
7. Social Inclusion Strategy of Brčko District 2021–2027: Aims to enhance social inclusion through education and digital literacy, especially among vulnerable groups (UNICEF, 2021).

Key measures identified in the strategic-legal framework include:

- Development and modernization of digital infrastructure to increase internet access for all citizens and businesses.
- Expansion of e-services for better public service access and transparent governance.
- Educational programs to develop digital skills in children, youth, the unemployed, and other target groups.
- Support for innovation and entrepreneurship in the IT sector through financial and mentorship schemes.
- Participation in EU programs like Digital Europe to gain funding and expertise (DEI, 2024).

The strategic-legal framework addresses important dimensions of digital development but lacks a comprehensive and integrated approach to digital inclusion. Most documents emphasize technical aspects—such as infrastructure and e-services—while the development of digital competences and the empowerment of vulnerable groups are underdeveloped and lack a clear implementation roadmap (UNICEF, 2021; FMRPO, 2022). Although there are promising initiatives—both international (e.g., Digital Europe) and local (e.g., Brčko District strategies)—BiH still needs to develop a coordinated, inclusive, and data-driven digital inclusion policy accessible to all citizens.

Key areas remain inadequately addressed due to the absence of a national plan for developing digital skills among marginalized groups. Categories of vulnerable

or at-risk populations are not clearly defined, and there is no centralized institutional responsibility or dedicated fund for digital inclusion (PARCO, 2025; MKT, 2024).

Field data shows that digital initiatives are often driven by individual enthusiasm rather than systemic policy support. A focus group with stakeholders from education, health, and social sectors, along with policymakers and researchers, revealed that political instability and frequent leadership changes disrupt policy continuity. Participants emphasized that e-services are often not accompanied by user education, resulting in confusion and inefficiency—especially among individuals with low digital literacy.

Experiences from the healthcare sector further highlight the fragmentation of digital infrastructure across cantons. Interviews with healthcare professionals reveal vast disparities in technical readiness and system functionality. Some cantons have no digital systems at all, while others use them selectively and face frequent technical issues such as system crashes and inaccurate automated data entries. These challenges underscore the need to harmonize digital standards and establish inter-cantonal and inter-entity interoperability.

Focus group discussions with university teaching staff and researchers concluded that Bosnia and Herzegovina lacks a unified national strategy for digital inclusion. The absence of legal definitions and policy frameworks, combined with political fragmentation, hampers coordination and long-term development. Participants highlighted the need for building a national framework that

includes entity and local government levels, along with tax incentives for purchasing basic digital equipment.

As a result, Bosnia and Herzegovina does not have a single, comprehensive national digital inclusion strategy. Instead, various sectoral and entity-level documents partially address this area. Examples include:

- The Development Strategy for Small and Medium Enterprises in FBiH 2022–2027 (FMRPO, 2022);
- The Information Society Development Strategy of RS 2021–2025;
- The Digital Transformation Program of Herzegovina-Neretva Canton (2022);
- The Economic Reform Program of BiH 2024–2026 (Council of Ministers of BiH, 2024).

The focus of these documents is often on infrastructure development, e-government, and the economic potential of digitalization. However, digital inclusion as a socio-legal category is rarely directly mentioned. Fragmented jurisdiction at the entity, cantonal, and municipal levels further complicates coordination and policy implementation.

Participants from the civil and education sectors emphasized that the strategic framework is neither sufficiently inclusive nor consistent, and that there is a need for intersectoral integration and joint monitoring of policy outcomes (Focus group with teachers, school professionals, and psychosocial support practitioners from the education and NGO sectors, 2025).

2.5. Governance

At the national level, the key institution responsible for digitalization, digital technologies, and telecommunications in Bosnia and Herzegovina is the Ministry of Communications and Transport of BiH. This ministry is in charge of strategic planning and coordination of policies related to digital transformation and the development of the information society (European External Action Service, 2024). It also collaborates with international partners, such as the EU's Digital Europe Programme, which BiH joined in 2024 to access EU-level funding and digital tools. In addition, the technical and operational aspects of digital infrastructure and identity are handled by the Agency for Identification Documents, Registers and Data Exchange of BiH (IDDEEA). This agency plays a vital role in implementing e-services and digital IDs, and is responsible for managing identification documents, central registries, and data exchange among state institutions (Biometric Update, 2024). At the entity level, the Agency for Information Society of Republika Srpska has the mandate to develop and promote the use of information and communication technologies (Agency for Information Society of Republika Srpska, 2023).

Findings from focus groups with representatives from the education, health, and social sectors, decision-makers, practitioners, researchers, university professors, and NGO professionals reveal the complexity of challenges surrounding digital inclusion in Bosnia and Herzegovina (Focus Group 1: school professionals and practition-

ers; Focus Group 2: decision-makers and researchers; Focus Group 3: university researchers and professors, 2025). According to participants, institutional responsibility is dispersed, and existing structures operate ineffectively due to a lack of political will and clearly defined mandates. An interview with a professional from the NGO DUGA (Bosnia and Herzegovina, Erasmus Project: Digital Inclusion) specifically emphasized the need for a networking platform and standardized approaches, as the current lack of interconnectedness is a significant obstacle.

Responsibilities are distributed across various ministries and levels of government. For example:

Education ministries at entity and cantonal levels (e.g., the Ministry of Education and Science of FBiH, cantonal education ministries, the Ministry of Education and Culture of RS, and the Education Department of Brčko District) manage digital skills development through curriculum reform and educational planning.

Ministries of labor and social policy (e.g., the Federal Ministry of Labor and Social Policy, the Ministry of Health and Social Welfare of RS) are responsible for digitalizing social services and access to e-social platforms.

Ministries of health (e.g., the Federal Ministry of Health, the Ministry of Health and Social Welfare of RS) oversee the digitalization of healthcare systems, e-medical records, and access to digital health services.

Additionally, entity-level agencies or IT departments (such as the Agency for Information Society of Re-

publika Srpska) provide technical support for digital infrastructure across sectors. This fragmentation of jurisdiction makes it difficult to establish a coordinated and standardized approach to digital inclusion at the national level.

Good practices are emerging at the local level—for example, a program in Tuzla Canton involving schools and municipal administrations aims to improve digital literacy among older adults (Interview with an expert from NGO DUGA, 2025). Most focus group participants also noted the absence of political will and systemic coordination, which leads to duplication of efforts and inconsistent standards.

2.6. Funding for digital inclusion policies

Funding is provided through various sectoral budgets, but there is no dedicated budget line for digital inclusion. Support for the acquisition of assistive technologies mostly depends on international donors, such as:

- EU funds (e.g., IPA III, Digital Europe);
- UNICEF, particularly in education and digital access for children;
- WBIF for infrastructure projects (e.g., broadband networks);
- EBRD and UNDP for digitalization in local governance.

Transparency in resource allocation is often lacking, and expenditure data is not systematically available to

the public. Respondents highlighted the lack of impact monitoring and project fragmentation (Interview with a neuropsychiatrist and psychotherapist from the private health sector in BiH). A UNICEF report (2023) notes that schools often receive digital equipment without staff training, which reduces the effectiveness of these investments.

Funding for digitalization in Bosnia and Herzegovina comes from multiple sectoral budgets, including education, communications and transport, economic development, science and technology, health, and social protection. Given BiH's complex administrative structure, there is no unified national budget framework. Instead, funds are allocated through sectoral or entity-level strategies and programs.

For example, the capital budget of Brčko District for 2025 includes: 7 million BAM for school equipment in the education sector, 5 million BAM for digital infrastructure in the finance sector, 5 million BAM for digital tools in the police sector (Government of Brčko District, 2024).

Bosnia and Herzegovina makes use of various international funding sources to support digitalization, but there are currently no dedicated national funds specifically for digital inclusion. However, digital inclusion is often integrated into broader development or social programs funded by international partners, aimed at training vulnerable groups, improving access to technology, and enhancing digital literacy (UNICEF, 2021).

Available digital funds include:

- EU funding via the Digital Europe Programme, which BiH joined as an associated member in 2024, enabling access to financing for developing digital services, infrastructure, and skills (European External Action Service, 2024);
- UNDP, which supports digital transformation projects in public administration and education (UNDP BiH, 2023);
- The Czech Republic, which funds the *Socio-Economic Inclusion Project In Brčko District* involving digital training for vulnerable groups (CARE International, 2024);
- EBRD and other financial institutions involved in infrastructure modernization projects with digitalization components.

Table 2: Available digital funds

Funding Source	Beneficiary	Objective Description	Digital Inclusion Component	Total Budget (EUR)	Dedicated Budget for Digital Inclusion (EUR)
EU Digital Europe	Ministry of Communications and Transport of BiH	Enhancement of digital capacities, innovation, and infrastructure	Training, digital skills development, e-services for citizens	7,000,000 (projection)	Not specifically indicated
Government of Czech Republic + CARE Int.	Brčko District / RGFBD	Social inclusion of vulnerable groups through employment and digital education	Yes – training and employment programs utilizing digital tools	1,380,000	Not specified
UNDP	Various levels of government	Digital transformation of public administration, digital inclusion through services/training	Indirect – includes marginalized groups through digital tools	Variable	Included within programs, not as a standalone fund
Brčko District Budget (2025)	Education, Finance, Police	Procurement of equipment, fiscal systems, and ICT development	Indirect – through infrastructure modernization and improvements in education	Approx. 17 million BAM	Partially within the education budget, not specifically allocated

An analysis of strategic and budgetary documents, as well as reports from international organizations, reveals that it is not possible to precisely estimate the annual percentage of Bosnia and Herzegovina’s GDP explicitly

allocated for digitalization and/or improved access to digital technologies.

Several factors complicate such an estimation:

1. Lack of a centralized digitalization budget – Digitalization funding is currently dispersed across different sectors (e.g., education, healthcare, communications, finance) and often appears as a sub-component of broader development or infrastructure projects, making it difficult to quantify.
2. Absence of aggregated data at the state level – Due to the complex administrative system (state, entity, cantonal, and local levels), there is no consolidated record of digitalization investments in relation to the total GDP.
3. Significant international funding – Although substantial resources come from donors such as the UNDP, EU, EBRD, and the World Bank, these are project-based and fragmented, varying year to year and not reported as a percentage of GDP.
4. Strategic documents – While the Federation of BiH Development Strategy 2021–2027, the 2025 Brčko District budget, and the Information Society Development Support of Republika Srpska outline digital infrastructure, education, and e-governance projects, there is no total sum at the BiH level, nor any GDP proportion indicated (Federal Institute for Development Programming, 2021; Brčko District Government, 2024; Agency for Information Society of Republika Srpska, 2023).
5. Stakeholder insights – Focus groups with teachers, professional associates, psychosocial support practitioners, NGOs, and interviews (e.g., with the expert from Association DUGA) indicated that digital inclusion lacks dedicated budget lines. Budgets often do not include equipment procurement or staff training. Support is largely based on short-term projects and individual initiatives, making efforts unsustainable without systemic financial backing. Even where budgets exist, they are typically short-term and exclude marginalized groups.
6. Healthcare perspectives – Health professionals emphasize the need for budget planning that includes not only equipment but also stable infrastructure and staff training. The proposed centralization of specialized health centers would require targeted investments and a unified state health insurance system to ensure equitable access across cantons and entities. First, the development of interoperable and centralized patient databases is necessary to enable the transfer of medical records across institutions and regions, ensuring continuity of care regardless of location. Second, digitalization would allow for automated and transparent scheduling of health services, reducing administrative burdens—especially for older and vulnerable populations. Third, stable digital infrastructure is a prerequisite for implementing e-referrals, e-prescriptions, and remote health services, which would significantly benefit rural residents and those with chronic or mental health conditions (Interviews with neuropsychiatrist/psychotherapist and occupational therapy professional, 2025).

Such an approach could enhance efficiency and reduce costs, but requires political will and systemic reform. A key challenge is the absence of a dedicated budgetary program for digital inclusion. It is recommended that a dedicated Digital Inclusion Fund be established within the national budget, with clearly defined indicators to monitor impact on vulnerable groups. This mechanism would align with global Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 10 (Reduced Inequalities) (UN, 2015).

As highlighted in the study on digital literacy in BiH (Turulja, Alagić and Kacapor, 2024), the development of digital skills must be grounded in defined indicators and systematic education programs accessible to all citizens, regardless of age, education level, or employment status. To ensure efficiency and effectiveness in reaching all citizens, future actions should follow these directions:

- a) integrate digital literacy programs into formal education at all levels;
- b) develop free public courses for adults;
- c) create clear indicators for systematic monitoring of digital skills development in BiH.

2.7. Alignment with EU frameworks and monitoring and evaluation mechanisms

Bosnia and Herzegovina demonstrates partial alignment with EU documents such as the *DigiComp Framework*, the *Digital Compass 2030*, and the *European Declaration on Digital Rights*. Elements and goals from these frameworks are reflected in national strategies, particularly in areas related to digital skills, e-governance, and infrastructure. However, these EU frameworks are not systematically or formally integrated into Bosnia and Herzegovina's strategic planning documents. There are no adopted indicators, monitoring mechanisms, or standards to track digital inclusion aligned with measurable EU goals and recommendations. As a result, thematic overlaps exist, but without formal harmonization or integration into operational policies and national plans. Compared to the EU average, BiH significantly lags in all digital skills indicators according to DSI 2.0.

While over 50% of the EU population has at least basic digital competencies, the share is much lower in BiH, especially among those over 55 and individuals with only primary education (Turulja, Alagić and Kacapor, 2024). Evaluation mechanisms are limited and mostly tied to donor-funded projects. There is no systemic tracking of digital inclusion indicators or aggregated data for vulnerable groups. Key gaps include:

- lack of an operational definition of digital inclusion;
- absence of a centralized register of digital accessibility;
- limited user voice involvement in policy evaluation.

The strategic-legislative framework in the Federation of BiH anticipates monitoring and evaluation mechanisms. For example, the Federation of BiH Development Strategy 2021–2027 includes monitoring mechanisms for goal achievement. The Public Finance Management Reform Strategy 2021–2025 mandates annual progress reporting (Government of the Federation of BiH, 2021).

Relevant ministries and institutions are tasked with monitoring and implementing these strategies. For example, the Federal Ministry of Finance oversees implementation of the Public Finance Strategy, while the Federal Institute for Development Programming coordinates implementation and reporting on the Development Strategy (Government of the Federation of BiH, 2021). According to the 2022 annual report on the Public Finance Reform Strategy, progress was made in key

areas such as increased transparency in public finance management. However, challenges remain, including the need for better integration of off-budget funds into national planning.

In the context of digital inclusion, the analysis reveals that BiH still lacks an operational definition of digital inclusion, a centralized digital accessibility register and a platform for user participation in policy evaluation. Thus, it is recommended to establish a national participatory monitoring and evaluation mechanism that includes civil society and user groups, ensuring better tracking of policy impact on vulnerable populations. Field data further supports this recommendation.

Participants in focus groups with representatives from the education, health, and social sectors, policymakers, practitioners, and researchers (2025) emphasized that digitalization challenges often become visible only during implementation. Experiences from “open days” and local workshops highlight the importance of participatory approaches in policy development and evaluation. An interview with a representative from the Association DUGA (2025) also pointed out that the lack of mechanisms for experience-sharing and joint monitoring is a major barrier to further progress.

2.8. Monitoring and evaluation of relevant policies

Strategic-legislative framework of Bosnia and Herzegovina formally includes provisions for monitoring and evaluating strategic goals. The Federation of BiH De-

velopment Strategy 2021–2027 and the Public Finance Management Reform Strategy 2021–2025 mandate regular reporting on progress and implementation of measures. Competent ministries and institutions at the entity and cantonal levels conduct monitoring through indicators and annual reports.

However, this research identifies multiple challenges in the digital inclusion domain:

- There is no integrated system to monitor the impact of digital measures on vulnerable groups. Available indicators are general and do not disaggregate data by age, disability, gender, or location.
- Evaluation is primarily conducted within individual, often internationally funded, projects without institutional obligation for systemic, real-time performance tracking.
- Focus group participants and interviewees highlighted the absence of user feedback mechanisms—citizens, teachers, patients, and socially vulnerable groups rarely contribute to the development of digital policies.
- There is no centralized registry on the availability, accessibility, and quality of digital services, particularly for persons with disabilities, the elderly, or residents of rural areas.

These shortcomings hinder the development of targeted and effective policies tailored to the needs of the most vulnerable and complicate the assessment of the

impact of existing interventions. Based on the analysis and field insights, the following recommendations are proposed for improving the national digital inclusion monitoring and evaluation framework in Bosnia and Herzegovina:

1. Develop a national digital inclusion indicator framework, covering:
 - functional access to digital services;
 - digital skills development;
 - institutional availability and accountability in service provision.
2. Establish participatory evaluation mechanisms, including:
 - digital platforms to collect user suggestions and feedback;
 - involvement of civil society organizations in independent policy performance audits;
 - publicly available reports on the use of digital services by vulnerable and marginalized groups.
3. Integrate digital vulnerability indicators into all new strategies and reforms, with systematic data collection and analysis by disability, geographic location, education level, and income category.

Focus group participants emphasized that current evaluation systems are neither inclusive nor adaptable to the real lives of users. Without direct interaction with end users, policies remain “trapped in Excel spreadsheets.”

At present, there is no institution in Bosnia and Herzegovina formally mandated to monitor digital inclusion at the national level. Evaluation responsibilities are dispersed among sectoral ministries, leading to inconsistent monitoring, non-uniform criteria, and duplicated reporting. This report recommends the establishment

of a coordination body or an intersectoral working group tasked with oversight, evaluation, and alignment with European standards.

The evaluation of digital inclusion progress is not explicitly linked to the Sustainable Development Goals (SDGs). Although the Voluntary National Review (BiH, 2023) mentions digital technologies in support of SDG 4 (Education), SDG 5 (Gender Equality), and SDG 10 (Reduced Inequalities), there are no concrete indicators or impact assessments of digital measures in these areas. It is recommended to develop a mapping of digital policies in relation to SDG targets to improve international comparability and strategic alignment.

2.9. Institutional capacities and systemic sustainability

Project research shows that institutions often depend on external donors for digital projects, which makes them vulnerable and unable to ensure long-term implementation.

Key issues include:

- lack of ongoing staff training,
- absence of standardized operational procedures in digital systems,
- lack of policy impact evaluations.

The report recommends the establishment of a National Center for Digital Inclusion (e.g., within the Ministry of Communications and Transport) that, with intersectoral support, would coordinate, train, and evaluate activities.

3. KEY SECTORS – ROLE AND CONTRIBUTION TO DIGITAL INCLUSION

Digital inclusion in Bosnia and Herzegovina is being implemented across different sectors, often without systemic coordination. Field findings, interview analyses, and desk research confirm that progress varies across sectors and that civil society plays a critical compensatory role.

3.1. Intersectoral cooperation

Despite its potential, intersectoral cooperation in BiH remains informal, project-based, and lacks clear institutional support. As highlighted in the *Social Protection System Analysis* (UNICEF, 2021), digital services in social protection are underdeveloped, and connections with education and health sectors are nearly nonexistent.

Focus group participants noted the absence of formal mechanisms for data and knowledge sharing between sectors (e.g., health – education – employment). “Cooperation lasts only as long as the project,” said a participant from the education sector (Focus group with teachers, educational professionals, and psycho-social support practitioners from the education sector and NGOs, 2025). This is confirmed by UNICEF reports, which emphasize that systemic support for digital inclusion is not possible without intersectoral synergy (UNICEF, 2023).

The *RS e-Government Action Plan (2022)* envisions intersectoral cooperation, but implementation is lacking, as confirmed by public administration officials (Interview with a neuropsychiatrist and psychotherapist from the private healthcare sector in BiH, 2025). Similarly, the *Economic Reform Programme BiH 2024–2026* does not connect digital transformation with social indicators. This report emphasizes the near absence of formal cooperation mechanisms between sectors. A recommended measure is to establish an inter-ministerial working group on digital inclusion with mandatory data sharing and standardized approaches. It is also recommended to integrate digital inclusion into all future sectoral strategies through a mandatory component in action plans.

3.2. Sectoral contributions

Education Sector

According to the *UNICEF report (2020)*, the education sector faces severe inequalities – 14,000 children in 500 schools lack internet access. Although 84% of schools have some form of internet connection, the quality of access is inconsistent and often inadequate. Focus groups indicate that teachers’ digital skills vary widely, and “training mostly focuses on technical use of platforms, not inclusive teaching methods” (Interview with an associate from the DUGA Association, BiH, 2025). According to the *USK Digital Strategy (2022)*, schools received equipment, but systemic teacher training was lacking. Furthermore, strategies such as the *HNK Digi-*

tal Transformation Programme do not explicitly address children with disabilities, which focus group participants viewed as neglecting the inclusive dimension.

Digital competence is recognized as a key competence in BiH's education system. Although not always explicitly stated as educational goals across curricula, there are initiatives that integrate digital skills into teaching, such as IT and programming classes in primary and secondary schools. Entity- and canton-level strategies also recognize digital inclusion as a priority, promoting the use of ICT tools and resources in education (Sarajevo Canton Strategy, 2022; AKELIUS BiH, 2023/24). Teacher digital competencies are incorporated into initial training programs at teacher education faculties, alongside various forms of professional development. Education ministries at all levels, with the support of international organizations (e.g., UNICEF), implement teacher training focused on digital literacy and technology use in teaching (UNICEF Teacher Training Programmes). E-services in education are developing in BiH but are not yet fully implemented nationwide. Some schools use platforms for online learning, student enrollment, grading, and performance monitoring. There is also an e-platform for teacher competition registration and scheduling, as well as systems being developed for tracking student progress (E-services in education, Tuzla Canton, 2024). Assistive technology is also present in primary and secondary schools, although its availability is uneven. Assistive technologies such as screen readers for visually impaired students, computers adapted for persons with disabilities, and specialized software are funded from various sources. The state and local governments

primarily finance these technologies, along with donations from international organizations (UNICEF, EU) and private sector contributions (UNICEF, 2022).

Data from a focus group with representatives from education, health, and social sectors, policymakers, practitioners, and researchers (2025) confirm that digital tools have significantly improved work with children with disabilities. However, access to technology is not equal across regions. Technology is used to facilitate teaching, but without support and training, its potential remains limited. An interview with an associate from the DUGA Association (2025) further highlights the importance of teachers and professionals as key actors and their need for continuous professional development.

A focus group with university professors, researchers, and academic experts in languages, IT, and social sciences (2025) notes increasing adoption of digital tools and artificial intelligence in education, alongside numerous challenges. Participants expressed concern about the indiscriminate use of AI tools (e.g., ChatGPT) among students, often leading to reduced autonomy and weakened critical thinking. Teachers emphasized the need to develop methodologies that detect and prevent plagiarism while promoting responsible technology use. AI should support learning, not replace it.

Many ethical questions arise regarding the use of digital tools in education. Responsibility must be shared between teachers and students in terms of transparency, citation, and authenticity. Teachers are urged to guide students toward ethical technology use and

to adapt teaching methods that follow contemporary digital trends without compromising educational standards.

Examples of good practice – integration of technology in teaching:

Example 1

A language teacher presented a concrete example of how digital technology can enrich the teaching process. In a course on the history of language, the teacher used digitized sources, mobile applications, and tools for transliterating texts written in Bosančica, enabling students to explore historical sources more actively and in depth.

Example 2

A digital storytelling project connects university professors and students around themes of digital storytelling and creative education. Through the use of assistive technologies and digital tools, the project enables knowledge exchange and skills development, particularly among youth and persons with disabilities.

Social protection sector

The social protection system lacks digital tools for users, aside from passive databases. “Our users don’t even know they are entitled to certain services because they’re not presented digitally, and at service counters they are left to navigate on their own” (Focus group with university professors, researchers, and academic experts in language, IT, and social sciences, 2025).

UNICEF Analysis (2021) shows that social work centers are decentralized, with significant differences in digital accessibility between urban and rural areas. Some databases do exist, such as online applications in Sarajevo Canton and the accessible website of FMRSP (<https://vlada.ks.gov.ba>; <https://fmrsp.gov.ba>). Citizen satisfaction is partially monitored – a study was conducted by the Gender Equality Agency in 2020 (Gender Equality Agency, 2020). E-services available to persons with disabilities and in minority languages include the FMRSP website for persons with disabilities, while no data are available regarding minority languages.

Health sector

The introduction of e-prescriptions in RS and digitization of medical records in FBiH represent important progress. However, interviews reveal that “no healthcare institution offers assistive support for persons with disabilities in digital environments, further complicated by the unregulated flow of information between health centers and pharmacies issuing prescriptions” (Interview with a neuropsychiatrist and psychotherapist from the private healthcare sector in BiH, 2025). The *RS Information Society Development Strategy 2021–2025* outlines digital goals but lacks inclusion indicators.

1. Federation of BiH (Cantons): Tuzla Canton appears to have the most advanced system (IZIS) and has a harmonized approach including e-prescriptions, e-referrals, e-sick leave, e-medical records, and e-health cards. Sarajevo Canton is developing an e-platform for appointment scheduling and digital medical records. Herzegovina-Neretva

Canton is working on record digitization and initial telemedicine services.

Note: Each canton is developing its own system; no unified platform exists.

2. Republika Srpska: Has a centralized Health Information System that includes e-prescriptions, e-referrals, and digital health cards. Telemedicine for rural areas is currently being implemented.
3. Brčko District: A health information system has been introduced along with basic e-health services; basic telemedicine options are available.
4. State Level: There is no unified national e-health system. Efforts are underway to connect entity and cantonal systems via a health informatics network.

Additional Information:

- Citizen satisfaction monitoring: Partially implemented. An example is Tuzla Canton, which occasionally conducts surveys.
- Accessibility for persons with disabilities and in minority languages: No systemic data available; likely limited or dependent on local contexts.
- Private digital platforms: These exist (e.g., Doktor Online) for video consultations and advice.

This project's findings reaffirm that health systems in BiH suffer from high fragmentation. Systemic weaknesses, such as frequent technical failures, inconsistent standards, and the lack of a unified digital medical re-

cord, directly impair the quality of healthcare services. A centralized health information system is recommended, with mandatory access for all cantons and entities to ensure interoperability and continuity of care.

Field data: Focus groups

Discussions with participants from the education, health, and social sectors, including decision-makers, practitioners, and researchers (2025), reveal that electronic health records and telemedicine services are recognized as valuable innovations. However, their implementation remains uneven across regions. Inconsistency in digital healthcare services hampers patient access and undermines public trust in the health system.

An interview with a neuropsychiatry specialist and psychotherapist from the private healthcare sector in BiH (2025) highlights that healthcare professionals face numerous technical barriers in using digital systems. Frequent system outages that prevent issuing electronic referrals, inaccurate automated entries that cannot be corrected, and a complete lack of interoperability between healthcare institutions in different cantons are among the most critical issues. These technical barriers directly impact service quality and patient safety.

Similarly, an interview with an employee in occupational therapy at a psychiatric department in BiH (2025) emphasizes that systemic weaknesses particularly affect older citizens, people with chronic illnesses, mothers with children, and those living outside urban centers—many of whom lack digital skills and require multiple in-person visits to access services.

Across all interviews, healthcare workers particularly highlight the complexity of administrative procedures for seemingly simple services, such as extending sick leave, which requires patients to visit several clinics and institutions. Interviewees consistently stress that effective digitalization of the healthcare system requires real interoperability between institutions, continuous staff training, and the introduction of a unified digital health record accessible to all authorized physicians. An interview with a professional associate from the NGO DUGA in BiH (Erasmus Project: Digital Inclusion, 2025) underscores that without standardized processes and adequate staff training, no sector will be able to fully utilize the potential of digital tools.

Employment sector

In the area of digital job registration and mediation, some progress has been made. However, focus group participants emphasized that existing digital solutions often fail to consider the needs of users with low digital skills. Instructions and procedures for using these platforms are frequently overly complex and not user-friendly (Focus group with education, health, and social sector representatives; Focus group with university professors and researchers, 2025). At the same time, current employment strategies in the Federation of BiH and Republika Srpska do not recognize the specific barriers faced by vulnerable groups in accessing digital services (Federal Ministry of Labour and Social Policy, 2022).

Entity and cantonal employment institutes in BiH offer retraining and upskilling programs, including basic ICT

training, indicating initial institutional support for developing digital skills. For example, the Federal Employment Institute, in cooperation with cantonal services, implements the “Training for the Labor Market” program, offering free courses for unemployed individuals in web design, computer maintenance, and basic digital skills (Federal Employment Institute, 2023). Cantonal services such as the Sarajevo Canton Employment Service regularly issue public calls for training, retraining, and upskilling, with a noticeable trend toward including ICT-relevant programs (Sarajevo Canton Employment Service, 2023). Partnerships with local education centers are also evident, such as with BIT Center Tuzla, which offers free ICT courses in cooperation with the Federal Employment Institute (BIT Center Tuzla, 2023).

However, key challenges remain:

1. Fragmentation and lack of standardization – retraining programs are not centralized or aligned, depending on the entity or canton. There is no central framework for ICT competencies ensuring consistent content and quality (Government of the Federation of BiH, 2022).
2. Limited scope and depth – most courses are general and do not cover advanced digital topics such as programming, network administration, or cybersecurity (Government of Republika Srpska, 2022).
3. Incomplete outcome monitoring – there is no system to evaluate success; it is unclear how many participants secure ICT sector employment post-training (Regional Cooperation Council, 2023).

To enhance support for digital inclusion, the following measures are recommended:

- Establish a national ICT retraining framework that defines standards and content for both basic and advanced digital competencies, with clear modules and mandatory evaluation.
- Promote partnerships with the IT sector, where employers collaborate with employment services to co-develop, deliver, and co-finance courses.
- Introduce performance indicators, such as employment rates in the ICT sector and regular public reporting on program outcomes.

Civil Society (CSO) Sector

BiH's strategic framework envisions intersectoral cooperation through participation in the Digital Europe program, focused on developing digital skills, infrastructure, and innovation (<https://www.dei.gov.ba/bs/bosna-i-hercegovina-pristupa-programu-digitalna-evropa>). An Intersectoral Advisory Council for the Digital Transformation of Education has also been established, facilitating cooperation among sectors. While the establishment of this council is an important step toward intersectoral collaboration, its current functioning does not ensure consistent and operational coordination of education sector digital transformation policies. The role of civil society and international partners remains vital in filling institutional gaps and providing direct support to vulnerable groups.

For example, UNICEF and ITU's Giga Initiative connects schools to the internet through a multisectoral approach (UNICEF, 2022). Projects like Stop and Listen

target digital inclusion for marginalized groups via multisectoral support (UNICEF, 2022).

Civil society organizations (CSOs) are active in digital inclusion, although data on specific initiatives is scarce. They conduct training, provide support, and advocate for the inclusion of vulnerable groups in the digital society.

Focus group discussions with university faculty, researchers, and experts in linguistics, computer science, and social sciences (2025) highlight that vulnerable groups—especially older citizens (65+) and women in rural areas—face numerous barriers to digital inclusion. Most initiatives enabling access to basic digital literacy, website creation, and e-services originate from the NGO sector. While valuable, these efforts are insufficient without broader institutional backing and strategic frameworks.

According to multiple focus group participants and interviewees, “the civil sector compensates for what the system fails to provide.” Examples include UNICEF's distance learning program, rural women's training (COI Step by Step, DUGA), and local initiatives such as living libraries, demonstrating the crucial role of CSOs in community education and empowerment.

The role of CSOs includes:

- Advocacy and research, including policy monitoring and raising awareness;
- Direct community support, through workshops, mentorship programs, and counseling;
- Substitution for formal institutions, especially regarding marginalized groups.

Other sectors

The cultural sector and libraries—though often overlooked—play a key role in rural areas, where they may represent the only source of digital access. However,

their capacities are limited, and digital services are often not adapted for persons with disabilities (Focus group with university faculty, researchers, and experts in linguistics, informatics, and social sciences, 2025).

Table 3: Contribution of different sectors

Sector	Are Digital Services Available?	Monitoring of Quality and User Satisfaction?	Specific Services for Vulnerable Groups?	Barriers for Vulnerable Groups
Education	Yes. e-registration, e-diary, e-learning	Partially	Assistive technologies available in some schools	Uneven access to technology; lack of teacher training
Telecommunications	Yes. Internet and mobile networks	Partially (RAK)	No specific data available	High service costs; limited access in rural areas
Healthcare	Yes. e-prescriptions, e-medical records (limited to cantons)	Partially (e.g., Tuzla Canton)	No systemic services, but telemedicine initiatives exist	Lack of system integration; complex procedures; older citizens face challenges
Finance	Yes. Mobile and internet banking	Partially	No available data	Low digital literacy; fear of fraud
Social protection	Partially, e.g., online applications in Sarajevo Canton	Partially	Websites adapted for persons with disabilities (e.g., FMRSP)	Lack of language inclusion; limited availability of information
Research and innovation	Yes, through digital innovation hubs	No	No specific services for vulnerable groups	Lack of targeted research
Administration	Yes. e-signature, e-ID, online services	No data	No specific services for vulnerable groups	Inaccessibility for persons with disabilities; lack of content in minority languages

The education sector shows the most progress in the development of digital infrastructure and content, whereas the healthcare sector is most affected by digital fragmentation. Telecommunications are technically advanced but lack universal accessibility. Administrative e-services exist but are not inclusive. The civil sector often acts as a substitute for institutional response.

3.3. The role of civil society and civil society-led initiatives

The civil society sector in Bosnia and Herzegovina plays a crucial complementary role in digital inclusion, compensating for institutional weaknesses and responding to the needs of vulnerable groups inadequately addressed in national strategies.

Field research analysis shows that most initiatives directly addressing digital exclusion stem from civil society rather than the public system. Representatives of civil society organizations (CSOs) in focus groups and interviews emphasized that their role includes education, technical support, local interventions, and advocacy toward authorities.

“If it weren’t for us, children from poor families wouldn’t have had access to online learning,” stated a representative of a non-governmental organization (Focus group with teachers, professional associates, and psychosocial support practitioners from the education sector and NGOs, 2025).

Between 2020 and 2023, organizations such as UNICEF, the Center for Educational Initiatives Step by Step, Mozaik Foundation, and local libraries implemented projects focused on:

- Training women in rural areas (UNICEF, 2021),
- Providing digital support for parents during the pandemic (UNICEF, 2020),
- Assisting migrants and refugees in accessing information (CEI, 2022),
- Engaging NEET youth through digital tools (Mozaik, 2023).

These organizations point out that government policies lack clearly defined operational dimensions, often forcing them to “follow the system and fix it at the same time” (Interview with a professional associate of Associ-

ation DUGA, Bosnia and Herzegovina, 2025). They also highlight the lack of CSO involvement in the planning and evaluation of public policies. “We have no insight into where the funds are going, nor are we consulted when action plans are created,” noted a representative from an organization with long-standing experience in adult education (Focus group with representatives from education, health, and social sectors, decision-makers, practitioners, and researchers, 2025).

Key areas in which CSOs recognize their essential role include:

- Advocacy on behalf of groups with no voice in public policy,
- Community work, especially with children, older adults, and persons with disabilities,
- Education and development of digital competencies, particularly where public institutions lack access or capacity.

The social protection system analysis (UNICEF, 2021) notes that, without civil society, many local communities would not even have basic access to information on digital rights and opportunities.

However, CSOs also warn of several challenges: lack of systemic cooperation, limited funding, and project instability. “We complete a project, and people keep calling us because there’s no one else to turn to,” emphasized a field participant (Focus group with representatives from education, health, and social sectors, decision-makers, practitioners, and researchers, 2025).

3.4. General conclusions on intersectoral cooperation

Intersectoral cooperation in Bosnia and Herzegovina aimed at improving access to digital technologies and skills does exist but remains limited. Initiatives such as the Digital Europe program and the establishment of the Intersectoral Advisory Board show progress in connecting sectors, and UNICEF's initiative links schools to the internet. The education sector is integrating digital skills, and international organizations are providing teacher training. However, challenges persist in implementation, such as inconsistent healthcare systems and unequal access to technology across regions. While significant steps have been taken, further alignment and investment in infrastructure projects are needed.

Intersectoral cooperation in the field of digital inclusion in BiH is not institutionalized and is limited to ad hoc initiatives and externally funded projects. There is no formal framework to ensure horizontal cooperation between the education, health, social protection, and employment sectors, nor is there a coordinating body to oversee cross-sectoral activities.

"Everyone works on their own, yet we're all addressing the same problems," summarized a representative from the education sector (Focus group with representatives from education, health, and social sectors, decision-makers, practitioners, and researchers, 2025).

Documents such as the *Information Society Development Strategy of Republika Srpska 2021–2025* and the

BiH Economic Reform Program 2024–2026 mention goals that imply a need for cooperation, but they lack clear implementation mechanisms and evaluation tools for cross-sectoral outcomes.

In practice, this means that knowledge, equipment, and data are not shared across sectors, significantly slowing the development of comprehensive solutions. Focus groups and interviews confirm low levels of trust among actors from different sectors, further hindering cooperation.

The only sector that systematically crosses institutional boundaries is the civil sector, which simultaneously collaborates with education, healthcare, municipalities, and NGO networks, yet without a formal role in policymaking. In conclusion, without clearly defined roles, exchange mechanisms, and shared objectives, intersectoral cooperation remains a potential rather than a practice.



4. RELEVANT RESEARCH ON DIGITAL INCLUSION

4.1. Overview of Research Findings

Multiple reports emphasize that the factors behind digital exclusion in BiH are linked to a combination of low digital skills, poor infrastructure access, socio-economic status, and the marginalization of specific groups. According to UNICEF data, at least 14,000 children attend schools with no internet access, while students and teachers in rural areas face multiple barriers (UNICEF, 2021). Children with developmental difficulties, children from low-income households, and Roma communities are identified as the most vulnerable groups.

UNICEF research (2020) also showed that migrants, older adults, and women in rural communities are systematically excluded from digital services—not only due to lack of infrastructure but also due to the absence of linguistic, procedural, and cultural adaptation of services.

Beyond the already identified exclusion factors, project-based research also points to low trust in digital services as a major barrier. Many citizens express fear of data theft, poor experiences with user support, and distrust in the accuracy of digitally generated information.

Factors contributing to digital inclusion:

- Local initiatives aimed at strengthening digital literacy,

- Involvement of civil society organizations and public libraries as accessible internet access points (e.g., libraries in Bihać and Zavidovići).

International organizations, particularly UNICEF, played a crucial role in developing digital resources and access for children during the COVID-19 pandemic (based on focus groups with teachers, education professionals, psychosocial support practitioners, NGOs, and academic experts in linguistics, computer science, and social sciences, 2025).

Focus groups also noted that teacher and student trainings organized through local initiatives had a positive impact on digital safety and self-confidence. However, these efforts remain inconsistent and vary significantly between projects.

Digital inclusion in Bosnia and Herzegovina has been bolstered by educational and technological initiatives that broaden access and strengthen digital competencies. A study by Habibija Ražanica (2022), conducted during the pandemic, found that age, education, and occupation significantly influence digital literacy: 62.2% of respondents shop online more than five times a month, while 41% use mobile devices for online purchases (TIP.ba, 2022). Employment status and place of residence showed no significant impact, highlighting the potential for digital inclusion regardless of geographical barriers.

Additionally, UNICEF's implementation of the Akelius digital platform provided students with interactive and personalized language learning tools, supported by

teacher training (UNICEFBiH, 2023; 2024). This underscores the importance of combining technological innovation with educational support as key enablers of digital inclusion.

Digital literacy training in Bosnia and Herzegovina is conducted by a variety of stakeholders, including NGOs, IT associations, educational centers, international organizations, and vocational schools. While there is a certain level of accessibility in training provision, systemic coordination and uniform standards remain lacking.

One of the key actors is the Association of IT Professionals of Bosnia and Herzegovina, which—through collaboration with the international ICDL Foundation—offers digital literacy programs aligned with the European DigiComp framework. These programs are delivered via accredited centers across the country and cover both basic and advanced digital skills (ICDL, 2024).

The Bit Alliance, an IT association comprising leading companies in BiH, organizes free CoderDojo programming schools for children and youth in over 15 towns, providing mentoring and access to software tools (Education Profiles, 2023).

Private educational centers also play a significant role. For example, Logiscool offers modular, age-appropriate courses and camps for children and adolescents, focusing on coding, digital safety, and creative programming—thus ensuring inclusive access (Logiscool, 2024).

In the formal education sector, vocational schools, particularly in Republika Srpska, have undergone modernization through the digitalization of teaching materials

and acquisition of IT equipment, aiming to improve students' digital competencies and align with labor market needs (Education Profiles, 2023). However, access to these resources varies across schools and regions, highlighting the need for a unified strategic framework.

International organizations such as UNICEF have also developed platforms like DigiEdu, which provides online courses for teachers to enhance digital-pedagogical competencies. The platform ensures access to training regardless of location—especially important for rural areas (UNICEF, 2023).

In addition, the Danish Refugee Council (DRC) delivers digital literacy training for migrants and refugees in temporary reception centers, focusing on basic internet use, email account creation, and understanding digital risks (DRC, 2023).

These initiatives collectively demonstrate a strong effort to enhance digital skills throughout B&H. However, their sustainability and long-term impact remain limited without a national strategy, curriculum standardization, and institutional support to ensure equal access for all population groups. Research and programmatic documents on Media and Information Literacy (MIL) in Bosnia and Herzegovina indicate a deep need for systemic education and integration of MIL into both educational and family contexts. Particular emphasis is placed on teacher preparedness, parental roles, and institutional sustainability models that would enable the continuous application of MIL in everyday life.

Three key findings stand out:

1. Misjudgment of teacher competencies. A pilot study among primary and secondary school teachers and librarians in BiH showed that 63.4% of teachers believe they can teach students how to analyze media messages, yet only 47% feel capable of teaching news production. This suggests a superficial understanding of media literacy. The authors emphasize the need for structured teacher training programs based on international standards (Vajzović, 2020).
2. Parents as under-supported actors in children's digital safety. A separate study focused on parents and children found that parents often overestimate their ability to protect children online. Although most believe they understand digital risks, their knowledge is generally intuitive and unstructured. This gap underscores the need for parent-focused MIL programs, including workshops and digital guides (Vajzović, 2020).
3. School libraries as institutional integration points. The publication Learning Design for the Digital Age proposes a multi-component MIL integration model that connects formal curricula, teacher competencies, and school library activities. Libraries are positioned as resource centers for students, parents, and teachers, supporting the development of digital and information skills through guided inquiry-based learning and open educational resources. This approach addresses challenges of institutional sustainability in digital inclusion (Vajzović et al., 2021).

Evaluation of digital inclusion policies

Evaluations of existing policies reveal a lack of strategic coherence and coordination, along with low implementation levels of stated objectives. Documents such as

the Information Society Strategy of RS (2021–2025) and the Digital Transformation Program of Herzegovina-Neretva Canton (2022) outline goals, but lack precise indicators for measuring progress in digital inclusion.

UNICEF's 2023 evaluation notes that interventions often focus on hardware provision without ensuring adequate user training and support, thus reducing effectiveness. Focus groups and interviews point to the absence of a comprehensive impact evaluation system for policies targeting vulnerable groups. Findings from focus groups with teachers, education professionals, psychosocial practitioners, policy-makers, researchers, and university lecturers highlight the complex challenges of digital inclusion in Bosnia and Herzegovina (2025).

The evaluation of national digital inclusion policies for the 2020–2025 period indicates slow progress in implementing strategic goals. According to the report by the Federal Institute for Development Programming (FZZPR, 2023), key activities such as the establishment of a Cloud Computing Center, the development of a legal framework for the digital economy, and broadband internet access have yet to be implemented. The legal framework regulating the web presence of public institutions is fragmented and not aligned with modern standards, limiting transparency and access to information (Analitika.ba, 2024). Izetbegović, Kudra, and Bešić (2023) further note that while digital competencies are formally included in the curriculum, the lack of institutional coordination and evaluation mechanisms undermines their practical implementation. These findings underscore the need for aligning policies with EU leg-

isolation and strengthening the normative framework for digital infrastructure. In their work *Assistive Technology – The Use of Digital Tools and the Akelius Program in Teaching*, the authors explore modern pedagogical approaches that incorporate digital tools in the teaching process to enhance teachers' competencies and improve classroom inclusivity. Several statements throughout the text reflect the current state and challenges of digital inclusion within Bosnia and Herzegovina's education system. One of the key statements in the report emphasizes that "in the educational process, assistive technology refers to any product (hardware and/or software) that facilitates the process of learning and teaching with the aim of supporting maximum individual participation." This definition acknowledges the importance of technology in supporting learning processes, but primarily highlights its functional role rather than its systemic, inclusive potential. It reflects a basic understanding of digital inclusion, yet lacks deeper consideration of inequalities in access to digital resources, such as insufficient infrastructure or disparities in digital literacy among students.

Similarly, the statement that "the use of assistive technology can facilitate the understanding of educational content and serve as a means to achieve learning outcomes" also points to the instrumental value of technology but fails to engage with broader issues of digital and social exclusion. Though affirmative in tone, the statement does not address specific barriers such as students' socio-economic status, access to devices, or stable internet connections. However, in the section

discussing teacher competencies in inclusive classrooms, a more critical perspective is introduced. The authors argue that "the teacher's competency profile must also be viewed through pedagogical-psychological and didactic-methodological lenses," and that inclusive classrooms require additional professional training. This assertion highlights the complexity of the teaching role in inclusive, digitally mediated learning environments, affirming that genuine digital inclusion cannot be achieved without systemic support and continuous teacher development. Further, the authors note that "the use of digital tools such as the Akelius app contributes to the development of communication, information, and media literacy." While this underscores the positive potential of digital tools, it does not engage with the challenges faced by students and teachers in applying them daily—particularly the digital divide affecting marginalized groups. The report also explicitly reinforces that "digital technology cannot replace teachers, but can enhance the teaching process."

Additional key findings

1. The digital divide within the education system. Research by the COI (2022) reveals that teachers in rural areas use digital tools three times less frequently than their urban counterparts.
2. Gender dimensions of digital exclusion. According to UN Women (2023), women in BiH have 40% less access to digital platforms for work and education compared to men of the same age and education level.
3. Impact of digital illiteracy on access to social rights. A report by Save the Children (2022) highli-

ghts that many recipients of child protection services were unable to claim their rights due to difficulties using online forms and e-services.

4.2. Summary of research findings

The formulation that “digital technology does not replace the teacher, but rather enhances the teaching process” reflects a mature and balanced view of technology’s role in education. It recognizes that technology is not a substitute for human interaction or professional judgment, but a tool that, if properly integrated, can contribute to more inclusive and effective learning.

The analysis of available research and field data reveals a high degree of alignment between academic findings, institutional insights, and participant experiences. Identified exclusion factors—such as poverty, rural isolation, and disability—were fully confirmed through qualitative data gathered in this study.

However, a gap emerges in the perceived effectiveness of public policies. While official documents present a strategic approach to digital transformation, they often omit explicit definitions of digital inclusion and lack measurable indicators. Focus group participants emphasized that strategies “do not trickle down” to the user level, highlighting a disconnect between policy objectives and their tangible impact in practice.

Key Conclusions:

- Digital inclusion is unevenly developed and highly dependent on location and social group.
- Policies are fragmented and often implemented without coordination.
- The civil sector fills gaps, but without systemic support or performance evaluation mechanisms.



5. NATIONAL PRACTICE EXAMPLES

5.1. Identification and description of the three most effective initiatives/projects led by the government or civil sector

1. Akelius Digital Language Course – inclusion of Roma and marginalized (r/m) children in the education system (BiH)

This initiative, supported by UNICEF and the Ministries of Education in Una-Sana and Tuzla Cantons, aims to increase digital and language inclusion through the use of the Akelius platform in classrooms. Launched in July 2020, the program has continuously enhanced teachers' capacities for digitally mediated instruction through mid-2025, resulting in an increase in trained personnel and participation of children in multilingual education. Key outcomes include the development of digital competencies among teachers and more equitable participation of Roma and marginalized children in formal education. Qualitatively, the initiative improved teaching methodologies and tailored content for students with diverse learning needs, while quantitative results show a growing number of teachers trained in digital instruction and greater inclusion of children in multilingual education.

2. e-Schools BiH – Digital transformation of schools

Led by UNDP BiH in collaboration with relevant ministries, this initiative has driven the digitalization of teaching processes in over 200 schools. The initiative launched in 2022 and, by 2025, has resulted in the implementation of e-diaries, LMS systems, and ICT equipment, significantly boosting the digital competencies of teachers and students.

The project's primary impact is quantitative: a large number of participants now use digital tools in daily educational activities. Qualitatively, the project has contributed to a transformation in teaching practices and the development of digital literacy among school staff. It remains active as part of a broader strategy to digitalize the public and education sectors.

3. DigIn – Digitalization and Inclusive Education (Erasmus+)

This international project involving Bosnia and Herzegovina, Austria, Italy, and North Macedonia focused on developing tools and training for inclusive digital teaching. Its main goal was to empower teachers to create accessible digital content. The impact was primarily qualitative: through online trainings, teachers gained knowledge on adapting instruction for students with disabilities and diverse educational needs. A handbook and a multilingual online course were developed and are now used across Europe, including in educational institutions in Bosnia and Herzegovina.

In Bosnia and Herzegovina, digital inclusion has not been systematically achieved, despite several projects with strong potential to contribute to equal access to information, services, and education through ICT. One significant example is the e-Government initiative at the entity and Brčko District levels, aimed at enabling access to administrative services online. While the project was strategically aligned with increasing public administration efficiency and service availability, its implementation was fragmented. The multinational project, registered as 2020 1 AT01 KA226 SCH 092523, began in 2021 and lasted until the end of 2023. It focused on developing tools and online trainings for inclusive digital teaching, supported by the creation of a handbook and multilingual course now in use in Bosnia and Herzegovina.

In the Federation of BiH, the development of e-services has been decentralized, with cantons (including Herzegovina-Neretva Canton) developing their own solutions—often lacking interoperability (Government of FBiH, 2021). In Republika Srpska, the implementation of e-services has been somewhat more centralized, yet many municipalities still lag in technical infrastructure and human capacities (RS Institute of Statistics, 2022). Brčko District adopted its own digitalization plan but lacks interoperable systems that would enable data exchange with the entity levels (OECD, 2021).

Focus groups and interviews further illustrate the fragmentation and inconsistency of practices. Participants highlighted that digital inclusion remains a privilege rather than a right, disproportionately affecting vulner-

able groups such as older adults, persons with disabilities, rural populations, and low-income families. During the pandemic, some schools improvised with video lessons and audio materials but lacked systemic support. The health sector exhibits significant shortcomings—electronic referrals often do not function, and patients must transfer documentation manually. Elderly individuals and those with chronic conditions remain excluded from digital services.

A key challenge lies in low levels of digital literacy, even among professionals. Focus group participants noted that many educators and social workers lack the necessary skills to use digital tools. At the same time, the digital tools being introduced are often not user-friendly and are poorly adapted for individuals with visual, hearing, or cognitive impairments. Field data also point to institutional inertia, where even motivated individuals face administrative obstacles.

Moreover, digital literacy and internet access projects in rural and vulnerable communities often struggled with sustainability. Lack of funding, unaligned digital literacy curricula, and the absence of a strategy for continuous technical support led to limited reach and low user confidence.

Key reasons for these shortcomings include:

- lack of coordination between different levels of government;
- absence of a comprehensive national digital inclusion strategy;

- lack of legal mandates to guarantee universal access to ICT services;
- limited participation of end-users in planning and evaluating digital policies.

As a result, digital inclusion remains partial, with pronounced disparities in access and quality of digital services across regions. This undermines the fulfillment of

fundamental rights for all citizens, including access to information, education, healthcare, and social services. Focus groups emphasized the need to move from isolated initiatives to systemic changes that include education, legal frameworks, infrastructure investment, and intersectoral collaboration—with the aim of using digital technologies as tools for social equity, rather than instruments of further stratification.



6. KEY CHALLENGES AND AREAS FOR IMPROVEMENT

6.1. Challenges in ensuring digital inclusion

Digital inclusion in Bosnia and Herzegovina faces a number of interrelated challenges, including:

- a complex political-administrative structure and limited institutional capacities, which hinder the establishment of unified standards and coordination of digital policies;
- uneven digital infrastructure across regions, leading to disparities in access and quality of digital services depending on geographic location.

Regarding the development of digital services for citizens:

- Citizens can access administrative digital services through the e-Identity and e-Signature systems, which allow for the issuance and verification of identification documents and online submission of requests for various administrative services (IDDEEA, 2024);
- These services represent a significant step in the digitalization of public administration, offering time and resource savings. However, there is a lack of publicly available data on user satisfaction, accessibility for persons with

disabilities, or linguistic accessibility for minority groups (IdentityWeek, 2024).

In the health sector:

- In Republika Srpska, a digital platform has been developed to monitor patient satisfaction via QR codes after receiving healthcare services, aiming to improve the quality and efficiency of healthcare delivery (World Bank, 2023);
- However, there is no documented data on the accessibility of these systems for persons with disabilities or their availability in minority languages.

In the social protection sector:

- In Sarajevo Canton, an interactive map has been developed to provide information on legislation and services for persons with disabilities and older adults, facilitating access to rights and services (UN Women, 2024);
- However, the map does not include information on accessible technologies such as screen readers, voice commands, or linguistic adaptation for minority groups.

While the digital initiatives mentioned above represent some progress, their development is still not accompanied by comprehensive standardization of accessibility and inclusivity. The lack of systemic adaptations for persons with disabilities and linguistic minorities highlights the need for greater alignment with European standards of digital accessibility and equality.

1. Inconsistent institutional approach to digital inclusion

Bosnia and Herzegovina lacks a unified national strategy for digital inclusion. Instead, different entities, cantons, and the Brčko District implement their own policies and projects. For example, the Federation of BiH pursues initiatives through sectoral ministries and cantonal strategies (e.g., Herzegovina-Neretva Canton has initiatives related to educational ICT tools), while Republika Srpska applies a more centralized but slower model for implementing digital services. Although the Brčko District has launched some initiatives, it often remains isolated in implementation without interoperability with other jurisdictions (OECD, 2021).

2. Digital divide between urban and rural areas

There are significant disparities in access to the internet and digital devices between urban and rural areas. According to the BiH Agency for Statistics (2023), while over 90% of households in urban areas have internet access, the percentage is significantly lower in rural parts of the Federation, eastern RS, and certain areas of Herzegovina-Neretva Canton and the Brčko District. This digital divide limits access to education, healthcare, and administrative services through digital channels.

3. Insufficient digital literacy and skills

A large number of citizens—particularly older adults, persons with disabilities, Roma, and other margin-

alized groups—are not included in digital literacy programs. Although there are local initiatives such as “Generations Online” and teacher training courses under projects like Akelius, these programs are not systematically supported or sustained. In Republika Srpska and most cantons of the Federation of BiH, there is no clearly defined obligation to develop digital skills for all citizens (Government of FBiH, 2021; DigIn, 2023).

4. Lack of Accessible Digital Content

Most digital services and platforms are not adapted for persons with various types of disabilities. Translation services (cultural mediators, assistants), enlarged display options, voice navigation, and content tailored for users with reduced cognitive or motor abilities are lacking. This directly limits the right to access information and services.

5. Insufficient Coordination and Sustainability of Initiatives

Many promising initiatives, such as e-diaries and e-government services, are launched as pilot projects but do not continue due to a lack of inter-institutional coordination and long-term financial support. Successful examples, such as Akelius, demonstrate effectiveness when supported by international partners (e.g., UNICEF), but without domestic integration mechanisms, results remain partial and short-lived. Implementation is limited to the project duration.

6.2. Areas for improvement

Given the multilayered challenges in ensuring digital inclusion, several key areas require systemic improvement to guarantee equal and sustainable access to information technologies for all citizens of Bosnia and Herzegovina:

1. **Development of a National Digital Inclusion Strategy**
The current fragmented approach to digital policy at the entity, cantonal, and district levels hinders synergy and effective implementation. A national digital inclusion framework must be established to define standards, goals, and monitoring methods across sectors such as education, health, public administration, social protection, and culture. This strategy must incorporate principles of universal access, reasonable accommodation (universal design), availability, and accessibility for all citizens, including vulnerable and marginalized groups.
2. **Improving digital infrastructure in rural and underserved areas**
Bridging the digital divide between urban and rural communities requires targeted infrastructure investment. This includes expanding broadband internet coverage, subsidizing equipment for students and users from vulnerable groups, and modernizing local public institutions such as schools, libraries, and health centers. Without universal access, no educational, healthcare, or administrative reform can be truly inclusive.
3. **Systematic development of citizens' digital skills**
Continuous and structured digital literacy programs must be introduced, particularly for older adults, persons with disabilities, women in ru-

ral areas, Roma communities, and unemployed youth. This involves formal and informal training, the establishment of local education centers, and capacity-building for teachers, public officials, and healthcare workers. Digital skills are no longer optional—they encompass the knowledge, abilities, values, and attitudes necessary for digital inclusion as a fundamental tool for social inclusion for all.

4. **Accessibility of digital content and services**
All digital tools and public platforms should be designed according to universal design principles to be accessible to persons with various disabilities. This includes adjustments for people with developmental challenges (such as vision and hearing impairments), as well as content in sign language, audio narration, simplified language, and multilingual formats. Special focus should be placed on e-health, e-education, and e-government.
5. **Strengthening Interinstitutional Coordination and Project Sustainability**
Digital inclusion projects often depend on donor funding and cease operations after the initial implementation phase. Mechanisms for intersectoral coordination must be developed, along with stable public financing, long-term action plans, evaluation mechanisms, and user involvement at all stages of design and implementation to ensure continuous and sustainable impact.



7. POLICY RECOMMENDATIONS

7.1. Recommendations for the general population

Based on the analysis of national and entity-level policies, the following five key recommendations aim to improve digital inclusion, directed at policymakers and civil society organizations. Each recommendation pertains to a relevant sector, education, healthcare, telecommunications, civil society, and public administration, and emphasizes measures that would enhance access to and benefits from digital technologies for all citizens of Bosnia and Herzegovina.

1. Education

It is essential to align educational programs and teacher training with the DigiComp framework and to develop teaching materials and evaluation tools that measure the digital skills of all students, including those with developmental disabilities. This would ensure a balance between the technical and inclusive functions of digital tools (European Commission, 2022). Special emphasis should be placed on integrating assistive technology into teaching and establishing a national standard for digital competencies aligned with the EU DigiComp framework.

2. Healthcare

Rather than fragmented cantonal or entity-level systems, it is recommended to establish a unified, interoperable e-health platform that enables patients to access personal medical data and schedule appointments online, with support for

older adults and persons with disabilities. This approach reduces administrative barriers and enables greater citizen involvement in managing personal health (World Health Organization, 2021). This recommendation includes the development of a unified interoperable e-health platform.

3. Telecommunications

Given the pronounced digital divide between urban and rural areas (BiH Statistics Agency, 2024), a national subsidy or voucher system should be created to provide broadband internet access for households below the poverty line. The program should include social workers and local communities in its distribution and impact monitoring. Introducing a subsidized internet program for socioeconomically vulnerable households would represent a significant shift.

4. Civil Society

Civil society organizations should have a formal role in the development and evaluation of digital policies. It is recommended to establish a National Platform for Digital Inclusion, through which NGOs could propose, test, and monitor inclusive digital interventions in the community. This would enhance the transparency and relevance of policies. Strengthening institutional partnerships between NGOs and public administration would accelerate systemic change at the national level, focusing on reducing the digital divide.

5. Public administration

All e-services provided by public institutions should undergo accessibility testing in line with Web Content Accessibility Guidelines (WCAG). Before launching new digital portals, it must be ensured that they are functional for persons with disabilities, older adults, and users from rural areas. This protects the right to equal access to infor-

mation and services (W3C, 2023). A recommendation to introduce mandatory accessibility testing for all public digital services can be supported by other nationally agreed-upon standards.

7.2. Recommendations for groups at risk of digital exclusion

1. Education and the integration of mandatory digitally inclusive approaches in schools

It is recommended that all educational institutions be legally required to integrate assistive technologies and content tailored to the diverse needs of students, including language support. This includes training for teaching staff, procurement of equipment, and the development of ICT-adapted teaching materials. Access to education must be equal for all children, regardless of disability, socioeconomic status, or minority affiliation (UNICEF BiH, 2022).

2. Healthcare and the establishment of mobile digital health units in remote and marginalized communities

For older adults, persons with disabilities, and residents of remote areas (particularly the eastern parts of RS, parts of HNC, and rural areas of Brčko District), access to e-health services should be provided through mobile teams equipped with digital devices. This would enable direct medical support, registration, and appointment scheduling via platforms, thereby reducing geographical and functional exclusion (based on WHO, 2021).

3. Telecommunications and the development of “social access” tariffs for vulnerable users

In collaboration with regulatory bodies (e.g., RAK BiH), it is recommended to introduce mandatory

“social packages” for mobile and fixed internet services targeting households receiving social assistance, families of children with disabilities, single parents, and pensioners. This measure would significantly contribute to reducing the digital divide and strengthen social inclusion through improved access to information, education, and e-services (based on data from the BiH Statistics Agency, 2023).

4. Civil sector and support for community-based digital inclusion centers

The NGO sector can play a crucial role in overcoming digital illiteracy and social isolation. It is recommended to establish local digital support centers (e.g., in libraries, community centers, rural schools, day-care centers, etc.), particularly in underdeveloped regions. These centers should offer free training, assistance with e-service usage, and access to equipment, with special programs for women, Roma, and persons with disabilities (DiGIn, 2023).

5. Public administration and mandatory user testing of digital policies and services in consultation with vulnerable groups

All digital policies and services should undergo pilot testing with real users from vulnerable categories prior to broader implementation. This ensures that e-services are functional and accessible to all. The legislative framework should require institutions to involve the voices of users—such as older adults, persons with disabilities, and national minorities—in the design and evaluation of digital solutions (W3C, 2023; OECD, 2021).

REFERENCES

Law related references:

Agency for Statistics of Bosnia and Herzegovina. (2016). *Census of Population, Households and Dwellings in Bosnia and Herzegovina 2013 – Final Results* [Popis stanovništva, domaćinstava i stanova u BiH 2013 – konačni rezultati]. Sarajevo.

Agency for Statistics of Bosnia and Herzegovina. (2023). *Labour Force Survey in BiH – Annual Report for 2023* [Anketa o radnoj snazi u BiH – godišnji izvještaj za 2023].

Agency for Statistics of Bosnia and Herzegovina. (2024). *Gross Domestic Product Estimate for 2023 and Average Salary per Employee for January 2024* [Bruto domaći proizvod BiH – procjena za 2023. godinu i Prosječna plata po zaposlenom za januar 2024]. Retrieved from (accessible on 12th of August 2025): <https://bhas.gov.ba>

Agency for Statistics of Bosnia and Herzegovina. (2024). *Use of Information and Communication Technologies in Households and Individually in BiH 2024* [Upotreba informacionih i komunikacionih tehnologija u domaćinstvima i pojedinačno u BiH 2024]. Retrieved from (accessible on 12th of August 2025): https://bhas.gov.ba/data/Publikacije/Bilteni/2025/IKT_00_2024_TB_1_BS.pdf

Assembly of Brčko District BiH. (2023). *Law on the Government of Brčko District BiH (Consolidated Text)* [Zakon o Vladi Brčko distrikta BiH – pročišćeni tekst]. Retrieved from (accessible on 12th of August 2025): Retrieved from: <https://skupstinabd.ba/ba/zakon.html>

Development Agency of Herzegovina (HERAG). (2024). *Public call for participation in the program for building and strengthening digital innovation centers in Bosnia and Herzegovina within the Digitalbiz project*. Retrieved from (accessible on 12th of August 2025): <https://www.herag.ba/novosti/item/561-javni-poziv-za-sudjelovanje-u-programu-izgradnje-i-osnazivanja-digitalnih-inovacijskih-centara-u-bosni-i-hercegovini-u-okviru-projekta-digitalbiz.html>

Federal Institute for Development Programming. (2021). *Development Strategy of the Federation of Bosnia and Herzegovina 2021–2027* [Strategija razvoja Federacije BiH 2021–2027]. Sarajevo.

Federal Institute for Development Programming. (2023). *Establishing Public Digital Infrastructure – Implementation Report* [Utemeljiti javnu digitalnu infrastrukturu – Izvještaj o implementaciji mjere]. Retrieved from (accessible on 12th of August 2025): <https://fzzpr.gov.ba>

- Federal Ministry of Development, Entrepreneurship and Crafts. (2022). *Development Strategy for Small Businesses of the Federation of BiH 2022–2027* [Strategija razvoja malog gospodarstva Federacije BiH 2022–2027]. Sarajevo.
- FMRSP. (2024). *New Accessible Website of the Ministry* [Nova pristupačna web-stranica Ministarstva]. Retrieved from (accessible on 12th of August 2025): <https://fmrsp.gov.ba>
- Government of Brčko District BiH. (2021). *Development Strategy of Brčko District BiH 2021–2027* [Strategija razvoja Brčko distrikta BiH 2021–2027].
- Government of Brčko District BiH. (2023). *Draft Budget of the Brčko District of Bosnia and Herzegovina for 2024*. Brčko: Government of Brčko District BiH.
- Government of the Federation of BiH. (2021). *Digital Transformation Programme of the Federation of Bosnia and Herzegovina* [Program digitalne transformacije Federacije BiH]. Sarajevo: Federal Ministry of Development, Entrepreneurship and Crafts. Retrieved from (accessible on 12th of August 2025): <https://fmrpo.gov.ba>
- Government of Sarajevo Canton. (2024). *Info-Line and Mobile Team for Social Needs Opened* [Otvoren info-telefon i mobilni tim za socijalne potrebe]. Retrieved from (accessible on 12th of August 2025): <https://vlada.ks.gov.ba>
- Government of Tuzla Canton. (2024). *Ministry Informs the Public about Digitalisation Plans in Education* [Ministarstvo upoznalo javnost o planovima digitalizacije u obrazovanju]. Retrieved from (accessible on 12th of August 2025): <https://www.tk.gov.ba/clanak/ministarstvo-upoznalo-javnost-o-planovima-digitalizacije-u-obrazovanju>
- Ministry of Communications and Transport of BiH. (2024). *Digital Europe Programme*.
- Ministry of Education of Sarajevo Canton. (2022). *Media and Information Literacy Development Strategy in Education – Sarajevo Canton* [Strategija razvoja medijske i informacijske pismenosti u obrazovanju u KS]. Retrieved from (accessible on 12th of August 2025): <https://mo.ks.gov.ba/node/17456>
- Republic Institute of Statistics of RS. (2022). *Information Society: Use of ICT in RS* [Informaciono društvo: Upotreba IKT u RS]. Retrieved from (accessible on 12th of August 2025): <https://www.rzs.rs.ba>

Other references:

- Agency for Gender Equality of BiH. (2020). *User Satisfaction Survey* [Istraživanje zadovoljstva korisnika]. Retrieved from (accessible on 13th of August 2025): <https://arsbih.gov.ba>

Association “Stronger Together”. (2022). *Generations Online: Digital Literacy for the Elderly* [Generacije online: Digitalna pismenost za starije osobe]. Sarajevo: UG „Zajedno smo jači“.

BIT Center Tuzla. (2023). *Education and Retraining Programs* [Programi edukacije i prekvalifikacije]. Tuzla: BIT Centar.

Bjelopoljak, Š. (2022). *E-Inclusion* [E – inkluzija]. University textbook. Faculty of Education, University of Bihać and Sarajevo: Center for Educational Initiatives Step by Step.

Bjelopoljak, Š., Dupanović, E., Šumar, E., & Zlatarević, J. (2024). *Assistive Technology: Application of Digital Tools with the Akelius Program in Teaching* [Asistivna tehnologija: Primjena digitalnih alata uz Akelius program u nastavi]. Bihać: Pedagogical Institute of Una-Sana Canton, Ministry of Education, Science, Culture and Sports of USC, Faculty of Education, University of Bihać. ISBN: 978-9926-8917-0-1.

Bussiness-magazine. (2019). Consumers in BiH Demand Greater Security and Trust. Retrieved from (accessible on 13th of August 2025): <https://business-magazine.ba/2019/07/08/potrosaci-bosni-hercegovini-zahtijevaju-vecu-sigurnost-povjerenje-pokazalo-istrazivanje-kompanije-mastercard/>

CARE International. (2024). *Socio-Economic Inclusion Project in Brčko District BiH*. Retrieved from (accessible on 12th of August 2025): <https://care-balkan.org/u-brckom-potpisan-ugovor>

Crna-hronika. (2024). *Low Digital Literacy in BiH: Every Fourth Citizen Has Not Used the Internet for Three Months*. Retrieved from (accessible on 12th of August 2025): <https://crna-hronika.info/niska-digitalna-pismenost-u-bih-svaki-cetvrti-stanovnik-nije-koristio-internet-tri-mjeseca/576899>

Confederation of Independent Trade Unions of BiH. (2023). *Social Indicator on Salary Levels in BiH*. Sarajevo: Confederation of Independent Trade Unions of BiH.

Carceles, J., Kabil S., Skalonja, A. (2023). *Mastering Digital Learning: Lessons for Creating Effective Teacher Training Programs from Bosnia and Herzegovina*. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih>

DataReportal. (2024). *Digital 2024: Bosnia and Herzegovina*. (accessible on 12th of August 2025): <https://datareportal.com/digital-in-bosnia-and-herzegovina>

Decent Work Balkans. (2024). Fact sheet: Bosnia and Herzegovina – Federation of BiH [Economic data]. Retrieved August 13, 2025, from <https://decentworkbalkans.com/facts/bih-federation-fact-sheet>

DigIn Consortium. (2023). *DigIn – Digitization and Inclusive Education* [Erasmus+ project website]. Available at (accessible on 13th of August 2025): <https://www.digin-education.at/bhs>

- DEI (2024). *BiH Joins the Digital Europe Programme*. DEI. Retrieved from (accessible on 13th of August 2025): <https://www.dei.gov.ba/bs/bosna-i-hercegovina-pristupa-programu-digitalna-evropa>
- Directorate for European Integration of BiH. (2022). *Social Inclusion and Poverty Risks – SDG Report for BiH*.
- Đipa, A., & Turulja, L. (2024). *Digital Inclusion and Digital Divide in the Context of Bosnia and Herzegovina*. In *From Digital Divide to Digital Inclusion* (pp. 39–57). Springer. Retrieved from (accessible on 13th of August 2025): https://doi.org/10.1007/978-981-99-7645-4_3
- European External Action Service. (2024). *Bosnia and Herzegovina Joins the Digital Europe Programme*. Retrieved from (accessible on 13th of August 2025): <https://www.eeas.europa.eu/delegations/bosnia-and-herzegovina>
- Employment Service of Sarajevo Canton. (2023). *Public Calls and Active Employment Policy Programs* [Javni pozivi i programi aktivne politike zapošljavanja]. Sarajevo: SZZKS.
- Federal Employment Institute. (2023). *Training for the Labour Market: Programme for 2023* [Obuka za tržište rada: Program za 2023]. Sarajevo: FZZZ.
- Federal Employment Institute. (2023). *Enhancing Digital Skills of the Population, Especially Those Aligned with Labour Market Needs – Implementation Report* [Unapređivati digitalne vještine stanovništva, posebno onih usklađenih sa potrebama tržišta rada – Izveštaj o implementaciji]. Retrieved from (last time accessible on 1st of July, not accessible on 13th of August 2025): <https://fzzpr.gov.ba>
- Fejzagić, M. (2023). *Bosnia and Herzegovina Joins the Digital Europe Programme*. Federalna.ba. Retrieved from (accessible on 13th of August 2025): <https://federalna.ba/bosna-i-hercegovina-pristupila-programu-digitalna-evropa-sr386>
- Government of Sarajevo Canton. (2023). *Establishment of an e-Health Platform in Sarajevo Canton* [Uspostava e-zdravstvene platforme u Sarajevskom kantonu]. Retrieved from (accessible on 13th of August 2025): <https://vlada.ks.gov.ba>
- Government of the Federation of BiH. (2022). *Employment Strategy of the Federation of Bosnia and Herzegovina 2021–2027* [Strategija zapošljavanja Federacije BiH 2021–2027]. Sarajevo.
- Government of Republika Srpska. (2022). *Employment Strategy of Republika Srpska 2021–2027* [Strategija zapošljavanja RS 2021–2027]. Banja Luka.
- Handalić Plahonić, M., Omerović, M., & Kusturica, E. (2023). *Socio-Economic Analysis within the Inclusive Socio-Economic Initiative Brčko* [Socio-ekonomska analiza u okviru projekta Inkluzivna socio-ekonomska inicijativa

Brčko]. SEI Brčko District BiH. Retrieved from (accessible on 13th of August 2025): https://seibrcko.ba/wp-content/uploads/2024/05/SEA_Final-Latinica.pdf

Health Insurance Institute of Tuzla Canton. (2023). *Digitalization of Medical Records*. Retrieved from (accessible on 13th of August 2025): <https://zzotk.ba/digitalizacija-medicinskog-kartona>

IDDEEA. (2024). *Digital Representation* [Digitalno predstavljanje]. Retrieved from (accessible on 13th of August 2025): <https://www.iddeea.gov.ba/hr/digitalno-predstavljanje-2/>

Izetbegović, A., Kudra, A., & Bešić, E. (2023). *Inclusive Digital Education: The Case of Bosnia and Herzegovina*. In K. Bešić et al. (Eds.), *Inklusive Bildung* (pp. 283–293). PHSt. Retrieved from (last time accessible on 1st of July, not accessible on 13th of August 2025): https://doi.org/10.56560/isbn.978-3-7011-0518-2_20284

Jašarević, A. (2024). *Management Perception of the Effects of Digital Transformation on Business* [Percepcija menadžmenta o efektima digitalne transformacije na poslovanje] [Graduation thesis, Faculty of Economics, University of Sarajevo].

Kemp, S. (2025). *Digital 2025: Bosnia and Herzegovina*. (accessible on 13th of August 2025): <https://datareportal.com/reports/digital-2025-bosnia-and-herzegovina>

Klix.ba. (2024, January 15). *BiH Citizens at the Bottom of Europe in Terms of Digital Literacy*. Retrieved from (accessible on 13th of August 2025): <https://www.klix.ba/vijesti/bih/gradjani-bih-na-zacelju-evrope-po-digitalnoj-pismenosti/240115077>

Musa, I., Turčilo, L., & Čurguz, J. (2024). *Media Literacy: A Manual for Acquiring Basic Competencies* [Medijska pismenost: priručnik za sticanje temeljnih kompetencija]. Banja Luka: Agency for Preschool, Primary and Secondary Education.

OECD. (2021). *PISA 2018 Results (Volume V): Effective Policies, Successful Schools*. Paris: OECD Publishing. Retrieved from (accessible on 13th of August 2025): https://www.oecd.org/en/publications/pisa-2018-results-volume-v_ca768d40-en.html

OECD/SIGMA. (2024). *Public administration in Bosnia and Herzegovina 2024* [Report]. OECD Publishing. Retrieved August 13, 2025, from https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/01/public-administration-in-bosnia-and-herzegovina-2024_df5d9924/969426b5-en.pdf

Public Administration Reform Coordinator's Office (PARCO). (2025). *Law on Electronic Signature in BiH* [Zakon o elektronskom potpisu BiH].

- RAK. (2023). *Performance Analysis of Electronic Communication Networks* [Analiza performansi elektronskih komunikacijskih mreža]. Regulatory Agency for Communications. Retrieved from (accessible on 13th of August 2025): <https://rak.ba>
- RAK. (2022). *Electronic Communications Market Report for 2022*. Regulatory Agency for Communications [Izveštaj o tržištu elektronskih komunikacija za 2022. godinu]. Retrieved from (accessible on 13th of August 2025): <https://rak.ba>
- Ražanica, A. H. (2022). *Digital Literacy of the Population in BiH* [Digitalna pismenost stanovnika u BiH]. TIP.ba. . Retrieved from (accessible on 13th of August 2025): <https://tip.ba/2022/06/15/prvo-naucno-istrazivanje-digitalne-pismenosti-stanovnika-u-bih>
- Regional Cooperation Council. (2023). *Balkan Barometer 2023: Public Opinion Survey*. Sarajevo: RCC. . Retrieved from (accessible on 12th of August 2025): <https://www.rcc.int/files/user/docs/43a521a624cf08523a2268a67a7be2ff.pdf>
- Ršumović, N., Jusić, T., & Numanović, A. (2014). *Javne institucije i internet: Politike i prakse u Bosni i Hercegovini* [Policy brief]. Analitika – Centar za društvena istraživanja. Preuzeto 12. augusta 2025. sa <https://www.analitika.ba/publications/public-institutions-and-internet-policies-and-practice-bosnia-and-herzegovina>
- Statista. (2023). *Share of Web Traffic in Bosnia and Herzegovina 2023, by Device*. Retrieved from (accessible on 13th of August 2025): <https://www.statista.com/statistics/1168047/bosnia-and-herzegovina-share-of-web-traffic-by-device/>
- Siljdedić, A., Alibabić, A. (2023). *Akelius Digital Platform: Successful Foreign Language Learning*. Retrieved from (accessible on 13th of August 2025): <https://www.unicef.org/bih>
- Trading Economics / World Bank. (2023). *Bosnia and Herzegovina – Individuals Using the Internet (% of Population)*. Retrieved from (accessible on 13th of August 2025): <https://tradingeconomics.com/bosnia-and-herzegovina/individuals-using-the-internet-percent-of-population-wb-data.html>
- Turulja, L., Alagić, A., & Kacapor, K. (2024). *Digital Literacy of the Population of Bosnia and Herzegovina: Analysis of Digital Skills Indicators* [Digitalna pismenost stanovništva BiH: Analiza indikatora digitalnih vještina]. Sarajevo: Association for Digital Transformation in BiH. Retrieved from (accessible on 13th of August 2025): https://www.udt.ba/wp-content/uploads/2024/01/Studija_Digitalna_Pismenost_Stanovnistva_BiH.pdf
- UNFPA & Agency for Statistics of BiH. (2023). *Demographic Trends and Population Ageing in BiH* [Demografski trendovi i starenje stanovništva u BiH].
- UNDP & FAO BiH. (2021). *Rural Development and Population Distribution in BiH* [Ruralni razvoj i distribucija stanovništva u BiH].

- UNDP. (2023). *The Digital Ecosystem in Bosnia and Herzegovina*. Retrieved from (accessible on 13th of august 2025): <https://www.ba.undp.org>
- UNDP BiH, Ministry of Civil Affairs BiH and Entity Education Ministries. (2021). *Digitalisation of the Education System in BiH: e-Schools Progress Report* [Digitalizacija obrazovnog sistema u BiH: Izveštaj o napretku e-Škole]. UNDP BiH. Retrieved from (accessible on 13th of august 2025): <https://www.ba.undp.org>
- UNDP BiH. (2023). *Digital Transformation in the Public Sector in BiH* [Digitalna transformacija u javnom sektoru u BiH]. Retrieved from (accessible on 13th of august 2025): <https://www.ba.undp.org>
- UNICEF BiH. (2022). *Assistive Technologies Catalogue* [Asistivne tehnologije, katalog]. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih/media/8586/file/Asistivna-pomagala%20Bos.pdf>
- UNICEF BiH. (2022). *Multisectoral Partnerships: Prerequisite and Catalyst for Digital Transformation* [Multisektorska partnerstva: Preduslov i katalizator digitalne transformacije]. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih>
- UNICEF BiH. (2024). *Advisory Board for the Digital Transformation of Education* [Savjetodavni odbor za digitalnu transformaciju obrazovanja]. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih>
- UNICEF BiH. (2022). *Social Inclusion Strategies in BiH* [Strategije socijalnog uključivanja u BiH]. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih>
- UNICEF. (2021). *Social Inclusion Strategy of Brčko District BiH 2021–2027* [Strategija socijalnog uključivanja Brčko distrikta BiH 2021–2027]. Sarajevo: UNICEF. Retrieved from (accessible on 13th of august 2025): <https://www.unicef.org/bih>
- United Nations Bosnia and Herzegovina. (2021). *Framework for Achieving the Sustainable Development Goals in BiH*. UN BiH.
- United Nations. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*. New York: United Nations.
- Vuorikari, R., Kluzer, S., Punie, Y. (2022). *DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes*. Publications Office of the European Union, Luxembourg.
- Vajzović, E., Hibert, M., Turčilo, L., Vučetić, V., & Silajdžić, L. (2021). *Media and Information Literacy: Designing Learning for the Digital Age* [Medijska i informacijska pismenost: dizajn učenja za digitalno doba]. Sarajevo: Faculty of Political Science, University of Sarajevo.

W3C – World Wide Web Consortium. (2023). *Web Content Accessibility Guidelines (WCAG)*. Retrieved from (accessible on 13th of august 2025): <https://www.w3.org/WAI/standards-guidelines/wcag/>

World Health Organization. (2021). *Global Strategy on Digital Health 2020–2025*. Retrieved from (accessible on 13th of august 2025): <https://www.who.int>



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