

ENTREPRENEURSHIP AS A SKILL FOR THE FUTURE: CHALLENGES AND OPPORTUNITIES IN BOSNIA AND HERZEGOVINA

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ABSTRACT

The European Union, through the Union of Skills initiative, seeks to strengthen the quality of education, training and lifelong learning. This study analyses relevant policies and challenges in Bosnia and Herzegovina, with a particular emphasis on the mismatch between the education system and the labour market, gender inequalities in STEM fields, and the importance of entrepreneurship as a key competence for the future. Based on an analysis of available data and examples of good practice, the paper provides recommendations for improving education policies, developing skills and promoting innovation, with a particular focus on the inclusion of young people and women.

KEYWORDS: entrepreneurship, education, lifelong learning, social innovation

PREDUZETNIŠTVO KAO VJEŠTINA BUDUĆNOSTI: IZAZOVI I PRILIKE U BOSNI I HERCEGOVINI

SAŽETAK

Evropska unija, kroz inicijativu Unija vještina, nastoji da unaprijedi kvalitet obrazovanja, obuke i cjeloživotnog učenja. Ova studija analizira relevantne politike i izazove u Bosni i Hercegovini, sa posebnim naglaskom na nesklad između obrazovnog sistema i tržišta rada, rodne nejednakosti u STEM oblastima, kao i značaj preduzetništva kao ključne kompetencije za budućnost. Na osnovu analize dostupnih podataka i primjera dobre prakse, rad daje preporuke za unapređenje obrazovnih politika, razvoj vještina i promociju inovacija, sa posebnim fokusom na uključivanje mladih i žena.

KLJUČNE RIJEČI: preduzetništvo, obrazovanje, cjeloživotno učenje, društvene inovacije

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INTRODUCTION

Skills are a fundamental resource of every society and a key factor in competitiveness, innovation and sustainable development. In a modern world, marked by rapid digital transformation, green transition and growing social and economic challenges, the issue of developing and improving skills is becoming central to all policies of the European Union (EU). In 2020, the European Commission launched the The European Skills Agenda,⁴ and in 2023, the Union of Skills initiative,⁵ which aims to build a strong European area of knowledge, education and competences. This framework recognises the need for continuous improvement, promoting lifelong learning and training people for the labour market of the future, with an emphasis on digital skills, STEM fields and entrepreneurship.

Bosnia and Herzegovina, as a country aspiring to European integration, faces numerous challenges in the field of human resources development. The youth unemployment rate is 35.1%, which is one of the highest rates in Europe (Novaković et al., 2025), and the education system is often assessed as outdated and not aligned with the modern needs of the labor market. The lack of practical skills, weak connections between universities and the private sector, and the lack of interest in STEM fields further complicate the country's economic transition to a knowledge society.

In this context, the European Union, through the Union of Skills, offers a strategic framework that can serve as a support and roadmap for reforms in Bosnia and Herzegovina. The issues of lifelong learning, micro-credentials, the development of digital and green skills, the promotion of entrepreneurship, and increased labor mobility are particularly important for countries in transition that want to reduce the gap between the education system and economic needs. At the same time, global forums, such as the World Economic Forum⁶, warn that neglecting women's skills in STEM fields will continue to limit innovation and economic growth. This confirms that the topic is not only an educational-economic issue, but also a social one.

The introduction of systemic measures for skills development in Bosnia and Herzegovina implies a combination of educational policy reforms, strengthening institutional capacities and active involvement of the private sector. Special emphasis must be placed on entrepreneurship, which the EU recognizes as one of the eight key competences for the 21st century. Entrepreneurship should not be viewed solely as an individual aptitude or talent, but as a set of knowledge and skills that can be learned, developed and improved (Novaković et al., 2025). This opens up space for strengthening innovation, self-employment and social innovation, which is particularly important in a country where a large number of young and highly educated people leave the labor market due to a lack of opportunities (Novakovic, 2021), (Novaković et al., 2020).

Starting from the European context and the specific challenges of Bosnia and Herzegovina, this paper aims to provide an analysis of key obstacles to skills development, present examples of good practice and offer recommendations for improving educational and development policies. Special emphasis is placed on the gender dimension and the need to strengthen the role of women in STEM and entrepreneurship, (Bobrek, Novakovic, 2023),

4 https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/european-skills-agenda_en

5 https://commission.europa.eu/topics/eu-competitiveness/union-skills_en

6 <https://www.weforum.org/stories/2025/01/why-it-s-time-to-use-reskilling-to-unlock-women-s-stem-potential/>

(Bobrek, Novakovic, 2025) as well as on recognizing entrepreneurship as a competence that can significantly contribute to the economic growth and social development of the country.

LITERATURE REVIEW

The issue of skills development occupies a central place in European and global education and employment policies. Over the past decade, the European Union has adopted a series of strategic documents that emphasize lifelong learning, improving digital competences and equipping citizens for the green and digital transition. A key document in this context is the European Skills Agenda⁷, which in 2020 defined the direction of development of education policies and employment measures in the Member States and candidate countries. This initiative is followed by the concept of the Union of Skills, which emphasizes that modern education systems must be based on flexible approaches to learning, student and workforce mobility, and continuous improvement of skills through micro-credentials and digital tools.⁸ A significant part of European policies relates to the promotion of STEM fields (science, technology, engineering and mathematics). The European Commission, through the STEM Education Strategic Plan⁹, insists on increasing young people's interest in scientific disciplines, involving more women in these fields and preparing human capital for the digital and clean industrial transition. Despite these efforts, research shows that women globally make up only 28% of the STEM workforce, while their share in artificial intelligence fields is only 22% (World Economic Forum, 2025). These data confirm that gender inequality remains one of the greatest obstacles to fully exploiting the potential of human resources (Bobrek, Novakovic, 2025).

In the context of the Western Balkans, the Regional Cooperation Council (RCC)¹⁰ points out that science, technology and innovation policies in the countries of the region, including Bosnia and Herzegovina, remain largely "gender-blind". Documents are often created without gender analysis, and measures to promote equality are rarely integrated into development strategies. This misses the opportunity to adequately valorize existing human capital – especially in terms of the significant share of women in mathematics and technical disciplines – in the labor market. There is also evidence of the existence of a "glass ceiling", i.e. limited opportunities for women in leadership positions in academic and research institutions, which further deepens the gap between potential and actual use of knowledge. Entrepreneurship is considered in the literature as a key competence for the 21st century. The European Framework of Key Competences for Lifelong Learning¹¹ defines entrepreneurship as one of the eight fundamental skills that citizens need for personal development, employability and active citizenship. It encompasses not only the ability to start a business venture, but also the development of creativity, innovative thinking, decision-making and taking responsibility.

Research conducted in Bosnia and Herzegovina (Novaković et al., 2025) shows that 79% of respondents believe that entrepreneurship can be learned, while more than half

7 https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/european-skills-agenda_en

8 https://commission.europa.eu/topics/eu-competitiveness/union-skills_en

9 <https://education.ec.europa.eu/focus-topics/stem>

10 <https://www.rcc.int/pubs/107/mapping-of-gender-related-policies-programmes-and-mechanisms-on-gender-disparity-in-stem-in-western-balkans>

11 <https://op.europa.eu/en/publication-detail/-/publication/297a33c8-a1f3-11e9-9d01-01aa75ed71a1/language-en>

believe that the education system has not sufficiently prepared young people for business challenges. These findings confirm the thesis that entrepreneurship should not be viewed as an innate talent, but as a set of knowledge and skills that can be developed through formal, non-formal and informal learning.

Research on women's entrepreneurship occupies a special place in the literature. Research papers (Novaković, V., & Bobrek Macanović, K, 2020), (Bobrek, Novakovic, 2023), (Bobrek & Novakovic, 2024) indicate the existence of numerous obstacles that women face when starting their own business - from the lack of institutional support, to difficulties in balancing private and professional life, to traditional attitudes about the role of women in society. At the same time, international organizations such as UNDP are implementing programs to support women in STEM and entrepreneurship, thereby trying to create a sustainable ecosystem for gender equality and innovation. Projects such as Economic Governance for Growth (EGG)¹² represent an example of good practice, as they combine the promotion of digital competences, entrepreneurship and practical skills among young people.

A review of the literature clearly shows that skills - especially digital, STEM and entrepreneurial - are not only an economic, but also a social category. Their development requires coordinated measures that connect educational institutions, the private sector and decision-makers. The role of women and youth is essential, because without their full inclusion, sustainable socio-economic development cannot be achieved. Therefore, research and policies indicate that Bosnia and Herzegovina, through alignment with European initiatives such as the Union of Skills, has a chance to overcome existing challenges and use its human potential as a key development force.

ANALYSIS OF CHALLENGES IN BOSNIA AND HERZEGOVINA

Skills development in Bosnia and Herzegovina faces numerous structural, institutional and social obstacles. These challenges can be viewed through four interrelated dimensions: economic challenges, challenges of the education system, gender inequalities and obstacles to entrepreneurship development. An analysis of each of these dimensions indicates a deep mismatch between human potential and the real needs of the labor market and society. Bosnia and Herzegovina is among the countries with the highest youth unemployment rates in Europe – as much as 35.1% according to data presented in 2024 (Novaković et al., 2025). This data testifies to a deep structural mismatch of the labor market, but also to the inability of the economic system to create enough quality jobs. In addition to generating social problems, youth unemployment also affects the departure of young people from the country, which further weakens economic potential. The phenomenon of “brain drain” is particularly pronounced in BiH, as a significant number of highly educated people decide to valorize their knowledge and skills in more developed EU economies.

The BiH economy is additionally faced with the challenges of the transition towards sustainable and digital industries. The lack of a skilled workforce in the fields of information technology, green economy and engineering represents a serious obstacle to attracting foreign investment and increasing the competitiveness of domestic companies. Employers increasingly complain that candidates, although formally educated, do not have enough practical and technical skills needed for modern jobs. One of the most significant problems

¹² <https://www.undp.org/bosnia-herzegovina/stories/empowering-next-generation-steminists-bosnia-and-herzegovina>

in BiH is the obsolescence of curricula, which do not keep up with dynamic changes in the labor market. Although formal education produces a large number of graduates, the structure of qualifications is significantly out of sync with the needs of the economy (Novaković et al., 2024). While there is a surplus of graduates in social sciences and humanities, there is an evident shortage of experts in STEM fields and technical professions. In addition, the education system in BiH is characterized by fragmentation - due to the complex constitutional order (Novaković et al., 2024) and the existence of multiple educational levels, it is difficult to ensure a unified approach to reforms. The weak connection between universities and the private sector further complicates the situation, as students rarely have the opportunity to gain practical experience during their studies. The lack of development of internship programs, mentoring schemes and cooperation with industry leads to young graduates entering the labor market without the skills that employers need most.

In addition, the education system does not sufficiently encourage the development of an entrepreneurial spirit and innovation. Although entrepreneurship is among the eight key competences recommended by the EU, in practice it is not sufficiently represented in the curricula of primary and secondary schools, and in universities it is mainly treated as an elective subject (Novaković, 2012). This misses the opportunity for young people to develop creativity, proactivity and a willingness to take risks from an early age.

Although women in BiH make up a significant share of the education and research sector, their position on the labor market is marked by numerous inequalities. Data show that every fourth female student in BiH studies technology, and every third studies engineering, while in mathematics women even outperform men. However, this positive statistic is not reflected in employment and management positions. In practice, there is still a pronounced "glass ceiling", i.e. limited opportunities for women to advance in research institutions, management and business. In addition, social norms and traditional understandings often shape women's professional decisions. Research shows that many women, although educated in STEM fields, choose "safer" professions in the public sector, where salaries are lower but jobs are more stable. In this way, the potential of women as carriers of innovation and entrepreneurship is lost. Instead, the promotion of women in science and entrepreneurship is mainly led by international organizations and non-governmental institutions, while the state lags behind in creating sustainable policies.

EXAMPLES OF GOOD PRACTICE

The entrepreneurial ecosystem in BiH is still developing. The lack of business incubators, mentoring programs and access to finance prevents many young people from turning their ideas into sustainable business models. While there are individual initiatives such as the Academy for Young Entrepreneurs or the INOVA program for sustainable employment, they are not widespread or institutionalized enough to have a wider social impact. Furthermore, the education system does not sufficiently encourage entrepreneurial competences, and the social context often discourages entrepreneurship due to risks, bureaucratic obstacles, and an unstable business environment. This further discourages young people, especially women, from engaging in entrepreneurial ventures.

Although Bosnia and Herzegovina faces numerous challenges in skills development, there are examples of good practice that point to opportunities and potential for improv-

ing education, entrepreneurship and gender equality in STEM fields. These examples show that cooperation between international organizations, state institutions, educational institutions and the private sector can result in significant progress, even in a complex socio-economic context.

*UNDP and the Economic Governance for Growth (EGG) project*¹³

One of the most prominent examples of good practice is the support that UNDP provides in BiH through the Economic Governance for Growth (EGG) project. This project aims to strengthen economic governance, improve the business environment and create new employment opportunities. Special attention is paid to the digitalization of education and the development of skills in STEM fields, with an emphasis on the inclusion of women and youth. The project has enabled an increase in the availability of digital educational resources, the empowerment of teachers and curricula, as well as the creation of an enabling environment for innovation and entrepreneurship. In this way, EGG contributes not only to raising the capacities of young people for the labor market, but also to strengthening their motivation to enter entrepreneurial ventures. The EGG project also developed the Academy for Young Entrepreneurs, as an innovative model of education and training of young people for the labor market of the future. The Academy offers young people a set of practical knowledge and skills needed to start and manage business ventures, but also to develop leadership competencies. The program focuses on improving key entrepreneurial skills: decision-making, creativity, project management, teamwork and communication skills. In addition to formal lectures, the Academy includes workshops, mentoring support and direct contact with successful entrepreneurs, which allows young people to learn based on real experiences and challenges from practice. This program shows that entrepreneurship can indeed be learned and developed through a systematic approach.

*INOVA – Initiative for Sustainable Employment*¹⁴

Another significant example is the INOVA initiative for sustainable employment, implemented by the Public Institution Employment Service of the Republic of Srpska – Banja Luka Branch. The goal of the initiative is to establish an innovative and sustainable model of cooperation between labor market institutions, educational institutions, social protection, specialized organizations and experts. INOVA seeks to increase the employment opportunities of the unemployed through the development of local partnerships and the matching of labor market needs with the competencies of program participants. This model shows that the synergy of different actors can bring concrete results, as the unemployed are given the opportunity to gain practical knowledge and connect with employers, while employers receive better trained candidates.

Examples such as EGG, the Academy and INOVA show that international support, combined with local initiatives, can significantly improve skills development. While international organizations bring in expertise, funding and global standards, local actors ensure that programs are adapted to the specific needs of BiH society.

These practices also point to the importance of integrating a gender perspective into education and development programs. Promoting women in STEM and entrepreneurship

¹³ <https://www.undp.org/bosnia-herzegovina/stories/empowering-next-generation-steminists-bosnia-and-herzegovina>

¹⁴ <https://inova-posao.ba/>

through targeted activities contributes to greater equality, but also to strengthening the overall innovation capacity of the country.

DISCUSSION

The analysis of challenges and examples of good practice shows that Bosnia and Herzegovina possesses significant human capital, but that the lack of a systemic approach and fragmentation of policies hinder its full exploitation. High youth unemployment, weak links between education and the labor market, gender inequalities in STEM fields and insufficient institutional support for entrepreneurship create a vicious circle in which the potential of young people and women is not sufficiently used. At the same time, individual initiatives by international organizations and local partners show that there are real opportunities for progress, but they require coordination, expansion and integration into national development strategies.

One of the key problems in BiH is the lack of a long-term vision and strategic planning in the field of education and skills. We can highlight some of the recommendations:

- **Reform of the education system and curriculum**
- Align curricula with labor market needs, especially in the areas of digital and green skills.
- Introduce mandatory entrepreneurship and innovation content in primary and secondary schools, as well as more strongly integrated subjects in higher education.
- Develop flexible forms of learning, such as micro-credentials, to enable young people and employees to quickly acquire new competencies.
- **Connecting education and the private sector**
- Establish systemic programs of professional internships, mentoring and business incubators in cooperation with companies.
- Increase the role of the economy in shaping education policies, through partnerships between universities and employers.
- **Gender equality in STEM and entrepreneurship**
- Develop gender-sensitive policies in the field of science, technology and innovation, including measures to reduce the “glass ceiling”.
- Provide targeted support to women in STEM and entrepreneurship through grants, mentoring support and flexible work models.
- Promote successful examples of women entrepreneurs and researchers as inspiration for new generations.
- **Development of the entrepreneurial ecosystem**
- Strengthen the capacities of local initiatives such as the Academy for Young Entrepreneurs and the INOVA program, and institutionalize them through public policies.
- Ensure easier access to finance for young and women entrepreneurs, including start-up funds and soft loans.
- Develop a national program to promote social entrepreneurship, which can simultaneously address economic and social challenges.

CONCLUSION

The analysis of skills development in Bosnia and Herzegovina points to the complexity of the challenges facing society, but also to the existence of significant opportunities that can be exploited with an adequate strategic approach. Through an overview of the European framework of the Union of Skills, insight into the state of the education system and labor market in BiH, the gender perspective in STEM fields and the importance of entrepreneurship as a key competence, it is clearly shown that the future of the country depends on the way human capital is developed and used. The first key finding relates to the economic context. High youth unemployment, pronounced emigration of educated personnel and the lack of experts in digital and technical fields pose a serious threat to the long-term sustainability of the economy. These problems cannot be solved in isolation, but require a systemic integration of educational reforms, economic policies and employment measures. The second finding relates to the education system. Outdated curricula, fragmentation of educational policies and the lack of practical skills among students clearly demonstrate the need for thorough modernization. Education should not be just a process of obtaining a diploma, but a process that provides young people with the competences needed for life and work in the 21st century. This includes digital skills, problem-solving skills, an entrepreneurial spirit and the flexibility for lifelong learning.

The third finding concerns the gender dimension. Although women in BiH record significant participation in the education system, especially in mathematics and technical sciences, their potential remains underutilized in the labor market. The “glass ceiling” in research institutions and business, as well as the lack of gender-sensitive policies in scientific and technological development, limit women’s full contribution to innovation and entrepreneurship. Without stronger inclusion of women in STEM and leadership positions, Bosnia and Herzegovina will not be able to fully utilize the available human capital. The fourth finding concerns entrepreneurship. Research shows that the majority of citizens believe that entrepreneurship can be learned, but at the same time they emphasize that the education system and institutional support are not sufficiently developed. Young people and women often do not have access to finance, mentoring and business networks, which reduces their chances of successfully launching and developing their own initiatives. Nevertheless, examples of good practice, such as the Academy for Young Entrepreneurs or the INOVA initiative, prove that it is possible to create sustainable support models that have long-term effects. The EU framework provides not only guidelines, but also opportunities for financial and technical support, through mobility programs, micro-credentials, skills academies and strategic partnerships. It is crucial that BiH builds institutional capacities to implement these instruments in its own development system.

The conclusion of this analysis is that skills are not a static category, but a dynamic process that requires continuous investment, coordination and adaptation to changes. Bosnia and Herzegovina has the resources – young, educated people, the presence of women in education, examples of good practice and access to European policies – but only through the synergy of all actors can these resources become a driving force.

It is particularly important to emphasize that entrepreneurship is not only an economic tool, but also a social phenomenon that contributes to innovation, self-employment, community development and social cohesion. Therefore, the future of Bosnia and Herzegovina

depends on the ability to make the education system inclusive, modern and connected to the economy, to make gender equality an integral part of science and technology policies and to make entrepreneurship a key competence. Only in this way can a knowledge and innovation society be created that will be strong enough to respond to global challenges, retain young people in the country and ensure sustainable socio-economic development.

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