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Digital Literacy in times of the COVID-19 in the Eastern Partnership Countries

EaP CSF COVID-19 POLICY PAPER

#PrepareEaP4Health

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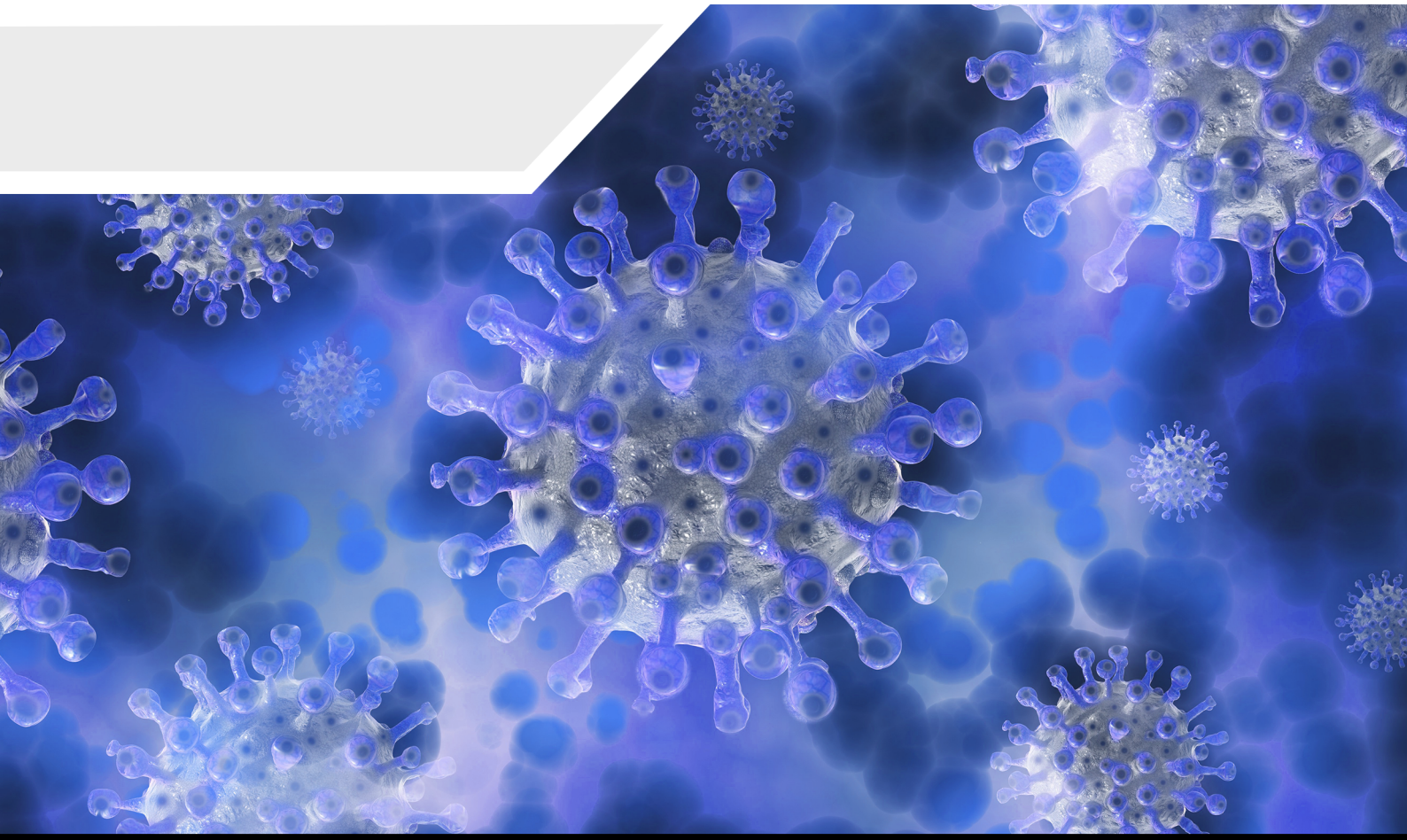

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List of Abbreviations

CCTV	Closed-circuit television
CERT	Computer Emergency Response Teams
CERT	Computer Emergency Response Team
CRRC	Caucasus Research Resource Center
DCFTAs	Deep and Comprehensive Free Trade Areas
DESI	Digital Economy and Society Index
DSM	Digital Single Market
EaP	Eastern Partnership countries: Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine
EC3	Europol's European Cybercrime Centre
EEAS	European External Action Service
ENIS	EU Agency for Cybersecurity
Hybrid CoE	the European Centre of Excellence for Countering Hybrid Threats
ICT	Information Communications Technologies
IFCN	International Fact-Checking Network
ILO	International Labour Organisation
ITU	International Telecommunications Union
NIS	Network and Information Security Directive of the EU
RSF	Reporters Without Borders
STEM	Science, technology, engineering and mathematics
UNDP	United Nations Development Programme
UNICEF	United Nations Children Funds

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Digital Literacy in times of the Covid-19 in the Eastern Partnership Countries

Executive summary

This policy paper examines the extensiveness of digital literacy across the EaP states, assesses the progress achieved to meet 2020 Targets on digital skills and evaluates media space and the spread of disinformation across the region. To outline the lessons learnt in times of the pandemic, the study reviews the good and bad practices of the EaP states on countering the effects of the COVID-19 and draws parallels with the world's best practices, including the ones of NATO, the Baltic states and other digitally advanced countries, such as South Korea and Taiwan. The analysis leads to actionable policy recommendations to the EaP governments and the EU.

1 Introduction

The outbreak of the COVID-19 proved to be challenging for both the EU and its Eastern neighbours (Eastern Partnership countries (EaP): Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine). After imposing several nation-wide lockdowns, digital literacy turned out to be the key for continuing activities online. Up to date, in the EU as well as in the EaP countries, teleworking remains the norm, teaching and learning continues remotely and a number of services, including the medical advice are available online. Yet, taking advantage of such digital opportunities requires a widespread digital literacy. However, this is not yet the case in the EaP region due to underdeveloped internet infrastructure and the lack of access to basic Information Communications Technologies (ICT).

This policy paper examines the prevalence of digital literacy across the EaP states, assesses the progress achieved to meet 2020 Targets on digital skills and evaluates media space and the spread of disinformation across the region. To outline the lessons learnt in times of the pandemic, the study reviews the good and bad practices of the EaP states on countering the effects of the COVID-19 and draws parallels with the world's best practices, including the ones of NATO, the Baltic states and other digitally advanced countries, such as South Korea and Taiwan. The analysis leads to actionable policy recommendations addressed to the EaP governments and the EU.

The study was conducted based on desk research, statistical analysis, seven semi-structured interviews with a number of stakeholders[1] and consultations with the representatives of the Eastern Partnership Civil Society Forum.[2] The major limitations for the analysis were the lack of comparable and up-to-date statistics on number of digital indicators, including digital skills, internet penetration and access to computers. Whenever possible, the data limitations were addressed by reviewing dedicated reports from international organisations, such as the Word Bank, the United Nations Development Programme (UNDP), the United Nations Children Funds (UNICEF), the International Labour Organisation (ILO), International

[1] The representatives of the Ministry of Foreign Affairs and Communications Commission of Georgia, fact-check platforms from Armenia, Ukraine and Azerbaijan, and two school teachers from Ukraine and Georgia were interviewed.
[2] The representatives of the Eastern Partnership Civil Society Forum were consulted at the meeting of the Working Group 4 on "Contacts between People" taking place during the Annual Assembly of the EaP CSF on December 9, 2020.

Telecommunications Union (ITU), and Caucasus Research Resource Center (CRRC). Other limitations stem from the fast-changing effects and implications of the spread of the pandemic and governments responses to them, which limits the possibility to draw robust conclusions on the long-run effects of the virus as well as the policy interventions. Finally, digital literacy involves and affects many adjacent areas, such as educational and employment policies, digital transformation of enterprises and households, media literacy and eGovernance, which could not be covered by an in-depth analysis given the focus and the nature of the paper.

The paper is organised as follows: the next section assesses the progress achieved on 2020 Deliverables covering digital skills; section 3 evaluates media space in the EaP region followed by the review of fake narratives and strategies to tackle disinformation in section 4; section 5 examines digital skills in the EaP states followed by the summary of the good and bad practices in section 6. Finally, section 7 concludes and section 8 provides policy recommendations.

2 Implementation of Deliverables 2020 on digital skills

In 2016, the EU and its EaP partners agreed on "20 Deliverables for 2020." The set of deliverables grouped in four areas, such as stronger economy, stronger governance, stronger connectivity and stronger society, acted as a work plan for the EaP countries to reach concrete results by 2020. The importance of digital skills was outlined in the Deliverable #7 on harmonising digital markets across the EaP and with the EU, the Deliverable #18 on investing in young people's skills, entrepreneurship and employability and in the Deliverable #12 on strengthening cybersecurity.

2.1 Connectivity

2.1.1 EaPConnect

Already straight after the launch of the EU's Digital Single Market (DSM) back in 2015, the EaP Summit in Riga underlined the role of digital transformation (Joint Declaration of the EaP Summit, 2015) and a month later the first EaP ministerial meeting on the Digital Economy took place in Luxembourg (EC, 2015). The same year, with a budget of €13 mln, the EU has launched the first EaP-wide project on the digital cooperation - EaPConnect. The project aimed to help researchers, students and academics from the EaP countries to connect with their EU counterparts via the pan-European network GÉANT.

After five-year cooperation the results are impressive. According to the statistics provided by the EU4Digital, around 800,000 students, teachers, researchers and staff of universities and research centres can now access networks and services of the EaPConnect partners. Education roaming Wi-Fi service (the eduroam) is now available throughout the education institutions across the whole region, connecting around 275 locations in the EaP countries. Around 126 EaP organisations use cloud services for various purposes, including the access and storage of data as well as for predictions and forecasts based on data stored in the cloud. The connectivity has increased significantly: around 10-fold increase is registered in Azerbaijan, Belarus, Georgia, Moldova and Ukraine and around 7-fold in Armenia. In addition, the costs of being connected, i.e., internet connectivity price has dropped importantly: by around 60% in Belarus and Ukraine and by 70% in Armenia, Azerbaijan and Georgia.

With the budget of €10 million, the EaPConnect will continue with its second phase for 2020-25. The project will now focus on extending network infrastructure within the EaP and beyond

by developing links with other European infrastructures and initiatives. The new priorities also refer to broadening user base and fostering the sustainability of the networks. These new focus areas build aptly on the achievements of the first phase of EaPConnect as they imply reaping the benefits of the connectivity in the region.

2.1.2 EU4Digital

Given the importance of digital transformation, in 2019, EU has launched a new three-year programme, EU4Digital. With a budget of €11 million, this umbrella initiative aims at extending the benefits of the DSM to the EaP region. The programme supports setting up necessary legislative and regulatory frameworks in the six areas: telecom networks, trust and security network, eTrade, ICT innovation network, eHealth and eSkills.[3] The latter covers developing digital skills strategies and putting forward eCompetence framework for SMEs in the EaP countries.

In line with these priority areas, EU4Digital addressed the absence of the common digital skills measurement approach across the region. So far digital skills constitute a part of the main policy objectives and programmes of the EaP countries. However digital skills measurement policies differ drastically across the EaP partners and not aligned with the EU practices. As pointed out by the report of EU4Digital (EU4Digital, 2019), the measurements range from just a few to nearly all benchmarked ICT indicators. For instance, Belarus, Georgian and Ukraine provide more than 50% of the benchmark indicators while Armenia and Moldova cover less than 30%. Indicators on the use of ICT in education and use of internet services are measured the most, while indicators on the integration of digital technologies are measured the least. Consequently, there is no common approach to the collection, measurement and publication of the indicators on digital skills.

To tackle the issue, EU4Digital prepared a study on the gaps in the digital skills measurement and forecasting approaches in the EaP states and put forward recommendations on how to bridge these gaps (EU4Digital, 2020). In addition, the platform ran a survey and discussions with the EaP states to pick the most preferred methodological approach by the engaged parties. The results indicated that the EaP countries prefer to adopt the methodological approach used in the EU's Digital Economy and Society Index (DESI). The adoption of this methodology will lay a strong foundation for the inclusion of the EaP states in DESI, which is an effective statistical tool to measure digital transformation across Europe.

Developing a common Competence Framework for SMEs and microbusiness is currently a work in progress. There are drafts developed and finalised on the methodologies and guidelines on establishing the common language for digital skills and competencies, learning paths and needs as well as job roles across the EaP countries (EU4Digital, 2020).

The delay in meeting 2020 Targets is recorded in developing and implementing Digital Skills and Jobs Coalitions. These Coalitions offer a multi-stakeholder partnership which can improve digital skills by promoting cooperation among public and private actors and business and education providers. Despite its importance, the implementation of this deliverable is

[3] This includes strengthening the independence of national telecom regulators, harmonising spectrum allocation and roaming pricing, development of broadband, digital innovation and interoperable eHealth services, improving digital skills, piloting cross-border e-Signatures and promoting electronic trade and Digital Transport Corridors. https://eufordigital.eu/discover-eu/the-eu4digital-initiative/.

behind the schedule.[4] For the time being only Ukraine and Armenia have established such coalitions. To accelerate progress in this area, EU4Digital has put forward Guidelines on establishing National Coalitions. The Guidelines were published in May 2020 and cover the key steps, activities and principles for setting up and managing Digital Skills and Jobs Coalitions in the EaP countries (EU4Digital, 2020).

Overall, the EaP as a forum proved to be very useful for the EaP states to achieve these deliverables. While working on the progress of 2020 Targets, EaP partners on the one hand, deepened intra-regional cooperation, and on the other hand, advanced their EU integration. EaPConnect delivered solid results in terms of improving connectivity and establishing strong networks among the educational and research institutions in the EaP and the EU countries. Assessing the progress achieved within EU4Digital is a bit early as this umbrella initiative has been running for only two years, out of which one coincided with the outbreak of the pandemic. This could partly explain the delays in a number of 2020 Targets on digital skills. But, overall, deliverables on e-skills, proved to be too ambitious for the EaP countries as most of them are still work in progress.

2.2 Mobility, trainings and youth

The EaP countries benefited from Erasmus+ which provided a number of opportunities to the citizens of the EaP countries to participate in mobility programmes for formal and non-formal education. According to the report on monitoring 2020 Deliverables (EC, 2020), academic exchanges were used by 32,000 students and academic staff since 2016. Around 46,000 young people participated in other types of exchange programmes including volunteering and around 500 graduate students received Erasmus Mundus scholarship. eTwinning+ managed to connect approximately 3,000 schools and 7,600 teachers from the EaP states. The EaP countries also participate in structural dialogue through the Torino process on Vocational Education reforms. The dialogue is an important tool for the EaP states to put forward needed policies to improve the quality of vocational education.

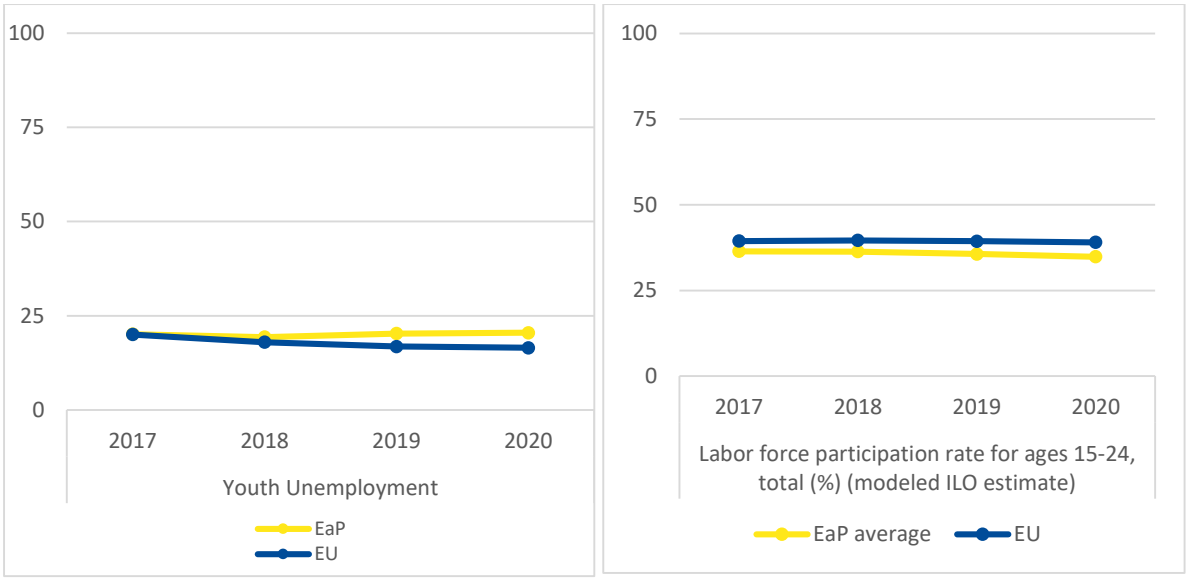
The same report outlines that the EU4Youth provided funding for 100 projects which connected around 265 organisations from the EaP region and improved civic engagement and entrepreneurship among youth. EU4Youth also supported six large-scale projects on youth employment, employability and transition to work which benefited around 23,000 young people in the EaP.

Despite the implementation of these targeted programmes for youth, the data reveal that youth unemployment did not show declining trends in the EaP region and has remained virtually the same since 2017. Although in some countries, Azerbaijan, Belarus and Georgia, unemployment among youth has increased slightly.

Figure 1 Youth unemployment (%)

Figure 2 Youth labour force participation (%)

[4] This was also confirmed in the semi-structured interviews with the representative of the Ministry of Foreign Affairs of Georgia.



Source: own visualisation based on the ILO estimates subtracted from the World Bank, 2020, https://datatopics.worldbank.org/world-development-indicators/.

In Armenia youth unemployment decreased by 4% points in 2017-2020, however it is still the highest across the whole region and by 2020 on average every third (34%) young person from the labour force was unemployed. The second highest unemployment rate is recorded in Georgia (31%), where similar to Armenia one in three young persons is unemployed. It is also worrisome that unlike Armenia, Georgia has increasing trends in the youth unemployment. The lowest rate of youth unemployment is observed in Belarus where only every tenth youngster is unemployed.

Table 1 Youth unemployment and labour force participation (%)

	Unemployment (%)				Unemployment female (%)				Unemployment male (%)				Labour force participation (%)			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
Armenia	38	38	35	34	44	45	42	41	33	33	31	29	36	35	35	35
Azerbaijan	13	13	15	16	16	15	16	17	11	11	13	14	42	44	43	42
Belarus	9	11	10	10	7	8	8	8	11	13	12	11	48	47	45	43
Georgia	29	29	30	31	34	34	34	35	27	26	29	30	39	39	39	39
Moldova	12	7	12	13	13	7	11	12	11	8	13	14	19	21	20	20
Ukraine	19	18	19	19	17	19	19	19	20	17	18	19	34	33	32	31
EaP average	20	19	20	20	22	21	22	22	19	18	19	20	36	36	36	35
EU average	20	18	17	17	20	18	17	17	20	18	17	16	39	40	39	39

Source: own visualisation based on the ILO estimates subtracted from the World Bank, 2020, https://datatopics.worldbank.org/world-development-indicators/.

Once disaggregating the youth unemployment by gender, the data show that unemployment rate among both males and females in some countries has been increasing in 2017-2020, yet

the increase was higher for females. As a result, unemployment among female youth in 2020 was 2% point higher than among males (22% versus 20%). The worst situation is recorded in Armenia, where in 2020 nearly half of female youth were unemployed. This is especially apparent given that among the male youth only every third person was unemployed.

Figure 3 Youth unemployment (%) *among males*

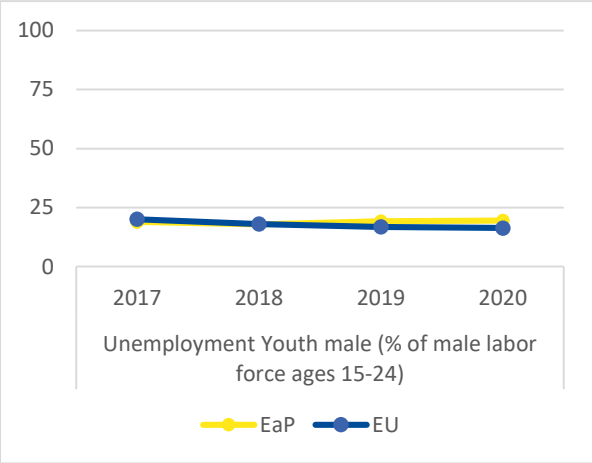
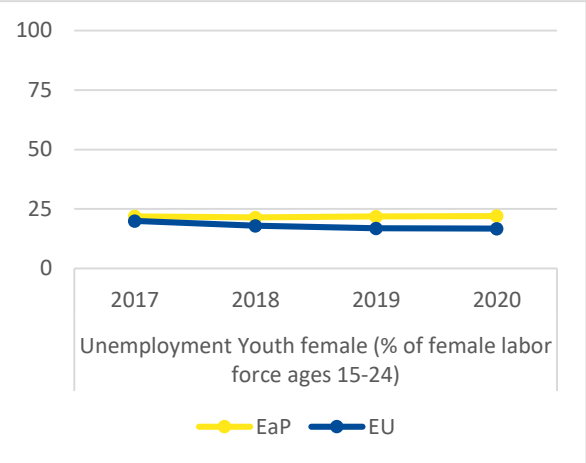


Figure 4 *Youth unemployment (%) among females*



Source: own visualisation based on the ILO estimates subtracted from the World Bank, 2020, https://datatopics.worldbank.org/world-development-indicators/.

Overall, despite the number of programmes implemented by the EU to promote youth employability and entrepreneurship in the EaP region, youth unemployment is still significantly high in the EaP countries. Moreover, there is a considerable gender gap and in some EaP countries youth participation in the labour force demonstrates a slightly decreasing trend. Overall, while the EaP-wide trainings and programmes promoted multiple youth initiatives, as the data illustrate youth unemployment remained virtually the same and, in some countries even increased slightly, since 2017. This indicates that the EaP countries should devote more efforts to address the labour market failures. Such policy should entail introducing structural changes in the labour market policy, improving skills among youth and bridging universities and educational institutions with the private sector. While the EU can help with developing targeted programmes for youth and sharing its best practices, implementing structural reforms of the labour markets rests with the EaP governments.

2.3 Cybersecurity

Deliverable #12 on cybersecurity defined 2020 Targets on increasing cyber capacity in the EaP states. It included setting up Strategies and Action Plans on cybercrime and cybersecurity, implementation of the Budapest Convention, establishment of the cybercrime and cybersecurity units e.g., national Computer Emergency Response Teams (CERT), adopting basic pillars of the EU's major cybersecurity legislation – Network and Information Security (NIS) Directive (EU) 2016/1148.[5]

For the moment, the progress made on 2020 Targets varies greatly across the countries. The most significant progress has been made by the three countries which have the Deep and

[5] EURLex, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.194.01.0001.01.ENG&toc=OJ:L:2016:194:TOC.

Comprehensive free Trade Areas (DCFTAs) with the EU, while the rest are falling behind the schedule. For instance, while Georgia, Moldova and Ukraine have already put forward the strategies and action plans on cybersecurity, Armenia, Azerbaijan and Belarus lack such documents. Procedural laws are unavailable in all the latter countries. There are cybercrime and CERT units operating in all six countries, but Armenia.

In terms of the approximation of the EU legal and strategic framework on cybersecurity, Georgia and Belarus are the most advanced. The two countries have already adopted most of the pillars of the EU NIS Directive. Moldova and Ukraine have also made considerable progress on crafting the legislation in line with the NIS Directive, while Azerbaijan has made less efforts and Armenia has so far not progressed at all in these areas.[6]

All the EaP countries, but Belarus, are members of the Committee of the Council of Europe responsible for the Budapest Convention on Cybercrime Convention.[7] However, none of the EaP states are fully in line with the Convention. This also refers to more advanced DCFTA countries, which already have cybercrime strategies, action plans and operational cybercrime units in place, yet their procedural laws are only partially implemented.

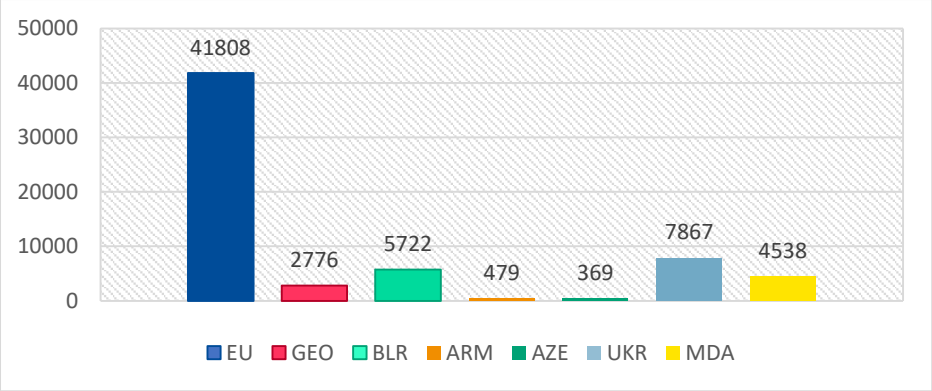
Since 2011, several EU-funded projects on cybersecurity have been implemented in the region. These projects predominantly helped EaP countries establish strategic priorities on cybercrime and electronic evidence.[8] To continue programmes on cybersecurity, EU4Digital has launched an action on cyber resilience in 2020. With a budget of €7 million, the programme aims to improve cyber resilience and criminal justice response in the EaP region (Akhvlediani, 2019).

The least progress is recorded in the cooperation among the cybersecurity bodies of the EaP countries and EU. Although, the EaP states showed their interest in enhancing cooperation with the EU on cybersecurity, such cooperation so far has not materialised. The EaP states are not yet members/parties to the EU bodies such as the EU Agency for Cybersecurity (ENISA) ENISA, Europol's European Cybercrime Centre (EC3) and the Computer Emergency Response Team for the EU Institutions (CERT-EU) and the European Centre of Excellence for Countering Hybrid Threats (Hybrid CoE).

The data further indicates the gap in cybersecurity between the EU and its EaP partners. The number of secure internet servers (per one million people) in the EaP countries is around twelve times less than in the EU. This particularly refers to Azerbaijan and Armenia, which have the lowest number of secure servers in the region. These are in fact the countries that also lag behind the other EaP states in terms of developing legislation and policies on cybersecurity.

Figure 5 Secure Internet Servers per mln people in 2019

[6] For more detailed information see Annex of the Commission Implementing Decision on the ENI Regional East Action Programme 2018 part III.
[7] Council of Europe, https://www.coe.int/en/web/cybercrime/parties-observers.
[8] These projects included Partnership for Good Governance (PGG), CyberCrime@EaP, TAIEX and Twinning.



Source: own visualisation of the data from the World Bank, 2020,

https://datatopics.worldbank.org/world-development-indicators/.

Overall, the progress achieved in the areas of cybersecurity is very uneven across the region. The most considerable results are achieved by the three DCFTA states, Georgia, Moldova and Ukraine, which have already put forward the action plans and strategies on cybersecurity and approximated the basic pillars of the key EU legislation on cyber. The least progress is recorded in the cooperation among the cyber bodies of the EaP and the EU countries. Even the DCFTA states who show more interest and readiness in deepening the cooperation on cybersecurity, have not yet benefited from the collaboration with the EU bodies on cybersecurity. Deeping cooperation in this direction could be of critical importance for reducing the exposure of the EaP countries to the cyber threats, cyberattacks and disinformation.

3 Media Space

The outbreak of the COVID-19 illuminated the central importance of access to information. Yet, media space in the EaP region is still far from being sufficient. At the best the media is more diverse in four out of six EaP states, (Armenia, Georgia, Moldova and Ukraine), in terms of the types and ownership of media providers as well as topics covered by mass media. While in the remaining two countries, in Azerbaijan and Belarus, access to information remains limited and independent journalism continuously faces serious pressure from the governments, including threats and arrests of innocent journalists and bloggers.

The World Press Freedom Index demonstrates that in 2013-2020 Armenia, Georgia and Ukraine have improved their media freedom rankings. Georgia achieved an outstanding progress, improving its ranking by 60 places since 2013. In contrast, Azerbaijan, Belarus and Moldova have downgraded their scores. Yet, it is notable that Azerbaijan and Belarus have already been at the lower range of the ranking back in 2013. Whereas Moldova's score has been downgraded by 36 places since 2013 reflecting the largest drop recorded among the EaP states.

Table 2 World Press Freedom Index

Country	Rank 2013	Rank 2020	Status
Armenia	74	61	Diversity but not yet independence
Azerbaijan	156	168	Hope quickly dashed
Belarus	157	153	A dangerous time for independent journalism
Georgia	100	40	Pluralist but not yet independent
Moldova	55	91	Media as weapons
Ukraine	126	102	At the crossroads

Source: own visualisation based on the data subtracted from the Reporters Without Borders, 2020, https://rsf.org/en/ranking.

Armenia upgraded its rank by 13 places since 2013, mostly due to the improvements in media diversity and investigative journalism online. However, the polarisation of the media, the lack of journalistic independence and transparent media ownership remain a concern in the country. TV is the dominant news source in Armenia. Both broadcast and print media in Russian-language are widely available and internet news is the most popular among the youth. According to Freedom House as of 2019 Armenia had the freest internet space among the former Soviet States, beyond the Baltic states. Yet, the outbreak of the pandemic and later the war in Nagorno-Karabakh have significantly increased the polarisation of the media and have decreased the public trust in independent and reliable journalism.[9]

Azerbaijan ranks the worst in the EaP region and takes the 169th place out of the 180 countries analysed worldwide. Unlike the other EaP states, media space in Azerbaijan is still far from being pluralist and diverse. Independent journalists and bloggers face serious threats and are jailed on unreasonable grounds in Azerbaijan and abroad. The main independent news websites are blocked and investigative journalists are forced to go in exile. TV remains as the main news source in the country, yet both the state as well as privately owned TV channels report the information in the government's liking. Whereas the online news providers who dare to criticise the government are threatened or arrested (Reporters Without Borders, 2020).

Belarus has slightly improved its ranking from the 157th place in 2013 to the 153rd place in 2020, yet still remains among the 30 least media free countries in the world. Since the outbreak of COVID-19 the situation became more critical as journalists and bloggers are threatened and arrested, leading news sites are blocked, access to information remains restricted and media diversity is unknown (Reporters Without Borders, 2020). The state

[9] Interview with the editor of the disinformation agency in Armenia media.am.

maintains control over all TV channels, while private and Western-funded TV stations struggle to obtain licences from the authorities are forced to operate in exile. The internet is so far the only source of accessing free mass media. Yet the Lukashenko government is actively trying to control the internet by passing the legislation that will authorise the government to filter online content. Overall, the outbreak of the pandemic followed by anti-Lukashenko demonstrations tightened the crackdown on the media space. Consequently, Belarus will most likely see its media freedom score downgraded in the next edition of the World Press Freedom Index.

Georgia has improved its score significantly: being the 100th in 2013, the country has risen by 60 places and ranks the 40th in 2020. The progress was achieved due to the improvements in media ownership transparency and satellite TV pluralism (Reporters Without Borders, 2020). However, Georgia media space remains highly polarised and editorial content is often influenced by the interests of the owners of the media outlets. As in the other EaP states, TV is also the main source of the information for Georgian public. The internet space is not censored and the population has access to the multiple viewpoints through the various media sources in Georgian language. Yet, the television, the main news medium, remains highly politicised and polarised (BBC World News, 2018).

Moldova's media are diverse but extremely polarised. The broadcasting regulatory authority lacks independence and the editorial lines of the leading media outlets is aligned with the political and business interests of their owners (Reporters Without Borders, 2020). Due to the ownership concentration, the lack of editorial independence and quality journalism Moldova's rank went down by 36 places since 2013. This is the largest decline in the ranking of the EaP states in 2013-2019. The television remains the main media source in the country. Even though the country banned rebroadcasts of Russian TV[10] and requires foreign broadcasters to offer at least half of the programming content to be sourced from the EU countries,[11] the most of the population still relies on the Kremlin news sources (BBC World News, 2019). This directly feeds the general public with biased information and fake narratives (Gotisan, 2020). This is particularly dangerous for the people living in rural and remote areas without internet access and no basic digital skills to access different media sources, or engage in public debates on the social media. Mass media environment is less free in Transnistria and Gagauzia where Moldovan media are blocked. Internet remains the second most important source of news after TV. There are good practices observed in leveraging existing media structures rather than introducing the new ones. For instance, Radio Free Europe/Radio Liberty Moldova has managed to include both Romanian and Russian language programming on Moldova's public TV and radio channels (Sillanpää, et. al. 2017).

Ukraine has improved its media freedom score since 2014. Yet, the influence of the oligarchs on the media and underfunding of the new independent public broadcaster (TV) remains concerning. Television remains the dominant media source in the country, but internet is the fastest growing source of information, particularly among youth (Internews, 2019). The situation is worsened by the ongoing "Information warfare" with Russia (Reporters Without Borders, 2020). The country has banned cable relays of leading Russian television broadcasters and introduced Ukrainian-language quotas for TV and radio (Radio Free Europe, 2017), yet this does not include the breakaway regions, where Russian control makes sure to

[10] In 2017 the country banned rebroadcasts of Russian TV by adopting "anti-propaganda" law.
[11] In line with the new Broadcasting Code introduced in 2019.

silence pro-Kyiv outlets (BBC World News, 2020). Introduction of Ukrainian-language quotas was controversial, particularly among Russian speakers in Ukraine who saw this policy to deliberately curtail the use of Russian language. The public divide was further exacerbated after Ukraine banned popular Russian social networks, VK (formerly VKontakte, Russian version of Facebook) and Odnoklassniki, two of the top two social platforms in Ukraine back in 2017. The ban was broadly criticised by human rights groups and journalists as undemocratic endeavours, labelling the President's decree as "Erdoganisation of Poroshenko" (Radio Free Europe, 2017). The Ukrainian Security Service justified the President's move by pointing at the harm caused by large-scale disinformation spread by Russian social media platforms, who at the same time are known for their cooperation with Russia's Federal Security Service (main successor to the KGB). Yet according to the cybersecurity experts, the ban was overdue and disproportional as Ukraine could have implemented other measures, such as limiting the use of Russian social media platforms by military and officials and ensure the localisation of personal data in Ukraine (Radio Free Europe, 2017).

To sum up, media space in the region is diverse, but highly polarised and partisan in most of the EaP states. Belarus and Azerbaijan are at the worst places in terms of freedom of speech and access to information that remain limited. Television continues to be the dominant media source in all the EaP states, yet, internet is rapidly growing and offers the freest media space in most of the EaP countries. The information warfare with Russia has devastating effects on the access to the information in the conflict areas where population can only access media affected and controlled by the Russian federation. While trying to limit the harm caused by disinformation, striking a balance between personal freedoms and public interest proves to be difficult. The region overall remains the second least media free in the world, with the presidents of Belarus and Azerbaijan, Lukashenka and Aliyev listed among the world's oppressors of press freedom. Together with the oppressors, however, the region, and in particular Belarus, is also home of "information heroes". For instance, Sergei Satsouk, who dared to criticize the president, the healthcare system of Belarus and the official statistics on the COVID-19, is listed among the 30 coronavirus "information heroes", compiled by Reporters Without Borders (RSF, 2020).

4 Disinformation

In the early days of COVID-19 pandemic there was a high demand on the information about the coronavirus. This demand was met with relatively low supply of the information from the official sources. Such gap created information vacuum or "data deficit," which made extra room for fake news to spread (IFCN, 2020). Later on the public interest in this topic lowered, yet the cross-platform traffic enabled disinformation to thrive online (Oxford Internet Institute, 2020). For instance, videos containing fake news and conspiracy theories were shared nearly 20 million times on social media, exceeding the number of shares of the five largest English-language news sources on YouTube (EUvsDisinfo, 2020). Consequently, the outbreak of the pandemic triggered the outbreak of "infodemic" globally, including in the EaP region, which has long been exposed to the large-scale disinformation predominantly from pro-Russian mass media sources.

4.1 Fake narratives

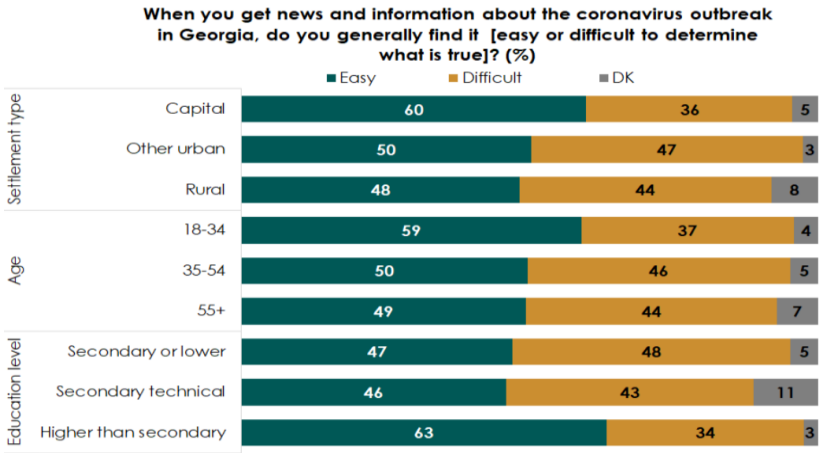
To detect fake narratives in the region, back in 2015, the European External Action Service (EEAS) launched EUvsDisinfo, which collects disinformation cases and their disproofs in the

EaP countries. Since the emergence of the COVID-19, the EUvsDisinfo has gathered over 640 examples of pro-Kremlin disinformation related to COVID-19 (EUvsDisinfo, 2020). During the first wave of infections fake narratives undermined the danger of the virus, introduced conspiracy theories such as the virus being a laboratory creation, and casted doubts on the EU's solidarity in response to the Covid-19. Such fake narratives were mostly spread by pro-Kremlin outlets as well as Chinese state media.

During the second wave of the pandemic the EEAS reported fake narratives to shift towards undermining the benefits of vaccination. Mainly disinformation accused the West for sabotaging the Sputnik V vaccine for political and economic reasons. The fake narratives on multi-lingual Russian state-controlled media also mocked the Western vaccine manufacturers for experimenting vaccines on monkeys, and some conspiracy narratives suggested that the vaccine would turn people into monkeys. According to the EEAS special reports, disinformation from pro-Kremlin outlets downplayed the threat of the virus and undermined governments' strategies of curb the second wave of infections (EUvsDisinfo, 2020).

The Caucasus Research Resource Centre (CRRC)[12] ran a survey in Georgia, which revealed that most of the public is unaware of a number of facts around the virus and struggle to differentiate fake news from truthful information. Despite the fact that most of the surveyed public reported following the news closely abound the COVID-19, almost half (42%) of the respondents found it difficult to determine what was true and what was false information. As a result, 42% of the surveyed public reported believing in the fact that the Coronavirus was created in a laboratory; every fourth (25%) person agreed with the idea that antibiotics are effective at treating the virus; every tenth (9%) thought that 5G internet infrastructure was causing the spread of the virus; half of the public turned out sceptical and uncertain about the vaccines and every fifth (19%) interviewed person found vaccines to cause autism. Overall, around three in four interviewed persons deemed that the information about the Coronavirus outbreak in Georgia was made up (CRRC, 2020). Although, the age, education and settlement type seem to make a difference: younger people, those with higher education and the ones living in urban areas identify better the false narratives, while older people, those with lower education and the ones living in rural areas struggle the most to differentiate fake news from the true information.

Figure 6 Information about the COVID-19 in Georgia



[12] CRRC Georgia conducted six waves of data collection between late April and early June, with the financial support of the Embassy of the Kingdom of the Netherlands in Tbilisi.

Source: Understanding Public Opinion on the Coronavirus in Georgia, CRRC, 2020. file:///C:/Users/tinat/Downloads/cv_19_Understanding%20Public%20Opinion%20on%20the%20Coronavirus%20in%20Georgia_ENG_2020.07.22.pdf.

4.2 Tackling disinformation

To tackle disinformation, social media platforms launched COVID-19 information tools. For instance, Facebook started featuring "Coronavirus Information Center," at the top of News Feed, which provides the latest news, real-time updates by health authorities and tips on how to stay healthy. However, despite the new features, the social media platforms keep hosting false ads and monetise disinformation and harmful content, including from the pro-Kremlin webpages (Politico, 2020).

To promote the widespread of the official information, the government in the EaP countries also started sending messages to the population. Such messages contain the latest updates in the government measures against the pandemic. For instance, Georgian government keeps sending personal messages with the latest updates to all the residents of the country who have mobile numbers registered in Georgia. In Ukraine there are mailing lists and messages sent via the mobile app "Diia."

Other effective tools tackling the spread of disinformation in the EaP region are fact-checking platforms. Up to date, all EaP states are equipped with fact-checking portals, which detect fake narratives and also provide a wide range of analysis of the political events in the region.

It is remarkable, that fact-checking providers in the EU's Associated states, Georgia, Moldova and Ukraine, are already verified signatories of International Fact-Checking Network (IFCN). First it was Ukraine's VoxUkraine[13] which became a signatory in February 2020, Georgia's Fact Check[14] followed in August 2020, Moldova's Stop False[15] joined the IFCN in September 2020, and Stop Fake,[16] another fact-checking portal of Ukraine became the signatory in December 2020. IFCN gathers 86 verified fact-checking platforms which fully comply with IFCN's Code of Principles covering non-partisanship and other professional standards. As signatories, Georgia, Moldova and Ukraine have now access to IFCN education programmes and grants and enjoy IFCN verification which is one of the necessary conditions to be recognized by Facebook as a fact-checker (ReBaltica, 2019).

Although fact-checking portals are effective tools in tackling disinformation, their effects tend to be short-lived and fake narratives remain shared much more often than their disproves. To overcome this, the study by Farrell et.al. (2020) suggests creating fact-checking content that is more appealing and engaging and builds interaction bridges between fact-checking and misinformation spreaders. In this way fact-checking content could attract more "likes" and "shares" and end up spreading over time.[17]

[13] Vox Ukraine, https://voxukraine.org/en/category/voxcheck/.
[14] FactCheck, https://factcheck.ge/ka.
[15] StopFals, https://stopfals.md/.
[16] StopFake, https://www.stopfake.org/.
[17] Heros Project, https://www.heros-project.eu/wp-content/uploads/Assessment-of-the-online-spread-of-coronavirus-misinformation.pdf.

4.3 EU, NATO and Baltic efforts to tackle disinformation

In "Tackling COVID-19 disinformation",[18] the EU has publicly condemned Russia and China for engaging in targeted disinformation campaigns around Covid-19 in the EU and its neighbourhood. The Commission also called on online platforms to cooperate closely with fact-checkers, to withdraw advertisements for fake medicines, to put forward information from health authorities and to publish reports on their policies and actions to address Covid-19 related disinformation. Yet, these measures were not found strong enough by the European broadcasting organizations, publishers and journalists,[19] who put forward a joint declaration demanding the EU to take much stronger measures to fight disinformation on internet platforms like Google and Facebook. The declaration suggested to apply "meaningful" sanctions so that internet platforms which are the co-signatories of the code of good practice (signed in 2018) have an incentive to act in line with the EU recommendations (Baltic Times, 2020).

NATO's approach to countering disinformation during the pandemic has been a "twin-track model" combining "understand" and "engage" functions (NATO, 2020). The former implies regular tracking, monitoring and analysing information and the latter involves NATO's strategic communication to counter disinformation. During the pandemic such strategic communication included NATO's various media engagements through statements, rebuttals, corrections and briefings. NATO briefings also reached the three EaP states: Georgia, Moldova and Ukraine. To better address the widespread of the disinformation from pro-Russian sources in times of COVID-19, NATO's communication in Russian has also been enhanced since the outbreak of the pandemic.

Being well-aware about the harm of disinformation originating from the Russian sources, Baltic countries have devoted proper attention to counter fake narratives during the pandemic. Already in the early days of the outbreak of the Coronavirus, Latvian government launched an information campaign in cooperation with public and private media. The government also made available funds for media sources to promote accurate reporting on the pandemic and fact-checking channels kept publishing regular reports and articles on fake news, conspiracy theories and disinformation (ECFR, 2020). In addition, the country made efforts to support public resilience and mental health by providing medical advice to the individuals free of charge (SPKC, 2020). To strengthen the global response to the "infodemic," Latvia also initiated a cross-regional statement on countering widespread of disinformation in the context of COVID-19. The statement called on everyone to cease spreading disinformation and to follow the UN recommendations on tackling fake narratives. The statement has been co-authored by many countries across the world, including Georgia from the EaP region (Baltic Course, 2020).

Lithuania welcomed the EU's attention to the harm caused by Russian disinformation and called on the EU to take more actions towards the social media platforms which so far are the main hosts of fakes news and disinformation (Baltic Times, 2020). The country keeps being targeted by pro-Kremlin disinformation campaigns and mostly relies on fact-check providers to detect and counter fake narratives. For instance, during the pandemic Lithuanian fact-checkers spotted and disturbed a well-known disinformation distributor M.G. Maksimalietis.

[18] EURLex, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020JC0008.
[19] The European Federation of Journalists, the European Publishers Council and the Association of Commercial Television in Europe (ACT).

According to the Facebook Ad Library, his sponsored posts exceeded the number of sponsored posts of political parties, commercial media and international organisations, including the European Commission and the European Parliament (Baltic Media Health Check, 2020).

Overall, the review of the measures taken by the EaP, EU, NATO and Baltic countries highlights that tackling the disinformation in times of the pandemic is not an easy task. While there are no global rules in place on the commitments and obligations of social media platforms the disinformation keeps spreading on the social media in the speed of light. The EaP countries keep being targeted mainly by the pro-Kremlin sources that continuously try to undermine the efforts of the EaP states to curb the virus. Fact-checking platforms are so far the most effective tools to tackle the spread of disinformation across the EaP countries, yet their effects tend to be short-lived. The EU, NATO and Baltic approaches to counter the disinformation demonstrate that information campaigns in cooperation with social platforms, and public and private media could be more effective. Enhancing strategic communication in Russian language could also help diminish the widespread of fake narratives in the region.

5 Digital skills

The EaP countries faced the outbreak of the pandemic with low digital literacy. Survey run by Caucasus Barometer a year before the pandemic pointed out that around half (47%) of Georgian population did not have the basic knowledge to use computers (Caucasus Barometer, 2019). Similar trends apply to Armenia where one thirds (34%) of the individuals did not have basic skills to use computers and only every fourteenth (7%) was equipped with advanced computer skills in 2019 (see Annexe 1).

According to the survey run by the Ministry of Digital Transformation in 2019,[20] in Ukraine more than half of the population (53%) had a lower than basic digital skills and one in six persons (15.1%) did not have any digital skills. The situation was worse in the breakaway regions, where 58.1% of the population had digital skills below the average. Irrespective of the low digital literacy, only half of the surveyed population of age 18-70 was interested in learning digital skills. However, the interest was higher among youth (61,4% in age group of 19-29), among people with hearing impairments (65%) and among high school children (67.5% in age group of 10-17).

As of 2019,[21] in Azerbaijan around one fourth of the surveyed individuals (22.7%) used internet for chat communication, whereas only one in six internet users sent emails with attached files (17%) and used search engines to find information (18.2%). In terms of knowledge acquisition, one third (32.4%) of internet users in Azerbaijan reported to develop their e-skills by learning-by-doing, one fourth (26.8%) mentioned education institutions, and one tenth (12.1%) pointed at training courses and only one twentieth (5.5%) reported to acquire digital skills through vocational training.

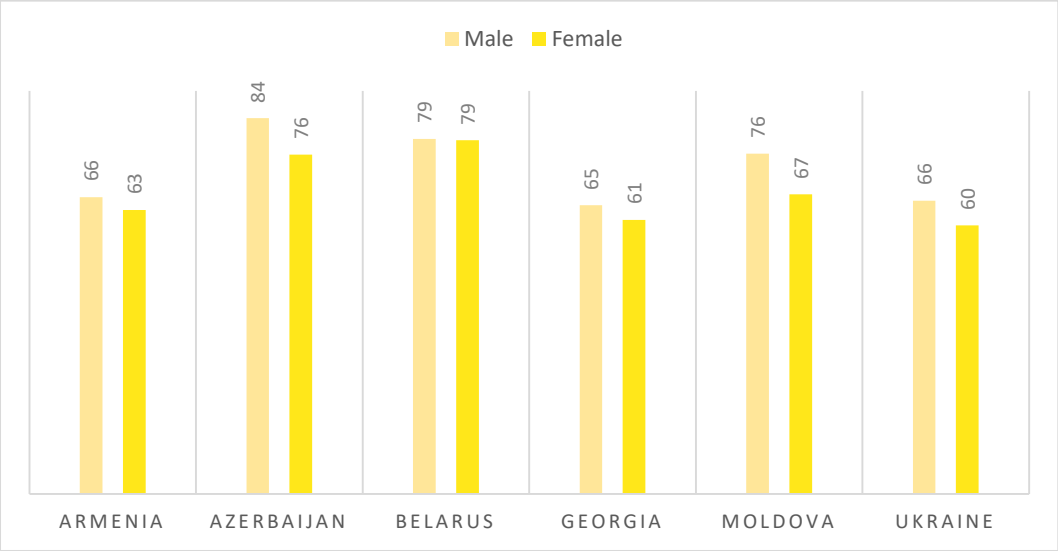
Moreover, the lack of digital literacy does not prevent the population from using social media mainly by phones. For instance, in Georgia nearly all surveyed individuals (95%) reported being online on social media, while only one in seven (14%) indicated to look for jobs online

[20] Osvita Diia, https://osvita.diia.gov.ua/uploads/0/588-the_first_in_the_history_of_ukraine_research_compressed.pdf.
[21] This is based on the data subtracted from the survey run by the State Statistical Committee of the Republic of Azerbaijan, https://www.stat.gov.az/?lang=en.

and one in six (17%) was able to install software and programmes other than gaming applications.[22] Similarly, in Armenia most of surveyed individuals use social media (87%), while only one thirds read, listen or watch the news (36%) or seek information online (28%) and only one in ten internet users (11%) uses email regularly (see Annexes 2-6).

The disaggregated data by gender furthermore exhibit the gender gap in internet usage: in all EaP countries the share of males who use the internet (out of the male population) exceeds the share of females who are online (out of female population) (see Figure 6 below). The largest gender gap comes on Azerbaijan and Moldova. In Azerbaijan one in four female individuals does not use internet regularly, while among males only one in eight individuals is not an active user. In Moldova, every third female individual is not active online whereas only every fourth male is not an active internet user.

Figure 7 Internet use by gender as % of male and female population, in 2016-2018



Note: the data for Azerbaijan, Belarus, Georgia and Ukraine are as of 2018, for Armenia as of 2017 and for Moldova as of 2016. Source: own visualisation of the data from the ITU World Telecommunication/ICT Indicators Database, 2020, https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.

There is also a gender gap among the graduates in the fields related to ICT and science (EU4Digital, factsheet, 2020). For instance, in 2018, among the graduates from ICT sector in the region on average only one thirds were females. The highest share of females is recorded in Azerbaijan where nearly half of ICT graduates (46%) were females and the lowest in Ukraine where female share is as low as 18%. The data on the graduates from STEM (science, technology, engineering and mathematics) programmes reveal even higher gender gap as on average only every seventh graduate was female in the EaP region. The highest share was recorded in Georgia (16%) and the lowest in Armenia (10%).

[22] According to the data sourced from Geostat, https://www.geostat.ge/ka/modules/categories/104/sainformatsio-da-sakomunikatsio-teknologiebi.

Table 3 Female graduates in 2018

	Female graduates in the ICT sector	Female graduates from STEM programmes
Armenia	39%	10%
Azerbaijan	46%	15%
Belarus	23%	15%
Georgia	24%	16%
Moldova	23%	12%
Ukraine	18%	14%
EaP average	29%	14%

Source: EU4Digital fact sheet on digital skills, 2020, https://eufordigital.eu/library/eskills-eu4digital-factsheet/.

To sum up, digital literacy is not widespread across the EaP states and the majority of the population in the region lacks basic digital skills. The data also reveal considerable gender gap in the use of internet as well as in e-skills among the population. The lack of digital skills at the same time is coupled with the high use of social media, which increases the exposure of the population to cyber threats and disinformation.

6 Good and bad practices

To counter the effects of the COVID-19, the EaP countries witnessed a number of interventions from the public and the private sector, several initiatives were also put forward by international organisations and general public. This section reviews such interventions, identifies good and bad practices in the EaP region and draws a few parallels with the world's best practices.

6.1 Policy interventions

6.1.1 Dedicated ministries

In times of the global health crisis, a dedicated ministry to digital transformation has the capacity to ensure a faster intervention to address the digital challenges in the country. Ukraine and Armenia are the two EaP states, which have established such ministries prior to the outbreak of the Covid-19. Prioritising digitalisation put both of these countries in a better position to face the digital challenges brought by the outbreak of the pandemic.

For instance, the Ministry of High-Tech Industry of Armenia already granted tax privileges to IT start-ups prior to the outbreak of the pandemic. Soon after the emergence of the Coronavirus, the Ministry has provided further 330 mln AMD to help tech companies to counter the effects of the Covid-19. This helped national IT sector to remain functional during the pandemic.

The Ministry on Digital Transformation of Ukraine was established only a year before the pandemic. Yet, the minster has put forward an ambitious plan to digitize most of the government services by 2024 under the concept "A State in a Smartphone", branded as "Diia" (President of Ukraine, 2019). Right before the outbreak of the COVID-19, the "Diia" mobile app was launched (in February 2020) and within a week it had been installed by more than one million Ukrainians. By the time of the Coronavirus outbreak, the app already offered storage of digital driving licenses, ID for domestic flights, digital passports; possibilities to open private businesses and making a court claim. To counter the effects of the COVID-19, the app started mailing lists with information about virus spread together with the government decrees and recommendations (Digitcoment, 2020). As discussed below, the ministry remained active during the pandemic and provided useful interventions to counter the effects of the pandemic.

6.1.2 Consolidated action against the pandemic

To counter the effects of the pandemic, there were number of policy interventions observed in the EaP countries, which proved to be effective once planned and implemented in cooperation with several public bodies, donor organisations and the private sector.

For instance, the Ministry of Education, Culture and Research of Moldova teamed up with the national and international partners to develop a COVID-19 response plan, including a part on remote education. In cooperation with private companies from the telecommunications sector (such as Orange Moldova, Moldtelecom, and Moldcell) the ministry launched campaigns to promote trainings among teachers and provided free internet to teachers for two months. The ministry also took the initiative to cooperate with other ministries, Communication Companies and Innovation Centres by signing a Memorandum of Understanding, as well as promising to provide the teachers trainings and the equipment for digital education at all levels of school (EU4Digital, 2020).

The Ministry of Digital Transformation of Ukraine launched "Diia. Digital Education" (both as a mobile app and a website), an educational series on improving e-skills. The series was developed by the EdEra online education studio together with other leading tech companies.[23] The goal of this project is to teach digital literacy to 6 million Ukrainians in 3 years. The courses are freely available to all Ukrainian citizens and among others cover: basic digital skills, digital literacy for teachers, a series for parents "Safety of children on the Internet," online services for teachers, payment for communal services online, entrepreneurship and artificial intelligence for schoolchildren and digital technologies for people with disabilities (Osvita Diia, 2020). The Ukrainian National Academy of Internal Affairs has also promoted free online courses provided by MyCyberHygiene, a Tallinn-based IT company offering diverse e-learning possibilities, including technical and strategic exercises for both the public and private sector (My Cyber Hygiene, 2020).

The trainings were also provided in Armenia for teachers of the technical colleges and craftsmanship, due to cooperation between the National Centre for Educational Technology Development and the local NGO on Distance Learning (EU Neighbours, 2020).

[23] The educational series are supported by the Swiss-Ukrainian EGAP Program, funded by the Swiss Agency for Development and Cooperation and implemented by the Eastern Europe Foundation and the Innovabrige Foundation.

In Azerbaijan, the Ministry of Labour and Social Protection with the support of UNFPA and UNDP, opened the first inclusive art school where people with disabilities can enrol for free (EECA, 2020).

In Belarus, as the government kept ignoring the outbreak of the Coronavirus and did not impose a nation-wide lockdown, there were no positive policy interventions observed in the country to promote digital skills or improve remote learning. The good practices so far include the joint support of the international organisations. For instance, the EU, Red Cross, UNICEF,[24] UNFPA[25] and the World Bank provided a wide range of digital trainings for teachers, pensioners, people living in remote areas, people with disabilities and special needs (EU4Digital, 2020).

6.1.3 Good initiatives

Another common policy intervention observed in the EaP region ensured streaming school lessons on TV and granting citizens free access to existing digital libraires. These TV lessons were subject to criticism as in some cases they did not follow the curricula, lasted for only few weeks, and contained a number of mistakes.[26] Despite these shortcomings, such TV streaming can still be viewed as useful for children living in remote and rural areas without access to internet or computer.

Developing e-books along with the paper handbooks for the schools was also registered as a good practice in Georgia (Agenda.ge, 2020). Although this is still the work in progress, it can bring positive effects as Georgian 15-year-old students perform far below OECD average according to the International Student Assessment (PISA) (Agenda.ge, 2010). In particular, by reading score the country ranks 71st out of 79 countries covered by PISA. The share of top performers in reading, mathematics or science is just 1%, while the share of low achievers in reading and in mathematics are as high as 64% and 61%, respectively (F. Avvisati, et.al 2018).

The good practice of organising hackathons was spotted in Ukraine. With the budget of 5 mln UAH, the Ministry of Digital Transformation of Ukraine has put forward #HackCoronaChalenge, the nation-wide competition for the projects in four areas: Coronavirus counteraction (electronic services to counter the spread of the COVID-19), e-services for citizens, social entrepreneurship and mutual assistance (HackCorona, 2020). The call has mobilised IT experts, civil society, start-ups and journalists with a common objective to implement IT projects which could help people and businesses in resisting the pandemic (Ukraine's government portal, 2020). To do so, over 445 participants split into 40 teams brainstormed to generate innovative ideas. The winning project put forward an initiative to develop a chatbot to help people with psychological support during the lockdown. Other top five ideas referred to setting up platforms to help professionals to work online, to bridge the gap of direct contact between medical staff and patients, and to use aerosol plants to reduce the risk of infection for health professionals (UNICEF, 2020).

[24] Relief Web, https://reliefweb.int/sites/reliefweb.int/files/resources/UNICEF%20ECARO%20COVID-19%20Situation%20Report%20No.%2014%20-%20for%2025%20September-21%20October%202020.pdf .
[25] UNFPA, https://www.unfpa.org/sites/default/files/resource-pdf/EECARO_COVID-19_UNFPA_Sitrep8_Sept.pdf.
[26] Interviews with two school teachers in the EaP coutries. The teachers do not wish to disclose their names as they are afraid of loosing their jobs.

6.1.4 Bad practices

Belarus and Azerbaijan are the two EaP states, which witnessed the worst policy interventions depriving the population from the freedom of speech and access to critical information.

Lukashenko government kept fighting against free and independent media and investigative journalism. The government even passed the law to filter the content on the internet and continued to arrest independent journalists, bloggers or activists who dared to criticise the regime.

Similar to Belarus, in Azerbaijan the government has also threatened and arrested independent journalists who were brave enough to question the government actions or the statistics on the outbreak of the COVID-19 in the country.

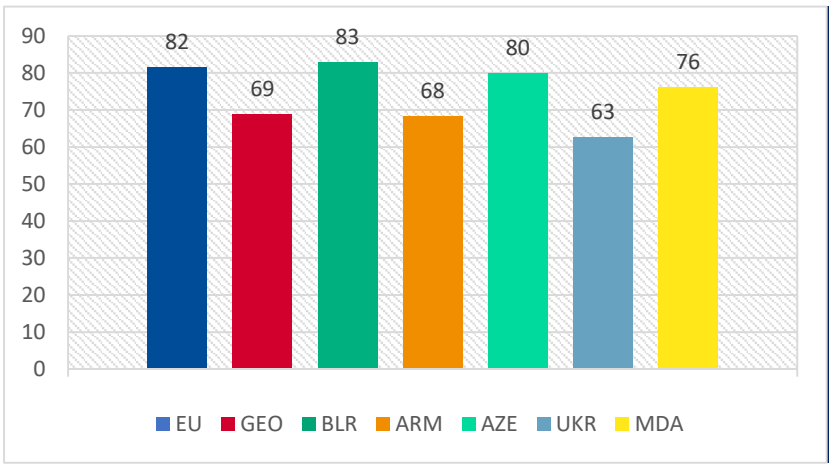
Somewhat excessive measures aimed to counter disinformation were observed in Armenia and Ukraine. For instance, the government of Armenia tried to arrest social media users and attempted to legislate without holding public debates and discussions with civil society and the media (RSF, 2020). Ukraine parliament drafted an anti-disinformation law that can undermine the freedom of press and authorise cyber-crime units to arrest agitators (Akhvlediani, 2020).

6.2 Challenges not addressed by policy interventions

Policy interventions in the EaP countries failed to address the systemic problems of insufficient connectivity, underdeveloped ICT infrastructure, low internet penetration, and the lack of access to computers, which importantly undermined the possibilities of remote work and learning.

The data illustrate that prior to the outbreak of the pandemic internet penetration in most of the EaP countries was lower than the EU average and in four out of six EaP countries around one thirds of the population did not use internet regularly. The situation is worse in the regions and rural areas. For instance, in Georgian mountainous regions in Racha-Lechkhumi and Kvemo Svaneti the penetration rate stands as low as 15%, while the internet penetration exceeds 100% in Tbilisi (125.7%) (Akhvlediani, 2021).

Figure 8 Internet users as % of population in 2019

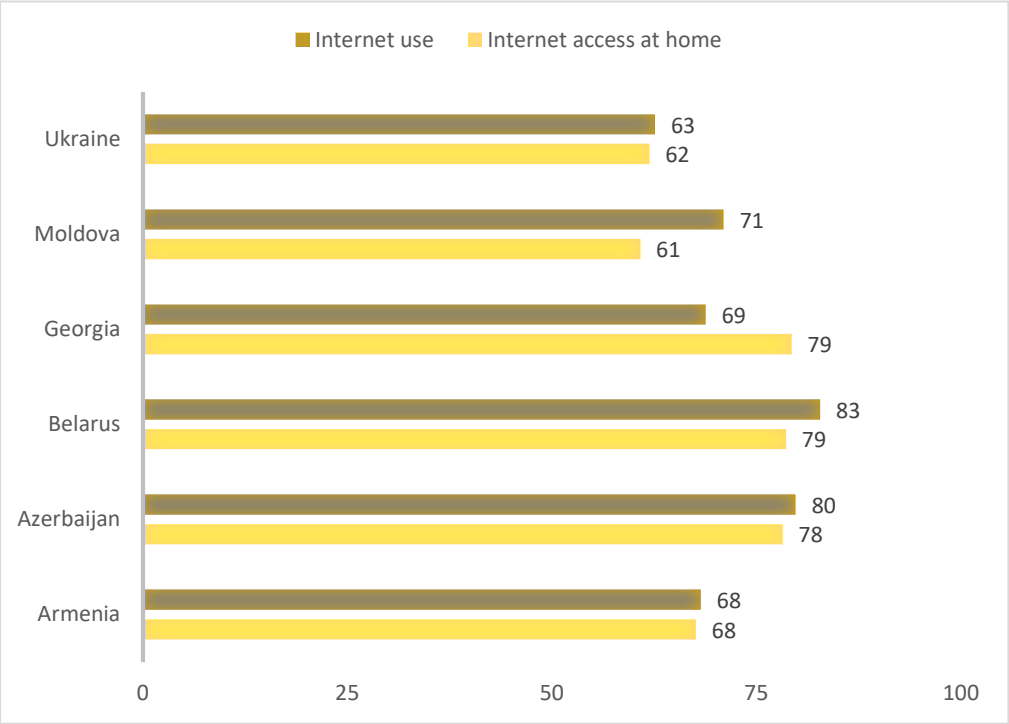


Source: own visualisation of the data obtained from the World Bank, 2020,

https://datatopics.worldbank.org/world-development-indicators/.

Similar to the figures on internet penetration, the data on the internet access illustrate that in most of the EaP countries around one thirds of the households do not have access to internet at home. Georgia is the only exception, where access to internet at home exceeds the use of internet. However, one fifth of Georgian households still lack internet access at home. The largest gap is observed in Moldova where around 40% of the households report not having internet at home. The gap is higher in rural areas where half of the households lack access to fixed broadband connections and rely on mobile connectivity which is insufficient for streaming videos or attending trainings and meetings online.[27] Internet access is also restricted in school in regions. For instance, prior to the pandemic, almost half of schools (48%) in rural regions of Azerbaijan lacked internet access, that prevented more than half of school students (59%) from using internet.[28]

Figure 9 Internet use by households (%) in 2019



Source: own visualisation of the data from the ITU World Telecommunication/ICT Indicators Database, 2020,

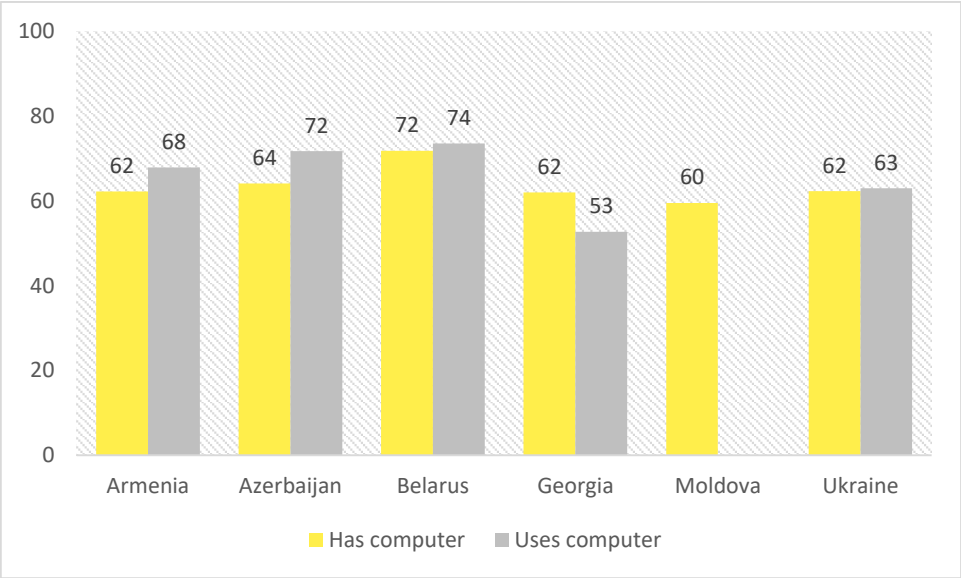
https://datatopics.worldbank.org/world-development-indicators/.

Another major shortcoming is related to the limited access to computers. As the data demonstrate, prior to the outbreak of the pandemic, around 40% of the population in the EaP countries did not have computers. Thus, the EaP states had to face the pandemic and nation-wide lockdowns without having access to the basic ICT tools for working or studying remotely.

[27] See the data subtracted from the UNDP and PWC, https://reliefweb.int/sites/reliefweb.int/files/resources/Moldova%20Covid-19_FINAL.pdf.
[28] Own visualisation of the data subtracted from the survey run by the State Statistical Committee of the Republic of Azerbaijan. https://www.stat.gov.az/?lang=en.

According to UNICEF, after Moldova closed downs schools, about 16,000 students (4.8% of total), and 3,000 teachers (10.6% of total) reported not having access to internet and/or laptop. Thus, they were not able to benefit from any trainings delivered by the public bodies or international donors, and neither could work or study from home. According to the same study, the most affected families are the ones living in rural areas, families with lower level of education and households with lower income (UNICEF, 2020).

Figure 10 Computer use by households (%) in 2019



Source: own visualisation of the data from the ITU World Telecommunication/ICT Indicators Database, 2020,

https://datatopics.worldbank.org/world-development-indicators/.

Note: Data on computer use in Ukraine come from Kyiv International Institute of Sociology, http://www.kiis.com.ua/?lang=eng&cat=reports&id=705, there are no comparable data on computer use in Moldova.

Other unaddressed group of vulnerable people are the elderly who lack digital skills, as well as people with disabilities and population living in the breakaway regions. As discussed in the previous sections, international donor institutions, including the EU, have provided a number of online trainings for the elderly and people with special needs, an inclusive school was also opened for people with disabilities in Azerbaijan, and the most affected groups soon will be targeted by the programme funded by UNDP and Sweden in Ukraine (Relief Web, 2020). Yet, such practices are not yet widespread in the domestic policies of the EaP countries and in most cases the most vulnerable groups remain unaddressed by policy interventions.

6.3 Initiatives from the private sector, foundations, and the public

While Georgian policy intervention failed to tackle problems with connectivity and access to computers, education foundation "Educare Georgia" and its donors from the private sector came to rescue people in need (Edu Care Georgia, 2020). The foundation established a platform "give internet," which calls for everyone to donate internet access to underprivileged high-school students. The platform was active prior to the outbreak of the COVID-19, yet the donations from the private sector and the general public have multiplied during the pandemic.

As a result, the platform has delivered computers and provided internet access to hundreds of students around the country.

Similar initiative was observed in Moldova, where Global Partnership for Education provided a $70,000 grant through UNICEF to provide learning materials and sports equipment to the most disadvantaged students and the ones with special needs who are more likely to face problems with online learning (Global Partnership, 2020).

The general public also teamed up actively to the solidarity initiatives put forward on social media, mainly on Facebook. Such good practices are able to rapidly raise crowdfunding financial support from thousands of social media users for the people in need, such as the elderly who were not able to leave homes during the lockdowns, people living under the poverty line, and homeless people living in the streets (OKmagazine, 2020).

Other good practices refer to fact-check portals, which proved to be the most effective tools for tackling disinformation during the pandemic. Fact-checkers kept detecting fake narratives and also provided a wide range of analytics of political events in the region. Given their widespread activities, fact-checkers from Georgia, Moldova and Ukraine became the signatories of the IFCN, which validates them as fact-checker portals on Facebook and enables them to participate in a number of educational programmes and grants provided by the IFCN.

6.4 The EU support

The EU, with its over €2 billion support, has been the largest donor to the EaP states during the pandemic. In terms of targeted programmes for promoting the digital skills, EU4Digital, EU4Business and EU4Youth proved to bring tangible results.

For instance, with the support of EU4Digital, there were few data track applications introduced in Moldova. Digital tools were created by a group of volunteer IT experts (Medcast Chatbot), public health partners (GoData platform) and upon the request of the Ministry of Health, Labour and Social Protection (the data platform with an interactive map of the COVID-19) (EU4Digital, 2020).

Within the EU4Business initiative, Georgia witnessed the first AI-based public servant, C Bot, able to provide assistance to the residents of the city of Rustavi on questions, statistics and recommendations related to COVID-19 (EU4Business, 2020). During the pandemic, EU4Business and EBRD also supported several projects to help SMEs to diversify sales strategies and to go digital by setting up dedicated mobile application. Other EU-funded projects were dedicated to teach around 300 primary school students filmmaking through remote classes (Agenda.ge, 2020).

In Ukraine, the EU has funded and supported civic initiatives to strengthen the Ukrainian civil society's engagement in countering the effects of COVID-19 (EEAS, 2020). One of the calls in this project referred to proposals on developing digital tools for making the communication between the state and citizens easier and resolving current challenges at the local or national level by deploying civic technology tools (EU Prostir, 2020).

In Armenia, EU4Youth – Say Yes Skills for Jobs, adapted the Khan Academy learning platform into Armenian. The platform proved to be very popular during the remote learning, as soon after the schools closed down amid the COVID-19 pandemic, the number of users has

increased by 975% (EU Neighbours, 2020). The EU has also funded a number of projects in Shirak, the poorest province of Armenia, which allowed students and unemployed people to get trainings on programming and other IT skills and consequently find jobs in local IT companies (EU4Digital, 2020).

6.5 Other international practices

Two worldwide leaders in digital transformation, Taiwan and South Korea can serve as good examples for the EaP states on how to build strong digital governance during the pandemic and prepare for the transitions to the post-COVID-19.

Over the past two decades, Taiwan and South Korea shifted their economies towards high-tech related industries, which contributed importantly to upgrading their digital infrastructures. For instance, South Korea was the first country to roll out 5G back in 2019 (Reuters, 2019) and Taiwan was among the few countries in the world to enjoy nearly full (100%) 4G penetration (Mobile World Live, 2020). Despite the outbreak of the pandemic, following South Korea, Taiwan managed to roll out the first 5G services in July 2020 (RCR Wireless, 2020).

Such impressive speed and level of digitalisation prepared the two countries to face the pandemic with strong digital ecosystems and effective digital governance. Already before the outbreak of the COVID-19, these countries had individual health records digitised and ready accessible in the cloud space (Yen, 2020). This enabled them to start linking individual's medical and travel history to the national health insurance system from the early days of outburst of the pandemic (January 2020). The integrated database enabled all healthcare facilities to access patients' immediate medical and travel history and helped local health facilities to better classify and monitor the spread of the virus in real time. High internet penetration proved to be crucial to allow the authorities in these countries to detect the new cases via GPS tracking, credit card usage, data-mining of closed-circuit television (CCTV) footage and mobile apps. All collected information about the clusters of the virus was publicly available via apps and allowed the public to avoid the most infected areas (OpenGovAsia, 2020).

As for the recovery strategy, Taiwan relies on developing not only media literacy but also media competence among the general public. As pointed out by the "Digital Minster," this can serve as the most effective tool to widespread digital literacy and counter disinformation in the long-run (The News Lens, 2020). The latter is very important for Taiwan, as similar to the EaP states, the country is highly exposed to the disinformation, mainly from the Chinese Communist Party (Stanford University, 2020). Tackling disinformation is also mainstreamed by the Ministry on Education which listed expansion of media literacy among its main goals (The News Lens, 2020). Taiwan also introduced a new school curriculum to teach children how to detect and combat fake news already back in 2017 (Time.com, 2017). The country is now working on improving the curriculum by introducing more interactive courses by using sandbox experiential training, not only for the school students but also for the school teachers and a wider community organisations who are engaged in fact-checking activities. Along with intensified data management, tracking and surveillance, providing trainings for the government officials is also discussed.

To pave the way to sustainable recovery from the pandemic, South Korea introduced a Korean New Deal with three main pillars: Digital New Deal, Green New Deal and Stronger Safety Net (World Bank, 2020). Digital New Deal aims to accelerate the digital transformation for the post-COVID-19 via increasing data integration, developing network and AI (DNA), promoting the 'untact' industry (including online activities of micro, small and medium sized enterprises) and digitalising the social overhead capital.[29] Overall the government promises to invest around 58.2 trillion won (around 43 bn €) to meet the objectives of the Digital New Deal (UNDP, 2020).

It is noteworthy, that despite such impressive digital governance, Taiwan and South Korea still face digital divide which is exacerbated by economic and social inequalities (UNCTAD, 2019, UNU, 2020). As a result, vulnerable groups, such as people living in rural areas, elder, low-income population and people with disabilities still struggle to access and use the internet. The other challenges refer to sacrificing data privacy to combat the pandemic. In particular, intensified data tracking and surveillance in Taiwan and South Korea raised many concerns around data privacy and security.

Overall, Taiwan and South Korea could serve as good examples for the EaP states in building strong digital governance to counter the negative effects of the pandemic. In particular, digitising health and travel history of individuals and linking the data to the common cloud, coupled with the application of digital tracking tools proved to be very effective to detect, prevent and treat the disease. The best practices of Taiwan underline the importance of mainstreaming media literacy and competence in the national educational policies. The best practices of South Korea point at the need of rolling out strategies for sustainable transition to the post-Covid-19. Together with sharing these best practices, the EaP countries should also pay attention to the lessons learnt by the two digital front-runners. In particular, bridging the digital divide could be very challenging, especially when paralleled with growing inequality. Another hurdle refers to striking a balance between individual privacy and public interest which proved to be very difficult even for the digitally advanced countries.

7 Conclusions

2020 Targets put forward in the fora of the EaP provided valuable guidelines for the EaP states to improve connectivity, digital literacy and youth employability by 2020. The EU programmes implemented in the region, such as EaPConnect, EU4Digital and EU4Youth brought tangible results in these directions. Yet, deliverables on digital skills, are still work in progress, which indicates that 2020 Targets on e-skills were perhaps too ambitious for the EaP countries. Deliverables on cybersecurity also proved to be challenging as most of the progress is recorded in three (DCFTA states) out of six EaP partners. Despite various EU programmes implemented in the region to improve youth entrepreneurship, unemployment among youth still remains unacceptably high in all the EaP countries.

There is some noticeable progress observed in the diversity of the media spaces in the EaP region. Yet, overall mass media still remain highly polarised and partisan in most of the EaP countries. The worst situation is observed in Belarus and Azerbaijan, as the presidents of these two countries, Lukashenka and Aliyev, are listed among the world's oppressors of press freedom.

[29] This implies adding digital innovations to urban spaces and building smart logistics and distribution systems.

Disinformation has been spreading fast across the EaP countries. Fake narratives mainly originate from the pro-Kremlin sources and attempt to undermine the efforts of the EaP states to curb the Coronavirus. The large amount of the population struggled to spot the fake narratives, yet, its age, education and settlement type seem to create a gap. Young people, those with higher education and the ones living in urban areas identify false narratives better, while older people, those with lower education and the ones living in rural areas struggle the most to distinguish fake news from correct information. Fact-checking platforms proved to be the most active and functional tools to tackle the spread of disinformation across the region.

Out of the policy interventions, the most effective ones were made in cooperation with international organisations and private companies. This approach enabled better mobilisation of resources to counter the negative effects of the pandemic. Other good practices involved providing free access to digital libraries and to a number of online courses and trainings. The EU programmes proved useful to enable the emergence of several innovative digital tools in the region.

Yet, these policy interventions are undermined by underdeveloped internet infrastructure, uneven internet penetration, and the lack of access to the basic ICT tools. This particularly refers to the most vulnerable groups, such as people living in rural and remote areas, households living in the breakaway regions, people with disabilities, the elderly and the poor. These groups lack access to internet and computers and are unable to benefit from online trainings, free access to digital libraries or seeking for medical advice online. Unfortunately, most policy interventions in the EaP countries failed to systematically address the challenges faced by such vulnerable groups. The gap is, however, partly filled by the solidarity initiatives put forward by the foundations, private sector and the general public to help people in need.

The worst policy interventions were recorded in Belarus and Azerbaijan, where authorities limited the freedom of speech and access to free media. Independent journalists, bloggers and activists in these two countries remain threatened and arrested. Their basic human rights are violated.

From the world's best practices, the EaP countries can draw their attention to the importance of developing strong digital governance based on the data integration and high connectivity as in Taiwan and South Korea, which proved to be very effective to detect and prevent the spread of the virus. The EaP states can also share the practices of these two countries to ensure the sustainable transition to the post-COVID-19. Following Taiwan's example, the EaP countries can mainstream media literacy and competence in the national educational policies to tackle disinformation. Following South Korea's example, they can also roll out strategies, including digital deals for sustainable transition towards the post-COVID-19.

To sum up, the outbreak of the pandemic was quite challenging for the EaP states who faced COVID-19 with insufficient digital literacy, underdeveloped internet infrastructure, unsafe cyber space, high exposure to disinformation, and largely polarised and partisan media spaces. The EU proved to be a reliable partner and kept supporting its Eastern neighbour with grants, loans and number of dedicated initiatives. However, the implementation of the policy interventions required to address the challenges brought by COVID-19 still remains within the mandate of the EaP governments.

8 Recommendations

For the EaP governments:

- An ultimate priority should be given to improving ICT infrastructure in all EaP countries, particularly in the rural and remote areas and conflict regions, where most of the population lacks access to internet and basic ICT tools.
- More efforts and funding should be devoted to providing laptops and internet donations to the most affected groups, such as people living in rural and breakaway areas, persons with disabilities, the elderly and people living under the poverty line.
- More policy interventions are needed to address the discontinued teaching process due to the lack of internet and computer access among teachers and school children.
- More efforts should be devoted to collect the data on digital literacy across the EaP countries and identify the groups with the lowest digital skills. Based on the findings, dedicated and systemic online trainings should be provided for the groups most lacking e-competences.
- To tackle high youth unemployment rates, the EaP countries should introduce labour market policies dedicated to the youth employability, invest more in youth trainings, and devote more efforts to connecting universities and educational institutions with the private sector.
- To better tackle disinformation, information campaigns should be organised in cooperation with fact-checking platforms, social media platforms and public and private media providers. Media literacy and competence should be mainstreamed in the national educational policies. Enhancing strategic communication in Russian language can also help diminish the widespread of fake narratives from the pro-Kremlin sources.
- Good practices underline that the most effective policy interventions during the pandemic were made in cooperation with the private sector and international donor organisations. This practice should become more widespread to mobilise sufficient funds and resources and address groups most affected by the pandemic.
- Following the world's best practices, the EaP stated should pay proper attention to striking a balance between individual privacy and public interest, while building and exercising their digital governance.
- Excessive fight against disinformation in Armenia and Ukraine should be stopped.
- Authorities in Belarus and Azerbaijan should stop threatening and arresting innocent independent journalists, bloggers and activists.
- To streamline and institutionalise digital literacy and other digital development reforms, Azerbaijan, Belarus, Georgia, and Moldova are advised to establish dedicated ministries of digital transformation. Ukraine's respective ministry structure (government agency, parliament group, and officers in each ministry) and policies (one-stop-shop mobile application and website for e-services) can serve as a model.

For the EU:

- The progress on deliverables on digital skills should be accelerated. As youth unemployment remains unacceptably high in the EaP region, developing and implementing National Coalitions for Digital Skills and Jobs should be further prioritised.

- The cooperation between the cyber bodies of the EaP countries and the EU should be enhanced. This particularly refers to the three DCFTA states (Georgia, Moldova and Ukraine), which progressed significantly in adopting the EU cyber legislation and policies and demonstrate their interest in deepening cooperation with the EU cybersecurity bodies.
- The EU programmes on digital skills and youth should continue as they prove to be extremely useful in enabling the creation of multiple innovative tools designed to cope with the pandemic.
- In cooperation with the EaP countries, the EU should better disseminate the information and the data collected in the EUvsDisinfo database. Increasing the outreach to the general public could contribute importantly to tackling disinformation in the EaP region as well as in the EU.
- The EU should continue supporting its Eastern Neighbours in developing common methodologies to collect and measure digital indicators, in line with the EU standards. Including the EaP states in the DESI could provide the needed overview of the digital transformation of the EaP region.
- The EU should keep its sanctions regime against the Lukashenko government and call on restoring the freedom of speech and access to information. The EU should also condemn the arrests of innocent independent journalists, bloggers, and activities in Azerbaijan.

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Stakeholders' consultations:

Semi-structured interviews with the representatives of the Ministry of Foreign Affairs and Communications Commission of Georgia on the implementation of Deliverables 2020, December 23, 2020.

Semi-structured interview with Azerbaijani fact-checking platform, Fakt Yoxla, https://www.faktyoxla.info/, January 10, 2021.

The representatives of the Eastern Partnership Civil Society Forum were consulted at the meeting of the Working Group 4 on "Contacts between People" taking place during the Annual Assembly of the EaP CSF on December 9, 2020.

Semi-structured interview with Gegham Vardanyan, the editor of the disinformation agency in Armenia media.am, January 8, 2021.

Semi-structured interviews with two school teachers from Georgia and Ukraine, January 10, 2021.

Fact-check portals:

Armenia: Fact Investigation Platform, https://fip.am/en/ ; Median Initiative Centre - https://media.am/en/contact-us/.

Azerbaijan: Fact Check, https://faktyoxla.info/.

Belarus: Media Bias Fact Check, https://mediabiasfactcheck.com/belarus-media-profile/ , Fact check portal of Annenberg Public Policy Center, https://www.factcheck.org/ , The Belarusian Association of Journalist, https://baj.by/en.

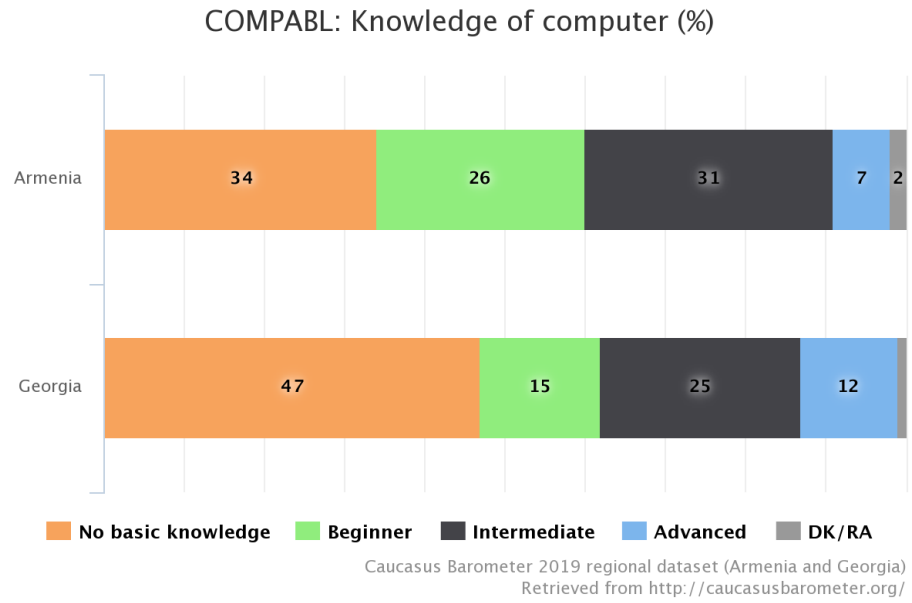
Georgia: Fact Check, https://factcheck.ge/ka.

Moldova: Stop False, https://stopfals.md/ru.

Ukraine: Stop Fake, https://www.stopfake.org/ ; VoxUkraine - https://voxukraine.org/en/category/voxcheck/.

10 Annex

Annex 1.



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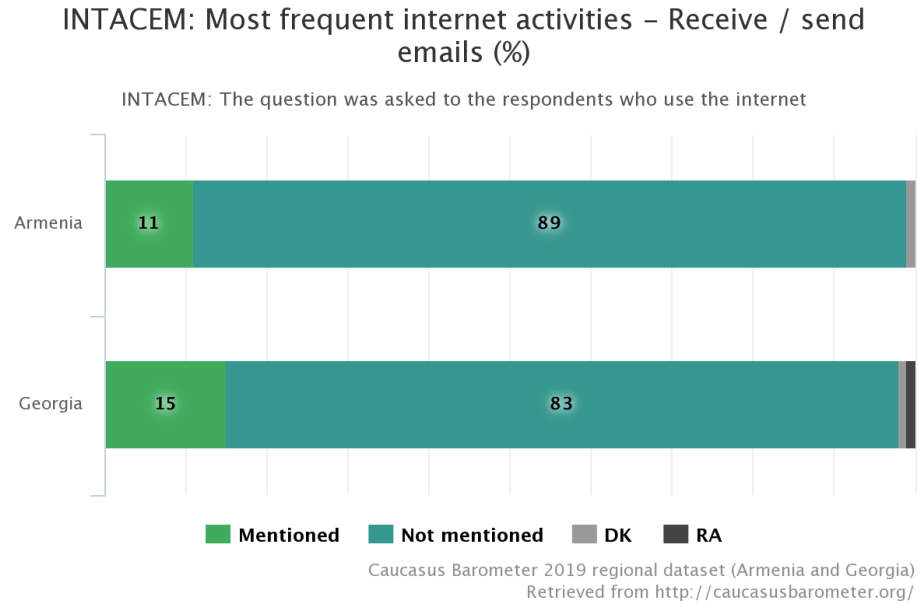

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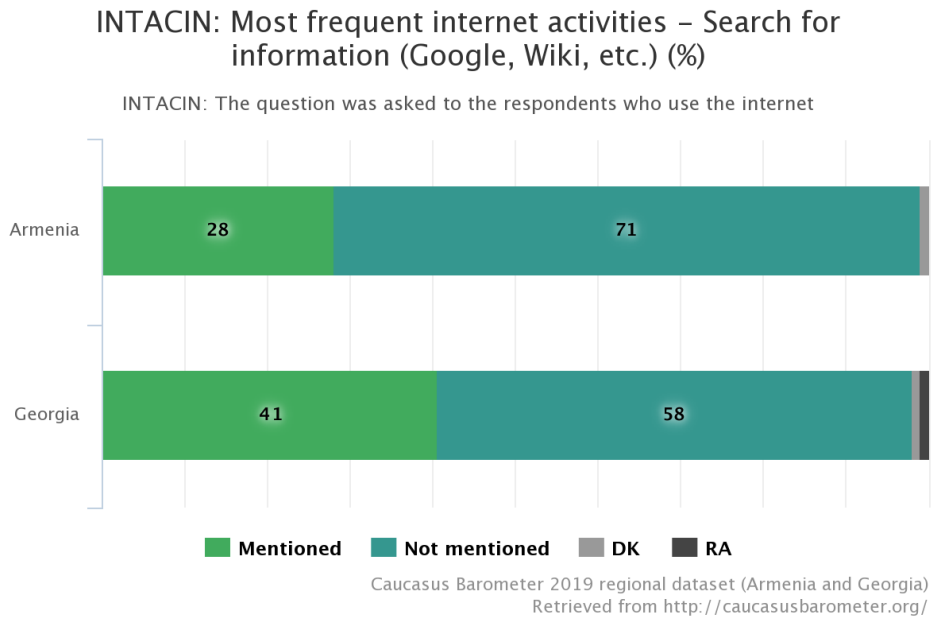

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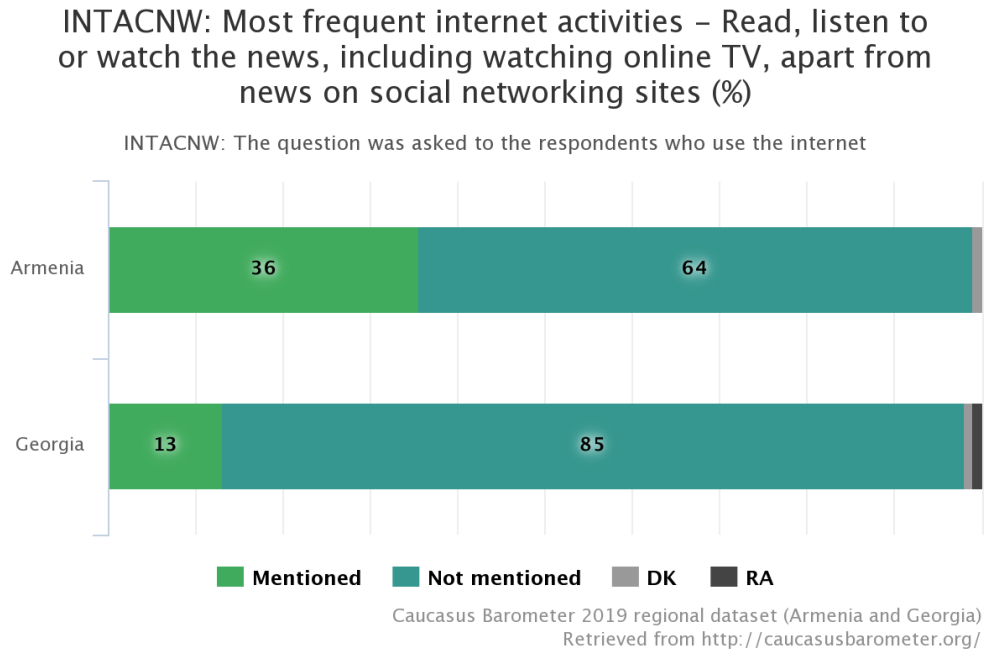

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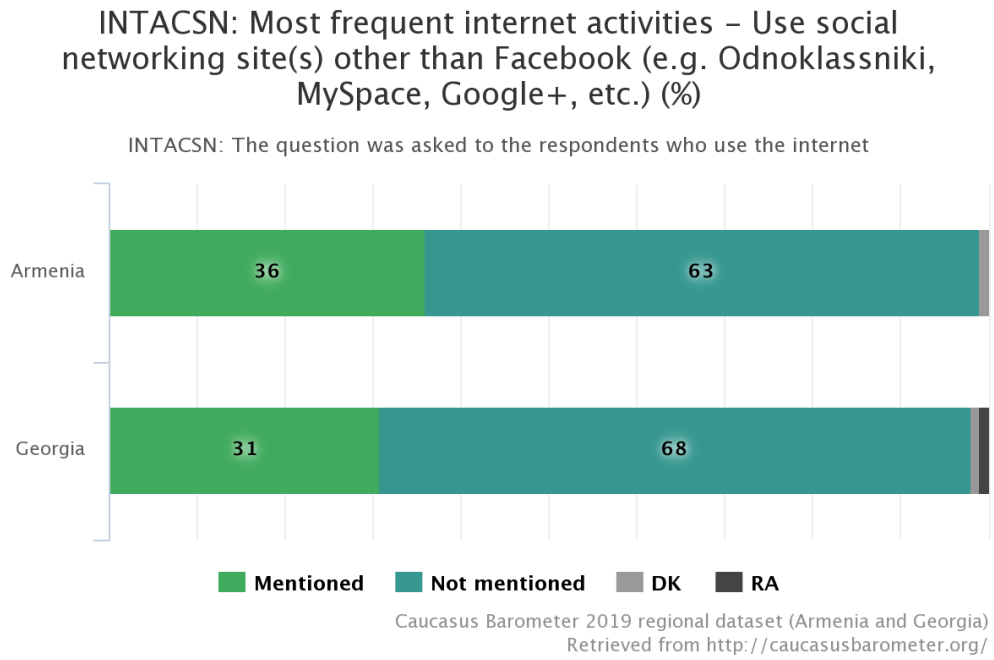

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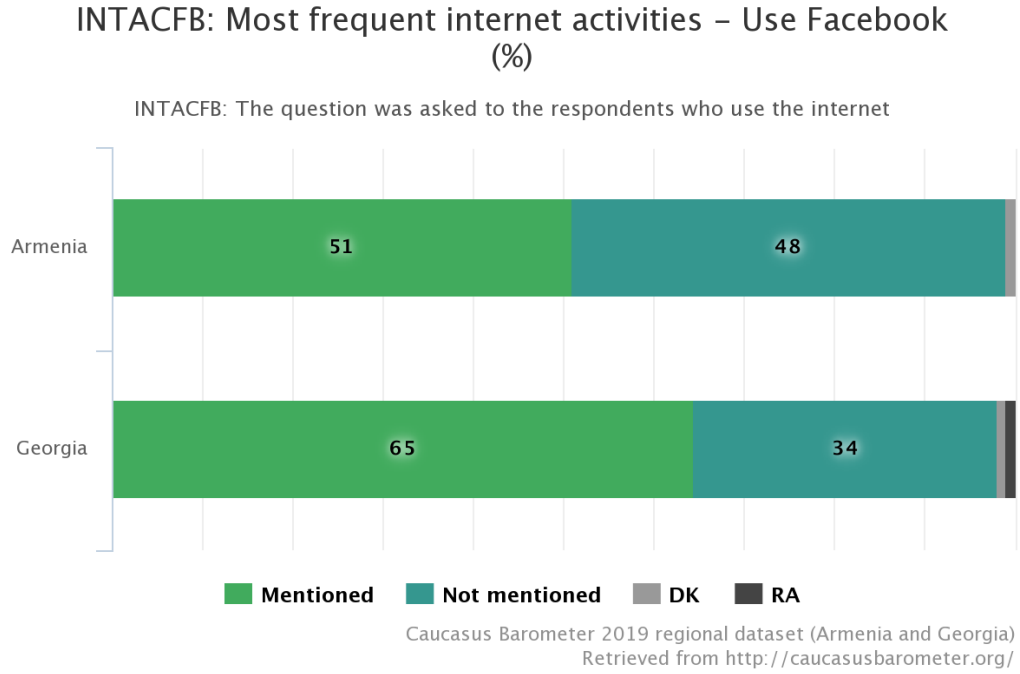

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The Eastern Partnership Civil Society Forum (EaP CSF) is a unique multi-layered regional civil society platform aimed at promoting European integration, facilitating reforms and democratic transformations in the six Eastern Partnership countries - Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. Serving as the civil society and people-to-people dimension of the Eastern Partnership, the EaP CSF strives to strengthen civil society in the region, boost pluralism in public discourse and policy making by promoting participatory democracy and fundamental freedoms. For more information, please visit the EaP CSF website at www.eap-csf.eu.

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